Main Findings of Strategic Consulting Project Industry Meeting

CEnter Humber

October 16th, 2007



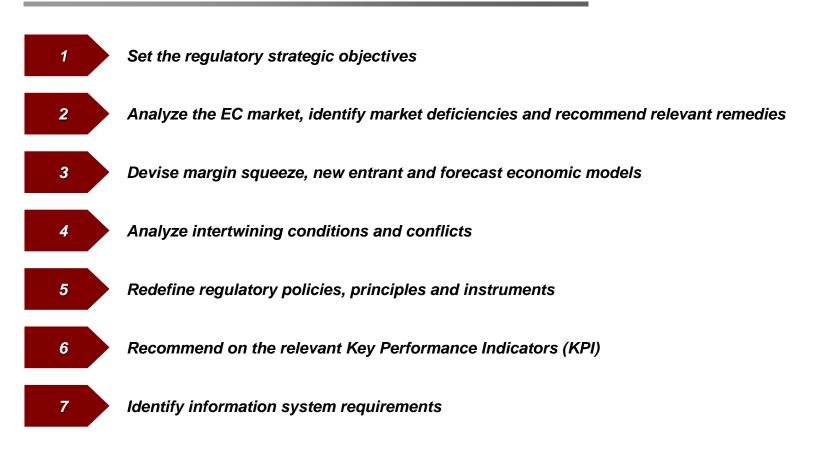
Introduction

- Mobile Sector Main Findings
- Fixed, Internet & Data Sectors Main Findings
- Broadcasting Transmission Sector Main Findings
- Intertwining Conditions Main Findings
- Strategic Objectives
- Summary



Our strategic project aimed to strike the proper regulatory strategy for the Romanian Electronic Communications (EC) market for 2007-2010

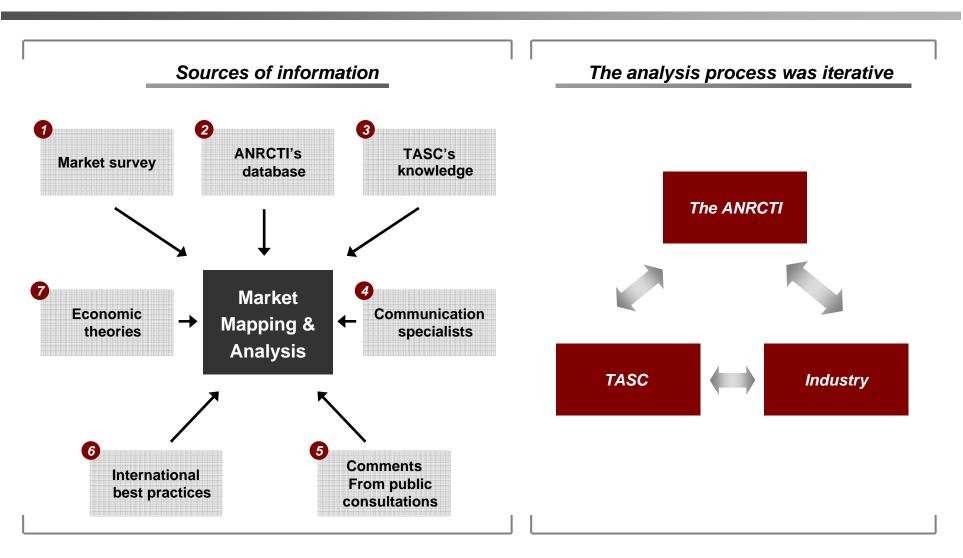
Several key assignments compiled the unitary global strategy:



The proposed strategy represents a holistic approach in which intertwining conditions are taken into account



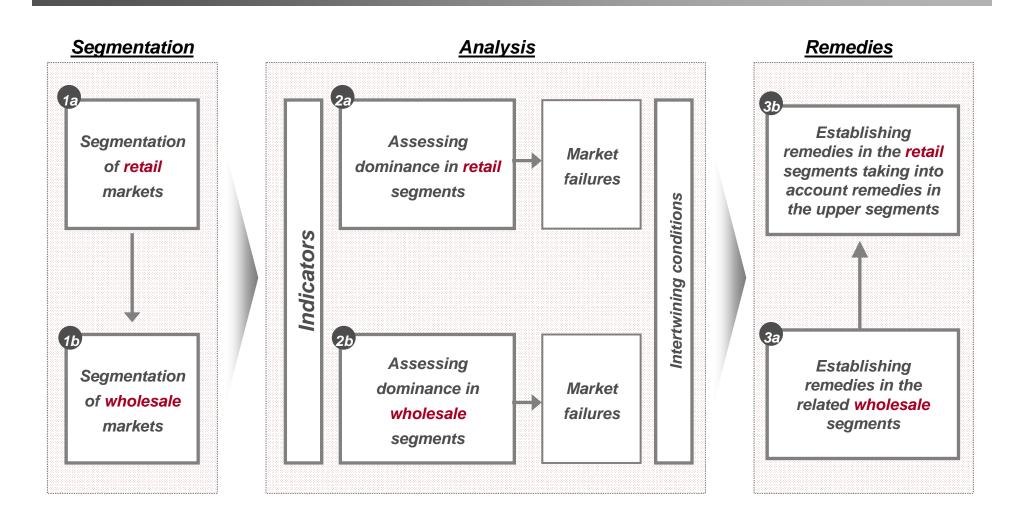
Different sources of information were utilized in the underlying strategic project



The iterative process and multiple information sources helped establish recommendations that were based on a vast factual basis



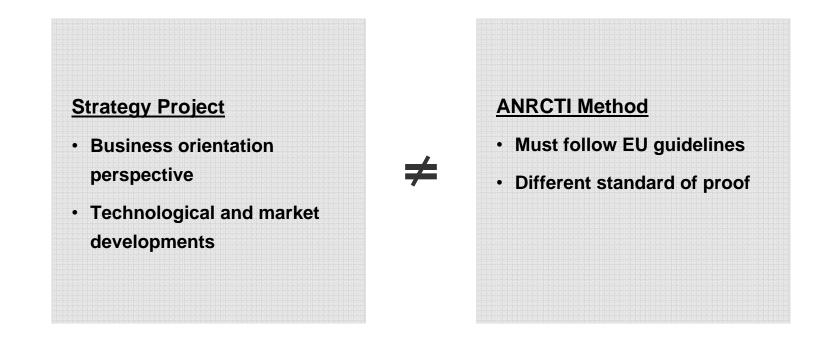
The process in which the relevant segments were defined and analyzed is presented in the following scheme



As opposed to the segmentation and analysis procedures, remedies are first proposed for the wholesale segments and only then, if needed, on the retail

TASC

Disclaimer



Due to the different underlying processes, ANRCTI future decisions may not be necessarily in line with TASC's recommendations



Comparing Romania to other European markets suggests that Romania still lags in penetration of most telecom services

