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INVESTMENT SUMMARY

We issue a BUY recommendation on OTE with a 12-month target price of €13.68 representing a 24.50% upside potential on the closing price of €10.99 per share on 01/02/2019. Our valuation is based on a combination of a Discounted Free Cash Flow to Firm model and EV/EBITDA multiples, with 70% and 30% weight to each methodology respectively. A thorough analysis of the key drivers which enhanced our BUY recommendation is detailed in the pillars that will follow.

Valuation	
Valuation Date Price	€ 10.99
Methodology	
FCFF Target Price (70%)	€ 13.92
EV/EBITDA Multiple Target Price (30%)	€ 13.13
12 Month Target Price	€ 13.68
Target Price Upside Return %	24.50%
2019 Dividends per Share	€ 0.74
Total 12 Month Return %	31.21%

OTE returns to growth thanks to the recovery of the Greek economy and the fortification of its leading position.

As a former incumbent operator and with a 69-year presence in the Greek telecommunications market, OTE is best placed among competitors in order to maximize its benefit from the upcoming growth. OTE will manage to capitalize on the recovery of the Greek economy, which is expected to grow with an average of 1.95% in the next 5 years, and the technological and social changes that will take place until 2022. Unemployment is set to decrease and reach 14.65% by 2022. The company possesses a market share above 50% in the fixed and mobile service business in Greece and is expected to retain the leading position in all its segments in the future.

OTE capitalizes on the need for fast and reliable telecommunications services with a strong position in VDSL and fiber technology.

The advent of the fiber network and the deeper adoption of broadband services in Greece, will lead to increased revenues from fixed business. VDSL and fiber adoption have begun to pick up speed, while ADSL penetration is dwindling. ARPU from a Fiber connection is €40, which is €14 more than the ARPU from a simple ADSL connection, greatly increasing the revenues from broadband services. In 2017, broadband revenues comprised 65% of fixed revenues and are expected to reach 77% by 2022, with over 1.5 million VDSL + Fiber subscribers. OTE has managed to win the auction and acquire the majority of cabinets concerning the FTTC program (15,700), leaving only 5,700 to the other operators. This was a strategic move from OTE, not only due to the large number of cabinets attained, but also to their privileged location, in areas with a high disposable income of residents. Consequently, OTE is expected to gain higher revenues both in the retail and the wholesale sector. An extensive analysis was conducted for this driver in the appendix (Appendix 16). In the pay TV sector OTE is the market leader possessing a significant percentage of 55%, with NOVA being the only significant competitor. As technology progresses, connectivity to the web on the go, is becoming more and more necessary in day to day and business life. Mobile data consumption in Greece is relatively low compared to its European Peers and for this reason, we forecast that Greek consumers will increase their usage in the upcoming years reaching 1 GB, favored by the high-quality 4G network, the extensive use of social media applications and the improvement of the economic environment. Moreover, since Greece is a touristic destination, OTE's data and generally mobile revenues will benefit from the abolition of all roaming charges for temporary roaming within the European Economic Area. Therefore, we anticipate OTE's revenues from mobile data to increase by 13% annually on average until 2022. Additionally, an increased ARPU is to be expected in the mobile business thanks to Greeks turning to post-paid contracts. Currently, only 29% of OTE's subscribers are on a post-paid subscription. As disposable income rises, we expect this ratio to reach up to 40% increasing significantly the ARPU of OTE in mobile services since the ARPU in post-paid is €25 while in pre-paid is only €4.5. The penetrations assessed concerning the forecast of the group's revenues were based predominantly on the European averages of each driver (Appendix 15).

Key Figures	
Outstanding Shares (€ in millions)	€ 479.94
Enterprise Value (€ in billions)	7.87
Beta	0.93
Annual Dividend	€ 0.35
52w Low (€)	€ 9.52
52w High (€)	€ 12.72
Average Daily Volume (52week)	626,396

Share Capital Structure	
Deutsche Telekom	45.0%
Institutional Investors	43.6%
Hellenic State	5.0%
Other	6.4%

Financial Metrics	2018E	2019E	2020E	2021E	2022E
Total Asset Turnover	57%	58%	62%	65%	64%
ROA	1.51	2.56	3.30	4.46	5.41
ROE	4.69	8.57	10.75	14.28	17.86
Financial Leverage	2.86	3.11	3.09	3.11	3.28
Debt Ratio	27%	31%	30%	30%	33%

Cost optimization leads to increased EBITDA margin. Since the onset of the Greek financial crisis, OTE has been in a process of minimizing its cost and maximizing its efficiency. This process is carried out through a reduction in personnel costs and digitalization. OTE has managed to reduce its operating expenses to €622 million in 2017 from €821 million in 2013, through Voluntary Leave Schemes (VLS) plan and salary reductions. Consequently, we expect the EBITDA margin to increase to 35.30% in 2018 and reach 38.77% by 2022. What is more, OTE is implementing more and more digitalized processes in its day to day business, thus becoming more efficient in terms of productivity, speed and cost management.

CAPEX normalization boosts Free Cash Flows and increased remuneration for OTE's shareholders. Adjusted Capital Expenditure (CAPEX), after peaking at €797 million in 2017 due to the deployment of the FTTC

program, is gradually returning to lower levels as no major investments are expected in the next 5 years. However, since the 5G network application requires heavy investment, it is reasonable to assume that, from 2022, it will have a significant impact on CAPEX. The reduction in CAPEX and operational expenses leaves space for more Free Cash Flow (FCF) generation. This is important for OTE's shareholders since the group has decided to remunerate them with the 100% of

Key Financials	2016	2017	2018E	2019E	2020E	2021E	2022E
Adjusted EBITDA Margin	33.8%	33.8%	35.3%	37.4%	37.2%	38.0%	38.8%
Net Profit Margin	3.58%	1.74%	2.63%	4.40%	5.32%	6.88%	8.42%
Revenue Growth	-0.52%	-1.24%	0.45%	-1.10%	0.58%	0.65%	0.92%
EPS	€ 0.29	€ 0.14	€ 0.21	€ 0.35	€ 0.43	€ 0.56	€ 0.69
DPS	€ 0.16	€ 0.34	€ 0.54	€ 0.74	€ 0.56	€ 0.65	€ 0.74
Debt/Equity	80.1%	78.8%	77.0%	97.0%	93.0%	93.0%	107.0%

the FCF for 2018 and 2019, splitting the distributable amount to 65% dividend and 35% share buybacks. In addition, a slight boost in FCFs is expected, owing to the sale of the Albanian subsidiary for the price of €50 million on January 2019. In terms of leverage, OTE can be characterized as an underleveraged company compared to its peers with only 78.80% Total Debt/Total Equity ratio, maintaining a stable trend in the years to follow.

The establishment of OTE's brand name in the Greek market. OTE's main drivers for its leading position in the Greek market are the high quality of its network and the offered telecommunications services. This state is empowered by a survey we conducted about customer satisfaction and loyalty among the Greek telecommunications companies. The results of this survey revealed that 74.80% of the respondents consider OTE as the best telecommunications company in Greece (**Appendix 22**). As far as corporate governance is concerned, OTE sufficiently acts in accordance with applicable domestic and international legislation. A corporate governance assessment was conducted in order to fully evaluate the group's compliance (**Appendix 17**). Furthermore, OTE's successful marketing campaign on TV and social media is also a significant component of its prestigious corporate image (**Appendix 23**). The group has adopted the motto "A better world for all", showing its willingness to combine corporate growth along with the improvement of the society. In the last years, OTE has taken several actions in the field of digital skills learning and environmental consciousness, with high social acceptance.

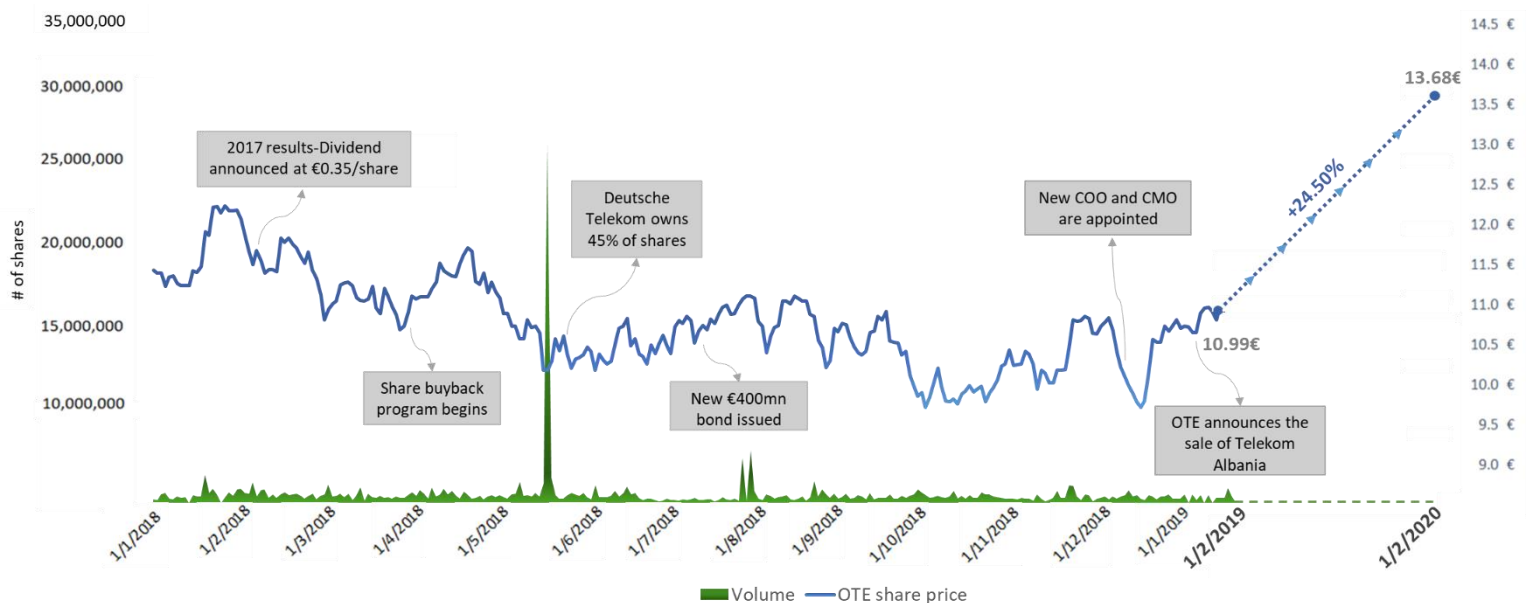
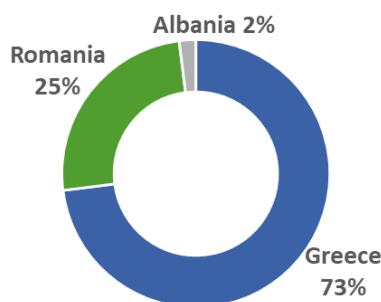
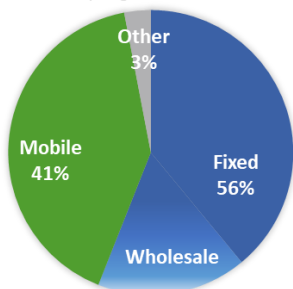


Figure 1: Revenue Breakdown 2017



Source: OTE Group reports

Figure 2: Revenue by Segment



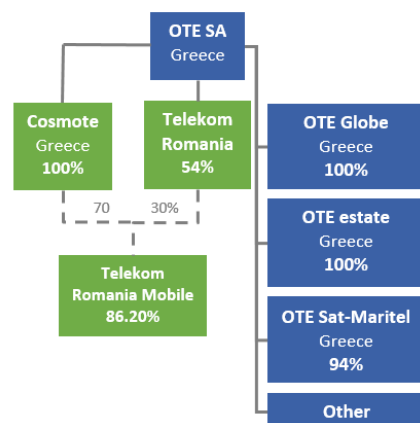
Source: OTE Group reports

BUSINESS DESCRIPTION

Hellenic Telecommunications Organization S.A., usually known by its Greek initials OTE, is the dominant telecommunications provider in Greece with a strong presence in south-eastern Europe. Its predecessor, AETE was founded in 1930 as an anonymous company and in 1949 OTE was created in order to unify the telecommunications services of Greece. Until 1998 it was exclusively state owned and the telecommunications market was a monopoly. After this point, the market was opened to competitors and OTE was gradually privatized. Since July 2009 Deutsche Telecom became the largest stockholder owning, after the last purchase on March 2018, 45% of the company and leaving only a remaining 5% to the Greek state.

Geographic and business segments. The business structure of OTE Group is mainly composed of two segments. Most of the revenues are generated in the fixed segment (56%), in which TV services and the wholesale sector (17% of revenues) are included, while the rest is derived from the mobile segment (41%) and various other revenues (3%). OTE group, apart from its activity in the Greek market, also has operations in Romania. More specifically, it owns 54.01% of the share capital of Telekom Romania, which is the incumbent telecommunications provider, offering fixed-line services and satellite TV services in the Romanian market. Also, the group possesses 86.20% of the mobile telephony division of Telecom Romania and until 2018, it had in its portfolio 97.20% of Telekom Albania as well. The main revenues are derived from the Greek market, with a proportion of 73.20% of its total revenues (37% in fixed, 28% in mobile and 8% others). Besides its activity in Greece, in 2017, OTE had 25.20% of its revenues from its business exposure in Romania (15% fixed and 10% mobile) and 1.60% from Albania solely from the mobile industry. In terms of profitability, OTE group had a consolidated adjusted EBITDA margin of 33.80% in 2017. After breaking down the group's margin, in Greece, the fixed segment generates a 42.80% adj. EBITDA margin

Figure 3: Group Structure



Source: OTE Group reports

while the mobile sector generates a 33.60%, with a total country contribution of 87%. As for Romania, the fixed segment's adj. EBITDA margin reaches 16.80% and the mobile 12.50% with a total contribution of 12%. In Albania, the same margin is 12.90% representing only 1% of the total adj. EBITDA. The latter subsidiary was sold on January 2019 for €50 million for two main reasons. The group's strategy to restructure its investment plans focusing on the Greek market and the fact that Albania was generating low adj. EBITDA margin in comparison to the other segments.

OTE products. OTE offers a wide variety of telecommunications products and services for homes and businesses. It is a provider of fixed-line and mobile telephony, broadband services, satellite television services and Internet Protocol Television (IPTV). Except for selling these products, it additionally offers bundles (2-play, 3-play), which combine all the above services at a lower price than the sum of the individual parts. An important revenue channel for OTE is the wholesale segment. The wholesale sector consists of two main operations, the first one is the rental of OTE's network to its competitors and the second regards the ICT projects, in which it provides a large spectrum of telecommunications services adjusted to the needs of businesses. Additionally, OTE participates in the retail distribution services through one of its subsidiaries, GERMANOS. The other subsidiaries of OTE in Greece differentiate from the traditional services, offering a wide range of telecommunications products and services, for the maritime world (OTESAT Maritel) and for professional training (OTE Academy) (Appendix 14). The company has announced its intention to grow in new fields such as insurances, e-payments and online betting.

Figure 4: Group Strategy



Source: OTE Group reports

Company strategies. OTE pursues the creation of a sustainable business with increased competitiveness. The company envisages to ensure its growth and maintain its leading position in the market, by offering the best possible experience to its customers in Greece as well as within the broader South-Eastern European market. Firstly, it is committed to the integration of digital technology into all areas of businesses (Digital Transformation), in order to reduce operating costs, improve efficiency and secure further savings. Additionally, as OTE mentions, there is a strong interdependency between the company and its customers. This is the reason why OTE wants to ensure that it provides high-quality products to its clients. In order to achieve this, one of its main priorities is the network and service evolution. OTE is investing heavily on the expansion of NGA, the 100% 4G/4G+ coverage, as well as the IP transformation. Moreover, it aims to establish the COSMOTE brand as a superior among its competitors, defending its wholesale revenues and further enhancing FMC (Fixed-Mobile Convergent proposition) proportions in Romania. Last but not least, another of OTE's main concerns is the development of its employees. Extensive training programs run for retraining and upgrading their skills in order to improve employees' experience and productivity.

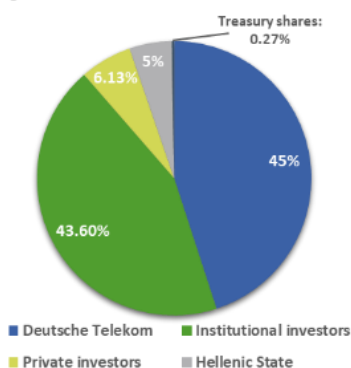
CORPORATE GOVERNANCE

Shareholder base. The company has a single class of 482 million shares outstanding since it has not issued any preference shares or shares with differed voting rights. For 2017 it has distributed a cash dividend of €0.35 per share. Currently, the biggest shareholder of OTE Group is Deutsche Telekom, which owns 45% of the group. On January 2018, a new dividend program was approved. OTE intends to remunerate its shareholders through a combination of dividend payout and Share Buyback Programs. In this procedure, the company repurchases its shares and at a certain announced date, it deletes them. A reduction of 11 million stocks each year is expected for 2018 & 2019.

Corporate Management. OTE's current team of directors is acknowledged regarding experience. Michael Tsamaz, Chairman and CEO has worked for the company for 17 years. Under his leadership, OTE Group managed to pipeline its financials, create new revenue streams and transform into an efficient, customer-centric, tech enterprise, with COSMOTE as the unified brand for its fixed, mobile, internet and TV. In addition, 85% of the executives have pertinent experience in the telecommunications field, not only in OTE but in other important telecommunications companies as well (Appendix 18).

Corporate Governance. OTE has two different committees to oversee and direct company's operations. The first one is the Audit committee and the second is the Compensation and Human Resources committee. OTE's board of directors is currently composed of 10 members, with only 2 independent members (20%). Michael Tsamaz is the Chairman and CEO of OTE. Except for its CEO duality, the independent Vice-Chairman of OTE, Panagiotis Tabourlos and Chairman of the two committees, held the position of CFO of OTE from June 2003 until April 2004. This choice of the company may raise slight concerns about the independence of the current board members and the quality of the internal audit. OTE Group duly complies with applicable domestic and international legislation and, as far as corporate governance practices are concerned, OTE applies in general lines the Hellenic Corporate Governance Code (HCG Code) for listed companies with a few deviations. Finally, Deutsche Telekom's control of OTE is an asset to OTE as it provides world-class corporate governance, which differentiates it from other market telcos.

