

Evolving over moving ground

Absorbing introduced regulatory risk

The case of WIND Hellas*

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* Former TIM Hellas. TIM was a Trademark & Name licensed until late May 2007 by TIM Italia S.p.A.. On June, 2007, TIM Hellas, already rebranded at that time and operating under the corporate/trade name of WIND Hellas, was merged with its subsidiary, former Q-Telecom, by absorbing the latter in its entirety.

** The content of this paper is based only on disclosed & open access facts/data and does not necessarily reflect the official position of WIND Hellas. Responsibility for the information and views expressed lies entirely with the authors.

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Abstract:

In this paper we examine the unique in Europe case of WIND Hellas (at that time known as TIM Hellas) & Q-Telecom, 3rd and 4th -in market share- mobile telecom operators in Greece and the impact that had on them a specific regulatory intervention by NTPC (Greek NRA for the telecom sector).

Both, WIND Hellas, parent company and sole shareholder of Q-Telecom and the latter, were regulated on 2006 according to the procedure provided under article 7 of the EC Framework Directive for voice call termination into their respective networks. The base for the aforementioned regulatory intervention and remedies imposed was the NTPC's finding -during a market analysis / public consultation- that WIND Hellas & Q-Telecom jointly held Significant Market Power (SMP) in market 16 (voice call termination in mobile networks) of the EC Recommendation on telecom markets that must be ex ante regulated.

The legal base for such a finding was the European Commission's final decision that cleared the buy out of Q-Telecom by private equity funds that were controlling at that time WIND Hellas, as well. **According to the decision the buy out of Q-Telecom constituted a concentration under article 3(1)(b) of the EU Merger Regulation. Following this evaluation, NTPC decided to treat both companies as a single company and awarded them joint SMP in the relevant market. This conclusion was followed by the imposition on them of the same regulatory remedies, considering them as a single network.**

The aforementioned regulatory intervention that followed the concentration of the two companies, in relation with the remedies imposed to the remaining other two mobile networks (Cosmote and Vodafone) and the high level of competition in the mobile telecom sector in Greece, which was already at that time a mature one, introduced market wide a significant regulatory risk, which mostly effected the concentrated companies. Moreover the lack of an effective appeal mechanism in Greece where NTPC's decision could be confronted made it inevitable for the two companies to proceed with the implementation of the remedies imposed. This compliance exercise was evaluated as having a major impact on certain business assumptions and plans that had been laid down.

As a response WIND Hellas fine-tuned its strategy. Firstly, expanded synergies with its subsidiary at every business/operational level and ultimately merged with Q-Telecom by absorbing the latter in its entirety. At the same time the two companies initiated a full scale commercial campaign targeting the entire mobile market (high & low / retail & wholesale level / expanding distribution network) with an ultimate goal to benefit at the maximum from the "waterbed effect" (especially in unregulated sub markets with low beta they were operating in), meaning to cut costs, maximize efficiencies, gain market share and at the same time to improve all financial indicators, keeping a two digits growth on a year basis.

A year after, all indicators show that the strategy was correct and ultimately the turnaround was complete. The two companies which now are one and under a new corporate name (former TIM Hellas was rebranded to WIND Hellas), overcame successfully every regulatory obstacle, gained significantly in market share, arpu, revenues & ebitda, minimized churn, succeeded a record in new subscribers for the 1st trimester of 2007 and increased immensely their value triggering world wide interest that ultimately concluded to the buy out by Weather Investments at a value of 3,4bil., making WIND Hellas' previous LBO by APAX Partners & TPG, almost a year ago, the most successful LBO Europe wide.

1. A brief history

1.1. Who is Who of WIND Hellas

WIND Hellas³, formerly known as TIM Hellas, is today one of three⁴ providers of GSM⁵/UMTS⁶ mobile telecommunications services in Greece⁷, 3rd in market share, with an annual turnover of €1.1 billion and more than 4.1 million customers.

It was founded in 1992 under the corporate name of Teletet. In late 2003, based on the fact that the company was an ultimate subsidiary of Telecom Italia Mobile (TIM)⁸, was rebranded to TIM Hellas and on May 2007 the company was rebranded for the second time to WIND Hellas following a successful buy out by Weather Investments S.p.A..

WIND Hellas since its beginning was established as the technology leader of the Greek mobile telephony market thanks to its innovative products and services⁹. In 2005 the company was

3 For more information refer to: www.wind.com.gr.

4 see table 1, which illustrates the pre WIND Hellas/Q-Telecom merger number of market players in Greek mobile market.

5 WIND Hellas' GSM network expands throughout Greece to offer population coverage of 99,3%. For customers travelling abroad, the company cooperates with 354 mobile operators in 146 countries. Everyday, WIND's network handles more than 28 million calls and 15 million SMS's. Thanks to the company's investments in infrastructure even the remotest areas of Greece have excellent network coverage. WIND Hellas invests approximately €150 million annually; almost 15% of its revenues, in order to assure that its customers enjoy full network coverage.

6 WIND Hellas is the technology leader of the Greek market. It was the first operator to launch 3G services in 2003 and since then invests heavily to build its wireless broadband network. Thanks to its 3G Broadband (HSDPA) network, currently deployed in most Greek cities, it offers its customers wireless data services with a speed that reaches 1.8 Mbps. WIND Hellas' 3G Broadband supports video-calls, web browsing and multimedia services usage such as MMS & VIDEO at impressive quality. It is estimated that at December 31, 2006 WIND Hellas GSM/GPRS network covered 98.14% and our UMTS network covered 50.11% of the Greek population of approximately 11 million.

7 Before WIND Hellas' merger with its subsidiary, Q-Telecom, 4 providers of GSM mobile telecommunications ~~in Greece~~ were operating in Greece ~~four providers of GSM mobile telecommunications services~~ (Cosmote, Vodafone, WIND Hellas & Q-Telecom) by which the first three operators were also licensed to provide UMTS services.

8 Adsorbed today by its parent company, Telecom Italia.

9 The development of WIND Hellas has been characterised by technological and commercial innovations, which have affected the whole segment of Mobile Telephony in our country:

(i) In 1995, TIM Hellas was the first to create a Customer Care unit.

(ii) In 1996 the first customized offers are provided by introducing economic packages.

(iii) In 1997 one of the most popular products in the history of Mobile Telephony is launched, the B FREE, which essentially created the market of pre-paid Mobile Telephony in Greece.

