A Work Project, presented as part of the requirements for the Award of a Master's degree in Finance from the Nova School of Business and Economics.

CFA SOCIETY RESEARCH CHALLENGE FOR NOS SGPS

MONETIZATION OF 5G TECHNOLOGY IN THE PORTUGUESE MARKET

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Abstract

This academic paper scrutinizes NOS SGPA S.A.'s market valuation and challenges amidst evolving strategies. It explores NOS's present trade position and the assessment suggesting a promising potential upside. NOS has navigated market turbulences predating COVID, emphasizing resilience through its telecom core's stability and dividend-yielding nature. This report argues that the pandemic-induced devaluation and shifting interest rates resulted in the market's underestimation of NOS's true potential. It advocates for a comprehensive reassessment, considering NOS's pivotal role in Portugal's future connectivity landscape within telecommunications and audiovisuals.

Keywords are disclosed in the individual parts.

This work used infrastructure and resources funded by Fundação para a Ciência e a Tecnologia (UID/ECO/00124/2013, UID/ECO/00124/2019 and Social Sciences DataLab, Project 22209), POR Lisboa (LISBOA-01-0145-FEDER-007722 and Social Sciences DataLab, Project 22209) and POR Norte (Social Sciences DataLab, Project 22209).

GROUP PART

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NOS: Connect Portugal's Future

Recommendation: BUY	
Closing Price	€ 3.21
52W Price Range	3.21 – 4.46
Beta (5Y)	0.58
Market Capitalization	1.665B
Enterprise Value (Market)	3.4B
P/Sales (ttm)	1.04
P/Book (mrq)	1.75
Profitability	
ROA (ttm)	3.75%
ROE (ttm)	16.17%
Forward Dividend & Yield	0.28 (8.66%)
Statements	
Revenue (ttm)	1.58B
EBITDA	533.6B
Net Income / EPS	159.6B/0.32
Total Cash / CPS	11.94M/0.02
Total Debt	1.78B
Total Debt/Equity	188%
Book Value per Share	1.84

Exhibit 1 - NOS Historic Share Price

NOS SGPA S.A. is presently traded at €3.21 per share, suggesting an Enterprise Value of €3.4 billion. We issue a **BUY** recommendation for NOS SGPS's stock. This analysis results in a target price of €3.84 Euros, showcasing a promising 19.5% potential upside. While fundamental analysis propels our valuation, the price based on comparable companies only shows a marginal undervaluation. When focusing only on dividends investing in NOS would not be justified.

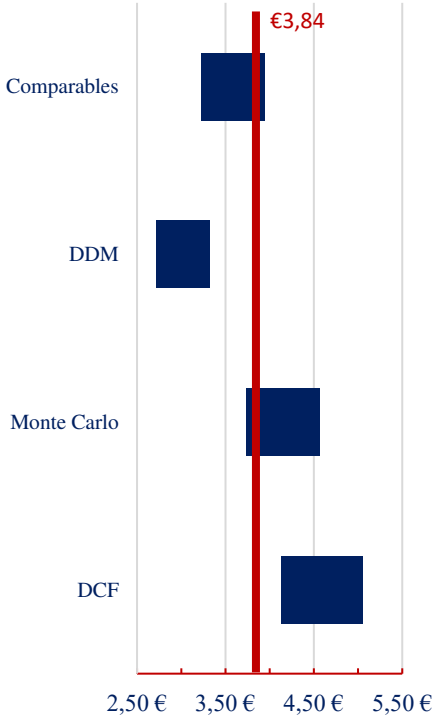
Recent years have posed challenges for NOS due to market dynamics. Before COVID, the company experienced a sustained downtrend and continuous devaluation, notably reflected in a decreasing Price/Earnings Ratio over the last decade. Its strategic focus in Home Services shifted conservatively from pursuing relative growth to contentment with absolute growth.

Despite these hurdles, NOS remains a dividend-yielding cash cow, driven by its non-cyclical telecom core, maintaining wide revenue stability even during the pandemic. Now Q3 2023 marked the second-highest revenue quarter not far from the pre-pandemic peak in Q4 2018. Current earnings are approaching levels near Q3 2018. Still, a significant valuation gap persists when compared to the pre-COVID era.

The current hurdle for NOS, influencing the broader Western world, stems from rising interest rates impacting project profitability, also in telecommunications. Despite a recent decrease in rates over the past month, there's still a considerable deviation from the zero-rate phase. NOS hasn't fully integrated the current interest level into its debt structure, presenting a challenge, although less severe than a month ago.

This equity research contends that NOS suffered devaluation due to the pandemic and changing interest rate dynamics. While not aiming to return to pre-COVID valuations, this analysis asserts that the market currently undervalues NOS's full potential. Therefore, it seeks to accurately portray the company's current position in telecommunications and audiovisuals being one of the main players connecting Portugal in the future. This analysis justifies that NOS is presently undervalued by the market in the horizon of reasonable assumptions.