Figure 5: Executive Officers



Source: OTE Group reports

Figure 6: Board of Directors

List of Board of Directors	
Michael Tsamaz	Panagiotis Tabourlos
Charalampos Mazarakis	Robert Hauber
Panagiotis Skevofylax	Andreas Psathas
Srinivasan Gopalan	Kyra Orth
Michael Wilkens	Vasiliki Kouforizou

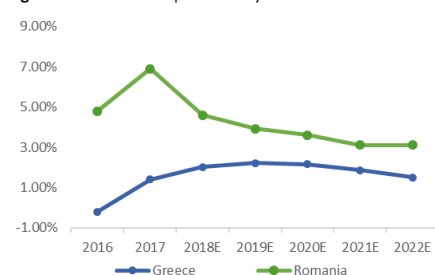
Source: OTE Group reports

Figure 7: Executive Officers

List of Executive Officers	Position
Michael Tsamaz	CEO
Charalampos Mazarakis	CFO
George Athanasopoulos	Chief Information Technology Officer
Aristodimos Dimitriadis	Executive Director Compliance
Irini Nikolaidi	Chief Legal & Regulatory Affairs Officer
Elena Papadopoulou	Chief Human Resources Officer
Ioannis Konstantinidis	Chief Strategy, Transformation
Deppie Tzimea	Corporate Commun. Executive Director
Stefanos Theocharopoulos	Chief Technology & Operations Officer
Grigoris Christopoulos	Chief Commercial Officer Business Seg.
Kostas Nebis	Chief Commercial Officer Consumer Seg.
Konstantinos Vasilopoulos	Executive Director Internal Auditor

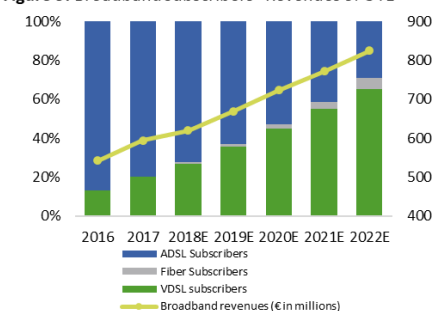
Source: OTE Group reports

Figure 8: GDP Growth per Country



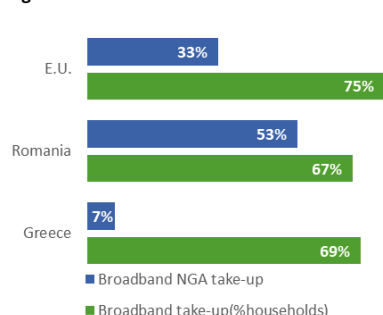
Source: Global Organizations

Figure 9: Broadband Subscribers - Revenues of OTE



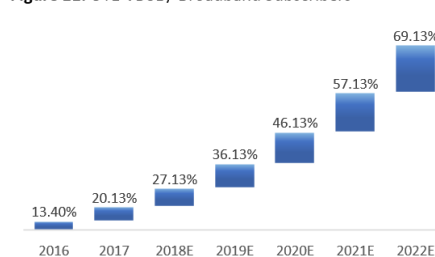
Source: Team Assessment

Figure 10: Broadband Penetration



Source: EDPR reports

Figure 11: OTE VDSL / Broadband Subscribers



Source: OTE Group reports & Team Assessment

Environmental Sustainability and Social Responsibility. OTE appears to be concerned about environmental protection, by implementing the 3 R's (Reduce, Recycle and Reuse) program, in order to reduce the group's environmental impact. As a result of this effort, OTE is a holder, amongst others, of the certificate in environmental management ISO 14001 and the quality management ISO 9001. The company believes that when it comes to Corporate Responsibility, a company should give back to society nothing but it's very best. This is the reason OTE supports many environmental organizations and coordinates voluntary actions. In 2017, OTE Group's social contribution exceeded €4.2 million, for projects aimed at educating children and funding vulnerable social groups, developing the digital skills of youngsters and older people, as well as supporting local communities. Finally, a telecommunications museum was built in order to educate people on the history of telecom. Admission, guided tours, as well as educational programs are offered by OTE free of charge.

INDUSTRY OVERVIEW & COMPETITIVE POSITIONING

INDUSTRY OVERVIEW

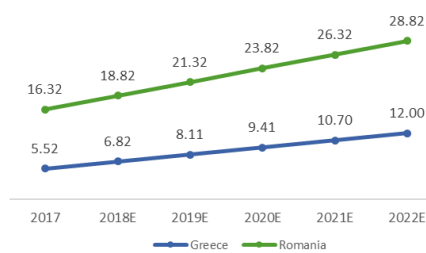
The telecommunications industry in Greece has been relatively steady over the past 3 years in terms of growth. In 2017, the total turnover of the industry reported a marginal increase resulting in a total market size above €5 billion. On the other hand, the Romanian market is characterized by fierce competition and is marked by the entrance of an aggressive 4th operator, Digi. OTE states that the underlying drivers are 1) the recovering economic environment, 2) higher broadband take up, 3) mobile data consumption, 4) contracts substituting pre-paid customers 5) increase in handset sales 6) technological changes which suggests that telecommunication companies will manage to increase their revenues in the upcoming years.

Economic recovery in Greece, growth in Romania. A key driver for telco companies is the boost in per capita income, as it potentially allows consumers to upgrade into more expensive services, like VDSL (30Mbps & 50Mbps), ultra-fast broadband (>100 Mbps) and increase mobile data usage. According to estimations of economic organizations (IMF, OECD, EU Commission, ESM, World Bank), Greece, where OTE has its main activity and source of revenues, is expected to slowly return to normality and grow with an average 1.95% over the next 5 years. The country in the summer of 2018 successfully completed the third adjustment program but still faces significant problems in the labor market and the banking sector, although certain reforms have been adopted (**Appendix 20**). As available income is slightly anticipated to increase, we expect a trend of upselling and increased ARPU from the Greek Market. Romania is in a trend of GDP growth since 2011 and economic organizations expect this trend to continue. Romania is a highly developed country in terms of telecommunications services, scoring highly above the EU average in fiber penetration. However, the telecommunications sector is very competitive regarding pricing and the prospects for OTE in this market remain challenging.

Greek consumers shift to faster broadband services. It is observed that due to technological advancement, Greek consumers tend to abandon the traditional ADSL services and move to the faster VDSL. As the economic environment improves, it is estimated that the number of clients that choose VDSL will have an ascending trend, increasing the penetration in the market. In Greece, the broadband take up, has reached 69% for 2017, moving upwards by 3% from the previous year. As the economic and social environment tend to return to normality, we presume this index to rise gradually and to reach the European average rate of 75%. Furthermore, according to the data gathered from the European Digital Progress Report (E.D.P.R.) of EU commission, the internet users in Greece represent only 61% of the population, while in Europe this rate is equal to 81%. As new generations replace the old ones and internet becomes more and more essential, consequently, the internet take up will increase in Greece. As a result, there is a large growth margin for Greek telco companies. OTE will greatly benefit from this shift, since 35% of its clients are voice only users, while on the contrary the respective percentage of its competitors is 10%. It is forecasted that this percentage will gradually decline in the next 5 years and that these customers will opt more for VDSL than ADSL. In other words, the number of voice users will decline with an average -12.45% YoY, representing by 2022 the 17.32% of total subscribers of OTE. Thus, the VDSL users will increase +33.44% in 2018 and by 2022 the total VDSL users will reach 69.30% of broadband users from 20.13% in 2017.

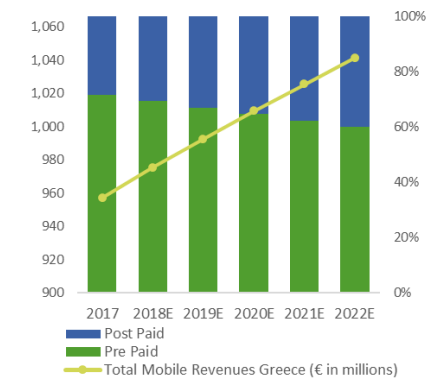
Higher data consumption paves the way for higher mobile service revenues. Providing 26.10% of mobile service revenues, the mobile data revenue is one of the most important revenue drivers for OTE. Since the emergence of high-speed 4G networks, which enables the end users to enjoy high quality of services for cheaper calls, instant messaging and social media, the percentage of data revenue to total revenue has grown from 11% in 2012 to 26% in 2017. Considering the fact that the Greeks consume only 0.46GB per month while the average European consumes 2.4GB, it becomes clear that there is room for increased GB consumption. We expect that the average data consumption in Greece will have reached 1GB per month by 2022. In addition, since Greece has a positive net visit of tourists every year, the Greek providers will be

Figure 12: Annual Data Consumption (in GB)



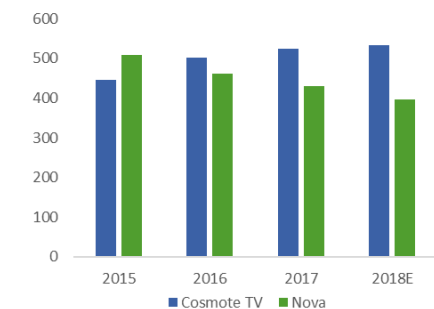
Source: EDPR & Team Assessment

Figure 13: Pre-paid vs Post-Paid



Source: Team Assessment

Figure 14: Pay TV subscribers (in thousands)



Source: OTE Group reports

Figure 15: Porter's 5 Forces



Source: Team Assessment

benefited by the EU's roaming regulation, which came into effect in June 2017 and led to the abolition of all roaming charges for temporary roaming within the European Economic Area. As a result of the above, OTE's revenues from mobile data are expected to represent 44.64% of the mobile service revenues by 2022 showing that OTE is prepared to capitalize on the new trends and increase its revenues from mobile data consumption. OTE's service revenues from mobile business are set to rise by 1.7% on average from 2018 to 2022. Similar trends are found in Romania as well, where the average monthly data consumption is expected to reach the current EU average of 2.4GB by 2022. However, the decrease in voice revenues will lead OTE's service revenues from mobile business in Romania to dwindle by an average of 3% until 2022. This is mainly driven by the fierce competition in Romania and the global trends towards the use of social media against the traditional forms of telecommunication.

Contracts substitute pre-paid customers. Currently, 28.56% of OTE's mobile customers are on post-paid contracts. Penetration of contracts in the Greek market (36.35%) is low compared to the German average (50%). As disposable income increases, consumers will look for a better bundle of services, combining voice, SMS and data. We believe Greece will follow suit but at a slower pace leading to a 60 / 40 ratio of pre-paid / post-paid customers for OTE. There is a high upside potential for OTE from this transition, since the ARPU from post-paid customers is €25 while for pre-paid ones is only €4.5. In Romania, OTE's pre-paid / post-paid split is 46% to 54% respectively. We expect this ratio to be 38% to 62% in 2022 providing OTE with an increased ARPU since the ARPU contract for OTE in Romania is €11.21 while for pre-paid customers €2.2.

Development of private optic fiber network. The wholesale revenues from OTE's subsidiaries in Greece and Romania comprise 17% of the group's total revenues, reaching €662 million in 2017. However, this figure is expected to decrease slightly in the upcoming years. In Romania, the absence of effective regulation results to substantial differences in wholesale revenues annually due to infrastructure overlap. Regarding Greece, the regulator, in order to counter the formation of a monopoly, forces OTE to decrease its LLU fees, which are the main source of wholesale revenues. The traditional copper line total fee is €7.5 while the VDSL wholesale fee is priced at €17.5. The fee for the full local loop is comprised by the shared loop fee (€1.53 for copper and €12.5 for VDSL lines) and the last mile fee (€5.85 for both networks). The regulator is expected to decrease the full local loop fee by €0.12 per year. However, the development of the vastest FTTC network in Greece by OTE, will give the group a chance to mitigate the LLU losses through the more expensive wholesale VDSL/fiber fee. By 2019, OTE will have installed VDSL/fiber network into 15,700 cabinets while Vodafone and Wind 5,700 combined.

Pay TV market will steadily grow. The pay TV market in Greece shows signs of maturity. Even though the content of the pay TV is significantly higher in quality than that of the free-to-air channels, it still has a low penetration rate of 25% versus 60% in EU. Moreover, the net additions are generally low at 4% for 2017. This trend is anticipated to remain steady for the next five years. OTE is the market leader (55%) in pay TV as COSMOTE TV offers high quality programs, especially in sports where it holds the broadcast rights of Champions League and Europa League until 2021. Because of the above reasons, it is projected that the subscribers will steadily increase for each year by 25,000 annually, similar to the increase of 2017.

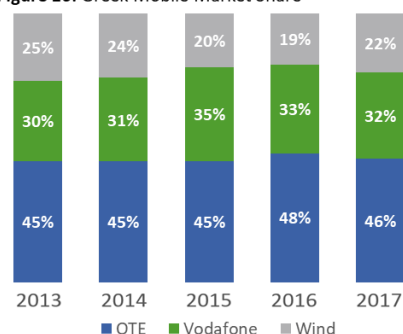
Increase in handset sales. As economy recovers and smartphones become more and more necessary in business and everyday life, people will have to buy such a device or update their current one. In 2017, smartphone penetration was 63.4% in Greece and 60.6% in Romania while the EU average was 69%. There is plenty of room for growth in this sector. From 2018 to 2022, an average 1.9% YoY increase is expected in handset sales in Greece and 1.6% in Romania.

Technological changes. Greece has lagged behind in building fiber infrastructure compared to its European peers. The process of building infrastructure started in 2016 and it is projected to finish in 2019. Greek consumers will be able to benefit from the services provided by FTTC network, while the faster but more expensive FTTH is still in its infant stages of development. OTE states that its running investment plan will mainly focus on the development of FTTH infrastructure and anticipates to make FTTH accessible to 1 million homes by 2022. OTE has the largest customer base in Greece and current take up of VDSL broadband services is at 20% of its retail broadband base. As the economy develops, we expect that the Greeks and especially businesses, will upgrade into fiber, resulting in a bigger ARPU from broadband services for OTE. In the long term, the 5G network and Internet of Things (IoT) applications will be a huge source of revenue for telecommunications companies. IoT turnover globally will grow to \$457 billion by 2020 and telco companies will look to benefit from it. However, Greece will lag in 5G network and infrastructure development. It is not expected for OTE or any other Greek telco company, to manage to enter this market in the next 5 years as they will anticipate their fiber investments to mature.

COMPETITIVE POSITIONING

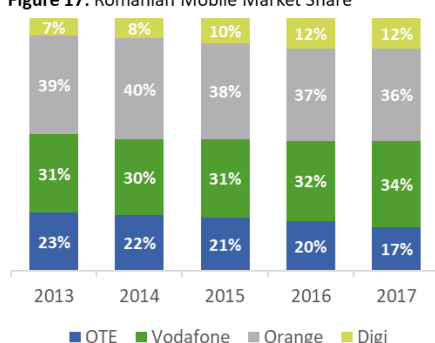
OTE is the market leader in Greece and has a strong presence in Romania, with sales up to €3.857 billion. The telecom market is characterized by low fragmentation. Entry barriers are high, due to the nature of

Figure 16: Greek Mobile Market Share



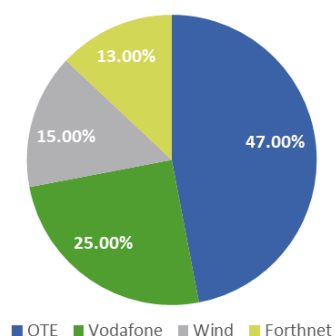
Source: Companies' Data

Figure 17: Romanian Mobile Market Share



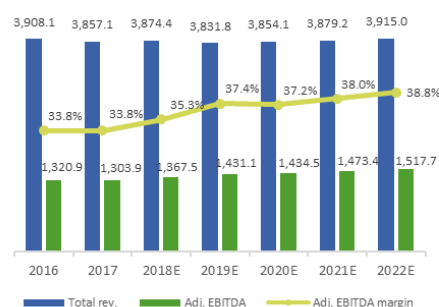
Source: Companies' Data

Figure 18: Greek Fixed Market Share



Source: Companies' Data

Figure 19: Key Financials (€ in millions)



Source: Team Assessment

telco businesses requiring expensive and vast physical capital and expenditure on high-end innovative technology, high requirements for customer satisfaction and need for commitment to the policies of the regulator. The Porter's five forces model was implemented to assess the threats faced by OTE. The outcome of our analysis demonstrates that OTE does not face any serious peril. Competition and the bargaining strength of consumers is moderate, while the three remaining Porter forces pose insignificant threats to OTE (*Appendix 19*).

OTE ahead of competitors in Greece. In Greece, OTE has a market share of 55.5% in the fixed line market and 46.4% in the broadband market. It is also the leader in the mobile sector with a market share of 46.4%. Telecommunications in Greece are an oligopoly since the total market is divided mainly among 3 big players. OTE's competitors are Vodafone and Wind, while Forthnet, which historically have been a competitive player in terms of pricing, at present is under financial distress due to excessive debt. Both Vodafone and Wind but are well behind OTE in terms of market share. OTE is the incumbent operator in Greece and therefore enjoys large revenues from wholesale. The wholesale revenue per line from the usage of traditional copper lines is regulated by EETT, the Greek telecom regulator, in order to avoid monopoly. In pay TV, OTE is the leading operator (55%) with a positive trend, while NOVA, the only competitor (45%) until 2017, is struggling to keep up with OTE. Currently, OTE has to face more competitors as Vodafone, WIND and Netflix have also entered the pay TV market. The penetration of pay TV in Greece is only 25%, and despite some signs of market maturity, it is expected that as the disposable income of the Greeks increases, so will this penetration increase too, yet at a moderate and stable rates.