(iv) In 2000, was launched the first integrated offer of telecommunication services for the Corporate business segment, the B BEST.

(v) In 2001 the first pre-paid package, with on-call activation from the first call, was offered, the FREE2GO.

(vi) In 2002, for the first time in Greek territory and on a pilot basis, the 3G network was put in operation.

(vii) In 2003 WIND Hellas was the first company in Greece and one of the first in the world to introduce customised 3G Mobile Telephony services.

(viii) In 2006 the company launched TIM PLUS, a menu of News and Entertainment services, easily accessible from the mobile phone. TIM Plus encompasses more than 200 services in 14 thematic categories, covering all interests and communication needs of its customers. It is available to all WIND Hellas customers, it runs on both 2nd and 3d generation devices and its content is continuously updated.

acquired¹⁰ by Apax Partners¹¹ and Texas Pacific Group¹², two of the biggest international investment (private equity) funds. In 2006, WIND Hellas acquired¹³ Q-Telecom¹⁴, the 4th largest mobile operator in Greece. This acquisition linked with the strategic repositioning of WIND Hellas allowed the company to further strengthen its market position. 2007 was a milestone year in the company's history. On February 2007, Weather Investments S.p.A. acquired¹⁵ WIND Hellas providing the latter a global perspective in its operations¹⁶. As part of Weather Investment Group's international footprint, WIND Hellas succeeded in continuing its successful course in the Greek market and the successful turnaround in its operations, which had begun since late 2005. The rebranding from TIM Hellas to WIND Hellas was made in order to celebrate a new era in communication during which its customers will enjoy much more than simple mobile

(ix) On July 2006 WIND Hellas launched MO'MAD, a pre-paid service addressed to young people with very low charges and the provision of rich music content, in collaboration with the Greek music channel MAD.

(x) In 2007 WIND Hellas, through its merger with Q-Telecom, offers fixed telephony and broadband services and it's planning to launch an innovative solution that features not only mobile services, but also fixed telephony and broadband internet services in a single package.

10 On June, 2005, a company controlled by a consortium of private equity investment funds managed by Apax Partners and Texas Pacific Group acquired an initial 80.87% stake in WIND Hellas from TIM International N.V., a wholly owned subsidiary of TIM Italia, company's former controlling shareholder. On November, 2005, the acquiring company acquired all of the remaining shares of WIND Hellas pursuant to a cash-out merger under Greek law and eventually absorbed its 100% subsidiary, concluding to an introduced debt leverage equal to WIND Hellas value at that time.

11 Apax is one of the world's leading private equity investment groups operating across Europe, Israel and the United States. Apax has approximately \$20 billion of funds under management. Apax funds invest in companies in the following industries: media, information technology, telecommunications, healthcare, financial services, retail and consumer. Apax's past and current investments include Audible, Dialog Semiconductor, Frontier Silicon, Inmarsat, Intelsat, Jamdat, Kabel Deutschland, Sonim Technologies and Yell. For more information refer to: www.apax.com

12 Texas Pacific Group (TPG) is a leading global private equity firm. TPG manages over \$14 billion of funds with an additional \$8 billion of affiliated funds, and in the course of its history, has completed more than 65 transactions. TPG's past and current investments include Burger King, Debenhams, Ducati, Eutelsat, Findexa, Grohe, Isola, J Crew, Lenovo, MGM, Scottish & Newcastle Retail and Spirit Group. For more information refer to: www.texaspacificgroup.com

13 On January, 2006, a wholly owned subsidiary of WIND Hellas acquired Q-Telecom. Q-Telecom merged into this wholly owned subsidiary on June, 2006, and the surviving entity from the merger was renamed Q Telecommunications S.A. Q-Telecom, until May, 2007, was operating as a separate business unit/legal entity of WIND Hellas in order to leverage the strength of the Q-Telecom brand in the pre-paid market segment.

14 Q-Telecom commenced operations in 2002 and operated under a partially MVNO business model, deploying its network in Greece's capital, Athens, where resides almost half of the country's population and operating under a national roaming agreement with Vodafone for the rest of the country. Since its beginning of operations had gained a significant market share of more than 10% focusing mainly to the Greek pre-paid mobile telephony market (low end). As of December 31, 2006, Q-Telecom provided mobile telecommunications services to approximately 1.1 million customers. For more information refer to: www.myq.gr & <http://portal.myq.gr>

15 On February, 2007, Apax Partners and TPG, agreed to sell their equity stake in the ultimate parent company that holds 100% of the shares of WIND Hellas to Weather Investments S.p.A. The sale price included €500 million of equity plus approximately €2.9 billion of net debt at year end 2006, meaning that the fair value of WIND Hellas was set at €3.4 billion.

16 Weather Investments S.p.A., is the main stakeholder of a global telecommunication group controlled by the Sawiris family and Naguib Sawiris. Weather Investments owns Wind Telecomunicazioni S.p.A., the 3rd largest mobile operator and 2nd largest fixed line operator in Italy as well as a 50% plus one share of Orascom Telecom Holding S.A.E.. Orascom Telecom is a leading international telecommunications company operating GSM networks in seven high growth markets in the Middle East, Africa and South Asia.

communications, explicitly showing the company's new endeavour to launch converged services and shows vividly the dynamic that the company has gained the past 2 years.

1.2. The Greek mobile telephony market

As an industry oversight and taking into account the fixed telephony also, the last 5 years Greek electronic communications market presents a contrasting picture. While there was intensive competition and consolidation in the mobile sector, the fixed incumbent maintained its position as the only access network provider on the fixed market. Greece was the last Member State to notify measures transposing the European regulatory framework into its national legislation, and the Greek National Regulatory Authority devoted a lot of energy to catching up on market reviews and has issued a number of regulations as part of its obligations under the new law¹⁷.

The Greek market of Mobile Telephony is characterized by high degree of penetration and advanced technology. Since the first year of operations, Mobile Telephony has become necessary means of communication by most Greeks and an integrated part of their everyday life. The business segment of Mobile telephony is one of the highest growth segments of the country, since the companies involved in the provision of Mobile Telephony services have made considerable investments of high value, both, for the development of telecommunications and technological infrastructure and in human resources.

Another growth factor of the Greek mobile market is the intense but fair competition between the operators, competition that works for the benefit of the consumer, since the services offered are of high quality and at convenient and historically decreasing prices. Penetration in Greece according to the 12th EC Implementation Report exceeds 99,8%¹⁸, just under the average of the European Community¹⁹. Although the real penetration, according to MNOs²⁰ data²¹, in the 2nd trimester of 2007 approached 135% a figure that reveals the dynamics of the specific industry in Greece.