C	Cellular-penetration rate (population) - Sep 2006			
3	ITALY	133.0%		
8	CZECH REPUBLIC	115.4%		
	AVERAGE EU25	103.2%		
20	HUNGARY	95.5%		
21	POLAND	88.7%		
27	ROMANIA	74.4%		

F	Fixed-penetration rate (population) - Sep 2006				
	AVERAGE EU25	52.6%			
13	ITALY	48.4%			
19	CZECH REPUBLIC	36.0%			
20	HUNGARY	34.9%			
22	POLAND	31.9%			
27	ROMANIA	20.4%			

Broa	Broadband penetration rate (population) Sep 2006			
	AVERAGE EU25	15.7%		
13	ITALY	13.6%		
18	CZECH REPUBLIC	9.6%		
21	HUNGARY	8.6%		
23	ROMANIA*	5.5%		
24	POLAND	4.5%		

Subscription TV-penetration rate (HH) - 2005				
11	HUNGARY	64.0%		
12	ROMANIA	63.5%		
	AVERAGE EU25	55.1%		
15	POLAND	53.3%		
22	CZECH REPUBLIC	24.6%		
23	ITALY	20.6%		

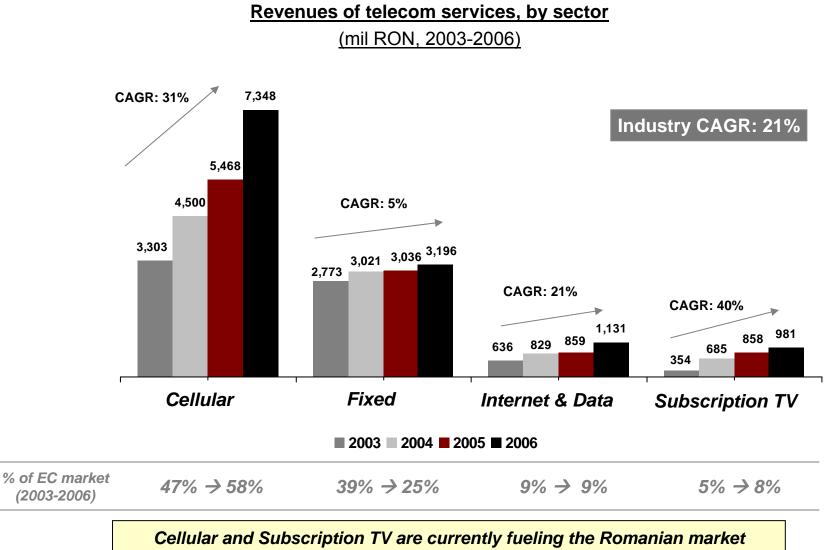
Main gap in penetration falls in the broadband and fixed telephony services, while the subscription TV is stronger than the European average

* According to the ANRCTI Broadband definition includes Internet access connections equal and faster than 128kbps

Source: Eurostat, ANRCTI .CIA World Factbook, European Union, .Merrill Lvnch, Eurostat .Television 2005.TASC.



Growth in telecom revenues has reached 21% per year while GDP growth stood on 8.1%



growth



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The segmentation process of the mobile sector resulted in the definition of 4 segments which were found relevant for regulatory intervention

<u>To define sector segmentation we</u> <u>utilized the following examinations:</u>

• Functionality

Should incoming and outgoing calls and SMS and advanced 3G services belong to the same segment

 Residential vs. Non-Residential Layer

Should different customer segments constitute separated segments

- Different Platforms Should GSM, HSPDA, 2G, 3G and 3.5G constitute different segments
- Geographic Considerations
 Should segments be defined
 according to network coverage area
 or at a national level

Segmentation map in the Mobile sector

Segment for the cluster of cellular services at the retail level

Segment for call termination on individual networks

Access and Origination on mobile networks

Wholesale international roaming segment *

The segmentation process resulted in the definition of 4 segments

Relevant for ex-ante regulation

When looking at the wholesale access segment, we need to identify deficiencies in the corresponding retail segment

* The segment was recently examined by the EU

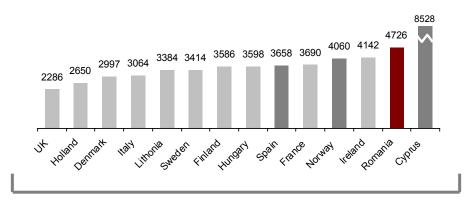


Our dominancy analysis in the retail cluster segment suggested the segment is dominated by Orange and Vodafone

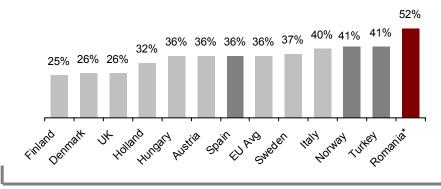
Main Findings

- · Very concentrated market and stable market share
- High EBITDA margins for top two players
- Potential of tacit coordination
- Relatively low level of innovation
- Switching barriers to consumers are high
- Relatively low level of effective churn level
- ARPU level (PPP) are higher than European counterparts





EBITDA margins of mobile operators (2006,%)



Implications

- Indications for joint dominancy of Orange and Vodafone in the retail segment - A need for a more thorough examination is needed
- The dominancy situation prevents the 3rd and 4th players to compete
- If collective dominancy exists, wholesale regulatory remedies should be imposed

Countries who defined SMP / Joint dominance

Segment should be tested for "collective dominancy"



Additionally, level of consumer awareness regarding the monthly expenditure for mobile services was found to be relatively low

Main Findings

Level of customer awareness regarding prices is low subscribers perceive the service as cheaper

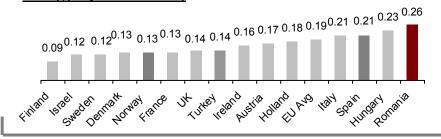
How many customers did not answer correctly to relative price awareness questions:

	Vodafone	Orange	Zapp	Cosmote
Said they know	95	120	8	8
Answered wrong	69	100	5	5
% wrong answers	72.63%	83.33%	62.50%	62.50%

(numbers represent # of people out of 405 cellular users)

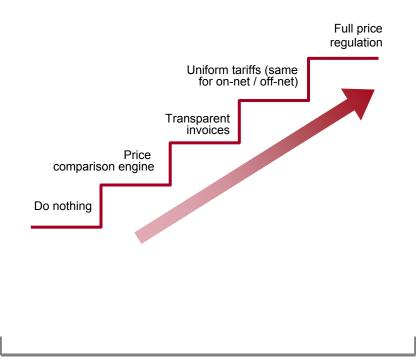
Retail price levels are relatively high

Price levels compared to Europe - Average income per minute, 2006 (\$, adjusted for PPP)



Implications

The ANRCTI faces a set of options for gradual regulatory intervention



Countries who defined SMP / Joint dominance

ANRCTI should encourage transparency by helping consumers understand the effective price, but should not intervene in pricing plans at present