Fierce competition in Romania. OTE is not the leader of the Romanian market but it is a significant competitor with a 45% market share on only-voice market and 23% in the broadband market. In the Romanian mobile market, OTE has 17% of the total market while its main competitors are Orange, Vodafone and Digi. It is notable that Digi is very aggressive in terms of pricing and investing while OTE has a negative trend of losing customers due to underinvestment. Additionally, the competition in the fixed market is also very strong because of the extensive infrastructure overlap. OTE is struggling in Romania and we expect this situation to mildly continue in the following years.

OTE's comparative advantage on fiber. Since 2016 and the beginning of the FTTC program, OTE has managed to install 13,000 cabinets until 2017 (from the total 15,700 to be installed in Greece), reaching a coverage of 60%. On the contrary, WIND and Vodafone, the main competitors of OTE, will have updated 5,700 combined by the end of 2019. Under the permission of the regulator (EETT), OTE had a head start in the auction of the cabinets, giving to the group the opportunity to select areas, especially in Attica, with higher average income. This offers the advantage to access clients that will possibly update into more advanced services and thus more expensive, like fiber ones, and gives OTE the potential to increase its retail revenues more than the other operators in Greece.

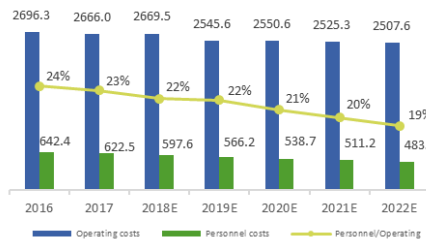
Customer satisfaction. OTE offers high-quality networks in Greece, both in fixed and mobile. The group has achieved, through years of investments, to develop its infrastructures in urban and rural areas. 4G and 4G+ networks cover 98% and 92% of the population respectively, achieving distinctions like the P3 test "Best in Class" and keeping OTE ahead of the competition. Additionally, in 2018 OTE was named award winner for Fastest Carrier by OOKLA in recognition of providing the fastest speeds for the Q1-Q2 award period. OTE has started to invest in 5G technology, signaling its intention to remain at the forefront of the technological innovation and be the first to offer this service to its clients. In order to verify the predominance of OTE in the customer satisfaction section, a survey was conducted. The results showed that OTE's customers are 15% more satisfied from the offered services, than the customers of its competitors.

Competitive landscape is expected to remain the same; restructuring among competitors. The Greek Market is an oligopoly and the telecommunications industry requires heavy capital investment, thus we do not expect a new operator to join in the competition. The major technological investments for the upcoming years have already taken place and OTE will lead the competition. The debt-burdened competitor Forthnet is about to be bought by Wind and Vodafone in a joint offer. As a result, operators in 2019 will be 3 (OTE, Vodafone and Wind) instead of 4. Vodafone and Wind will increase their customer base but that will not affect the market share of OTE. However, since Forthnet owned NOVA TV, OTE's main competitor in the field, we expect the competition to intensify in the pay TV and triple play market.

FINANCIAL ANALYSIS

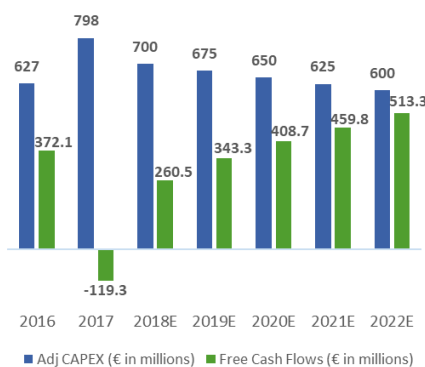
Revenue growth driven by VDSL and data consumption. OTE has experienced negative growth on its revenues over the past 6 years due to the unexpected and unprecedented Greek financial crisis. However, in 2018, the group seems to come back to growth along with the Greek economy and we expect OTE to achieve an annual growth of +0.45% resulting in annual sales of €3.874 billion. This growth mainly derives from an increase in the Greek mobile (+1.71%) and fixed business (+1.31%). OTE will manage to sustain this revenue growth as ARPU in fixed business will continue to rise thanks to the upselling in the broadband

Figure 20: Operating & Personnel Costs (€ in millions)



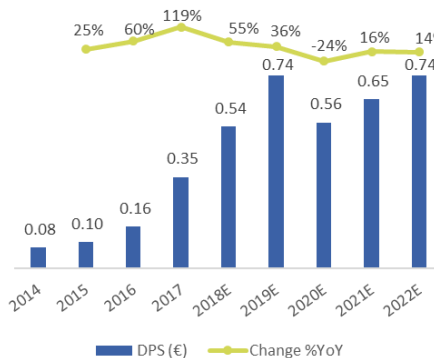
Source: Team Assessment

Figure 21: Capex & FCF Evolution



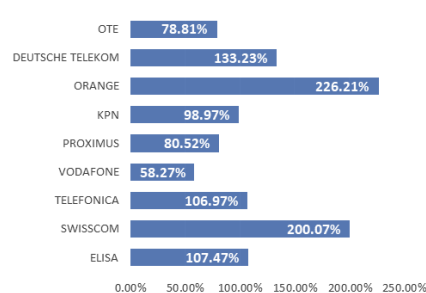
Source: Team Assessment

Figure 22: Dividend Evolution



Source: Team Assessment

Figure 23: Debt/Equity ratio among OTE and Peers



Source: Thomson Reuters

market and the increased data consumption that will boost the service revenues of the mobile business. From 2017 to 2022 we assume an overall revenue CAGR of 0.25% including the revenues from Albania and total revenues to almost reach €4 billion. Although without the Albanian participation, the CAGR ascends to 0.55%. Nevertheless, OTE's revenue growth could have been higher had it not been for Telekom Romania. In Romania, we expect a negative CAGR of -1.3% and -2.03% in the mobile and fixed business respectively ([Appendix 2](#)).

OTE in its process of cost optimization is cutting down on its operating costs. Personnel Costs represent 23.3% of total operating expenses in 2017 from 28.15% back in 2013. During the last 5 years, OTE is implementing a program of Voluntary Leave Schemes (VLS) and will continue to have it in force in order to further reduce its personnel costs and optimize its production cost. Specifically, OTE saved €14 million in 2017 thanks to VLS plan. We expect personnel costs to represent 19.29% of operating expenses by 2022. Additionally, OTE is continuously trying to cut down costs through the digitalization of processes. A lot of the company's operations are now handled from special apps or via internet like the e-signature or the "SmartHR" platform resulting in online and paperless internal approval workflows.

Thanks to cost reduction, OTE will boost adjusted EBITDA margin. Generally, a high EBITDA margin demonstrates an effective company. Over the past years, this metric had a decreasing trend as from 35.9% in 2013 it diminished to 33.8% in 2017. However, it seems that OTE has managed to reverse this trend as we expect an adj. EBITDA margin of 35.3% for 2018 that it will reach 38.77% in 2022 ([Appendix 13](#)). The main drivers behind this accretive effectiveness of the group are the digitalization and the reduction in personnel costs and the disposal of Telekom Albania, which burdened EBITDA, with an EBITDA margin of 12.9% in 2017. OTE scores highly in this metric, since it manages to have better adjusted EBITDA margin than the majority of its European peer group, even though OTE is a much smaller company in terms of capitalization ([Appendix 12](#)).

Cash Flows and Capital Expenditure (CAPEX) returning to normality in 2018. OTE mainly uses CAPEX for maintenance or purchase of equipment and intangibles. Due to the huge line and cabinet infrastructure, CAPEX affects OTE's financial results intensively through the free cash flows. Even though the group generally generates strong free cash flows, in 2017, in which OTE reached a group record of €797 million for adjusted CAPEX, the free cash flows greatly decreased falling to €-119.3 million. The main reason for CAPEX being so high is the investments made in order to secure the best cabinets and to install a fiber network of 13,000 cabinets. OTE has announced that from 2018, adjusted CAPEX will significantly decrease to €700 million and will continue to decline steadily for each one of the five years of our forecast. In 2018, FCFs are expected to return to normality reaching €260 million and to continually increase each year until our last forecasted year 2022, hitting €513 million ([Appendix 6](#)).

Starting from 2018 OTE will begin to implement its new remuneration policy towards its shareholders. The new policy states that OTE will remunerate its shareholders with 100% of its Free Cash Flows (FCF). This amount will be split through a combination of dividend payout (65%) and share buy-back programs (35%). For 2018 the total remuneration amount will reach €260 million resulting in a dividend of €0.54 marking a 54% increase from the 2017 dividend (€0.35). OTE has stated that this strategy will surely continue for 2019 as well. After 2019, we believe that OTE will stop the remuneration of the shareholders by using share buy-backs and will only proceed with the traditional dividend distribution. Consequently, the group will start to keep the remaining 35% of the Free Cash Flows each year as cash inflow, in order to invest heavily in the 5G from 2023 and on. Through this policy, we expect the dividend to reach €0.74 by 2022 ([Appendix 7](#)).

OTE is following a conservative policy regarding debt accumulation. Total debt has decreased from almost €3 billion in 2013 to €2 billion in 2017. In particular, the leverage of the group (Total Debt/Total Equity) has decreased from 128.3% in 2013 to 78.8% in 2017. In 2018, this metric is anticipated to be even lower at 77.4%. What is more, the Cash and Cash Equivalents/Current Liabilities ratio equals to 0.48 showing that the group is highly capable of repaying its short-term debt. Currently, OTE is the second most deleveraged company amongst its peer group giving signs of a stable company which has left room for additional leverage should an opportunity appear. Additionally, we believe the Group can sustain this level of debt and has a low probability of bankruptcy, since it scored a 5-year (2014-2018) average of 2.36 in the Altman's Z test we conducted, well above the 1.8 critical point ([Appendix 10](#)).

Reported earnings. OTE has its financial statements audited by PWC, one of the "Big Four" audit firms, which states that its consolidated financials objectively present OTE's financial position. In order to ensure the credibility of the company's reported earnings, we conducted a Beinish M test for the Group from 2014 to 2018 and it scored an average of -4.06 well below the -2.22 critical point. Taking into consideration the results of the test, we consider OTE is unlikely to be a manipulator of its earnings ([Appendix 9](#)).

VALUATION

We issue a **BUY** recommendation on OTE Group, with a **12-month target price of €13.68** representing a **24.5% upside potential on the closing price of €10.99 per share on 01/02/2019**. We derived our target price based on a combination of the Discounted Cash Flow (DCF) to Firm model with a target price of €13.92 and EV/EBITDA multiple with a target price of €13.13. Since the DCF analysis provides important insights into the group's financials, demonstrating a more comprehensive picture of OTE than that presented from the multiples methodology, we attributed weights of 70% and 30% respectively.

Figure 24: WACC Computation

WACC computation			
	2018	2019-2022	2022-∞
10yr German Corp. Bond	1.60%	1.60%	1.60%
Avg Market Risk Premium	10.77%	10.66%	8.24%
Beta	0.93	0.93	0.93
Cost of Equity	11.61%	11.52%	9.60%
Cost of Debt	3.36%	3.36%	3.36%
Tax Rate	29%	29%	29%
WACC	9.38%	9.31%	7.85%

Source: Team Assessment

Intrinsic valuation reveals there is potential for greater share price. The Free Cash Flow to Firm model was selected because OTE is continuously generating stable Free Cash Flows to Firm, which we expect to increase gradually in the next five years, since the revenues of the group will upsurge, while on the contrary, the capital expenditures will decline steadily. The model is divided into two phases where the first one is based on a year-to-year forecast up to 2022 and the second one on a steady growth of 1.6%. The outcome of our FCF analysis is a price of **€13.92 (Appendix 8)**.

Calculating the Weighted Average Cost of Capital (WACC). In our calculation, we estimated three different WACC. For 2018 we calculated a WACC including the revenue contribution of Albania while for the period 2019-2022 a new WACC was calculated excluding the Albanian contribution. The final WACC refers to the second stage of the DCF model in order to better present the stabilization of the Greek economy. In the first stage, a risk-free rate of 1.6% was estimated using the daily yield for a 10-year time span (01/01/2009-31/12/2018) of the 10-year German government bond. To calculate the beta, we conducted a regression analysis by using the daily closing prices of OTE's stock and the ATHEX index for 5 years (01/01/14-31/12/2018). The final outcome was a beta of 0.93. The Market Risk Premium (MRP) was defined separately for Greece, Romania and Albania (Damodaran) at 11.86%, 7.46% and 12.21% respectively. By applying the Capital Asset Pricing Model (CAPM) we concluded to three different Costs of Equity which led us to three different WACC estimations, 10.15% for Greece, 7.05% for Romania and 10.4% for Albania. For 2018, we concluded to a WACC of 9.38%, while for the period of 2019-2022 to a WACC of 9.31%, by weighting the different WACC with the percentage of revenues each country contributes to the total revenues of the group. In the second stage of our model, we maintained the same beta and risk-free rate and we adjusted the MRP of Greece to be 9.02%, which is the current MRP of Portugal. After 5 years, the Greek economy is to have advanced beyond the crisis and relate to the current recovered economy of Portugal. This comparison is made because both countries have similar GDP (approximately €200 billion) and have faced fiscal deficits during the last decade. The adjustment in the MRP was made to better reflect the recovery of the Greek economy. The WACC of the second stage for Greece is expected to decrease to 8.15%, while the total WACC of the group is forecasted to be 7.85% (Appendix 24).

Figure 25: EV/EBITDA Multiples Valuation

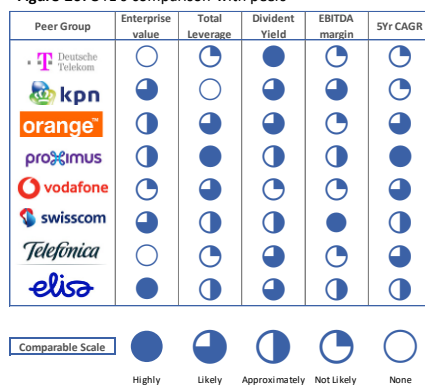
Company Name	EV/EBITDA	
	2017	2018
OTE	4.56	4.51
Deutsche Telekom	6.21	6.03
Orange	5.52	5.5
KPN	6.82	7.26
Proximus	5.87	5.65
Vodafone	5.33	5.57
Telefonica	5.74	6.02
Swisscom	7.73	7.69
Elisa	11.78	11.19
75th Percentile	7.05	7.37
Median	6.04	6.02
25th Percentile	5.69	5.63

Source: Thomson Reuters

Sustainable terminal growth rate. In order to calculate the terminal growth rate, initially we used the projections of global organizations (IMF, OECD, World Bank, EU Commission, ESM) for the real GDP growth rates of countries where OTE will have business exposure in the next five years. After weighting them into OTE current geographically revenue proportion, we concluded a GDP growth of 2%. However, the 10-year German government bond yield may be more appropriate to reflect the nominal growth of the economy in the long run. The average yield for 10 years (01/01/2009-31/12/2018) was calculated at 1.6%.

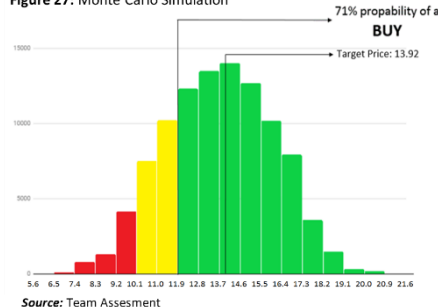
Multiples analysis: an undervalued company in a recovering economy. We conducted a multiple peer group analysis using commonly applied ratios such as P/E, PEG and EV/EBITDA. However, Enterprise Value to Earnings before Interest, Taxes, Depreciation and Amortization (EV/EBITDA) was identified as the most proper multiple to compare OTE to its peers. The main issue for the rejection of P/E and PEG is that the earnings per share are heavily influenced by special adjustments in the calculation of OTE's taxation and different depreciation methods. EV/EBITDA multiple was used mostly as it is more appropriate in analyzing the value of an infrastructure intensive business, like the telecommunications sector. In addition, by using this multiple, the effect of depreciation policies is removed. We chose the 25th percentile and not the median to compute the target price from the multiple analysis as OTE has a competitive disadvantage against the other companies mostly because of the financial crisis in Greece and the high tax rate that delayed its expansion. The peer group is comprised of important telecommunications businesses, like Deutsche Telekom (OTE's largest shareholder) and other smaller ones closer to the size of OTE like KPN, Proximus and Elisa. Our peer analysis revealed an undervalued company with high prospects. Eventually, after taking the forward (2018) EV/EBITDA peer 25th percentile as a proxy, we concluded to a 1-year target price of **€13.13** which weighs 30% of the final valuation analysis.

Figure 26: OTE's comparison with peers



Source: Thomson Reuters & Team Assessment

Figure 27: Monte Carlo Simulation



RISKS TO THE TARGET PRICE

The forecasted target price may not hold if Greek economy unexpectedly deteriorates and returns back to depression or if OTE experiences a drop in its sales due to increased competition. Simple adjustments in our assumptions could significantly alter our final recommendation of BUY. In order to evaluate the impact

of these possible changes in our assumptions we performed a Monte Carlo simulation, a sensitivity analysis and a scenario analysis.

Monte Carlo simulation. A Monte Carlo simulation was conducted with varying sales growth projections, operating expenses and other factors. After running the simulation, we observed a 71% probability of finding a price 8% above than the current one or €11.9 per share and only an 8% probability of a downgrade to a SELL. From the simulation's results, we concluded that the most sensitive variables in our model for OTE's stock price are the revenues. Therefore, it is essential for OTE to concentrate on revenue growth (**Appendix 25**).

Sensitivity Analysis. We modelled a sensitivity analysis changing the WACC and the terminal growth rate of OTE. Even in the worst case, where terminal growth is at the rather unexpected 1.1% and the WACC at 8.35%, the target price is 12.08€, more than 9% higher than the current price. Under favorable conditions the target price of OTE may rise up to 15.88€.