¹⁷ see 12th EC Implementation Report.

¹⁸ see table 2, which embodies October's 2006 data reported in the 12th EC Implementation Report. The number of active subscribers reached 11.1 million in October 2006. According to NTPC's data penetration in the 1st trimester of 2007, exceeded 130%.

¹⁹ The EU average was approaching, in late 2006, 103%. see table 3.

²⁰ Mobile Network Operators.

²¹ Cosmote has announced (1st trimester 2007) 5.4, Vodafone 5.2 and WIND Hellas 4.3 mil. subscribers, a total of 14.9 mil. in a population totalling 11 mil.. According to research data, the mobile penetration rate based on active customers is substantially lower largely because of the high inactivity driven by the 12 month validity period of pre-paid accounts and the use of more than one mobile telephone connection by each end user. Even so and beyond the fact that such a fact is also common in other European countries, mobile penetration in Greece remains as one of the highest, Europe wide.

1.3. Market position

WIND Hellas historically competed principally with Cosmote and Vodafone Greece, respectively 1st and 2nd mobile operators in market share in Greece. At the end of September 2006 the leading Cosmote had 40.52% of the market in terms of number of subscribers, Vodafone Greece had a market share of 30.83%, while WIND Hellas had a, combined with Q-Telecom, market share of 28.65%²². Both Cosmote and Vodafone Greece take advantage of competitive advantages derived from the respective group of companies they participate in. Cosmote benefits from its relationship with and certain operating advantages provided by OTE, the incumbent fixed line telecommunications operator in Greece. Similarly, Vodafone Greece benefits from the high levels of brand awareness and global advertising as well as the technical assistance provided by its parent, Vodafone Group Plc.

High penetration and competition for contract customers, especially for business and other bundled minutes based customers, has in the past forced the competing companies to take on high costs for acquiring new customers and retaining existing customers (low churn). In the pre-paid market, where historically Q-Telecom held a strong position, the competition was more severe because historically all four mobile operators were present. Competition at market's low level focus to younger mobile phone users, through tariffs lower than the other competitors for both voice and SMS services, driving historically to average decreased tariffs.

The recent years decrease in fixed-to-mobile (and also mobile-to-mobile) interconnection rates (MTRs) has adversely affected operating MNOs profitability because the interconnection fee paid to MNOs by fixed line operators for calls that originate on their networks and terminate on mobile networks are -due to the higher costs of mobile networks and the mobility premium- substantially higher than the minimal interconnection charge MNOs pay for their customers' calls that terminate on a fixed line network. Accordingly, the decrease in interconnection fee revenue received from fixed line operators has not been offset by corresponding cost savings resulting from respective decrease in interconnection charges paid by MNOs to fixed operators²³. At the contrary, the impact of the decrease in mobile-to-mobile interconnection rates on MNOs, although effected nominal revenues, the effect for profitability has been relatively minor because of the balance in the traffic²⁴ which originates from the three separate market players, providing almost equal cash flows.

22 source: 12th EC Implementation Report./ see table 4, for EU averages in market share between the leading operators per country.

23 The respective voice termination was eventually ex ante regulated starting 2007. Although, no significant changes in cash flows are expected due to the minimum volume of traffic terminating to alternative fixed networks.

24 see Armstrong & Wright, "Mobile Call Termination in the UK" (2007).

2. The fundamentals of WIND Hellas' unique case

2.1. Severity of regulatory intervention

It is well known that the liberalization in telecommunications, especially after the enactment of the EU Regulatory Framework in 2003, introduced a significant regulatory risk in operating former incumbents²⁵. This came as a result based on the fact that former monopolies were offering products and services in all the markets that compose the entire telecommunications sector. There were cases where incumbents were present and dominant in all 17 out of 18 markets of the EC Recommendation. Consequently, speaking of regulatory risk and moreover introduced by an ex ante regulatory intervention, it is well understood that this is the case for almost every incumbent Europe wide. However, in the case of WIND Hellas there existed simultaneously six key factors that make the case unique, at least at European level. These factors were:

- the significant leverage,
- the concentration of WIND Hellas and Q-Telecom, under the same ultimate shareholder,
- the NTPC's ex ante regulatory intervention in the relevant market,
- the SMP awarded on a "single economic entity" approach, based on the parent-subsidiary corporate structure,
- the nature of remedies imposed (rate regulation) and finally
- market developments, that introduced in parallel further competitive restraints.

Following the NTPC's regulatory intervention in the market of wholesale mobile voice call termination in 2006 and remedies imposed, that were common for all regulated MNOs, these factors, played a key roll in raising the level of introduced regulatory risk for WIND Hellas and for its subsidiary, at that time, Q-Telecom.

25 see Monk, "Economic Study for Financing Telecommunication Development" (2003), for the ITU-TD. Abstract: "Virtually all of the governments in developing countries have been both owners and/or operators of their respective telecommunications networks. This premise was based on a perception of government's social, political, cultural, and economic responsibilities and the role of telecommunications in fulfilling those responsibilities. Government involvement in and dominance of the telecommunications sector in developing countries have been based on the following factors:

- National security interests;
- Need to generate fiscal revenue;
- Desire to ensure equity or universal service;
- Huge initial investment requirement.

Over the last 5-10 years, the ownership structure of telecommunications entities around the world has changed drastically in favor of privatized operators. As governments realized the benefits of allowing the private sector into telecommunications, they went through the necessary regulatory changes to allow private ownership of telecommunications entities and in many cases incorporated favorable foreign ownership provisions as well. New ventures sprung up all over the world, but many least developed countries were left behind in favor of lower risk investments in countries on the cusp of development, such as Egypt and Romania. As a result, some of the world's weakest economies have been unable so far to reap the benefits of telecommunication contribution to economic growth".

2.2. Leverage

Following its LBO in 2005, WIND Hellas became a significantly leveraged operator. During years 2005-2006, the company's leverage ratio remained historically well above 95% and was mainly used for four different purposes:

- powered the company's development (mainly network expenditure),
- offered WIND Hellas the advantage of better debt than equity ratios²⁶, in a time that interest rates were still significantly low²⁷,
- increased company's market value and generated dividends for shareholders and ultimately,
- protected WIND Hellas against introduced regulatory risk (regulatory opportunism²⁸), which was the case in early 2006.