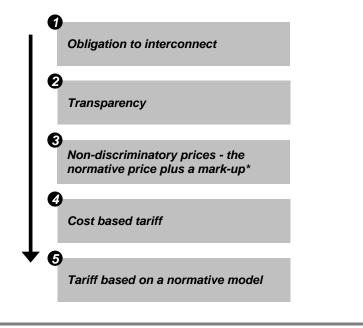
Lastly, the dominance in the individual terminating call segments and lack of a unitary interconnection policy brought about another deficiency

Main Findings

- Only Orange and Vodafone have regulated tariffs, while Cosmote and Zapp set termination fees freely (with transparency obligation only)
- Large operators exploit their negotiating power to impose lower rates
- Small operators exploit the obligation to interconnect to set excessive prices
- At times, dispute between operators yielded refusal to interconnect
- The unregulated interconnection tariffs in Romania are asymmetric and discriminating between players
- Interconnection tariffs are relatively high in comparison to the effective outgoing minute rate

Implications

- The ANRCTI should devise an interconnection policy that will set unified, non discriminative and transparent guidelines to current and potential players
- The long run goal is to achieve a single, efficient, cost- based, normative interconnection tariff



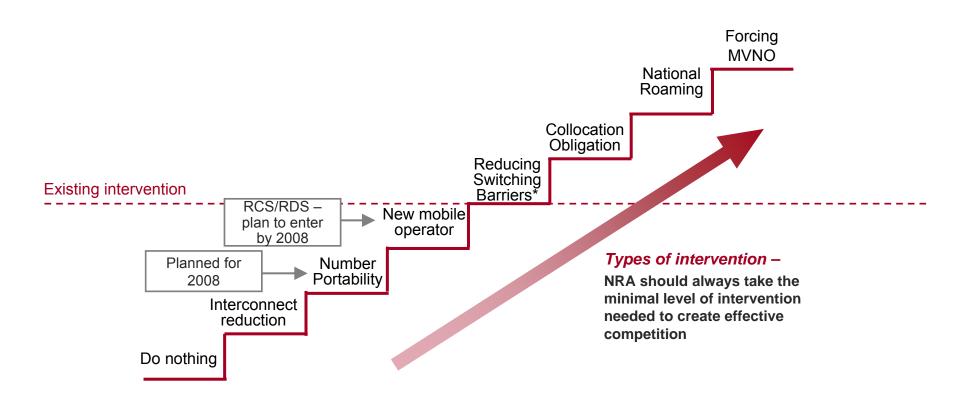
A unified interconnection policy will increase certainty and reduce the freuency of disputes



* To ensure non discriminative tariffs – Account separation should also be imposed

In order to address the problematic competition conditions, the ANRCTI can choose from a set of regulatory interventions

<u>Types of regulatory intervention to</u> increase competition in the mobile sector



A MVNO policy should be imposed <u>only</u> if all other wholesale regulatory instruments fail



* Such as SIM lock prohibition, long term contractual obligations..

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The retail segmentation process yielded 8 defined segments, out of which only 2 were found susceptible for ex-ante regulatory intervention

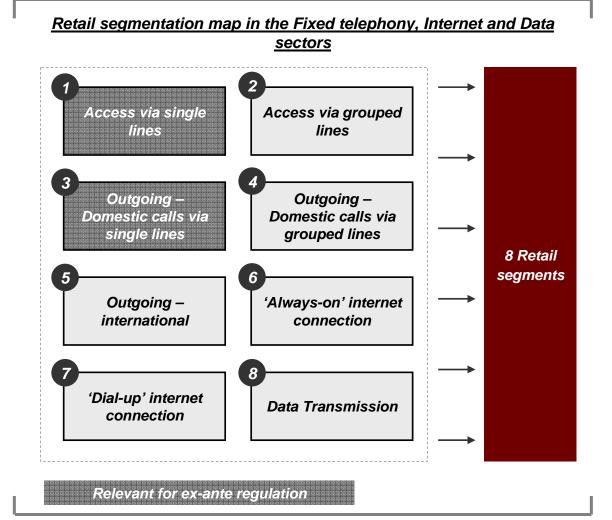
<u>To define sector segmentation we</u> <u>utilized the following examinations:</u>

- Functionality Should different call destinations be segmented
- Residential vs. Non-Residential Layers

Should differentiation be made according to customer segments

- Different Platforms Such as PSTN\ISDN, Fixed-Mobile, WiMAX, VoB...
- Geographic Considerations Should segmentation occur with relation to location (Urban and Rural)

The segmentation process resulted in the definition of 8 segments



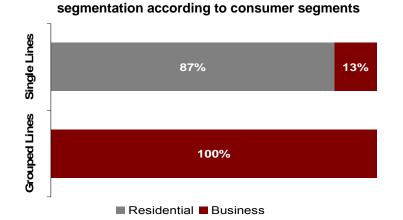
The proposed segmentation narrows the scope of current retail regulation



Our analysis suggested that we should alter current retail segmentation to 'grouped' and 'single' access lines

Main Findings

- Small and medium size businesses needs are more similar to the residential segment's needs
- SMEs, which compile most of the business sector, sometimes choose to be classified as residential customers, if such plans are more appropriate



Single vs. Grouped lines

Implications

- The sector was segmented according to grouped and singles access lines as opposed to the current market definition, which differentiated between business and residential users
- Our analysis suggests that Romtelecom is not dominant in the grouped lines segments, thus, regulatory constraints should be released

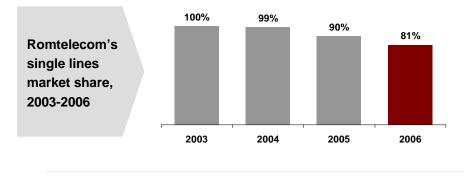
Retail regulation regarding grouped lines should be lifted



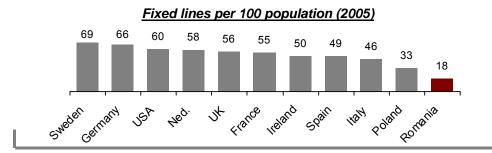
Analysis of the single access lines segment suggested Romtelecom position has decreased, yet, it still holds a dominant market power

Main Findings

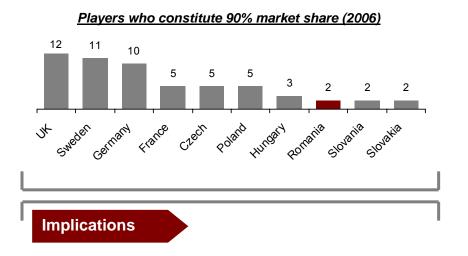
Romtelecom <u>still</u> holds dominance in the single access lines segment