Scenario Analysis. Two different scenarios were projected based on the following assumptions. In the BULL case scenario, we projected a sale increase of +2% more than the base scenario and the average MRP at 10.46%, while in the BEAR case scenario we projected revenues -2% less than the base scenario and an average MRP of 11.04%. Based on the bull scenario's assumptions the target price can rise up to 16.90€ (54% return) while on the bear scenario's assumptions the target price could decrease to 9.34€ (-15% return). It is notable that based on our analysis while there is limited possible downfall on OTE's stock price, the upturn could generate remarkable returns to the investor. (**Appendix 26**)

Figure 28: Scenario Analysis

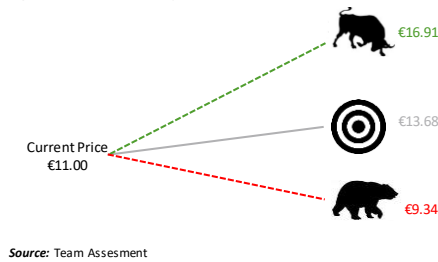


Figure 29: Sensitivity Analysis

		WACC								
		7.55%	7.65%	7.75%	7.85%	7.95%	8.05%	8.15%	8.25%	8.35%
Terminal growth rate	2.1%	15.88	15.62	15.36	15.11	14.87	14.63	14.41	14.19	13.98
	2.0%	15.60	15.34	15.09	14.85	14.62	14.40	14.18	13.97	13.76
	1.9%	15.33	15.08	14.84	14.61	14.38	14.16	13.95	13.75	13.55
	1.8%	15.07	14.83	14.59	14.37	14.15	13.94	13.74	13.54	13.35
	1.7%	14.81	14.58	14.36	14.14	13.93	13.72	13.53	13.34	13.15
	1.6%	14.57	14.34	14.13	13.92	13.71	13.52	13.32	13.14	12.96
	1.5%	14.33	14.11	13.90	13.70	13.50	13.31	13.13	12.95	12.77
	1.4%	14.10	13.89	13.69	13.49	13.30	13.12	12.94	12.76	12.59
	1.3%	13.88	13.67	13.48	13.29	13.10	12.92	12.75	12.58	12.42
	1.2%	13.66	13.47	13.28	13.09	12.91	12.74	12.57	12.41	12.25
1.1%	13.45	13.26	13.08	12.90	12.73	12.56	12.39	12.23	12.08	

Source: Team Assessment

INVESTMENT RISKS

Strategic risks

(S1) Risk of increasing competition (Impact: Medium/ Probability: Low) Existing competitors in Greece are constantly trying to improve their networks and products. A potential increase in investments along with the new arrival of TV content for Vodafone and Wind could affect OTE's market share and profitability. Moreover, if Digi continues the price war in Romania, it will create more issues for OTE in terms of revenues and market share.

(S2) Risk of new technologies (Impact: High/ Probability: Low) OTE invested a significant amount in fiber technologies. If a new technology could emerge sooner than OTE expects, it would significantly affect OTE's long-term growth. However, this risk is low as there is a trend towards fiber technology.

(S3) Expiring licenses (Impact: Medium/ Probability: Low) OTE is the market leader in Greek paid TV due to its quality content and especially due to the Champions League rights that it possesses. In the unexpected occasion of OTE failing to renew the expiring TV licenses, there will be a considerable loss in its revenues.

Financial risks

(F1) Dividend Payments (Impact: Low/ Probability: Low) OTE intends to pay out 100% of FCF as dividend and share buybacks (65%/35%). This makes it more attractive to investors seeking companies that pay dividends, increasing demand for the company's stock. OTE may have a problem and uncertainty will be created if the generating cash flows are not as large as investors foresee.

(F2) Accounting/Taxation (Impact: Low/ Probability: High) The international accounting standards have a strong influence on every group's financial activity. The fact that they are constantly changing and trying to adapt to the new economic reality, (e.g. IFRS 9 & 15 in 2018 and IFRS 16 in 2019) may lead to a negative impact on them. Moreover, changes in tax accounting requirements (e.g. deferred taxes) may negatively affect OTE's performance. There is a high probability for this risk, but it would have a moderate impact.

Figure 30: Appreciation of EURO/LEU

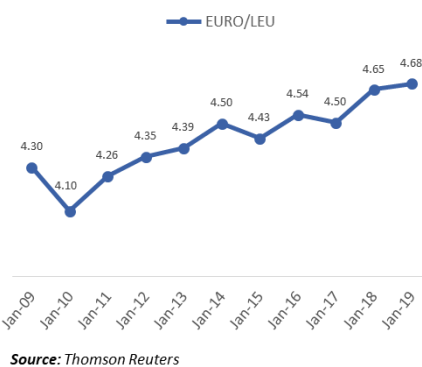


Figure 31: Cost of Debt Evolution

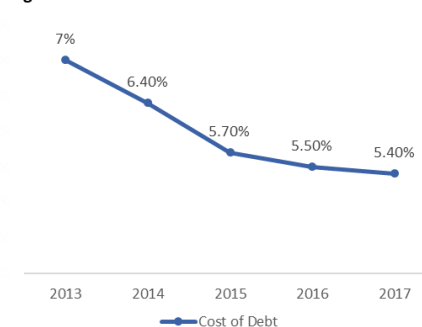
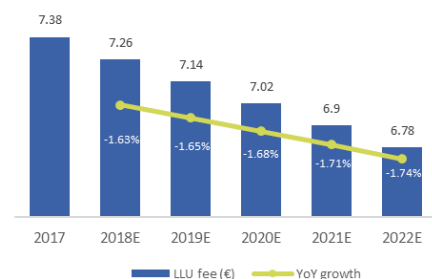
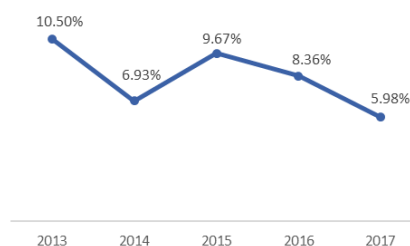


Figure 32: Wholesale LLU fees



Source: EETT & Team Assessment

Figure 33: Greek 10-yr Gov. bond yield



Source: Thomson Reuters

(F3) Foreign exchange risks (Impact: Low/ Probability: Medium) As OTE owns one subsidiary in Romania it is possible for the group to face fluctuation on the fair value of the cash flows due to foreign currency changes.

(F4) Interest rate risks (Impact: Low/ Probability: Medium) The group's fair value of cash flows from financing activities may fluctuate due to changes in interest rates as almost 80% of its long-term borrowings' rates are fixed. However, the impact of this risk is very low for OTE as an imminent rise of 1% in interest rates would affect group's debt less than €1 million. Additionally, a possible worsening of the Greek economy could increase interest rates and therefore make it harder for OTE to refinance its debt.

Regulatory risks

(R1) Regulatory framework (Impact: Medium/ Probability: Medium) OTE's wholesale revenues in Greece are highly related to the decisions of the EETT. This commission regulates the LLU fees which OTE charges to the other operators in order to use its copper network. These LLU fees are reduced every year by the commission in order to avoid monopoly and consequently, OTE's wholesale revenues are negatively affected by this trend. In the retail sector, the regulator forces OTE to provide its services at higher prices than its competitors, because of the significant market share the company has. The above factor, plus the increasing competition may affect the company's market share on a bigger scale. In Romania, the absence of efficient regulatory framework, allows some competitors of OTE to use unconventional practices, like overlapping network, affecting negatively OTE's revenues.

(R2) Tax rate (Impact: Low/ Probability: Low) For OTE that operates in a country with very aggressive and unstable tax policy, sudden changes in VAT or in any other tax could affect the group's net income.

Operational risks

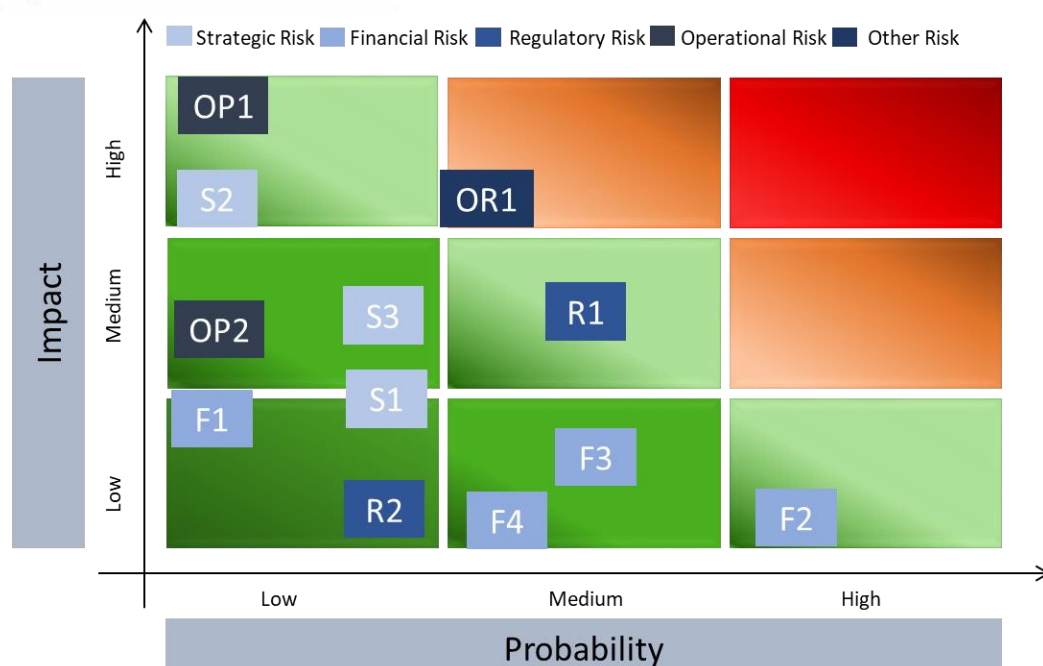
(OP1) Risks related to the quality of OTE's products (Impact: High/ Probability: Low) OTE's success depends on its ability to maintain a high quality to its services. It is mandatory to continuously adapt in the new environment and technologies, otherwise, the company is vulnerable to the risk of losing clients.

(OP2) Failure to attract new talent (Impact: Medium/ Probability: Low) OTE tries to re-structure the company through the voluntary- leave schemes plan. There is a possibility that the new employees that it hires will not fulfil the high standards of the company. In this occasion, OTE's prospects may negatively be affected, although the probability of this risk is rather low due to the highly qualified Human Resources department.

Other risks/Reasons for concern






















(OR1) Macro-Political risk/Political uncertainty (Impact: High/ Probability: Medium) Even though Greece has exited the third bailout program and is showing continuous signs of stability, the country is not ready yet to access affordable financing from the markets showing that uncertainties continue to exist. Furthermore, the political situation should also be taken into consideration, as the forthcoming elections (2019) reinforce uncertainty environment. In conclusion, a deterioration of the economic or political situation could jeopardize the company's domestic sales and increase the country's risk premium.

Figure 34: Risk Matrix



Source: Team Assessment

Appendix 1: Glossary

-  **ADSL:** Asymmetric Digital Subscriber Line. A data communication technology that offers the user internet speeds up to 24Mbps.
-  **ARPU:** Average Revenue Per User. The average yearly revenue that OTE receives from its retail clients.
-  **Broadband:** Refers to an internet access that is always on and faster than dial-up access over traditional analog or ISDN PSTN services.
-  **Cabinet:** A street box that telecommunication lines from the local exchange concentrate and then distribute to the clients.
-  **EDPR:** Refers to the European Digital Progress Report. It is published from the European Commission, and monitors the digital progress of each member state.
-  **EETT:** Hellenic Telecommunications and Post Commission or EETT is the telecommunication regulator in Greece.
-  **Fiber connection:** The evolution of VDSL. Based on a fully optic fiber network this technology promises speeds that exceed 100Mbps and can reach 1Gbps.
-  **FMC:** Fixed-Mobile Convergence. It allows the user to connect his fixed line services with his mobile network.
-  **FTTC:** Fiber to The Cabinet. The procedure of upgrading the existing cabinets, by replacing the copper cables that connects them with the local exchange with optic fiber cables.
-  **FTTH:** The next stage of FTTC, where the last mile will also be replaced by optic fiber cables, connecting the local exchange, cabinets and homes/businesses solely with optic fiber.
-  **ICT:** Stands for Information and Communication Technologies and refers to technologies that provide access to information through telecommunications.
-  **Incumbent operator:** A telecommunications operator that held the local monopoly before the market was opened to other private companies. Usually, these operators hold a special position in the market and certain restrictions by the regulator.
-  **Internet of Things (IoT):** The network of devices, like vehicles and home appliances, that posse's technology which allows them to connect and interact with each other.
-  **Last mile:** The part of the LLU line that connects the cabinet with the client's premises.
-  **LLU:** Refers to Local-Loop Unbundling and is the line that connects the local exchange with the client's premises.
-  **Mbps/Gbps:** Measure the capacity and speed of data transfer.
-  **NGA network:** New or upgraded access networks that allow higher broadband speeds and quality of service compared to today's services. Most often used to refer to networks using fiber optic technology.
-  **Operator:** The telecommunications company that provides fixed and/or mobile services.
-  **Post-paid subscriber:** It refers to mobile users to whom the provided services are defined by a contract with the mobile network operator.
-  **Pre-paid subscriber:** The mobile user must purchase credit in advance in order to gain access to mobile services.
-  **VDSL:** Very-high-bit-rate Digital Subscriber Line. A data communications technology that offers the user internet speeds of 30 and 50 Mbps.

Appendix 2: Revenues by Segment

€ In Millions	2016	2017	2018E	2019E	2020E	2021E	2022E
Greek fixed	1,568.50	1,583.80	1,604.50	1,624.30	1,645.79	1,670.71	1,706.90
Retail service revenues	898.00	904.60	922.50	955.22	991.71	1,028.58	1,070.20
Wholesale revenues	344.40	347.70	350.50	337.58	322.58	310.63	305.20
Other + Miscellaneous revenues	326.10	331.50	331.50	331.50	331.50	331.50	331.50
YoY Growth	2.12%	0.98%	1.31%	1.23%	1.32%	1.51%	2.17%
Romania fixed	599.80	607.70	585.96	573.45	561.14	549.05	537.20
Retail service revenues	306.90	288.70	278.38	268.14	258.05	248.13	238.41
Wholesale services revenues	113.10	141.60	113.28	111.01	108.79	106.62	104.49
Other revenues	179.80	177.40	194.30	194.30	194.30	194.30	194.30
YoY Growth	-0.48%	1.32%	-3.58%	-2.13%	-2.15%	-2.15%	-2.16%
Greek mobile	1,194.22	1,202.34	1,222.89	1,242.64	1,262.15	1,281.25	1,299.92
Retail service revenues	943.92	957.54	975.46	992.53	1,009.31	1,025.62	1,041.45
Handset revenues	150.30	137.00	139.63	142.31	145.04	147.83	150.67
Other + Miscellaneous revenues	100.00	107.80	107.80	107.80	107.80	107.80	107.80
YoY Growth	-2.79%	0.68%	1.71%	1.62%	1.57%	1.51%	1.46%
Romania mobile	457.10	464.80	456.21	450.21	443.82	437.01	429.78
Retail service revenues	304.20	303.70	293.37	285.59	277.39	268.75	259.65
Handset revenues	89.20	103.90	105.65	107.42	109.23	111.06	112.93
Other + Miscellaneous revenues	59.90	57.20	57.20	57.20	57.20	57.20	57.20
YoY Growth	4.24%	1.68%	-1.85%	-1.31%	-1.42%	-1.53%	-1.65%
Albania mobile	77.20	68.10	63.63	-	-	-	-
All other	489.70	451.60	451.60	451.60	451.60	451.60	451.60
Eliminations Adjustments	(481.10)	(521.30)	(510.40)	(510.40)	(510.40)	(510.40)	(510.40)
Total Revenues	3,905.42	3,857.04	3,874.38	3,831.81	3,854.10	3,879.23	3,915.00
YoY Growth	-0.52%	-1.24%	0.45%	-1.10%	0.58%	0.65%	0.92%

Appendix 3: Income Statement

€ In Millions	2013	2014	2015	2016	2017	2018E	2019E	2020E	2021E	2022E
Revenues										
Revenues from fixed business	2,177.50	2,171.70	2,134.20	2,150.60	2,149.40	2,143.76	2,151.05	2,160.24	2,173.06	2,197.39
Revenues from mobile business	1,758.80	1,651.00	1,589.50	1,556.10	1,579.80	1,602.73	1,552.86	1,565.97	1,578.26	1,589.70
Miscellaneous other revenues	117.80	95.70	179.20	201.40	127.90	127.90	127.90	127.90	127.90	127.90
Total revenues	4,054.10	3,918.40	3,902.90	3,908.10	3,857.10	3,874.39	3,831.81	3,854.11	3,879.22	3,915.00
Other operating income	42.30	66.40	60.70	55.20	51.40	65.00	65.00	65.00	65.00	65.00
Expenses										
Interconnection and roaming costs	(468.20)	(473.60)	(487.00)	(542.90)	(569.80)	(555.28)	(526.28)	(547.38)	(550.98)	(556.11)
Provision for doubtful accounts	(84.90)	(92.00)	(86.80)	(89.90)	(106.30)	(90.83)	(89.74)	(90.26)	(90.85)	(91.69)
Personnel costs	(821.50)	(697.10)	(667.20)	(642.40)	(622.50)	(597.63)	(566.17)	(538.70)	(511.23)	(483.77)
Costs for voluntary leave schemes	(272.40)	(8.40)	(100.70)	(49.60)	(51.80)	(88.00)	(70.30)	(56.14)	(44.81)	(35.75)
Commission costs	(168.70)	(151.20)	(148.60)	(164.70)	(141.30)	(103.15)	(96.92)	(100.51)	(101.18)	(102.13)
Merchandise costs	(276.40)	(300.70)	(292.10)	(268.70)	(296.70)	(340.56)	(333.72)	(335.68)	(337.89)	(341.03)
Maintenance and repairs	(91.00)	(96.40)	(103.20)	(100.10)	(96.60)	(100.00)	(97.80)	(99.30)	(100.80)	(102.30)
Marketing	(113.00)	(119.80)	(113.60)	(104.50)	(96.50)	(107.95)	(102.76)	(104.88)	(105.58)	(106.58)
Other operating expenses	(622.40)	(660.10)	(743.90)	(763.50)	(684.50)	(686.09)	(661.95)	(677.50)	(681.95)	(688.28)
Total operating expenses	(2,918.50)	(2,599.30)	(2,743.10)	(2,696.30)	(2,666.00)	(2,669.50)	(2,545.64)	(2,550.35)	(2,525.27)	(2,507.64)
EBITDA	1,177.90	1,385.50	1,220.50	1,267.00	1,242.50	1,269.88	1,351.18	1,368.76	1,418.96	1,472.37
Adjusted EBITDA	1,456.30	1,421.60	1,343.00	1,320.90	1,303.90	1,367.50	1,431.10	1,434.50	1,473.40	1,517.70
Adjusted EBITDA margin	35.92%	36.28%	34.41%	33.80%	33.81%	35.30%	37.35%	37.22%	37.98%	38.77%
Depreciation, amortization and impairment	(842.50)	(796.40)	(829.40)	(881.40)	(937.00)	(951.01)	(937.35)	(905.65)	(873.95)	(842.25)
EBIT	335.40	589.10	391.10	385.60	305.50	318.87	413.83	463.11	545.01	630.11
Total loss from financial and investing activities	(20.60)	(193.70)	(144.60)	(133.20)	(131.00)	(128.53)	(127.63)	(124.33)	(118.00)	(113.04)
Profit before tax	314.80	395.40	246.50	252.40	174.50	190.34	286.20	338.77	427.01	517.08
Income tax	(20.90)	(123.90)	(117.80)	(168.40)	(151.70)	(137.20)	(165.00)	(180.24)	(205.83)	(231.95)
Profit for the year	293.90	271.50	128.70	84.00	22.80	53.14	121.20	158.53	221.17	285.13