As empirical studies envisage and as implemented in WIND Hellas case, capital structure is one way to allocate, reduce or in general terms manage risk²⁹. An increase in the leverage helps a privately owned undertaking to overcome regulatory obstacles, especially in cases where a rate regulation is introduced on ad hoc basis, concluding to a significant increase of regulatory and eventually operational risk in the market. As it is not only theoretically, but empirically also shown³⁰, in all cases were the regulator tends to alter the "rules of the game", meaning to distort the historically introduced level of competition and this is in its higher display in introducing ex ante price caps, then the regulated firms have the incentive to increase their leverage, in order mainly to:

- take advantage of the increased margin in financing rate regulated operations,
- finance growth in unregulated markets, taking advantage of the "waterbed effect", in an effort to differentiate the source of their revenues and finally

26 In practice, a firms' debt/equity ratios differ significantly than the competition ones and they are industry dependent, varying significantly depending the existence of regulation. Generally, it is accepted that regulation limits or/and encourages the use of debt over equity. Off course the theoretical question always stands, which is the optimal capital structure for a regulated firm and is this the optimal solution in social terms ("swings & roundabout effect").

27 In all such cases, cost of debt remains significantly lower than the cost of equity.

28 see Grout & Zalewska, "The impact of regulation on market risk" (2005). Abstract: "The failure of rate-of-return regulation to replicate the risk and rewards inherent in competition have led to the well documented disadvantage that it provides poor incentives for efficiency improvements, leading to higher costs and over investment".

29 see Correia da Silva, Estache & Jarvela, "Is Debt Replacing Equity in Regulated Privatized Infrastructure in Developing Countries?" (2004) and Read, BT Group Compliance Director, "Managing Risk in the Regulatory Environment" (2006).

30 Amongst others, see: De Fraja & Stones, "Risks and Capital Structure in the Regulated Firm" (2004), Spiegel, "The choice of technology and capital structure under rate regulation"(1996), Spiegel & Spulber, "Regulation and markets" (1994) and more recently, Bortolotti, Cambini, Rondi & Spiegel, "Capital structure and regulation: Does ownership matter?" (2007).

- become transparent to the regulator, excluding the chance³¹ to become rate regulated at a level below the cost of capital³².

This last factor, is also the reason why NRAs worldwide and irrespective the industry we refer to, favor debt leverage, mainly because it makes it easy to regulate such undertakings and on the other side operates as a disincentive for the regulated firms to behave radical and opportunistically. This affects per case the debt/equity ratio, resulting in a capital structure that may affect positively or negatively the cost of capital and therefore the level of competition among competitors and established/dominant operators in the industry and as a first side effect determines the return on assets and the level of investment in infrastructure.

2.3. Concentration

Following the acquisition³³ of WIND Hellas³⁴ by APAX Partners and TPG, a wholly subsidiary of the former acquired on January, 2006, the 4th in market share MNO in Greece, Q-Telecom. This transaction was judged by the European Commission as constituting a concentration in the sense of article 3(1)(b) of the Merger Regulation³⁵.

The Commission's market investigation revealed that even though the transaction would lead to a reduction in the number of market players from four to three, overall the market would remain at least as competitive as it was before, WIND Hellas would remain the third largest supplier but, following the merger, in a stronger position to compete with the two main players, Cosmote and Vodafone Greece. Consequently, the transaction although gave rise to a horizontal overlap in the provision of retail mobile telephony services in Greece, WIND Hellas and Q-Telecom remained as the 3rd and 4th largest mobile operator respectively in Greece. But with the combination of Q-Telecom's and WIND Hellas' market power, the new entity's aggregate market share rose

31 This is mainly happening because rate regulation, is based on a "fair and expected" return of invested capital approach, where WACC is the fundamental condition to be preserved. The application of a WACC to a regulated asset base is done with the purpose to determine an explicit return on assets employed by the telecommunications firms. In most cases the CAPM is used to determine the cost of equity capital but other methodologies exist such as the DCF and the risk premium analysis. Regulatory regimes that "penalize" operators by setting the WACC too low, or according to other undertakings' standards, may see a reduction or a delay of investment in infrastructure and the deployment of new services. Inevitably the approach adopted by regulators and the model they use to make an asset valuation that will undoubtedly affect on investment, is not a concern only for investors and telecommunications firms but is a priority for regulators also.

32 Although it must be noted that debt isn't in most cases -and especially in Europe- taken for granted. In many cases European Regulators, with most significant example the case of the OfCom in UK, literally expressed an opinion on what constitutes an optimal capital structure for regulated firms, taking an industry average or producing a "fair mix" of debt and equity.

33 For more information refer to Case no. COMP/M.3785 at http://ec.europa.eu/comm/competition/mergers/cases/decisions/m3785_20050526_20310_en.pdf

34 At that time known under the name of TIM Hellas.

35 For more information refer to Case no. COMP/M.4036 at http://ec.europa.eu/comm/competition/mergers/cases/decisions/m4036_20060113_20310_en.pdf

significantly after the concentration, although the two strongest players on the Greek mobile telephony market, Cosmote which is a subsidiary of the former fixed telephony incumbent in Greece and has a strong customer base and Vodafone Greece which its strength lies in the integrated European network of the Vodafone mother company, remained as market leaders. Moreover it was argued that the concentration would strengthen WIND Hellas and ultimately would narrow down the gap between the two leading operators and the third and would thus further sharpen the competitive situation on the market³⁶, ultimately benefiting the customers with better prices and higher quality.

In the light of the above, Commission concluded that the proposed transaction/concentration would not significantly impede effective competition in the mobile telephony sector in Greece, in particular as a result of the creation or strengthening of a dominant position, for this reason decided not to oppose the notified operation and to declare it compatible³⁷ with the common market and with the EEA Agreement.