Penetration levels indicate fixed telephony is less developed in Romania



Low level of availability



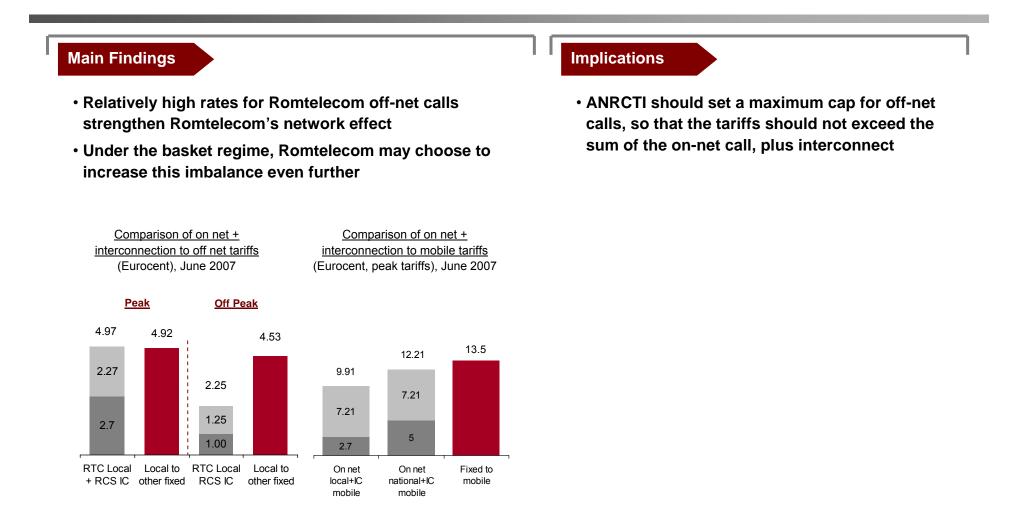
- The market should still be regulated
- Current regulatory obligations should be revisited
- Enhance competition using instruments such as Fixed Number Portability and new facility based operators (such as, Fixed- Mobile, WiMAX)

Regulation regarding the retail 'single line' should be maintained, while tariff regulation should be relaxed



Source: ANRCTI; International Overview (2006) \ OFCOM; European Electronic Communications Regulation and Markets 2006 (12th Report)

Still, we have observed excessive off-net prices by Romtelecom



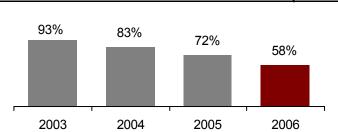
While retail regulation on Romtelecom should be relaxed, freedom to set prices for off-net calls should be restricted



Oppositely, Romtelecom's position in the outgoing international segment has decreased significantly

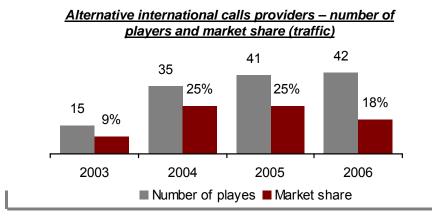
Main Findings

Romtelecom's dominancy is questionable



Romtelecom's market share of international calls (minutes)

Customers have sufficient availability of choice



- High number of players indicate barriers are
 lower with relation to the domestic call markets
- Trends suggest Romtelecom's market share will drop below the 40% level in the relevant timeframe
- While there is an increase in the international traffic, it is clearly seen that average revenues per minutes are decreasing

Implications

• The ANRCTI should reconsider the current regulatory regime regarding international outgoing retail segment

Current level of competition seems adequate, and if so, Romtelecom's regulatory constraints should be removed



Furthermore, fixed lines tariff structure is too complex for the end consumers

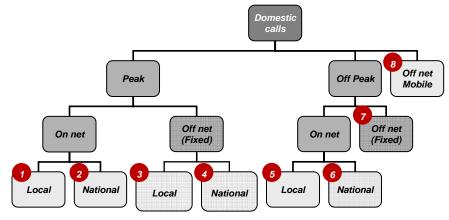
Main Findings

Consumers are sometimes faced with a multiple of tariffs which create complexity and reduces transparency

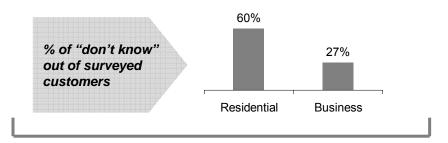
For example:

Romtelecom's customers face 8 different basic tariffs that are divided according to destination, receiving network and time of the day





This impedes customers ability to make rationale consumption decisions



Implications

The ANRCTI should promote tariff awareness

- Initiate and operate different methods to increase consumer awareness such as a comparative internet website, consumer leaflets, etc.
- Transparent invoices obligation to present the effective price per minute and traffic distribution

We recommend to promote transparency through providing information to consumers



Fixed-mobile offerings represent a hybrid access solution and pose a dilemma for the regulator in terms of segment attribution

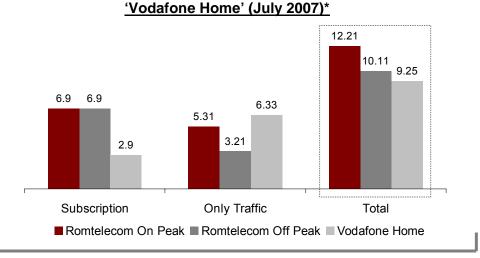
Main Findings

- The subscription and traffic charges of the fixed-mobile offerings suggest an economic alternative (based on Romtelecom's usage pattern, Vodafone's offer is comparable to Romtelecom's)
- The incremental investment needed from MNOs is lower than the investment needed for the deployment of fixed networks

Comparison between the offering of Romtelecom and

Implications

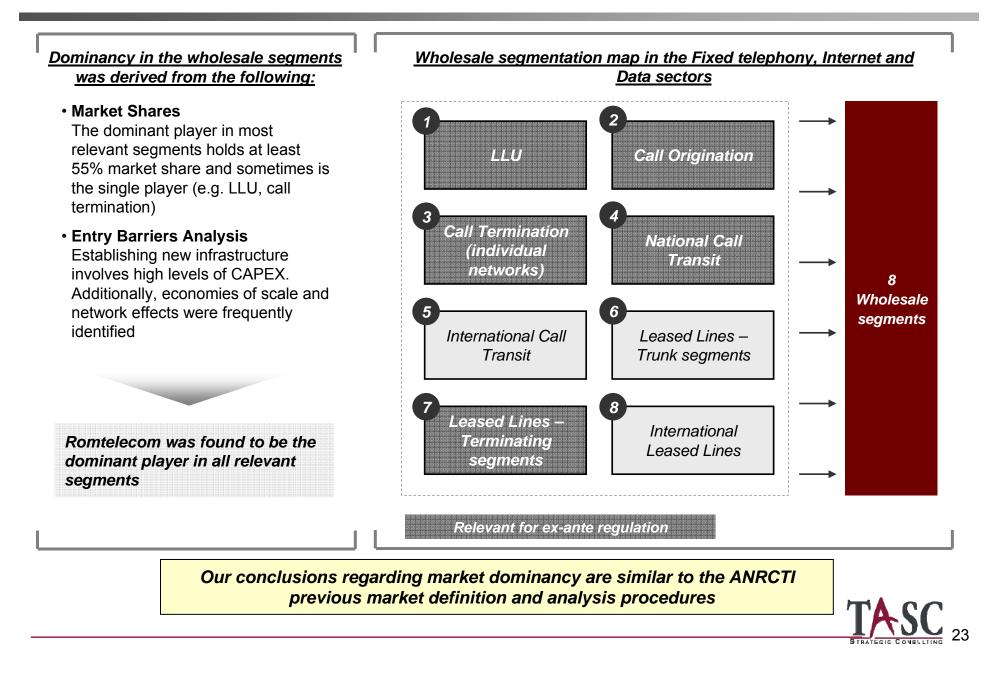
- Due to the similarities in functionality and high demand and supply side substitution, fixedmobile offering belong to the fixed telephony segment
- Therefore, interconnection obligations should be imposed identically to fixed tariffs