Appendix 4: Balance Sheet

€ In Millions	2013	2014	2015	2016	2017	2018E	2019E	2020E	2021E	2022E
Assets										
Tangibles and Intangibles	4,260.30	4,246.90	4,027.00	3,834.20	3,768.70	3,517.69	3,335.33	3,159.68	2,990.72	2,828.47
Goodwill	506.00	505.90	506.40	507.00	447.10	447.10	447.10	447.10	442.10	442.10
Other non current assets	582.90	557.60	516.50	501.60	508.20	510.70	505.10	499.50	493.90	488.30
Assets for sale (Albania)	-	-	-	-	-	50.00	-	-	-	-
Trade receivables	703.30	684.90	728.60	730.50	719.70	723.47	715.52	719.68	724.37	731.05
Inventories	97.00	87.90	97.20	95.90	91.30	99.58	98.56	99.09	99.69	100.55
Other current assets	249.50	211.20	262.00	316.80	269.50	261.68	261.68	261.68	261.68	261.68
Cash and cash equivalents	1,444.30	1,509.90	1,322.50	1,585.60	1,297.70	1,148.76	1,220.38	1,028.37	966.97	1,239.85
Total assets	7,843.30	7,804.30	7,460.20	7,571.60	7,102.20	6,762.91	6,587.61	6,219.03	5,983.38	6,095.93
Equity										
Share Capital + Share Premium	1,899.00	1,883.80	1,883.40	1,883.30	1,883.50	1,854.60	1,825.71	1,825.71	1,825.71	1,825.71
Other	21.30	238.20	373.60	472.70	460.90	317.84	144.93	82.20	42.45	21.36
Total equity attributable to owner of the Parent (a)	1,920.30	2,122.00	2,257.00	2,356.00	2,344.40	2,172.44	1,970.64	1,907.90	1,868.16	1,847.06
Non-controlling interests (b)	375.40	376.40	352.20	295.70	245.00	196.28	148.59	101.93	56.27	11.60
Total equity (c) = (a) + (b)	2,295.70	2,498.40	2,609.20	2,651.70	2,589.40	2,368.71	2,119.23	2,009.83	1,924.43	1,858.66
Liabilities										
Long-term borrowings	2,556.50	2,173.10	1,755.60	1,941.00	1,276.20	1,308.54	1,172.19	1,696.81	1,206.43	1,820.05
Provisions / Other non-current liabilities	583.50	697.70	606.50	538.70	515.60	476.30	390.81	333.50	287.74	256.48
Short-term borrowings	399.90	465.40	433.50	184.10	764.50	525.38	875.38	175.38	575.38	175.38
Trade account payable	923.70	975.10	1,202.50	1,364.10	1,162.40	1,169.45	1,156.60	1,163.33	1,170.91	1,181.71
Other current liabilities	1,084.00	994.40	852.90	892.00	794.10	914.52	873.40	840.18	818.49	803.65
Total liabilities	2,407.60	2,434.90	2,488.90	2,440.20	2,721.00	2,609.36	2,905.38	2,178.89	2,564.78	2,160.74
Total equity and liabilities	7,843.30	7,804.30	7,460.20	7,571.60	7,102.20	6,762.91	6,587.61	6,219.03	5,983.38	6,095.93

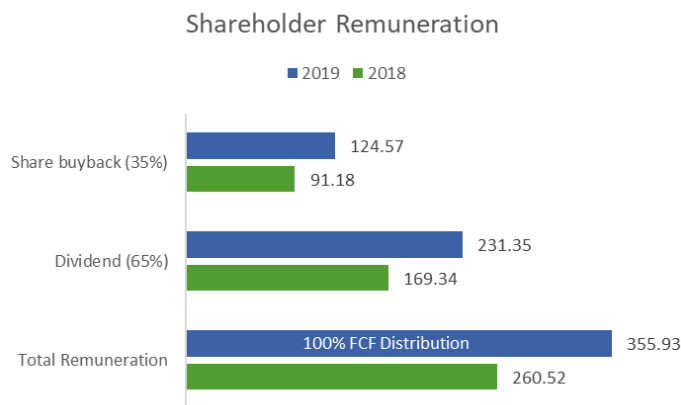
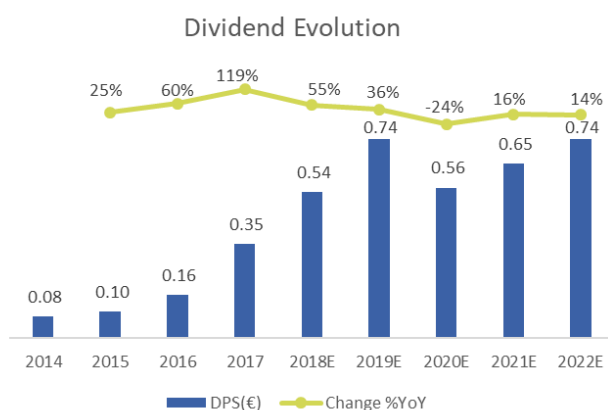
Appendix 5: Cash Flow Statement

€ In Millions	2013	2014	2015	2016	2017	2018E	2019E	2020E	2021E	2022E
Adjusted EBITDA	1,456.30	1,421.60	1,343.00	1,320.90	1,303.90	1,367.48	1,431.08	1,434.50	1,473.37	1,517.72
Change in Working Capital	114.80	(9.30)	(12.30)	(87.10)	(190.00)	(92.20)	(45.01)	(31.19)	(19.40)	(11.57)
Interest and related expenses paid	(249.20)	(238.30)	183.20	(134.90)	(132.10)	(130.40)	(129.58)	(126.21)	(119.97)	(114.97)
Income tax paid	(121.30)	(137.30)	(154.00)	(104.20)	(211.90)	(137.20)	(165.00)	(180.24)	(205.83)	(231.95)
Payment for voluntary leave schemes	(163.10)	(114.50)	(103.90)	(53.90)	(65.30)	(88.00)	(70.30)	(56.14)	(44.81)	(35.75)
Other	54.40	77.50	(312.80)	84.30	96.00	90.83	89.74	90.26	90.85	91.69
Net cash flow from operating activities	1,091.90	999.70	943.20	1,025.10	800.60	1,010.52	1,110.93	1,130.98	1,174.21	1,215.17
Adjusted Capex	(471.10)	(556.80)	(569.70)	(627.00)	(797.50)	(700.00)	(675.00)	(650.00)	(625.00)	(600.00)
Spectrum/Other	(133.60)	(47.10)	(88.70)	(26.00)	(122.40)	(50.00)	(80.00)	(80.00)	(80.00)	(80.00)
Reported Capex	(604.70)	(603.90)	(658.40)	(653.00)	(919.90)	(750.00)	(755.00)	(730.00)	(705.00)	(680.00)
Interest Received	8.80	5.40	2.40	2.20	1.60	2.07	1.96	1.87	1.97	1.93
Asset sold (Albania)	-	-	-	-	-	-	50.00	-	-	-
Other	756.20	22.50	10.60	3.80	5.60	5.60	5.60	5.60	5.60	5.60
Net cash flows used in investing activities	160.30	(576.00)	(645.40)	(647.00)	(912.70)	(742.33)	(697.44)	(722.53)	(697.43)	(672.47)
Share option plans/buyback	(6.00)	(43.10)	(0.40)	-	(0.30)	(91.18)	(124.57)	-	-	-
Proceeds from loans granted and issued	1,245.70	700.00	350.00	389.00	150.00	630.44	561.12	416.87	(200.35)	487.78
Repayment of loans	(2,201.20)	(1,013.90)	(800.30)	(454.50)	(242.70)	(787.05)	(547.05)	(897.05)	(197.05)	(597.05)
Dividends paid to Company's owners	(0.90)	(0.50)	(39.40)	(48.90)	(78.10)	(169.34)	(231.35)	(260.64)	(304.98)	(347.86)
Cash flows from non-distributed FCF	-	-	-	-	-	-	-	140.34	164.22	187.31
Net cash flows used in financing activities	(966.20)	(357.50)	(490.10)	(114.40)	(171.10)	(417.13)	(341.85)	(600.48)	(538.16)	(269.82)
Net increase / (decrease) in cash and cash equivalents	286.00	66.20	(192.30)	263.70	(283.20)	(148.94)	71.64	(192.03)	(61.38)	272.88

Appendix 6: Distributable FCF

€ In Millions	2016	2017	2018E	2019E	2020E	2021E	2022E
Adjusted EBITDA	1,320.90	1,303.90	1,367.48	1,431.08	1,434.50	1,473.37	1,517.72
Difference in Working Capital	(87.10)	(190.00)	(92.20)	(45.01)	(31.19)	(19.40)	(11.57)
Interest and related expenses paid	(134.90)	(132.10)	(130.40)	(129.58)	(126.21)	(119.97)	(114.97)
Income tax paid	(104.20)	(211.90)	(137.20)	(165.00)	(180.24)	(205.83)	(231.95)
Payment for voluntary leave schemes	(53.90)	(65.30)	(88.00)	(70.30)	(56.14)	(44.81)	(35.75)
Other	84.30	96.00	90.83	89.74	90.26	90.85	91.69
Operating Cash flow	1,025.10	800.60	1,010.52	1,110.93	1,130.98	1,174.21	1,215.17
Adjusted Capex	(627.00)	(797.50)	(700.00)	(675.00)	(650.00)	(625.00)	(600.00)
Spectrum/Other	(26.00)	(122.40)	(50.00)	(80.00)	(80.00)	(80.00)	(80.00)
Total Capex	(653.00)	(919.90)	(750.00)	(755.00)	(730.00)	(705.00)	(680.00)
Reported distributable FCF (FCF to Equity)	372.10	(119.30)	260.52	355.93	400.98	469.21	535.17

Appendix 7: Dividend Remuneration



Appendix 8: Free Cash Flow to the Firm

€ In Millions	2016	2017	2018E	2019E	2020E	2021E	2022E
Adj. EBITDA	1,320.90	1,303.90	1,367.48	1,431.08	1,434.50	1,473.37	1,517.72
Difference in Working Capital	(87.10)	(190.00)	(92.20)	(45.01)	(31.19)	(19.40)	(11.57)
Income tax paid	(104.20)	(211.90)	(137.20)	(165.00)	(180.24)	(205.83)	(231.95)
Adjusted CAPEX	(627.00)	(797.50)	(700.00)	(675.00)	(650.00)	(625.00)	(600.00)
Spectrum/Other	(26.00)	(122.40)	(50.00)	(80.00)	(80.00)	(80.00)	(80.00)
Unlevered FCF	476.60	(17.90)	388.09	466.08	493.07	543.14	594.19

Appendix 9: M-Score Analysis

The Beneish model is a statistical model that uses financial ratios calculated with accounting data of a specific company in order to check if it is likely (high probability) that the reported earnings of the company have been manipulated. $M\text{-Score} = -4.84 + 0.92 \times M1 + 0.528 \times M2 + 0.404 \times M3 + 0.892 \times M4 + 0.115 \times M5 - 0.172 \times M6 - 0.327 \times M7 + 4.679 \times M8$. If M-Score is less than -2.22 - the company is unlikely to be a manipulator. If M-Score is greater than -2.22 - the company is likely to be a manipulator. **From our results we consider OTE unlikely to be a manipulator of its earnings.**

Input Variables (€ in millions)	2014	2015	2016	2017	2018
Net Sales	3,912.05	3,925.65	3,905.42	3,857.04	3,874.38
Costs of Goods Sold (COGS)	(1,622.60)	(1,594.90)	(1,618.70)	(1,630.30)	(1,596.63)
Net Receivable	776.90	815.40	820.40	826.00	814.30
Current Assets (CA)	2,493.90	2,410.30	2,728.80	2,378.20	2,237.42
Property Plant & Equipment	3,103.30	2,950.60	2,852.50	2,740.90	2,603.00
Depreciation	(796.40)	(829.40)	(881.40)	(937.00)	(951.01)
Total Assets (TA)	7,804.30	7,460.20	7,571.60	7,102.20	6,762.91
SGA Expenses	(976.70)	(1,148.20)	(1,077.60)	(1,035.70)	(1,072.87)
Net Income	271.50	128.70	84.00	22.80	53.14
Cash Flows From Operation	999.70	943.20	1,025.10	800.60	1,012.52
Current Liabilities	2,434.90	2,488.90	2,440.20	2,721.00	2,609.36
Long Term Debt	2,173.10	1,755.60	1,941.00	1,276.20	1,308.54
Working Capital-Cash-Depreciation	(681.10)	(290.20)	(628.20)	(232.50)	(174.65)
Change in Working Capital- cash- depr.	(722.80)	(725.80)	(800.60)	(903.50)	(805.70)
Variables to Calculate M score	2015	2016	2017	2018	
M1. Day's Sales Receivable's Index	1.05	1.01	1.02	0.98	
M2. Gross Margin Index	1.01	0.99	0.99	1.01	
M3. Asset Quality Index	-1.54	-1.62	-1.74	-1.56	
M4. Sales Growth Index	1.00	0.99	0.99	1.00	
M5. Depreciation Index	0.88	0.87	0.86	0.90	
M6. SGA Expenses Index	1.17	0.94	0.97	1.03	
M7. Leverage Index	0.96	1.02	0.97	1.03	
M8. Total Accruals/Total Assets	-0.10	-0.11	-0.13	-0.12	
M-score - 8 variables model	-3.94	-4.04	-4.18	-4.11	

Appendix 10: Z-Score Analysis

Input Variables (€ in millions)	2014	2015	2016	2017	2018
Current Assets	2,493.90	2,410.30	2,728.80	2,378.20	2,237.42
Current Liabilities	2,434.90	2,488.90	2,440.20	2,721.00	2,609.36
Total Liabilities	5,305.90	4,851.00	4,919.90	4,512.80	4,394.19
Total Assets	7,804.30	7,460.20	7,571.60	7,102.20	6,762.91
Retained Earnings	3,401.00	3,509.20	3,595.40	3,573.10	3,414.11
Revenues	3,912.05	3,925.65	3,905.42	3,857.04	3,874.38
EBIT	1,385.50	1,220.50	1,267.00	1,242.50	1,269.88
Market Capitalization	4,610.90	4,596.20	4,331.60	4,312.00	5,375.30
Working Capital	32.40	202.90	76.00	(128.20)	(23.10)
Derived Variables	2014	2015	2016	2017	2018
z1. Working Capital/Total Assets	0.00	0.03	0.01	-0.02	0.00
z2. Retained Earnings/Total Assets	0.44	0.47	0.47	0.50	0.50
z3. EBIT/Total Assets	0.18	0.16	0.17	0.17	0.19
z4. Market Capitalization/Total Liabilities	0.87	0.95	0.88	0.96	1.22
z5. Revenue/Total Assets	0.50	0.53	0.52	0.54	0.57
Altman Z-score	2.22	2.33	2.27	2.38	2.63

The Altman Z-Score Analysis indicates a company's financial health and, consequently the likelihood of declaring bankruptcy. If the specified formula is below 1.81, a firm has a high probability of bankruptcy, while a score of 2.99 indicates a firm is far from a bankruptcy probability. The formula is $(1.2 \times Z1) + (1.4 \times Z2) + (3.3 \times Z3) + (0.6 \times Z4) + (1.0 \times Z5)$. **Considering the financial information for the period 2014-2018, OTE has LOW probabilities of filing for bankruptcy.**

Appendix 11: DuPont Analysis

	2015	2016	2017	2018E	2019E	2020E	2021E	2022E
Total Asset Turnover	0.51	0.51	0.52	0.57	0.58	0.62	0.65	0.64
Pretax Margin (%)	6.32	6.46	4.52	4.91	7.47	8.79	11.01	13.21
Pretax Return on Assets (%)	3.22	3.29	2.35	2.8	4.33	5.45	7.15	8.45
Return on Assets(%)	2.04	1.85	0.95	1.51	2.56	3.3	4.46	5.41
Financial Leverage (Assets/Equity)	2.86	2.86	2.75	2.86	3.11	3.09	3.11	3.28
Return on Equity (%)	6.73	5.94	2.87	4.69	8.57	10.75	14.28	17.86

Applying insights in the ROE components, we can make a sophisticated conclusion about OTE groups' profitability and potential growth. By using historical information, we observe a positive ROE which fell under 3% in 2017 due to the high level of Capital Expenditure of the group, which affects the net profit margin. In the next five years, the average pretax margin will be 9.1% and the average financial leverage 3.1%. A higher pretax margin ratio would be indicative of a company with a high degree of operational profitability, whereas a lower ratio would indicate poorer operational profitability. Financial leverage is a ratio used to analyze a company's debt and equity financing strategy. Lower multiplier ratios are always considered more conservative and more favorable than higher ratios because companies with lower ratios are less dependent on debt financing and don't have high debt servicing costs. In the same time, ROE is expected to rise annually because of the increasing net profit margin and financial leverage as a result of the share buybacks which are about to happen. Concluding, we foresee a very promising five-year period for OTE and its ROE.