2.4. Ex ante regulatory intervention

The long-awaited transposition of the EU Regulatory Framework³⁸ in Greece was completed with the adoption of Law 3431/2006 on “Electronic Communications and other Provisions”, which entered into force in February 2006. The NTPC³⁹ (Greek NRA) in an effort to catch up with the EU Framework implementation launched in 2006 a large number of parallel public consultations and market analyses. In this perspective, NTPC conducted an analysis of the

³⁶ The market investigation, furthermore, indicated that large customers generally rely on more than one operator (and usually on the large ones) for their telecommunication needs. This is all the more possible given the fact that Q-Telecom predominantly had a pre-paid customer base. In fact, the removal of Q-Telecom from the market didn't jeopardize customer choice, nor it entailed a major change in the structure of the market. The market investigation had also evidenced that switching supplier at no significant cost remained possible following the merger. WIND Hellas, in comparison with Q-Telecom, was (and continued to be) able to engage in pricing competition with its two biggest competitors, also given its own network facilities with full coverage of the country. Additionally, WIND Hellas was the strongest competitor to Cosmote and Vodafone Greece thanks to the UMTS spectrum license it holds. The Commission's conclusion was that the acquisition will not have a negative effect on competition, but more so that it may even enhance competition by creating a combined mobile telephony operator, which will be in a better position to compete with the large incumbents: Cosmote and Vodafone Greece. The results of the market investigation and ultimately the coming years, confirmed these assumptions.

³⁷ This decision was adopted in application of article 6(1)(b) of Council Regulation (EC) no. 139/2004.

³⁸ Namely the (i) Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services (Framework Directive), OJ L108/33, 24. 4. 2002, (ii) Directive 2002/19/EC of the European Parliament and of the Council on access to, and interconnection of, electronic communications networks and associated facilities (Access Directive), OJ L108/7, 24.4. 2002, (iii) Directive 2002/20/EC of the European Parliament and of the Council of 7 March 2002 on the authorisation of electronic communications networks and services (Authorisation Directive), OJ L108/21, 24.4.2002, (iv) Directive 2002/22/EC of the European Parliament and of the Council of 7 March 2002 on universal service and users' rights relating to electronic communications networks and services (Universal Service Directive), OJ L108/51, 24.4.2002 and (v) Directive 2002/58/EC of the European Parliament and of the Council of 12 July 2002 concerning the processing of personal data and the protection of privacy in the electronic communications sector (Directive on privacy and electronic communications), OJ L 201/37, 31.7.2002.

³⁹ The National Telecommunications & Posts Committee. For more information refer to: www.eett.gr

market for wholesale mobile voice call termination⁴⁰ in Greece, in accordance with the provisions listed in Article 16 of Framework Directive 2002/21/EC. In the context of its Market Definition and Analysis procedures with regard to the aforementioned market, NTPC carried out four⁴¹ consecutive public consultations and ultimately on July, 2006, reached its final conclusions on the Wholesale Mobile Voice Call Termination market taking into account in some cases the responses made by the industry. The NTPC in accordance with Article 7(3) of Directive 2002/21/EC notified on June 2006 its proposed measures for the relevant market. The relevant geographic market for voice call termination was set Greece.

The NTPC designated all four operating MNOs in Greece as having SMP in the relevant market for the termination of voice calls on their respective mobile networks⁴². The criteria for SMP designation was between others market shares, potential competition (i.e. barriers to entry/ technological alternatives/structural changes in the market), countervailing buying power, historical market conduct / Anti-competitive practices of MNOs.

2.5. SMP awarded based on a “single economic entity” approach

(Parent-subsidiary corporate structure)

Following the aforementioned Decision by the Commission, NTPC cleared⁴³ the buy out of Q-Telecom by a WIND Hellas’ subsidiary, concluding to the same findings over the level of competition in the mobile market. Although, NTPC decided that the said concentration fundamentally changed its market assumptions and ultimately altered the Market Definition, reasoning that after the concentration, Q-Telecom was a part of the same single economic entity jointly with WIND Hellas, regardless their different position in the mobile market. According to NTPC’s arguments under competition law, WIND Hellas ultimately took control of Q-Telecom’s subscribers base and its network facilities. Consequently, regardless if Q-Telecom was operating at that time as a separate company, NTPC argued that the company must be judged in the same perspective with WIND Hellas. Under this rationale NTPC decided to treat WIND

⁴⁰ This market is included in the Commission’s Recommendation 311/2003/EC, as market number 16.

⁴¹ The NTPC conducted (i) a national consultation on market definition and analysis and SMP designation, which commenced on September 3rd, 2003 and ended on October 3rd, 2003, (ii) a national consultation on the proposed remedies which commenced on February 11th, 2004 and ended on March 18th, 2004, (iii) a national consultation on Draft Measure, which commenced on December 12th, 2004 and ended on February 2nd, 2005 and (iv) a final national consultation on the new modified draft measure in relation to market 16 which commenced on May 5th, 2006 and ended on March 5th, 2006, in parallel with the notification of the aforementioned draft measure to the EC.

⁴² Each operator has a 100% share of its own termination market.

⁴³ NTPC’s Decision no. 368/39/2005.

Hellas and Q-Telecom⁴⁴ as a single economic entity (virtually a single company) and designated this single entity as having Significant Market Power in its (virtually) single network.

2.6. Remedies imposed

Following the market definition and analysis NTPC imposed on all three undertakings, meaning Cosmote, Vodafone Greece and the single economic entity that was consisted of WIND Hellas/Q-Telecom the following regulatory remedies:

- obligation of access to, and use of, specific network facilities,
- obligation of transparency. This remedy also include a requirement to publish a reference interconnection offer,
- obligation of non-discrimination,
- price control obligation, on a cost oriented approach based on an LRIC bottom-up model developed by Greek NRA, with the imposition of a 10 month glide path⁴⁵,
- obligation of accounting separation.

The NTPC concluded that the imposition, maintenance or amendment of obligations on undertakings was considered proportional and justified in the light of the objectives laid down in Article 8 of the Framework Directive 2002/21/EC.

2.7. Market developments

Main market developments that increased the level of competition and in some cases introduced, from the market side this time, significant constrains, were:

- The maturity of the mobile market. In 2006 mobile market in Greece rose at a rate of 11,7%, significantly higher than the EU average⁴⁶ and reached -in reality- an above 100% level.
- The quality of services provided by all the MNOs. All MNOs were offering at that time, beyond 2G and GPRS, 3G services and mobile premium rate platforms.

44 Prior to the concentration of WIND Hellas and Q-Telecom, Q-Telecom enjoyed the arbitrage between the rates it paid for calls by its customers that terminated on the network of another Greek MNO and the rates it was permitted to charge other MNOs for calls by their customers that terminated on its network, based on the fact that its MTRs were significantly higher. Prior to August 1, 2006, when the NTPC's glide path was initiated, the Greek NRA was sceptical on imposing cost orientation on Q-Telecom's MTRs, basically because the latter was the forth player in the market, focusing on the low end (pre-paid end users). Following the acquisition by WIND Hellas and the concentration occurred, NTPC revised its rationing and in its new market analysis concluded to the single economic entity approach, imposing the same remedies, market wide.