Current conditions suggest that fixed-mobile offerings may pose a significant competitive constraint on fixed operators, also in rural areas



The wholesale segmentation process yielded 8 segments, out of which 5 were found relevant for ex-ante regulation

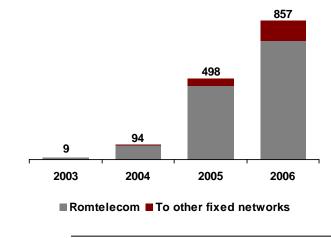


The fixed telephony termination market creates 'uneven playing ground' for the different players

Main Findings

• Romtelecom's share of terminated calls is decreasing rapidly. As the trend is likely to increase these strengthens the need for a unified interconnection policy

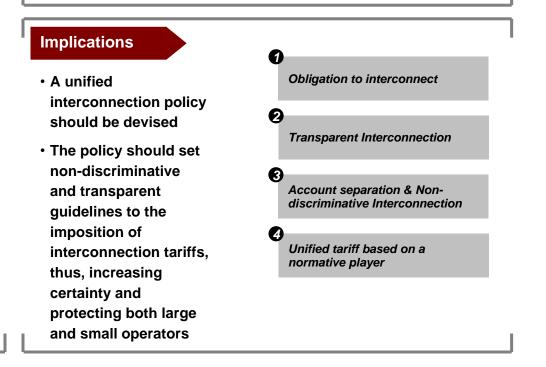




Romtelecom Market Share	99.6%	97.1%	94.8%	87.2%	

Lack of a unified interconnection policy creates two problems:

- Large operators exploit their strong bargaining power and force to interconnect at lower tariff
- Small operators abuse the obligation to reach interconnection agreements and charge excessively



Devising the interconnection policy will promote transparency and provide certain economical horizon for new entrants



The LLU solution does not prove to be effective

Main Findings

• Relative number of LLU lines in Romania is extremely low vs. the EU average (9% of access lines)

	Country	Population (M)	Full LLU (000)	Shared LLU (000)
	Ireland	4.2	19	1
	Denmark	5.4	111	65
	Greece	11	132	223
	Netherlands	16.5	264	532
-	Sweden	9	107	376
	France	61	1585	1928
	Romania	22	0.6	0.3

- According to the new entrant model, not enough margins exist for the solution to be sustainable
- Moreover, active ONU in the NGN deployment challenge the viability of the LLU business model

Implications

- The LLU solution in its current design does not appear to be an effective regulatory tool in the relevant timeframe
- The Bitstream access solution would have greater effect on competition as it is still sustainable in the NGN scenario

Next to the LLU, Bitstream access wholesale solution should be considered



In addition, Carrier Selection and Pre-Selection do not yield sufficient competition in the outgoing calls market

Main Findings

- Facilitation of CPS has only recently been activated
- Though there are CS players, they are mainly used for International outgoing calls

Country	# of CS players	% of operators ⁽¹⁾	# of CPS players	% of operators ⁽¹⁾
Belgium	13	87%	13	87%
Denmark	18	42%	19	44%
Estonia	11	32%	12	37%
Netherlands	68	65%	24	23%
Sweden	17	34%	37	37%
Germany ⁽²⁾	16-44	13%-36%	22-47	22%-47%
Romania	46	56%	0	0%

- Number of operators using CS\CPS as a percentage of the number of active operators, excluding the incumbent
- (2) Local and Long distance

- Due to the recent rebalancing, margins for domestic outgoing calls are low and the segment is unattractive for new entrants
- The CS\CPS solutions were more relevant in the past when margins for outgoing traffic were higher

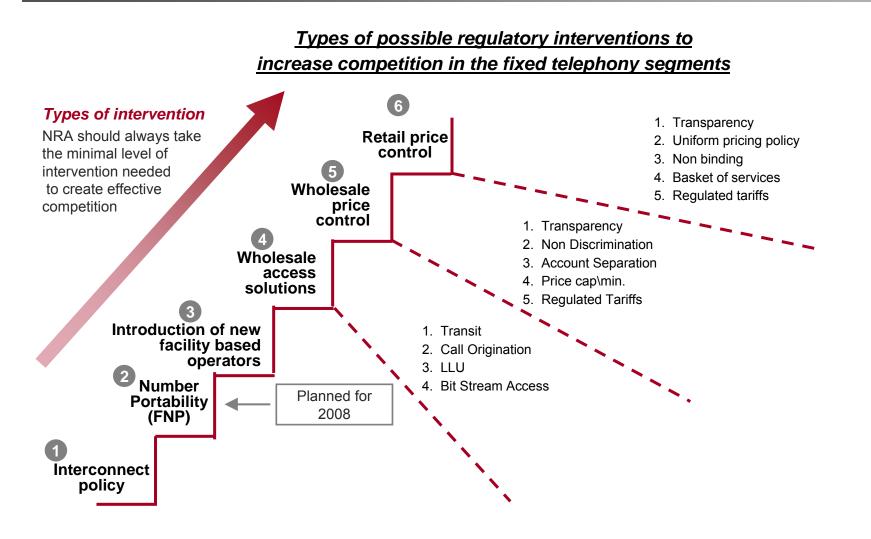
Implications

- Provided that the margins for CS\CPS are expected to decline further, these solutions should be considered 'yesterday's battle'
- Romtelecom should still provide call origination services

Romtelecom should still provide call origination service to meet wholesale demand



In order to deal with the competitive deficiencies in the fixed telephony sector, the ANRCTI may implement different types of intervention



We propose to relax current regulation regarding Romtelecom's retail price control, while maintaining its wholesale obligations