Appendix 12: Various Metrics Versus

Dupont Analysis							
Company Name	Asset Turnover	Pretax Margin %	Pretax ROA %	Total Assets/Common Equity	ROE Total Equity %	Earnings Retention Rate	Reinvestment Rate %
OTE SA	0.52	4.52	2.35	2.75	2.87	-156.64	-0.46
DEUTSCHE TELEKOM AG	0.50	6.56	3.30	4.96	11.53	12.16	6.34
ORANGE SA	0.43	7.78	3.32	3.89	6.50	-6.56	-0.48
KPN NV	0.46	9.87	4.54	5.91	18.16	-10	-3.30
PROXIMUS SA	0.69	12.89	8.89	2.93	18.39	35.19	1.20
VODAFONE PLC	0.32	8.45	2.67	2.15	6.42	-72.21	0.71
TELEFONICA SA	0.44	8.83	3.85	12.08	28.91	42.14	4.02
SWISSCOM AG	0.54	16.90	9.06	3.07	22.16	27.42	6.07
ELISA	0.70	22.56	15.77	2.54	33.49	21.80	9.65
COMPETITORS AVERAGE	0.51	11.73	6.43	4.69	18.20	6.24	3.03

Leverage					
Company Name	Total Assets/Common Equity	Total Debt/Total Equity(%)	Long Term Debt to Total Capital(%)	Long Term Debt to Total Equity (%)	Forward Total Debt to EBITDA
OTE SA	2.75	79.20	29.10	55.44	0.90
DEUTSCHE TELEKOM AG	4.96	167.61	56.11	156.79	2.21
ORANGE SA	3.89	174.47	47.37	130.02	2.68
KPN NV	5.91	382.77	79.12	381.97	3.62
PROXIMUS SA	2.93	85.05	35.18	65.10	1.05
VODAFONE PLC	2.15	63.95	29.67	48.65	2.22
TELEFONICA SA	12.08	639.35	73.33	542.20	3.10
SWISSCOM AG	3.07	107.45	40.27	83.54	1.31
ELISA	2.54	107.48	43.56	90.38	1.54
COMPETITORS AVERAGE	4.69	216.02	50.58	187.33	2.22

Profitability					
Company Name	Gross Margin(%)	Operating Margin(%)	Pretax Margin(%)	FCF Margin(%)	Net Profit Margin(%)
OTE SA	30.88	15.90	4.52	-3.05	1.74
DEUTSCHE TELEKOM AG	15.72	12.48	6.56	10.74	4.62
ORANGE SA	22.38	12.50	7.78	5.59	3.92
KPN NV	23.56	15.42	9.87	17.24	6.68
PROXIMUS SA	24.62	14.06	12.89	8.38	9.10
VODAFONE PLC	25.11	9.27	8.45	18.14	9.47
TELEFONICA SA	23.67	13.57	8.83	9.24	5.49
SWISSCOM AG	35.90	23.70	16.90	14.69	13.46
ELISA	31.36	21.36	22.56	13.76	18.83
COMPETITORS AVERAGE	25.29	15.30	11.73	12.22	8.95

Liquidity			
Company Name	Quick Ratio	Current Ratio	Cash Ratio
OTE SA	0.87	0.90	0.48
DEUTSCHE TELEKOM AG	0.67	0.74	0.13
ORANGE SA	0.68	0.71	0.30
KPN NV	1.62	1.65	1.20
PROXIMUS SA	0.61	0.66	0.12
VODAFONE PLC	0.84	0.85	0.43
TELEFONICA SA	0.68	0.72	0.25
SWISSCOM AG	0.69	0.72	0.10
ELISA	0.86	0.99	0.08
COMPETITORS AVERAGE	0.83	0.88	0.33

Appendix 13: OTE Financials

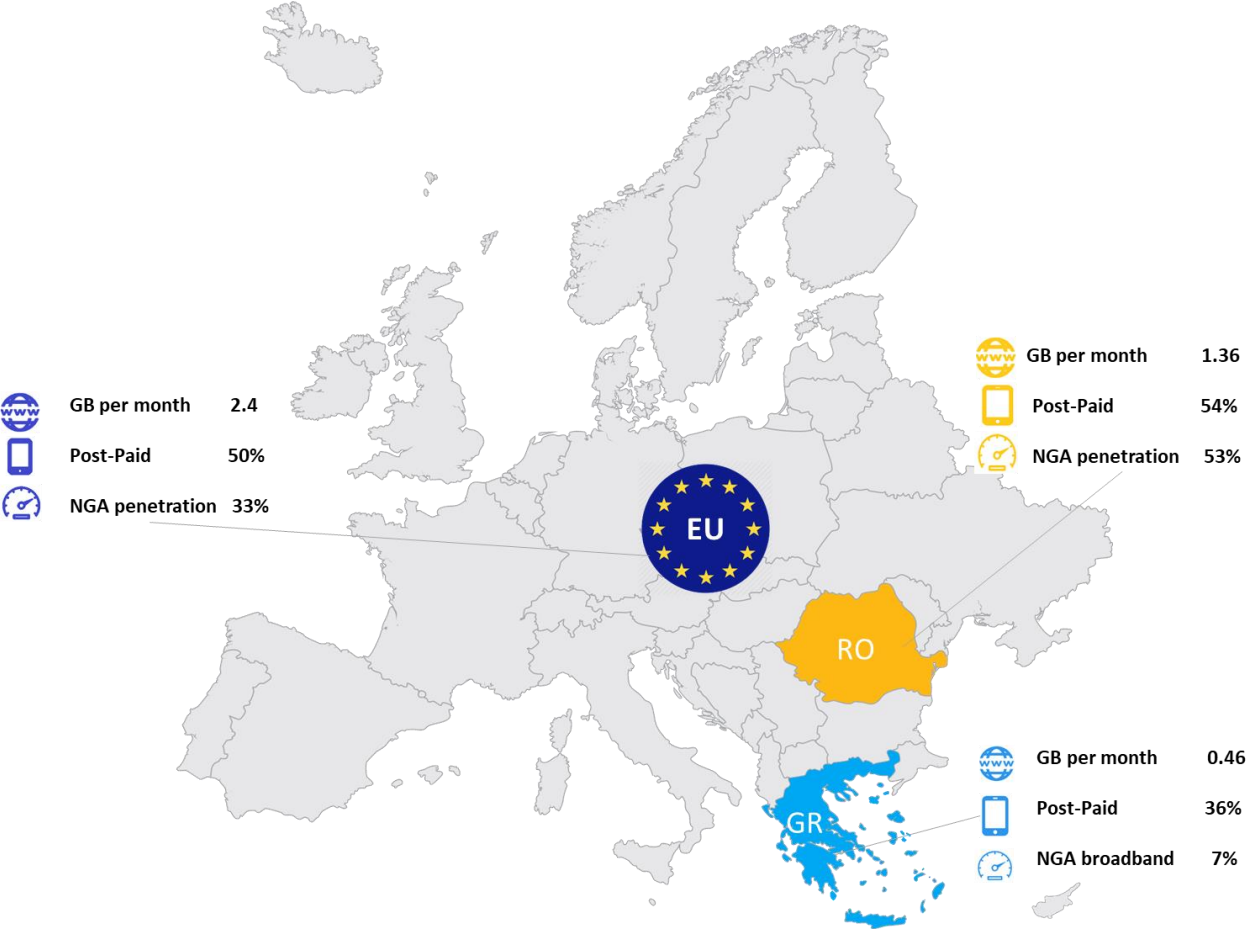
€ in Millions	2016	2017	2018E	2019E	2020E	2021E	2022E
OTE Profitability							
Gross margin	30.71%	30.88%	37.75%	39.34%	40.53%	42.27%	44.08%
Operating margin	15.86%	15.90%	14.94%	17.59%	18.76%	20.75%	22.48%
FCF margin	9.58%	-3.05%	6.72%	9.29%	10.40%	12.10%	13.67%
Pretax margin	6.46%	4.52%	4.91%	7.47%	8.79%	11.01%	13.21%
Net profit margin	3.58%	1.74%	2.63%	4.41%	5.32%	6.88%	8.42%
OTE Solvency							
Debt	2,125.10	2,040.70	1,833.92	2,047.57	1,872.19	1,781.81	1,995.43
Debt/Asset ratio	28%	29%	27%	31%	30%	30%	33%
Debt/Equity ratio	80%	79%	77%	97%	93%	93%	101%
Net debt/EBITDA	0.41	0.57	0.50	0.58	0.59	0.55	0.50
Asset/Equity	2.86	2.74	2.86	3.11	3.09	3.11	3.28
Interest coverage	2.58	2.19	2.45	3.19	3.67	4.54	5.48
OTE Liquidity							
Current ratio	1.12	0.90	0.86	0.79	0.97	0.80	1.10
Quick ratio	1.08	0.87	0.82	0.76	0.92	0.76	1.03
Cash ratio	0.65	0.48	0.54	0.51	0.59	0.48	0.69

Appendix 14: OTE Subsidiaries

Country	Company	Line of Business	Currency	Revenue	Contribution	Share
Greece	COSMOTE S.A.	Mobile telecommunications services	EUR	1,088.61		100%
	COSMO-ONE HELLAS MARKET SITE S.A.	E-commerce services	EUR	1.68		61.7%
	OTESAT-MARITEL S.A.	Satellite telecommunications services	EUR	21.55		94%
	OTE ESTATE S.A.	Real estate	EUR	67.56		100%
	OTE ACADEMY S.A.	Training services	EUR	5.41		100%
	OTE INSURANCE AGENCY S.A.	Insurance brokerage services	EUR	1.45		100%
	GERMANOS S.A.	Retail services	EUR	299.46		100%
	COSMOTE E-VALUE	Marketing services	EUR	2.13		100%
	OTE INTERNATIONAL SOLUTIONS S.A.	Wholesale telephony services	EUR	333.48		100%
	COSMOTE TV PRODUCTIONS	TV Productions and services	EUR	1.19		100%
	E-VALUE DEBTORS AWARENESS ONE PERSON LTD	Overdue accounts management	EUR	2.13		100%
	OTE RURAL NORTH SPECIAL PURPOSE DEVELOPMENT AND MANAGEMENT OF BROADBAND INFRASTRUCTURE S.A.	Wholesale broadband and infrastructure services	EUR	4.25		100%
	OTE RURAL SOUTH SPECIAL PURPOSE DEVELOPMENT AND MANAGEMENT OF BROADBAND INFRASTRUCTURE S.A.	Wholesale broadband and infrastructure services	EUR	13.79		100%
Romania	TELEKOM ROMANIA COMMUNICATIONS S.A.	Fixed line telephony services	EUR	608.00		54.01%
	TELEKOM ROMANIA MOBILE COMMUNICATIONS S.A.	Mobile telecommunications services	EUR	465.00		86.20%
Albania	TELEKOM ALBANIA (SOLD 16/01/2019)	Mobile telecommunications services	EUR	68.00		99.76%
UK	OTE PLC	Financing services	EUR	101.76		100%

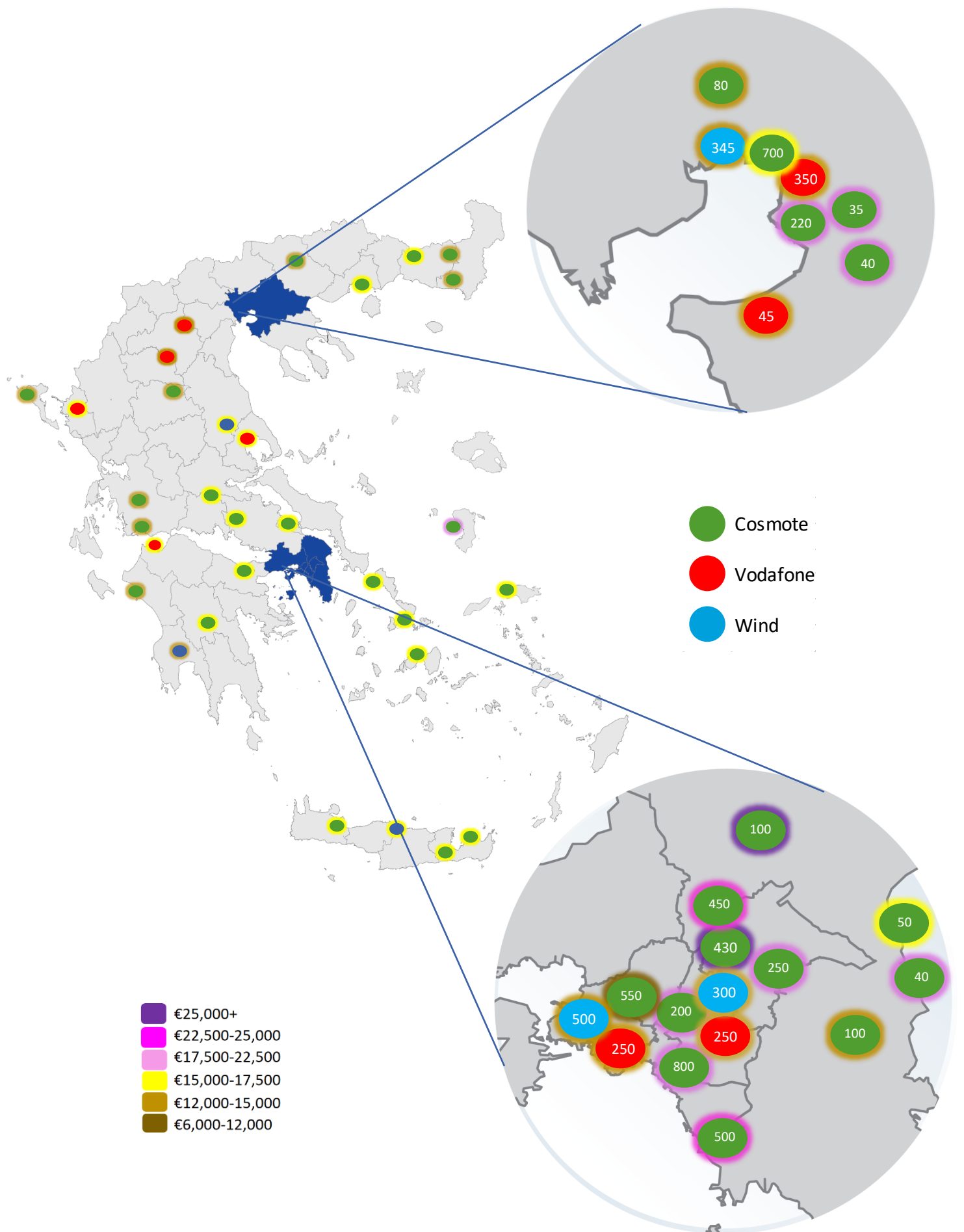
Appendix 15: EU Penetrations

Some of the assumptions made concerning the revenue drivers of OTE were based on various average EU penetration indices. To begin with, Greeks and Romanians consume far less GBs per month than their European peers. Greek and Romanian consumption of GB is only 0.46 GB and 1.36GB per month, respectively, while the average European one is 2.4 GB per month. As digital integration becomes more and more intense, it is expected that, by 2022, the average mobile data consumption in Greece will have reached 1 GB and in Romania the average European level, leading to increased revenues for OTE from mobile business. What is more, data consumption increase will be boosted by an increase in the number of post-paid contracts, which provide customers with complete packages, in OTE’s customer base. It is remarkable that only 36% of Greek mobile subscribers are on a post-paid contract while the same ratio for Europe is 50%. For OTE, post-paid subscribers comprise only 20% of its total mobile subscribers. The ARPU from post-paid contracts is 25€, while that from pre-paid ones is 4€. It is apparent that there is a high potential for revenue growth from a trend switch to post-paid contracts. OTE has already started marketing campaigns to promote post-paid contracts and it is expected that by 2022 these subscribers will comprise 40% of its customer base. Finally, regarding the broadband NGA take up, Greece significantly lags behind other European countries. It is notable that in the EU, the average NGA take up is 33%, while in Greece is only 7%. OTE is ahead from its competitors in this market since 20% of its broadband subscribers have a VDSL connection. The necessity for high-speed internet and the projected increased disposable income of Greeks will make the market trend shift towards NGA broadband. We expect that, by 2022, NGA broadband connections will comprise 75% of OTE’s total broadband connections.



Appendix 16: Strong View on VDSL

Currently, OTE has developed a fiber network of 43,000 km covering the majority of Greece. Having outbid the respective auctions and the bids of its competitors, OTE has already updated 13,000 cabinets to suit the new fiber network. In the years to come, based on auctions carried out by Greek regulator, OTE will develop a network of 15,700 cabinets while its competitors only one of 5,700 combined. Consequently, OTE will benefit from this investment and increase its broadband revenues from upselling and increased FTTC take up. In the following images, both the cabinet and income allocation are represented. Apparently, OTE will provide high-speed broadband services to a much wider part of the Greek population Furthermore, it is apparent that OTE has invested in areas across all Greece, while in the meantime, its competitors have built the new network in specific cities over Greece reaching a much smaller percentage of the Greek population. The main urban centers in Greece are Athens and Thessaloniki. By zooming into these cities, we can clearly see the allocation of cabinets among the three competitors. It is notable that OTE has invested into areas all over Athens and Thessaloniki of both high and low income, while its competitors have mainly invested in areas of Attica and Thessaloniki where disposable income is significantly lower. Disposable income is an essential factor, since the fiber technology is significantly more expensive than the traditional copper one, and therefore the high-speed internet is anticipated to be adopted faster in these wealthy regions. The same image can be observed in the rest of Greece and as a result, we can assume that OTE will have a higher increase in its revenues from fiber broadband than its competitors.