45 Concerns were raised by the MNOs about the tight (10-month) glide path imposed for convergence of mobile termination tariffs towards cost orientation. These concerns were envisaged in the Commission's 12th Implementation Report, although the Commission itself was the one that asked for a tighter 10 months glide path, contrary to the one NTPC originally proposed, that was 12 months long.

46 source: 12th EC Implementation Report. From October 2005 to October 2006, EU average mobile penetration rate was 8%.

- The historically significant decrease in both wholesale and retail tariffs. As already noted, MTRs in Greece had significantly decreased from 2001 to 2006 at a rate of 53%, when at the same time the European average decrease was at a rate of 40%. Notably in 2006⁴⁷, MTRs declined in EU 25 member states at a rate of 8,35%, when at the same time in Greek market the same decrease was above 16,4%. At the same time, Europe wide, the maturity of mobile markets drove the arpu in significantly lower levels⁴⁸, making first priority the need for new revenue sources in order to keep a significant growth rate.
- The escalation of competition, following specific business initiatives by competing MNOs⁴⁹.

All the aforementioned events, happening at the same time that the NTPC was about to regulate the most significant market for MNOs, meant that WIND Hellas had not only to respond to the competition's business initiatives, but had to differentiate its revenue sources.

3. Regulatory risk (introduced & existing)

3.1. The introduced regulatory risk

In the aftermath of the 2002 EU Regulatory Framework, during the transition from state-owned monopolies to privately led and increasingly competitive market structures in telecommunications, poor or biased performance of regulatory agencies⁵⁰ could limit the benefits of reform and eventually distort competition⁵¹, especially in countries with a tradition of weak governance or political driven incentives. Focusing on competition & regulatory policy, the significant term/goal is the competition level and the fair and balanced regulatory intervention,

⁴⁷ October 2005-October 2006.

⁴⁸ source: 12th EC Implementation Report.

⁴⁹ The case of Germanos retail stores is a notable one. WIND Hellas until mid 2006 had a non-exclusive distribution agreement with Germanos, at that time the largest retail telecommunications and electronics dealer in Greece, operating a retail chain of over 360 stores. These retail stores were primarily located within high-traffic pedestrian areas in cities throughout Greece and beyond WIND Hellas Germanos was simultaneously the master dealer of Cosmote and Vodafone Greece. In 2006, just before the regulatory intervention by NTPC, Germanos was acquired by Cosmote, the 1st in market share MNO. Following this development, both companies, Vodafone Greece and WIND Hellas, stopped cooperating with Germanos, and focused developing and expanding their privately owned exclusive retail distribution networks.

⁵⁰ See Oftel's rationing back in 1999 on bit stream access and retail minus implementation: "...retail minus ... avoids a major change in the regulatory framework which increases regulatory risk".

⁵¹ see "A study into certain aspects of the cost of capital for regulated utilities in the U.K." (2003) p. 118, commissioned by the U.K. economic regulators (CAA, OFWAT, Ofgem, Oftel, OPR & OFREG) and the Office of Fair Trading. Abstract: "...A common concern among those involved in regulation is that the regulator can itself introduce risk, through unpredictable or unjustifiable regulatory intervention, so raising the regulated firm's cost of capital and leading to inefficient investment..."

not the policy itself. The main objective is not a radically successful and for this reason worth remembering agency⁵², but a well-regulated/performing sector⁵³.

Regulatory decisions that apply financial models to a regulated asset base to determine an explicit return on a regulated firm's assets expose firms and investors to a regulatory risk and provide disincentives for investment⁵⁴. In order to avoid situations as such, regulators in most cases encourage the use of debt over equity⁵⁵, a fact that makes introduced regulatory risk an inherent factor in any financial decision. As a result, minimization of the uncertainties created by changing or radical regulatory decisions over the parameters used in the financial models, notably the equity risk premium⁵⁶, the risk free rate, the market risk premium, the beta asset⁵⁷, the debt premium, the debt share, the debt beta of the WACC⁵⁸ and CAPM and the Fama-MacBeth regression for CAPM⁵⁹, and finally the use of a regulatory framework that provides greater certainty to investors, can undoubtedly impact positively on investment.

Moreover introduced regulatory risk has implications far beyond the cost of capital. It is accepted⁶⁰, that undertakings with significant differences in their financial structure and economies of scale, proved to have a differential sensitivity on regulatory risk.

52 see the debate around the Commission's policy on implementing the telecommunications liberalisation. Also Gasmı, Numba & Virto, "Political accountability and regulatory performance in infrastructure industries: An empirical analysis" (2007).

53 see Smith & Wellenius, "Mitigating Regulatory Risk in Telecommunications" (1999).

54 see Grout & Zalewska, "The impact of regulation on market risk" (2005).

55 see Gentzoglani, "Regulatory Risk, Cost of Capital and Investment Decisions in the Telecommunications Industry: International Comparisons".

56 Between many see Lee, Ng & Swaminathan, "The cross section of international cost of capital" (2003) & "International asset pricing: Evidence from the cross section of implied cost of capital" (2003).

57 see Wright, Mason & Miles, "A study into certain aspects of the cost of capital for regulated utilities in the UK" (2003), p. 117-135.

58 Between many see OfCom's "Statement on Mobile voice call termination charges -June 2004-, Annex B".

59 The Fama-Macbeth regression method is used to estimate parameters for asset pricing models such as the Capital asset pricing model (CAPM). The method estimates the betas and risk premia for any risk factors that are expected to determine asset prices. The method works with multiple assets across time (panel data, in most cases at a 5 year period). The parameters are estimated in two steps: First regress each asset against the proposed risk factors to determine that asset's beta for that risk factor. Then regress all asset returns for a fixed time period against the estimated betas to determine the risk premium for each factor.