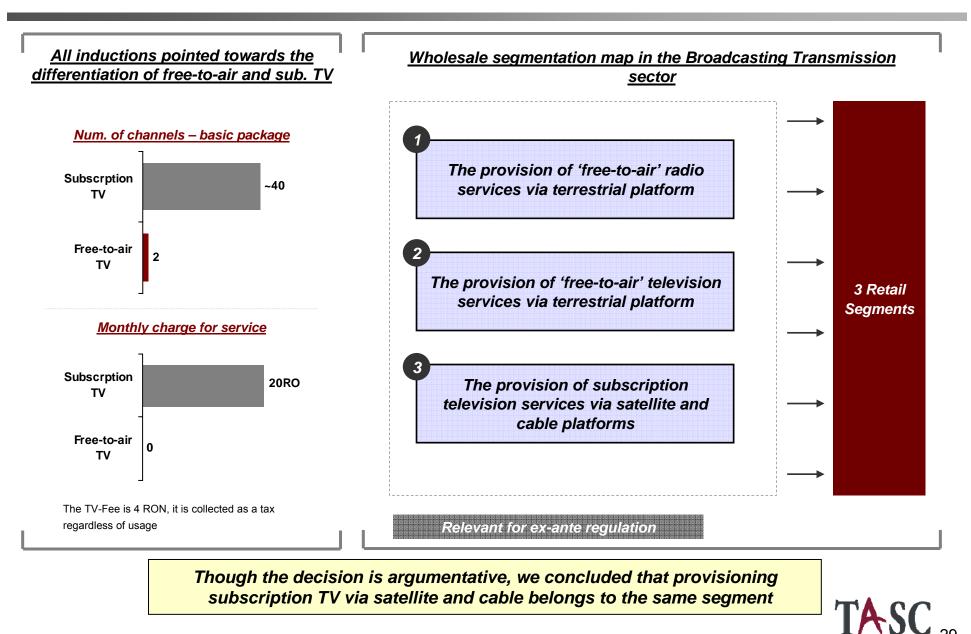
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The retail segmentation process resulted in the definition of 3 retail segments, none of which was found relevant for regulatory intervention



Source: Providers' publications

On the subscription TV segment, we saw it fit to examine the segment's low level of innovation

Main Findings Low ARPU and the move towards satellite transmission suggest cable digitization will be Digitization in Sub. TV segment is very low and mainly further delayed from satellite Satellite transmission does not enable Digitization level of subscription TV (excluding IPTV) advanced services such as VOD and 91% interactive TV 77% 70% 65% 63% 56% 55% Romania lags behind its European counterparts in terms of digitization 29% 20% 14% UK Italv France Ireland USA Sweden Poland Romania Germanv Spain Ned Implications The digitization in the subscription TV segment is very low Current take up of the satellite offers indicates the level of digitization will rise significantly 97.3%

Since the segment is heading in the 'right direction', we believe this deficiency will be self regulated, still, the segment should be monitored

2.7%

Digital Cable



Satellite

14.3%

Digital

85.7%

Analogue

At the wholesale level, 6 segments were defined and 2 were found to susceptible for ex-ante regulation

<u>To define sector segmentation we</u> <u>utilized the following examinations:</u>

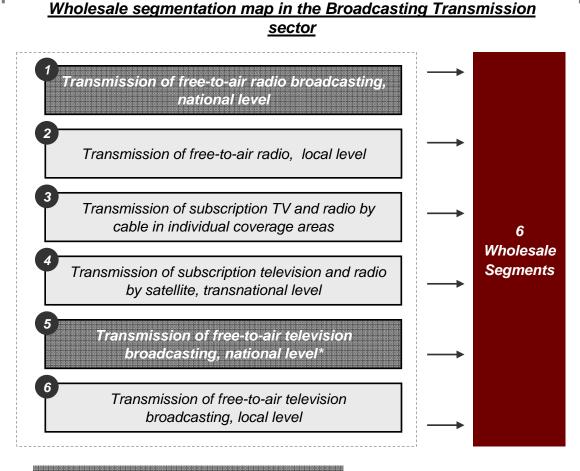
• Functionality Should radio & TV belong to same segment

• Different Platforms Should Cable, Satellite, IPTV and Terrestrial belong to same segment

• Analogue vs. Digital Should analogue TV & radio broadcasting belong to same segment as digital

• Geographical Consideration Should segments be differentiated with relation to geographic location

In both relevant segments Radiocom was found to be the dominant player



Relevant for ex-ante regulation

As opposed to the retail segmentation, the provision of transmission services via satellite and cable constitute two separate segments

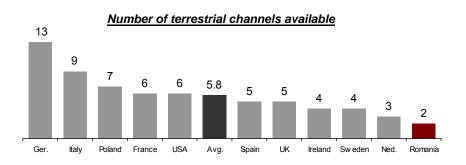
* Due to the different contractual conditions further segmenttion may be required



There is a significant need for improvement in the national free-to-air TV segment as both excessive pricing and low availability of choice exist

Main Findings

Low availability of choice for Romanian customers (~38% of TV-owned households receive broadcasting via the terrestrial platform)



Radiocom charges excessive prices for it's services

Country	Broadcasting company	# of employees	# of Sites
	Radiocom	2300	91
	NTL Broadcast	1,300	1,154
	Crown Castle Int'l Corp.*	785	~24,000

Indications for # of employees in transmission companies

- TV is an important medium the average Romanian citizen spends ~4 hours a day watching TV
- Radiocom employs a relatively large number of employees in relation to the number of sites needs to be covered by transmission prices
- Public TV channels spend twice as much (15 % of revenues) on transmission than other national public channels (e.g. BBC + Channel 4 spend 6-7%)

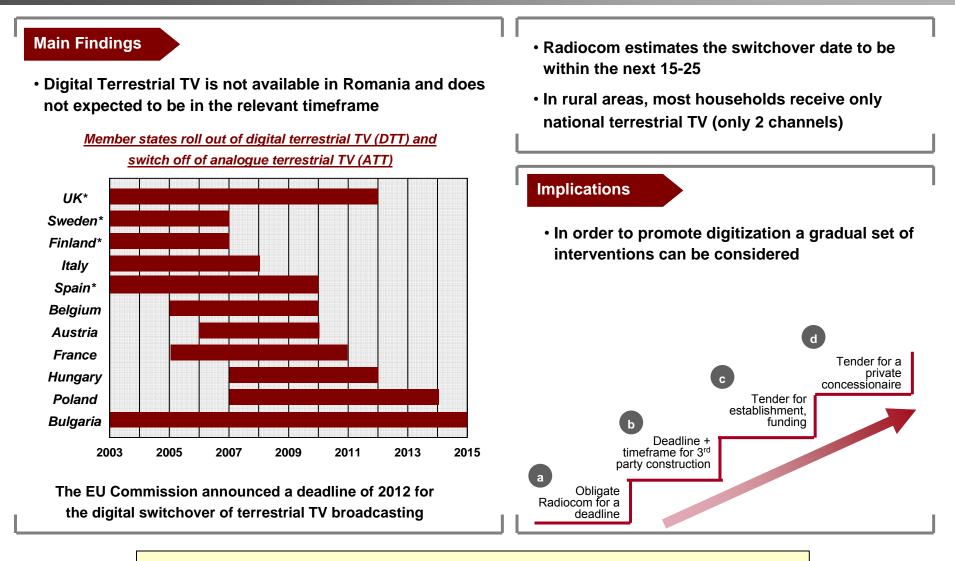
Implications

• Dominancy in the market creates a blatant competitive deficiency and should be dealt with using the imposition of regulatory instruments at the wholesale level