Appendix 17: Corporate Governance Assessment

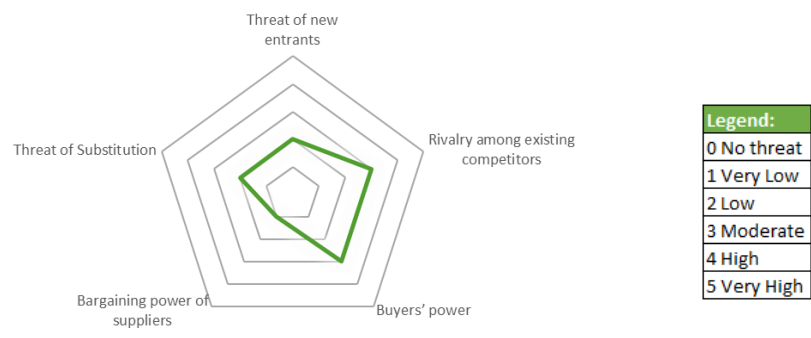
Proper corporate governance is of paramount importance to a company. When executed effectively, it can prevent corporate scandals, fraud and criminal liability of the company. In order to provide an extensive and more comprehensive picture of OTE's Corporate Governance, a Corporate Governance Assessment was run.

Corporate Governance Assessment	SCORE
1. Board Structure	B+
a. The independent directors represent 20% of the board, OTE seems to follow the minimum requirements forced by the law, but does not follow the recommendation of Corporate Governance Code of at least 33%. b. The BoD members have the right to participate in BoD meetings via electronic means. c. Strong financial and business administration background of BoD. d. If a BoD member does not participate to any meeting for more than 6 months, the member will lose its position. This measure was taken in order to avoid inactivity of the board. e. The election of the BoD members is conducted every 3 years, earlier than the 6 year indicated by the law. f. CEO duality, but an independent Vice-Chairman is appointed. g. 20% & 25% women on BoD and Management Team respectively. h. No clearly published status of remuneration to BoD members which affects the transparency of procedures and goals. i. No process in which if it is proven that a present or previous BoD member has manipulated the earnings of the company, he will have to return back its remuneration.	
2. Audit & Compensation Committee	B
a. 66% of the Audit and 33% of the Compensation committee are independent directors, fully complying with the indications of law and Corporate Governance Code. b. Independent Audit and Compensation committee Chairperson, but former CFO of OTE. c. No Nomination Committee for the elections of candidates for BoD members.	
3. Shareholder rights	B-
a. Shareholders have the right to participate in the General Meetings via electronic means. b. The company has the charters of BoD and Audit Committee published for everyone, a practise only a few companies apply in Greece. c. No specific procedure whereby the independent Vice-Chairman may be available to the shareholders, in order to discuss issues about the company. d. The remuneration policy of BoD is not approved by the shareholders.	
Total Score: 71% (B+) Source: Thompson Reuters, Team Assessment	
Rating levels 100% - 90% Excellent 90% - 80% Very Good 80% - 70% Good 70% - 60% Satisfactory	

Appendix 18: Board of Directors

Position	Name	Information
CHAIRMAN BOD & CEO	Michael Tsamaz (Appointed as CEO in 2010)	· Business administration degree · Over 18 years of experience in CEO & BoD member for a number of OTE & COSMOTE international subsidiaries
MEMBER BOD & CFO	Charalampos Mazarakis (Appointed as CFO in 2012)	· Degree and master in business administration · Past CFO for National Bank of Greece · CFO & COO & BoD member of various Vodafone subsidiaries
VICE-CHAIRMAN BOD	Panagiotis Tabourlos (Member since 2017)	· Degrees in Economics and Business Administration · Past CFO at Frigoglass SA
MEMBER BOD	Robert Hauber (Member since 2017)	· Chairman of Magyar Telekom · Past CFO of Slovak Telekom
MEMBER BOD	Panagiotis Skevofylax (Member since 2017)	· Degrees in Political Economy & Analysis · Worked as consultant in strategy and communications
MEMBER BOD	Andreas Psathas (Member since 2016)	· Engineering expertise
MEMBER BOD	Srinivasan Gopalan (Member since 2017)	· Business administration degrees · Member of BoD of Deutsche Telekom
MEMBER BOD	Kyra Orth (Member since 2018)	· Degrees in Law · Senior Vice President Top Executive Management of Deutsche Telekom
MEMBER BOD	Michael Wilkens (Member since 2018)	· Economic Background · Deutsche Telekom's Senior Vice President Group Controlling
MEMBER BOD	Vasiliki Kouforizou (Member since 2018)	· Economic Background · Auditor at Ministry of Finance of Greece

Appendix 19: Porter's Five Forces



Threat of new Entrants-Low: Generally, it is extremely expensive for a company to enter the telecommunications market. The necessary infrastructure requires extremely high Capex which makes the telecommunications market rather hostile. Moreover, the services offered entails the purchase of expensive signal licenses and TV rights. However, in Greece, the regulator, in order to avoid monopoly, regulates the market and allows other companies to buy in the wholesale market the right to use OTE's infrastructure making the market friendlier to new entrants. In spite of this, it is not likely that any other company will enter the competition in the Greek Market. As a result of the financial crisis, telecommunications companies have already reduced their prices in order to fit the new market terms. A new entrant would have to offer unbearably low prices to enter the highly competitive telecom market. Taking the above into account, we assume that the probability of a new entrant in the market is low.

Rivalry among existing Competitors-Moderate: Telecommunications is a sector that the competition is very intense. Since there is differentiation in terms of quality of service and coverage and hence the switching costs are not negligible. All companies offer the same product (voice, broadband, mobile data) using a similar technology. Consequently, companies, in order to keep customers or to attract new ones, need to differentiate in other sectors of business. On top of that OTE, because of his Significant Market Power (SMG), is obliged by the regulatory framework to charge higher prices than those applied by its competitors for the same service. In order to counterbalance this disadvantage, OTE has focused on offering high-quality services. That is the reason why, this has not been proven to be a hindrance for OTE since it has maintained the leading role in terms of market share in Greece in all categories of telco due to its high quality services (faster speed, almost 100% coverage, more diverse TV content) and customer satisfaction services, leading to its competitive advantage against its competitors. Moreover, it is notable that a price war is not waging in the Greek market. On the contrary, it seems that the prices are stable. However, this is not the case in Romania, where competitors are very aggressive, and operators have proceeded in extensive infrastructure overlap. Overall, the rivalry among existing competitors is of moderate intensity for OTE.

Buyers' Power-Moderate: Generally, the buyers' power is measured by the price sensitivity of the customers and the relevant switching costs. In the telco market, the price sensitivity is very high since there is low differentiation among the products offered and the switching costs are insignificant because there is neither a particular user interface nor a network of devices that require a particular operator. In Greece, there are only 3 competitors, while in Romania, there are 4 competitors. In Greece the market is relatively steady in terms of pricing and companies focus on competing on better bundles and quality of services. In Romania, on the other hand, the marketplace is at a complete contrast with that in Greece. The emergence of Digi, a very aggressive, in terms of pricing, competitor has increased greatly the bargaining power of customers.

Bargaining power of Suppliers-Very low: Generally, the bargaining power of suppliers is strong if their number is small and their magnitude is large, as well as if the product they offer is differentiated (unique characteristics and significant switching costs). In the telco market, the number of suppliers of raw material can be considered small. In addition to this, the companies of this sector have very low demands of raw material since they are limited to IT, handsets and technological equipment. In addition, the offered product by any supplier cannot be considered unique, since there is a wide variety of raw materials and combinations of them to carry out the duties of a telecommunications market. We believe that the bargaining power of suppliers is very low.

Threat of Substitution-Low: A substitute product uses a different technology to solve the same necessity. Telco companies have experienced substitution in recent years with the emergence of wireless devices and other technological breakthroughs. These breakthroughs, such as IP telephone, email and instant messaging have reduced the revenues by SMS and traditional voice. The rate of SMS is fading out in the market as more and more social media emerges in the market. Apart from messaging, the industry has also witnessed an upswing of using VoIP calls rather than normal voice calls over mobile. However, telecommunications companies have managed to capitalize from this new technology and transform their revenue sources gaining income from increased mobile data consumption and broadband subscriptions. OTE is a technology leader in Greece and offers every service available around telcos such as voice, internet and pay TV. Telecommunications companies are also well poised to capitalize on the revolution of the Internet of Things since it requires both fast broadband internet and 5G technologies to function. Telco companies not only will not be substituted by other technologies but will be rendered even more necessary in our daily lives. For this reason, we believe the substitution risk is low.

We conducted a Political, Economic, Social and Technological (PEST) analysis in order to understand the macro-environmental factors that affect the business activity of OTE. Political and Economic factors have significant power since Greece is in transitional stage after the successful completion of the third adjustment program and the expected exit to the markets, while the upcoming elections increase the uncertainty about the stability of the economy. Social and Technological factors seem to be propitious for the growing strategy of OTE for the reason that they specify an assimilative and constantly developing environment.

Political Factors

- The entrance of the Greek economy into an electoral cycle with increasing political competition combined with the change of the election law may send contradictory messages about economic political commitments and disrupt the favorable expectations that have been shaped.
- Possible decision of the Council of State to give back to pensioners and employees of the public sector up to €24 billion (approximately 13% of the Greek GDP) may evaporate the primary government surplus and threaten the exit to the markets by increasing the spreads again.
- Discontinuation of the structural reforms due to imminent elections in 2019.
- Geopolitical conflicts with Turkey, FYROM and Albania may cause concerns to the global markets and increase Greek spreads.

Economic Factors

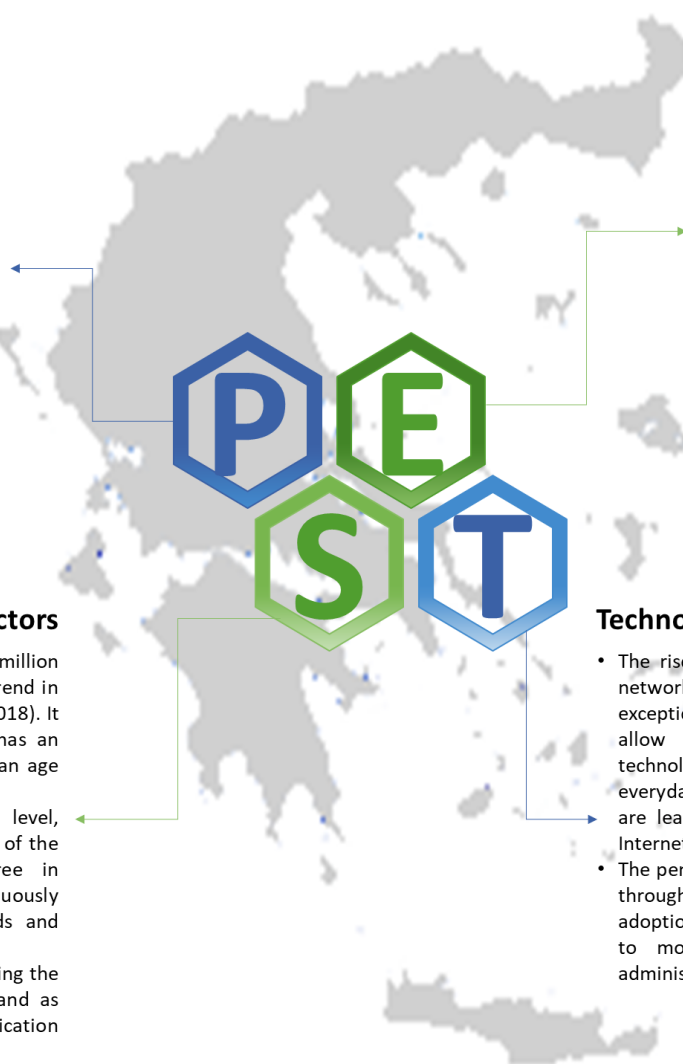
- The rise of the Gross Domestic Product (GDP) and the gradual decline of the unemployment rate will positive affect the available income and consumption.
- The improvement of the Greek economy along with the amelioration of the banking system, are about to reduce the interest rates and allow companies to easier access to credit.
- The negotiable decrease of the business tax rate, from 29% to 28%, will encourage the business activity.

Social Factors

- Greek population reaches 11 million with a negative growth rate trend in the recent years (-0.07% in 2018). It is obvious that the country has an aging population as the median age observed is 44.9.
- Due to the high educational level, Greek citizens (in Greece 31% of the population possess a degree in Tertiary Education) continuously adapt to technological trends and innovations.
- Consumers are increasingly using the internet for their purchases and as an alternative way of communication through the social media.

Technological Factors


- The rise of the optic fibers and 5G network would be able to offer exceptional services to its users and allow the passage to new technologies that will affect people's everyday lives. These technologies are leading to the adoption of the Internet of Things (IoT) mindset.
- The penetration of new technologies through digitalization and their adoption from the businesses, leads to more effective and low-cost administration.




Appendix 21: SWOT analysis

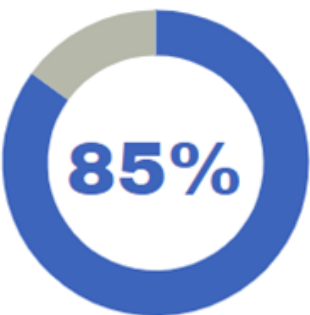
In order to identify the internal and external factors that are favorable and unfavorable into achieving the business goals of OTE group, a Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis of was performed. OTE holds a competitive advantage in terms of infrastructure and market position, while the main weaknesses are identified in the strict control of the market from the regulator and the underperformance of Romanian segment. Opportunities that will support the revenues, such as the increase in data consumption and the upselling trend, are presented despite the threats from the increased competition and the Greek economic uncertainty.

- 
- ### Strengths
- Leading telecommunication player with stable revenues in a bad economic environment
 - Strong brand name and social profile
 - Excellence in technology and infrastructure, both in fixed and mobile business
 - Strong retail sales outlets due to the acquisition of Germanos network of branches in 2006
 - OTE is well positioned to benefit from industry trends such as fiber since it has constructed the most extensive network in Greece
 - Exclusive broadcast of Champions League and Europa League
 - Subsidiary of the Deutsche Telekom Group

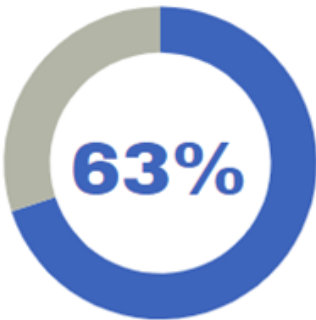
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- ### Opportunities
- Increase in mobile data consumption, supported by the increase of mobile penetration and social media usage
 - Increased ARPU from ongoing trend towards fiber and VDSL technologies
 - The rise of the 5G technology and its applications (e.g. IoT)

- ### Weaknesses
- 
- OTE is forced by the regulator to impose higher prices, while the telco market is very sensitive to pricing
 - Weak competitive position in Romania, with negative prospect for market share
 - Decline in wholesale revenues in Greece, because competitors obtained private owned cabinets

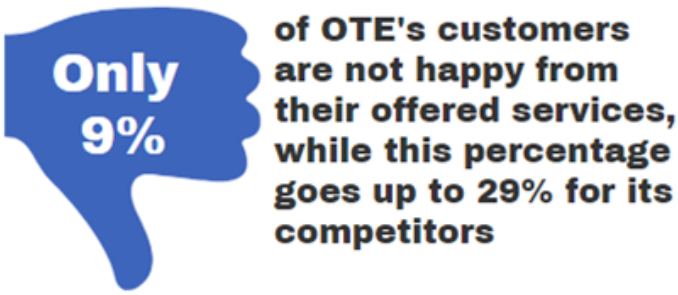
- ### Threats
- 
- A possible increase in the country risk of Greece will increase spreads and the yields of the corporate bonds that OTE has issued, resulting in expensive refinancing of the CAPEX and debt in the future
 - Increased competition after the joint acquisition of Forthnet from Vodafone and Wind
 - Aggressive pricing policy from competitors, especially in Romania
 - Need for maintaining high CAPEX, because of rapid technological changes and high obsolescence of the technological achievements



of customers have been loyal to OTE in the last three years, while only 68% for its competitors



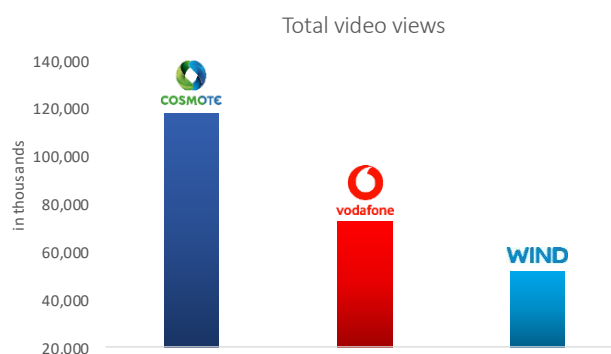
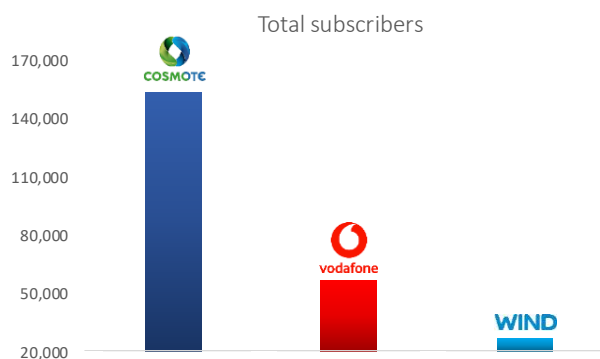
of OTE's customers value quality over price



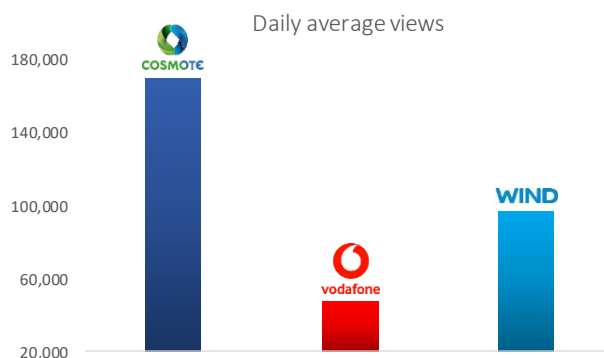
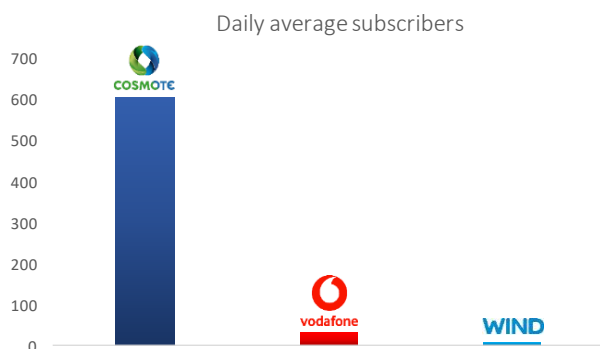
Sample of survey: 436 respondents
Age range: 15 - 60+
Sex: 55.5% male & 44.5% female
Geographic location: Greece