60 Between many, see Charles River Associates "Best practice in the context of Competition Analysis and Price Regulation" (2003). Abstract: "... Regulatory risk has implications far beyond the cost of capital. The most obvious cases are where regulatory risk has an asymmetric impact on cash flow. Regulation can operate by punishing firms when they earn healthy returns while not guaranteeing them when returns are poor.¹⁴ This is undoubtedly a source of concern and markedly impacts on the performance and valuation of regulated firms as well as the willingness of investors to commit capital to them. This effect may come through expected earnings rather than the cost of capital, but this does not make it benign. ... regulatory intervention might not affect the CAPM beta but this is by no means the end of the story. Even within the CAPM framework it is incorrect to assert that the cost of capital is only affected by systematic risk. The cost of capital for regulated firms is a combination of the cost of equity and the cost of debt. In other words, the weighted average cost of capital (WACC) is the relevant measure. If expected regulatory behaviour

3.2. The micro-macro environment

However, it is mostly expected that regulatory intervention introduces greater risk in incumbents, based on the fact that they are dominant in almost every market they operate in and consequently ex ante regulated market wide, ex ante regulatory intervention can be most upsetting for competing operators, who enjoy minimum economies of scale and essential facilities contrary to the formers.

This basic characteristic/incentive was moreover emphasized in the case of Greece due to the presence of three different factors, meaning:

- the lack of an effective appealing mechanism⁶¹, where the NTPC's Decision could be confronted, a fact that was also noted by the Commission in its 12th EC Implementation Report,
- the maturity of the telecommunications market, that reduces expectations for market growth and
- the high level of competition⁶².

For telecommunications development, a capital intensity market, political and economic stability are essential incentives to investment growth. Without assurances that a relative regulatory policy will be implemented, investors cannot determine the corresponding risks of their future investment and thus do not finance their business plans. Regardless of the demand or need for telecommunications services, investors will opt for other investments before taking a risk on one with limited political stability. For telecommunications investors, a predictable regulatory environment that enables them to address levels of competition and market access at every level provides safety and security. Also, the long-term feasibility of a project can be questionable if the system for technological advancement is not clear and defined. In general, investors can account for good news and for bad news, but unpredictability leads to a risk-reward relationship that is not conducive to investment. Of course, potential investors are not looking for a risk-free investment. Instead, they are looking for a reasonable return given the risks involved. To work well this model of macroeconomic stability, the regulatory practice requires certain conditions:

alters the uncertainty surrounding a firm's cash flows then the cost of debt is certainly affected irrespective of whether the regulatory risk introduced is systematic or specific and asymmetric or symmetric”.

61 It is empirically and theoretically proven that: “Formal provisions for renegotiation and bailouts can reduce investment risk by providing certainty for how unusual circumstances will be dealt with. However, once renegotiation and bailout become formal options, they can also become strategic variables for operators interested in behaving opportunistically. Governments can restrict such opportunistic behaviour on the part of operators by formally limiting renegotiation and bailout options, but the enforcement of these formal restrictions is in part dependent on the stability and legitimacy of the government institutions that are being stressed by the unforeseen shock or institutional breakdown”.

62 For the interaction between the “waterbed effect” and competition and market maturity, see Genakos & Valletti, “Testing the waterbed effect in mobile telephony” (2007).

- a strong administrative tradition and ethics,
- the ability to undertake commitments that endure from governmental agendas and
- a judiciary that is impartial, immune to government and political pressures, and able to make enforceable decisions.

In the regulatory area, a crucial factor is the design and implementation of the regulatory framework, which includes a fair and predictable judicial system and before that a reliable appealing mechanism. Well-conceived regulatory frameworks, as the EU Regulatory Framework, that provides significant institutional authority to the bodies that will eventually implement them, unconditionally need independent regulators, sound regulatory policy, fair price-setting regimes and transparent regulatory processes. If so, the increasing predictability of the investment climate and the reducing regulatory risk, will unavoidable generate cash flows and consequently development. Credible regulatory and appealable framework also increase investor confidence that tariff structures will be respected.

4. The post-regulation strategic adjustment

There are three basic approaches in order to mitigate introduced regulatory risk⁶³:

- institutional instruments that limit the possibility of government / regulatory opportunism (“regulation-friendly”),
- financial instruments that decrease financial risk and
- radical, but well tested managerial strategies, such as exploiting operational opportunities market wide (and especially in unregulated submarkets with low beta), investing on value added services, with dynamic characteristics achieving “revenue neutrality”⁶⁴ and choosing technologies that may not be cost-minimizing but that have lower “sunk” costs than others.

4.1. Waterbed effect

The basic driver for WIND Hellas strategic adjustment was the maximisation of the end users welfare, which was with certainty estimated that could generate more value and revenue for the company (exploiting the “swings & roundabout effect”⁶⁵ at every level). This assumption was built on and took advantage of an alternant of the “waterbed effect” that exists in every regulatory (rate) intervention in two sided or (to be more close to market conditions) multiproduct markets.

63 see Jamison, Holt & Berg, “Measuring and Mitigating Regulatory Risk in Private Infrastructure Investment” (2005).

64 see Klumpp & Su, “Open Access and Dynamic Efficiency” (2007).

65 see Rohlfs, “A model of prices and costs of mobile network operators” for OfCom (2002).

The “waterbed effect” actually refers to the fact that introduced rate regulation in two sided markets with price interdependence, inevitably influences the interconnected/neighborhood market⁶⁶. This is based on the fact that the regulated undertaking will almost certainly try to make up welfare/revenue losses, suffered because of the regulation. In mobile telecommunications markets and especially when imposing rate regulation in mobile termination, “waterbed effect” most probably tends to cause an increase in subscription prices and mobile origination. It is widely debated⁶⁷ if the waterbed effect can take such a scale that would put the regulatory intervention under dispute/question. However, two facts are almost unanimously accepted:

- firstly, rate regulation does cause welfare losses for operators⁶⁸, losses that a private owned company has an incentive to make up. These losses, when the regulated rate was standing far above marginal costs (a status of “supernormal profits”) are equalled by the welfare benefit⁶⁹ that the rate regulation generates for the end users⁷⁰. It is the NRAs’ task to maintain⁷¹ the momentum of the “swings and roundabout effect” (overall public benefit) when they are driving, ex ante and on an ad hoc basis, the market to “zero-profit” by their regulatory intervention⁷² and
- secondly, the level of competition -including the number of market players- and the market maturity affects significantly the magnitude of the waterbed effect, minimising the market opportunism for increasing not regulated rates.

66 Between many see Schiff, “The Waterbed Effect and Regulation” (2006).

67 see the New Zealand case. COVEC, “Modeling Regulation of Mobile Termination Rates” for Vodafone (2004) and Cave & Valletti, “Response to the Telecom and Vodafone Submissions on the waterbed effect and the network externalities” (2004).

68 Between many see OfCom’s “Wholesale Mobile Voice Call Termination - Explanatory statement and notification - Annex L: Oftel’s Cost benefit analysis of regulation” (2003).