Exhibit 2 - Valuation Overview



I) Business Description

NOS SGPS S.A., is a telecommunications and entertainment business. The group was created in 2013 with the merger of ZON and Optimus, and currently it has the two main segments Telecommunications (Telco) and Audiovisuals & Cinema (A&C) industries while also part-taking in joint-ventures, appendix X.

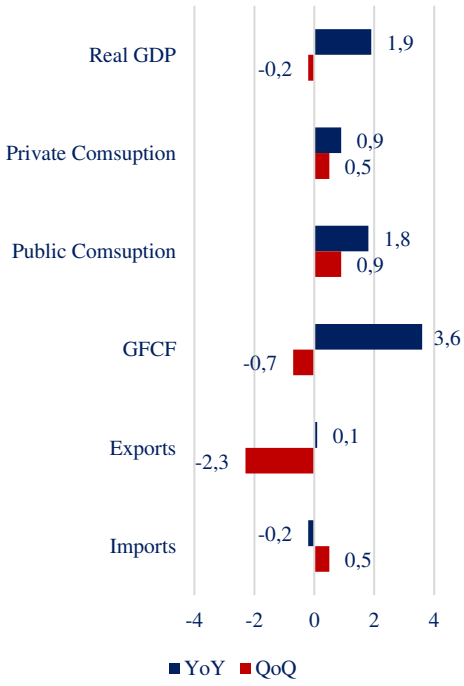
In Telco, NOS SGPS is an established top player, alongside Vodafone and Altice, offering fixed and mobile solutions for television and data, services and adjacent businesses. In A&C, NOS divides their focus between Cinemas and the distribution of Audiovisual content.

NOS engages in a variety of joint ventures, which are broadly categorized into two main groups. The first group encompasses NOS-related companies where NOS maintains over 50% ownership. Prominently, this includes NOS Audio – Sales and Distribution, S.A., which is tasked with negotiating, purchasing, and distributing content rights and other media products, in addition to managing advertising spaces on television and in cinemas. Other significant subsidiaries in this group are NOS Açores Comunicações, S.A. (84% ownership) and NOS Madeira Comunicações, S.A. (78% ownership), responsible for the communications in Portuguese archipelagos. The second group comprises companies where NOS holds a minority stake. These include Dremia, S.A. (50% ownership), ZAP (30% ownership), and SportTV, S.A. (25% ownership)

NOS has been recognized as the Portuguese operator with the fastest 5G network by Ookla®, this is the third time in a row that the company receives this award.

NOS SGPS with NOS Inovação is noted for its innovative approach to telecommunications, constantly adapting and evolving to meet the changing demands of the industry. This R&D section of the company conducts research and develops stimulating activities throughout the group, to incentivize innovation. Historically NOS has managed to adapt really well to fast paced environments with merging and rebranding strategies. (Optimus/ZON, NOS Pub/NOS Lusomundo). Demonstrating a commitment to corporate responsibility, NOS SGPS engages in initiatives that promote sustainable practices and community engagement. NOS implementing “ECO rating” in stores and sustainable financing lines.

Exhibit 3 - Portugal real GDP Q3 2023



II) Market Analysis

1) Portugal Macro Outlook

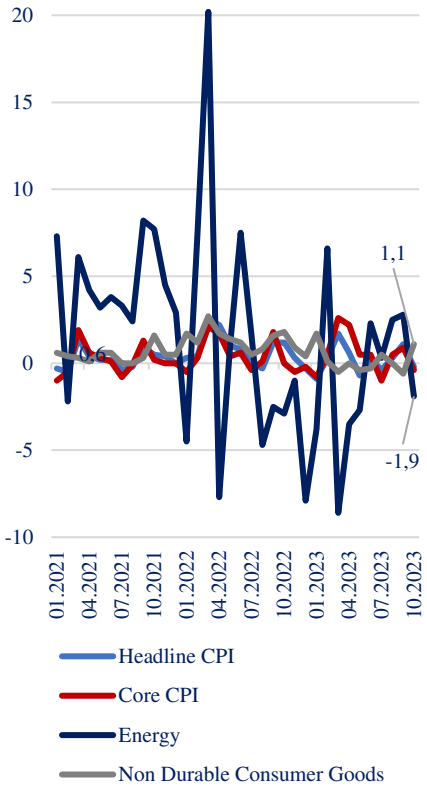
NOS SGPS is focus mainly on Portuguese market, where it has 100% of its revenue generation, a minimal exposure to foreign countries by Join Ventures, but which account for less than 10% of assets.