Romania is lagging behind its European counterparts regarding the competitive environment in the national free-to-air TV segment



Additionally, Romania transitional process towards Digital Terrestrial Television (DTT) is too slow



In order to meet EU demands to switchover by 2012, we believe Radiocom should be obligated to a deadline



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The main intertwining condition that should be addressed is fixed-mobile substitution and convergence

Some level of substitution exists

Continuous substitution between fixed and mobile services:

- Traffic substitution The increase in mobile traffic is higher than the increase in mobile lines, suggesting a shift in consumers' usage
- Lines substitution Significant increase of mobile lines and at the same time a decline in the number fixed lines

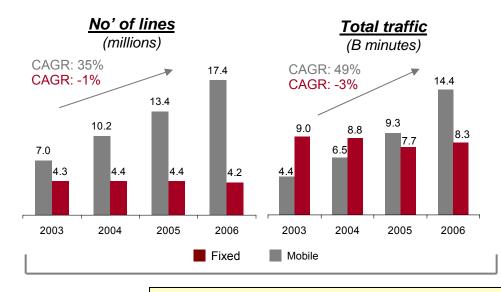
However functionality and price point toward 2 different markets

Functionality

- Substitution is asymmetrical symmetrical substitution exists only in fixed locations
- A mobile line is an individual line while the fixed is a shared family\business line

Prices

• Price differences are significant



Some of the mobile operators' offers should be viewed as fixed

- Premicell offers and direct connections to large businesses function as fixed calls that originate from a fixed location
- Vodafone and Zapp are offering a substitute to the fixed telephony at a fixed location with a fixed numbering (in case of Vodafone)

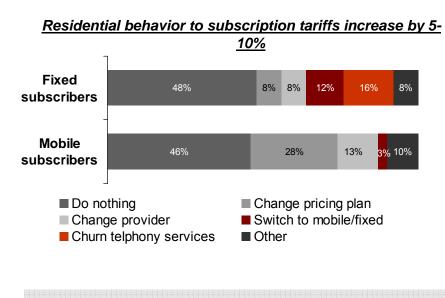
Direct connections and Fixed-mobile offerings ought to be viewed as fixed offers, this further reduces the level of substitution between fixed and mobile



Although functionality and pricing are different, we have analyzed whether mobile and fixed ought to be part of the same market

Residential

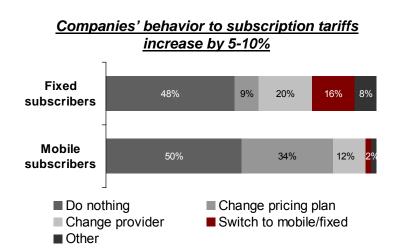
Due to the relatively low penetration of fixed telephony in the residential segment, a mobile line (and traffic) do not necessarily replace a fixed line



The SSNIP analysis distinctly showed low level of full substitution exists. Nonetheless, there is a weak indication for one-side substitution

Business

- The business segment is less likely to substitute the fixed lines with mobile due to the high traffic volume and the higher prices of mobile calls
- According to the survey, about 5% of companies use Premicell services

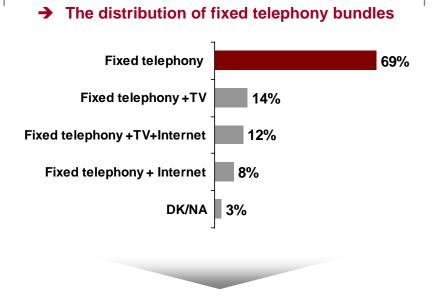


Some level of line substitution exists, but none that suggest that the two markets are substitutes

TASC 36

We see a growing trend towards bundles, as both the business and the residential segments value bundles

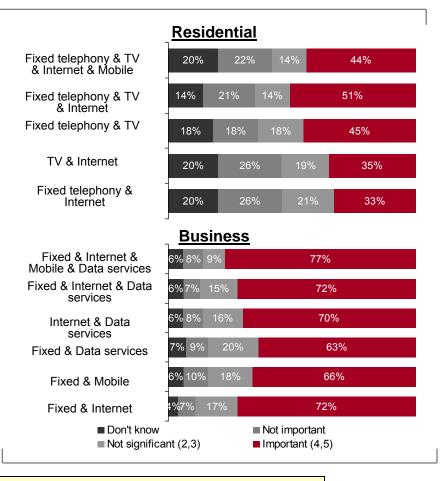
According to the survey, 34% of fixed telephony subscribers have some sort of a bundle



• Currently, there are 3 options for fixed telephony bundles, **none holds significant market share**

 With the introduction of quadruple-play - 13 different type of bundles will be available. The probability of one bundle type to be significant is unlikely

"How important is it for you to receive the following telecom services from one provider"



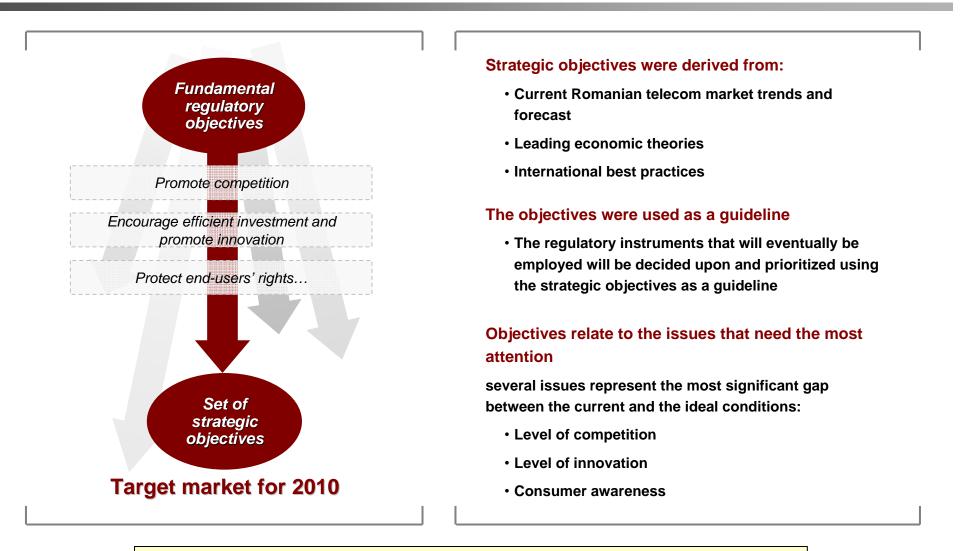
Given the current take up of bundles and lack of dominancy of a certain type, the bundled offers should not change the relevant segmentation