69 At the contrary in a market where marginal costs are minimum (“zero profit unregulated”) the welfare losses for the industry inevitably will always remain higher than the welfare benefit (lack of public benefit).

70 see Cave & Valletti, “Response to the Telecom and Vodafone Submissions on the waterbed effect and the network externalities” (2004), in such cases as stated “...the presence of the waterbed effect does not affect the overall effect of regulation if one adopts a public benefits test. Alternatively, if one adopts a consumer surplus test, the case for regulation of mobile termination rates is also always strong, and it is stronger the smaller the magnitude of the waterbed effect”.

71 see also the practice, followed almost by all NRAs Europe wide, of providing network externalities margins to MNOs.

72 This also why it is common for NRAs to perform a welfare/cost benefit analysis in order to verify the overall public benefit, before introducing rate regulation. Unfortunately, this was not the case in NTPC’s intervention, which only followed the European regulatory trend, without estimating in economic terms the impact of its regulatory intervention. see also Frontier Economics, “The waterbed effect” (2005).

4.2. Strategic pillars & implementation

Having in mind the fundamentals of WIND Hellas case and the micro-macro environment, the solution of increasing unregulated rates, was just not an option. At the contrary, it was decided on the side of the financial structure of the company to keep the high debt leverage and in relation to the operational part to empower the waterbed effect, meaning to increase the part of the equation that refers to the welfare benefit for end users, using the company's exposure to demand risk as an advantage⁷³, based on the well tested belief/assumption that the high overall public benefit that WIND Hellas would introduce⁷⁴ in the entire market, would attract significantly more subscriptions⁷⁵, stimulate usage (arpu⁷⁶), increase revenues by increasing market share and at the same time minimize churn by increasing end users' loyalty.

Specific tasks were undertaken in order to achieve these strategic goals:

- end users accelerated acquisition and increased retention was served by segmenting the entire market and specifically targeting each one of them, launching innovative loyalty schemes⁷⁷, differentiated for every segment and generating a booming expansion of WIND Hellas' owned distribution network⁷⁸,
- usage and arpu were stimulated through targeted pricing schemes and tailored add-ons that provided incentives for increased usage and fixed to mobile substitution⁷⁹,
- exploit opportunities offered through value added services by being ahead of competition in introducing innovative content platforms and content, mostly by investing in "ready to play" handsets⁸⁰.

At the same time WIND Hellas targeted also the wholesale market cooperating with all operators present in the market, fine tuned its operating procedures at every level, maximizing efficiencies and expanded synergies with its subsidiary, Q-Telecom, at every level, with most significant projects the co-exploitation of the latter's 2G license and the take over of Q-Telecom's national

73 see Evans & Guthrie, "Risk, Price Regulation and Irreversible Investment" for the New Zealand ISCR (2003).

74 Higher than the one introduced by the competition at that time.

75 Taking economies of scale at the competition level.

76 Especially by exploiting value added services. In some cases maximizing public benefit, created demand in side submarkets where there wasn't previously any revenue, making the chosen strategy an incentive for stimulating demand (without dedicating direct investments).

77 In 2006 WIND Hellas' churn dropped almost 30% on a year basis, contrary to 2005.

78 WIND Hellas reached 370 stores country wide in mid 2007, 6 months ahead of plan, from just 200 in late 2005, meaning an increase at a rate of 85% in just 18 months. In early 2007, almost 75% of gross post paid additions were made through this distribution network, providing between others benefits, accelerated cash flows.

79 This task was taken at a pre-convergence of services stage.

80 In early 2007, WAP portal was used by almost 1mil.+ end users.

roaming service at wholesale level, from Vodafone Greece⁸¹, which was completed in early 2007 and ultimately merged by absorbing it.

5. The turnaround

Following these strategic adjustments, WIND Hellas overcame successfully the introduced regulatory risk, bypassed the problem of market's maturity and the high level of competition and eventually enjoyed in 2006 and early 2007 a superior growth profile in all its commercial and financial key indicators.

In the first and second quarter of 2007, WIND Hellas succeed a record high in new subscriptions⁸², almost 4% more subscriptions than the market leader, Cosmote, and almost 50% than the second in market share, Vodafone Greece, for the same semester. On a year basis WIND Hellas subscribers base increased at a rate of more than 20%⁸³, a fact that considering the market maturity and the level of competition seemed unthinkable, a year earlier.

In relation to financial performance, although the company suffered a significant welfare loss from the rate regulation in its mobile termination at wholesale level and the regulatory risk that this regulatory intervention introduced and moreover faced the escalation of competition in the market, succeeded not only to deliver the projected budget, but to keep a two digits growth. Total revenues increased on a year basis, at a rate of almost 10% and ebitda 28% which was a record high, considering the transition the company was under not only based on regulatory issues and market developments⁸⁴, but based also on corporate issues as well⁸⁵.

By achieving these goals, WIND Hellas was strategically repositioned in the Greek mobile telecom market and succeeded to increase significantly its true value triggering world wide interest that ultimately concluded to the buy out by Weather Investments at a value of 3,4bil.

81 This turnover, not only contributed significantly in opex surplus that is now saved, but at the same time constituted a lost revenue for competition.

82 WIND Hellas announced 256k new subscriptions for Q1 and 224k for Q2, a total of 480k. At the same time Cosmote and Vodafone Greece respectively announced 210k and 90k new subscriptions for Q1 and 254k and 180k for Q2, a total of 464k and 270k.

83 It is notable that one the same year basis, Cosmote and Vodafone increased their subscribers base at a rate of 12,4% and 11,8% respectively.

84 Market maturity, level of competition, entry to the era of converged services.

85 It is notable that the Q-Telecom's acquisition by WIND Hellas in 2006 didn't contributed only positively, but incorporated also a significant financial debt to the company. In the same context, WIND Hellas-Q-Telecom merger and the post merger migration and off course the rebranding of WIND Hellas, added a significant ones off expenditure in WIND Hellas operations. see also for policy trends and incentives Le Blanc & Shelansky, "Merger Control and Remedies Policy in Telecommunications Mergers in the E.U. and U.S." (2002) and Majumbar, Moussawi and Yaylacicegi "The impact of mergers on Technological Progress in the US Telecommunications Industry, 1998 to 2001" (2007).

making its previous LBO by APAX Partners & TPG, almost more than a year ago, the most successful LBO Europe wide.

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