Appendix 23: OTE Branding Campaign

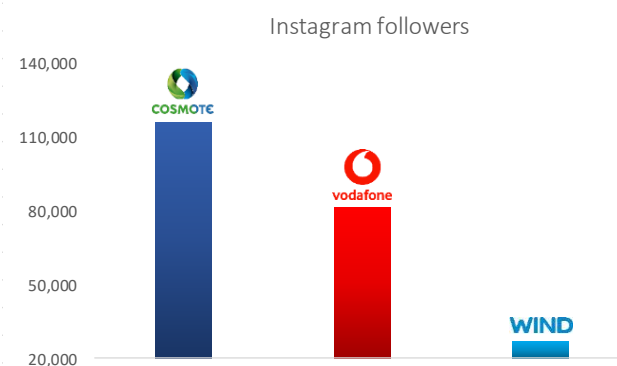
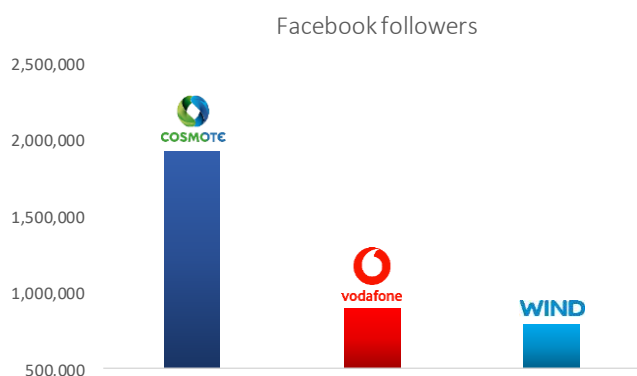
Brand is the immediate image, emotion, or message that people experience when they think of a company or product and OTE seems to have a very good understanding of this term and how important is for a company to have a strong branding campaign. OTE under the brand name of COSMOTE and Germanos, has managed to promote a modern, dynamic, customer-centric, high-performance image and associate itself as a supporter of Greek culture, art and athleticism. The online impact the company has made, can be demonstrated through YouTube, Facebook and other social media networks:



OTE has over 3.5x the Greek peer average in total subscribers, and almost 2x the average video views. In addition, OTE outperforms its competitors in the subscriber and viewer growth.



On Facebook and Instagram, more interactive platforms and less advertising-focused than YouTube, OTE also excels its peers.



Appendix 24: WACC

Weighted Country Risk Premium Calculation 2018			
Country	Revenue Comp. Weight	Country Risk Premium	Weighted Risk Premium
Greece	73%	11.86%	8.66%
Romania	25%	7.46%	1.87%
Albania	2%	12.21%	0.24%
MRP		10.77%	

Weighted Country Risk Premium Calculation 2019 - 2022			
Country	Revenue Comp. Weight	Country Risk Premium	Weighted Risk Premium
Greece	73%	11.86%	8.65%
Romania	27%	7.46%	2.01%
MRP		10.66%	

Weighted Country Risk Premium Calculation 2022 - ∞			
Country	Revenue Comp. Weight	Country Risk Premium	Weighted Risk Premium
Greece	73%	9.02%	6.58%
Romania	27%	7.46%	2.01%
MRP		8.59%	

Cost of Debt			
Loan	Remaining Sum	Interest %	Maturity Date
EBDR €339mn	113	3.50%	16/9/2019
BTSDB €50mn	16.33	3.50%	16/9/2019
EBDR €65mn	65	2.90%	9/7/2020
EBDR €85mn	60.7	2.95%	10/1/2021
EIB €150mn	128.6	2.81%	23/1/2025
Bond		Interest %	Maturity Date
€350mn	-	4.38%	2/12/2019
€700mn	-	3.50%	9/7/2020
€400mn	-	2.38%	18/7/2022
Cost of Debt		3.36%	

Calculating the WACC. In order to calculate the WACC the Group's cost of debt and cost of equity had to be calculated. We estimated weighted country averages since OTE's revenues sources come from three different countries with completely different economies. For 2018 we estimated a WACC of 9.38% while for 2019-2022 the WACC was calculated as 9.31% after removing the contributions of the Albanian subsidiary in the revenues. For the period after 2022, we reduced the MRP of Greece to 9.02%. This was done on the premises that Greek economy will continue to recover and reach a stable state, therefore posing lower risk to investors. The WACC for that second stage of our model is 7.85%.

WACC computation			
	2018	2019-2022	2022-∞
10yr German Corp. Bond	1.60%	1.60%	1.60%
Avg Market Risk Premium	10.77%	10.66%	8.24%
Beta	0.93	0.93	0.93
Cost of Equity	11.61%	11.52%	9.60%
Cost of Debt	3.36%	3.36%	3.36%
Tax Rate	29%	29%	29%
WACC	9.38%	9.31%	7.85%

Calculating the cost of debt. Each debt liability of OTE was examined to calculate its cost of debt. The result was a cost of debt of 3.36%.

gretl: model 1				
File Edit Tests Save Graphs Analysis LaTeX				
Model 1: OLS, using observations 1-1233				
Dependent variable: OTERETURN				
	coefficient	std. error	t-ratio	p-value
const	0.000691476	0.000495692	1.395	0.1633
GDRETURNS	0.930658	0.0246408	37.77	6.06e-208 ***
Mean dependent var	0.000406	S.D. dependent var	0.025561	
Sum squared resid	0.372858	S.E. of regression	0.017404	
R-squared	0.536781	Adjusted R-squared	0.536405	
F(1, 1231)	1426.493	P-value(F)	6.1e-208	
Log-likelihood	3246.418	Akaike criterion	-6488.836	
Schwarz criterion	-6478.602	Hannan-Quinn	-6484.986	

Beta Calculation. The daily returns of OTE's stock and ATHEX for the last five years (01/01/14 to 31/12/2018) were used to calculate the beta. We estimated a beta of 0.93 suggesting that OTE is slightly less volatile than the Greek Stock Market.

Weighted Country Risk Premium Calculation 2018			
Country	Revenue Comp. Weight	Country Risk Premium	Weighted Risk Premium
Greece	73%	11.86%	8.66%
Romania	25%	7.46%	1.87%
Albania	2%	12.21%	0.24%
MRP		10.77%	

Weighted Country Risk Premium Calculation 2019 - 2022			
Country	Revenue Comp. Weight	Country Risk Premium	Weighted Risk Premium
Greece	73%	11.86%	8.65%
Romania	27%	7.46%	2.01%
MRP		10.66%	

Weighted Country Risk Premium Calculation 2022 - ∞			
Country	Revenue Comp. Weight	Country Risk Premium	Weighted Risk Premium
Greece	73%	9.02%	6.58%
Romania	27%	7.46%	2.01%
MRP		8.59%	

Calculating weighted average country risk premium. The adjusted cost of equity was calculated using the weighted average country risk premium. The weights were determined using the 2017 OTE's geographic revenue composition to weight each country. For 2018, we used the risk premium for Greece, Romania and Albania. In 16/01/2019 OTE announced the sale of its subsidiary in Albania (Telekom Albania) and therefore, we calculated a new weighted average country risk premium without the revenues from the Albanian subsidiary from 2019 and on. Consequently, the contribution of Romanian revenues, as a percent to total revenues increases to 27% while Greek revenues remain at the same level of 73%. It is notable that the sale of Telekom Albania resulted in a 0.11% reduction in OTE's weighted average country risk premium from 10.77% to 10.66%. The risk premia were obtained from the NYU Professor Aswath Damodaran's database.

Calculating Cost of Equity. After finding the weighted average country risk premium we were able to calculate the cost of equity for OTE. The CAPM formula $E(R) = R_f + R_m \cdot b$ was used, and we calculated two different costs of equity: For 2018 Albanian contribution is included while for 2019 and onwards it was removed from our calculations. For 2018, the result was a cost of equity of 11.61%, while for 2019 was estimated at 11.52%. For the second stage of the analysis we calculated a cost of equity of 9.60%

Cost of Equity 2018		
Country	Revenue Composition	Cost of equity
Greece	73%	12.63%
Romania	25%	8.54%
Albania	2%	12.96%
Cost of equity		11.61%

Cost of Equity 2019 - 2022		
Country	Revenue Composition	Cost of equity
Greece	73%	12.63%
Romania	27%	8.54%
Cost of equity		11.52%

Cost of Equity 2022 - ∞		
Country	Revenue Composition	Cost of equity
Greece	73%	9.99%
Romania	27%	8.54%
Cost of equity		9.60%

Terminal Growth Calculation		
Country	Revenue Composition	GDP Growth
Greece	73%	1.95%
Romania	27%	3.67%
Average		2.41%

German Government Bond
(01/01/2009-31/12/2018)
1.60%

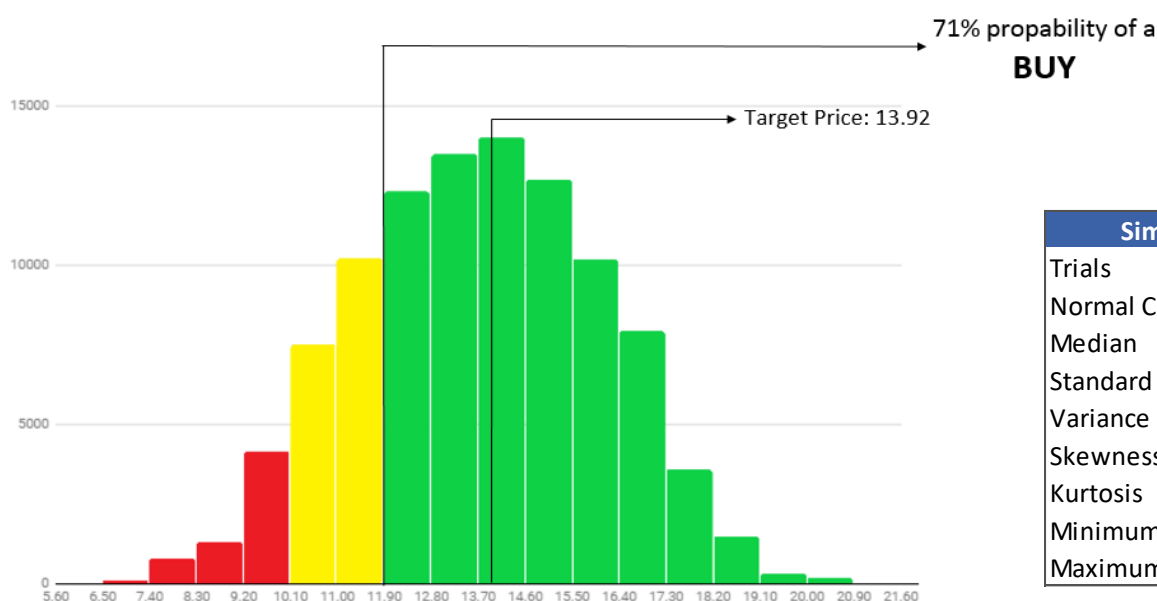
Calculating the Terminal Growth. It can be estimated either by using the weighted country average of the expected GDP growth or by using the yield of a suitable government bond. The weighted GDP Growth rate was taken as the expected 5-year average growth for Greece and Romania. Data was obtained from IMF and OECD databases. The rates were weighted by the revenue proportion of each of them. We obtained a 2.41% rate. However, we rejected it since we believe that it does not reflect the expected growth of OTE and the economy. Moreover, we did not use the return of the 10-year Greek government bond (4.18%) because its yields are highly influenced by the Greek financial crisis and this rate does not reflect the expected nominal growth of OTE. Consequently, we preferred to use the average 10-year German government bond (1.6%) yield since it may be more appropriate to reflect the nominal growth of the Group.

Appendix 25: Monte Carlo

OTE's valuation is mostly based on predictions about the total revenues and expenditures of the group. Although, due to the local and international presence of OTE some additional risks exist in both. As a result, we performed a Monte Carlo simulation in order to obtain a clear view of the sensitivity of our DCF valuation if fluctuations occur in the main variables of it. The simulation variables taken under consideration are (1) revenues, (2) terminal growth, (3) personnel costs, (4) depreciation, (5) Capital Expenditure, (6) debt, (7) cash and cash equivalents and (8) change in working capital.

Variable	Minimum	Normal Case	Maximum
Revenues	-1.63%	0.45%	3.04%
Terminal Growth	1.10%	1.60%	2.10%
Personnel costs	-13.63%	-5.26%	3.10%
Depreciation	-3.84%	1.50%	6.83%
Capital Expenditure	-24.76%	-12.23%	0.31%
Debt	-24.83%	-10.13%	4.57%
Cash & Cash Equivalent	-30.74%	-11.48%	7.79%
Change in Working Capital	-89.87	-39.87	10.87

After executing 100,000 simulations we observe that the outcome of the Monte Carlo is a representative of the group's strong performance, resulting to a 71% of BUY probability.



Simulation Statistic	
Trials	100,000
Normal Case	13.92
Median	13.83
Standard Deviation	2.154
Variance	4.643
Skewness	0.022
Kurtosis	-0.549
Minimum	6.216
Maximum	20.544

Appendix 26: Scenario Analysis

Base Case (€ in millions)	2018E	2019E	2020E	2021E	2022E
Greek fixed	1,604.50	1,624.30	1,645.80	1,670.70	1,706.90
Annual Growth	1.3%	1.2%	1.3%	1.5%	2.2%
Romania fixed	586	573.5	561.1	549.1	537.2
Annual Growth	-3.6%	-2.1%	-2.2%	-2.1%	-2.2%
Greek mobile	1,222.90	1,242.60	1,262.10	1,281.30	1,299.90
Annual Growth	1.7%	1.6%	1.6%	1.5%	1.5%
Romania mobile	456.2	450.2	443.8	437	429.8
Annual Growth	-1.9%	-1.3%	-1.4%	-1.5%	-1.6%
Albania mobile	63.6	-	-	-	-
Annual Growth	-6.6%	-	-	-	-
Total Annual Growth	0.45%	-1.10%	0.58%	0.65%	0.92%

Assumptions Base Case	
Average MRP 2019-2022	10.67%
WACC 2018	9.38%
WACC 2019-2022	9.31%
WACC 2nd stage	7.85%
Sales Growth Rate	base scenario

Bull Case (€ in millions)	2018E	2019E	2020E	2021E	2022E
Greek fixed	1,636.20	1,689.10	1,745.30	1,806.60	1,881.90
Annual Growth	3.3%	3.2%	3.3%	3.5%	4.2%
Romania fixed	598.1	597.3	596.4	595.5	594.6
Annual Growth	-1.58%	-0.13%	-0.15%	-0.15%	-0.15%
Greek mobile	1,246.90	1,292	1,338.10	1,385.20	1,433
Annual Growth	3.7%	3.6%	3.6%	3.5%	3.5%
Romania mobile	465.5	468.7	471.4	473.6	475.3
Annual Growth	0.2%	0.7%	0.6%	0.5%	0.4%
Albania mobile	65	-	-	-	-
Annual Growth	-4.57%	-	-	-	-
Total Annual Growth	2.61%	0.77%	2.61%	2.68%	2.95%

Assumptions Bull Case	
Average MRP 2019-2022	10.46%
WACC 2018	8.83%
WACC 2019-2022	8.66%
WACC 2nd stage	7.46%
Sales Growth Rate	base scenario +2%

Bear Case (€ in millions)	2018E	2019E	2020E	2021E	2022E
Greek fixed	1,572.80	1,560.80	1,550.20	1,542.70	1,545.20
Annual Growth	-0.7%	-0.8%	-0.7%	-0.5%	0.2%
Romania fixed	585.9	573.5	561.1	549.1	537.2
Annual Growth	-3.6%	-2.1%	-2.2%	-2.1%	-2.2%
Greek mobile	1,198.80	1,194.20	1,189.10	1,183.30	1,176.90
Annual Growth	-0.3%	-0.4%	-0.4%	-0.5%	-0.5%
Romania mobile	446.9	432.1	417.3	402.6	387.9
Annual Growth	-3.9%	-3.3%	-3.4%	-3.5%	-3.7%
Albania mobile	62.26	-	-	-	-
Annual Growth	-8.6%	-	-	-	-
Total Annual Growth	-1.15%	-2.91%	-1.16%	-1.10%	-0.84%

Assumptions Bear Case	
Average MRP 2019-2022	11.04%
WACC 2018	9.06%
WACC 2019-2022	8.86%
WACC 2nd stage	8.15%
Sales Growth Rate	base scenario -2%

Appendix 27: OTE vs ATHEX Price

The indexing methodology can be used with various types of economic data. It can be an effective means of normalizing data to a common starting point and observing how variables change over time relative to each other. It is a common method used by economists and business people to enhance perspective and understanding of economic trends.

In this chart, the past values of OTE's share and ATHEX index are plotted from 01/01/2014 to 01/02/2019. It is notable that OTE's gain is 8.81%, while ATHEX is reporting a loss of -48%. It can be stated that OTE is a much stronger and conservative stock than the rest of the Greek Stock Market.



What is more, since 01/01/2017 until 01/02/2019 OTE has recorded a positive return of 22% while ATHEX is recording a loss of -1%.



A safe haven is an investment that is expected to retain or increase in value during times of market turbulence. OTE is a haven asset of the Greek economy since it has managed to generate positive returns in a very bad economic environment. Meanwhile, the Greek economy is recovering and OTE's prospects are positive. We expect OTE to continue to outperform the Greek market index. The expected capital gains, the increasing dividends and the security of this asset render OTE a very attractive stock of the Greek Market.