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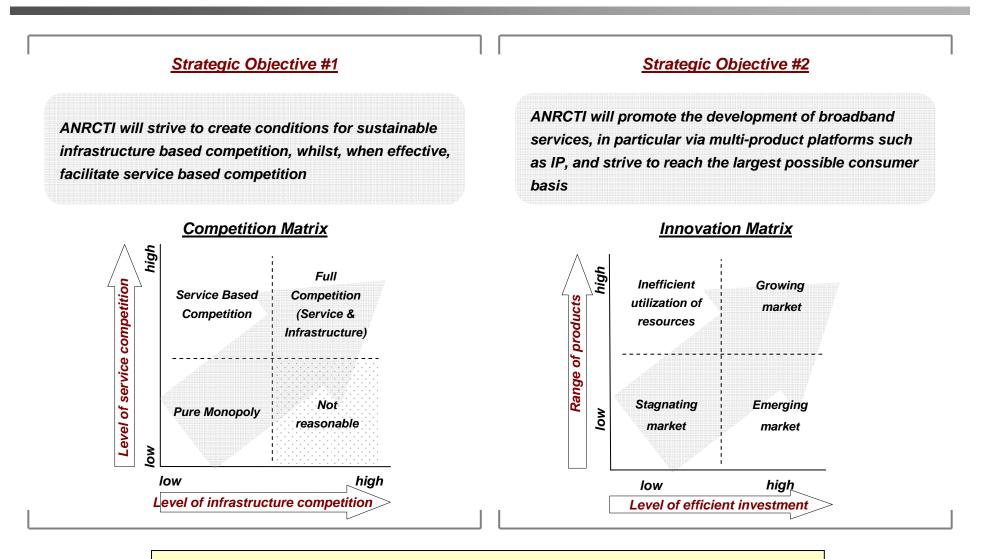
The set of strategic objectives for 2007-2010 was derived from the ANRCTI's three fundamental objectives



Since various objectives can be derived through this process, the target market for 2010 was used as a guideline to choose the preferred objectives



The described process yielded five recommended regulatory strategic objectives (1/2)

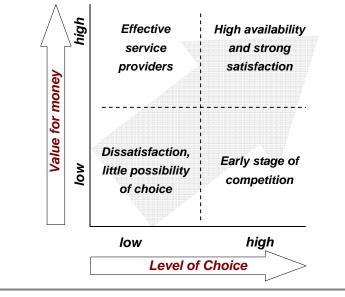


According to the 'ladder of investment' principle, infrastructure based competition is the final step towards self regulation

The described process yielded five recommended regulatory strategic objectives (2/2)

Strategic Objective #3

ANRCTI will ensure that different profiles of users (residential and business, urban and rural), get the "best value for money" for electronic communications services



Consumer Interests Matrix

Strategic Objective #4

ANRCTI will strive to create an environment where information on service availability, supply conditions and pricing, is transparent, non-complex and available to all Romanian consumers

• Lowering the level of complexity of tariffs will empower the Romanian citizens and, hence, help protect consumer interest

Strategic Objective #5

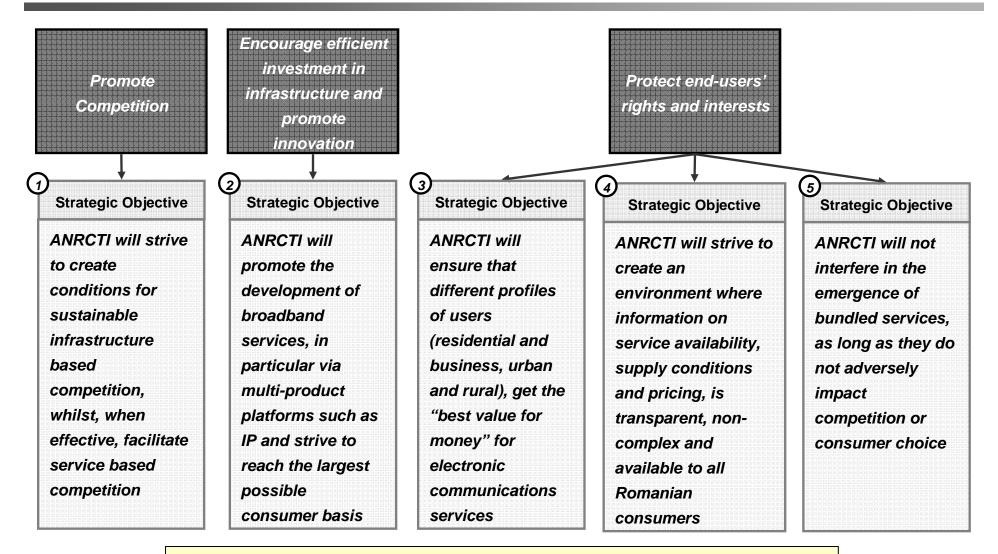
ANRCTI will not interfere in the emergence of bundled services, as long as they do not adversely impact competition or consumer choice

- Bundled services, particularly based on single platform, enable a **better utilization of resources**
- Allow more choice for consumers, just as long as they do not eliminate the option for single service offers

Enhancing the consumer choice, while increasing the level of transparency, will encourage rationale buying behavior



Each regulatory strategic objective relates to ANRCTI's three fundamental objectives



These five strategic objectives should guide the ANRCTI regulatory policy for the period 2007-2010

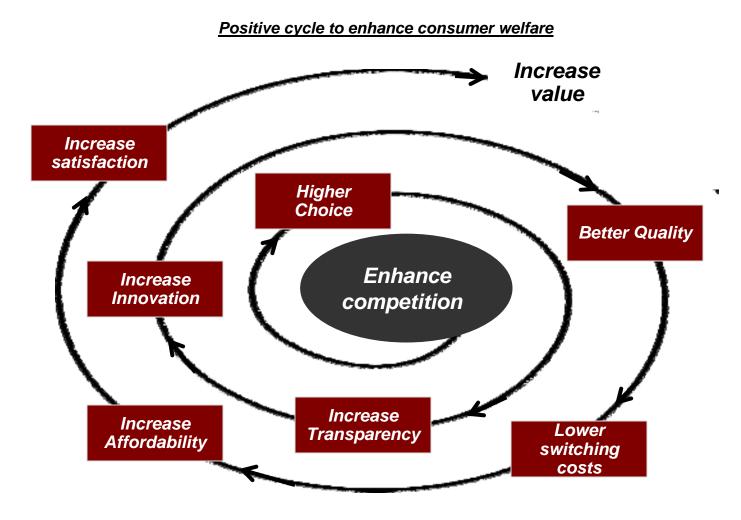


- Introduction
- Mobile Sector Main Findings
- Fixed, Internet & Data Sectors Main Findings
- Broadcasting Transmission Sector Main Findings
- Intertwining Conditions Main Findings
- Strategic Objectives

• Summary



In summary, the Romanian EC sector needs to go through an iterative process to enhance consumer welfare



While the Romanian market is heading in the right direction, self-regulation in most sectors is still not expected to occur in the relevant timeframe