The Portuguese economy has been marked by an upward momentum, with the real GDP growing year over year by 1.9%. The economic boost has been justified mainly by the strong investments in fixed capital, 3.6%, and additionally increase in consumption private and governmental, with respectively 0.9% and 1.8%. The private consumption is showing resilience to

the downward pressures, as interest rates hikes and high inflation, due the increase of wages and government measures to support incomes, making the inflation sticker than expected and slowdown it's decrease. The comeback of tourism demand was not enough to reflect higher than pre covid levels on exports, but so far Portugal counts with +0.1% in this metric. Nevertheless, last quarter change was particularly impacted by the decrease in Exports (-2.3%) combine by an increase in Imports (+0.5%)

The inflation continues in a downward path, having the PPI felling 2% year over year, as of October 23, this indicator is early signal of inflationary pressures in the economy as it expresses the raw materials prices and cost inputs. On other side the wages increase has been approximately 7% and the implementation of the recovery and resilience plan by the Government are reverting the downward pressure on inflation.

Exhibit 4 - Portugal CPI Monthly Change %



With the current investment behavior in mind, we expect a stagnation of the current levels as the current monetary policies from ECB tight the conditions to make possible liquidity and money available to invest, the interest rates can still surprise on real economy in 2024, as the central bank plans to stick current rates for longer. The government plans to keep lowering the debt burden, the decrease of government debt as % of GDP can highly influence the next years government spending or decrease of revenues, which can impact positively directly or indirectly companies. Currently Portugal has the third highest debt ratio in the euro area, and it is projected Portugal to reach the sixth place in the coming year.

On the Fixed Income market, Portugal's government bond rating was raised two level by Moody's, which cited the Portuguese economy as solid medium-term growth. Currently the sovereign bonds have a A3 rating, with stable outlook, which reflects the sustained positive credit effects over the medium term of a series of economic and fiscal reforms, private sector deleveraging and ongoing strengthening of the banking sector.

The political crisis installed from surprise resignation of Antonio Costa fragile the market outlook for Portugal, as it may slow progress in investment and reforms, at the same time Portuguese Institution's allow the country to address the issue effectively. Currently following the European Commission predictions, Portugal counts with an expected growth year over year of 1.3% for 2024 and 1.8% for 2025, reflecting the slowdown of the strong growth from this year.

Exhibit 5. Summary Table of Economic Forecast

Indicators	2023	2024	2025
GDP growth (%, yoy)	2,2	1,3	1,8
Inflation (%, yoy)	5,5	3,2	2,4
Unemployment (%)	6,5	6,5	6,4
General government balance (% of GDP)	0,8	0,1	0
Gross public debt (% of GDP)	103,4	100,3	97,2
Current account balance (% of GDP)	1,6	1,1	0,8

Exhibit 7 - Mobile Access

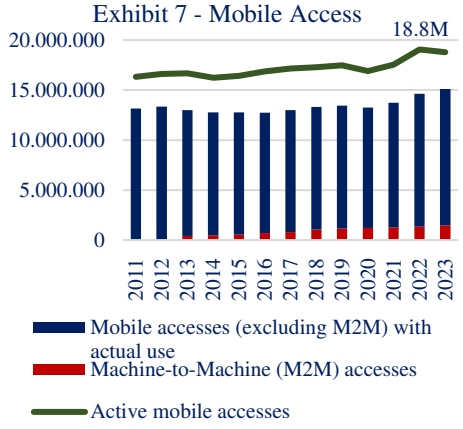


Exhibit 8 - Calls Outgoing

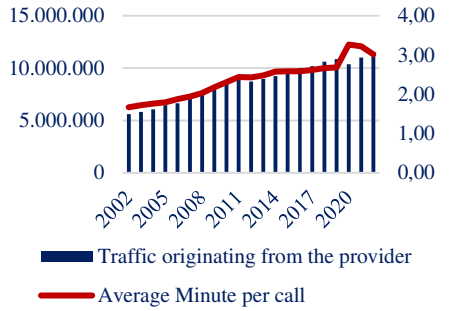


Exhibit 9-Short Messages Service

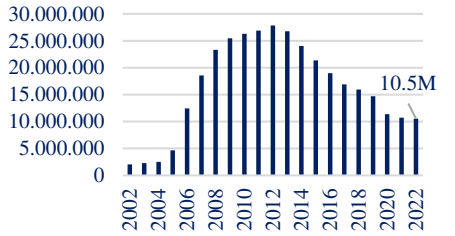


Exhibit 10 - Mobile Data

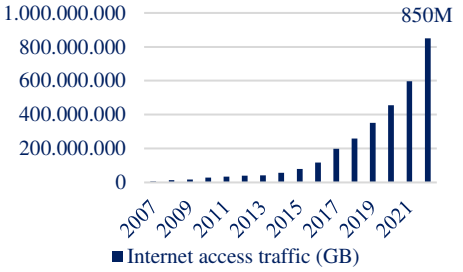
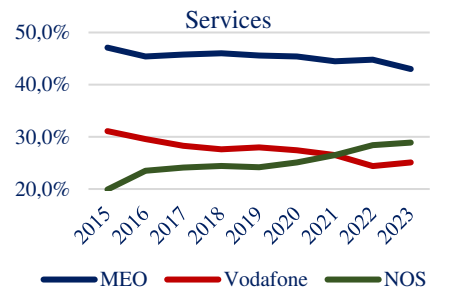


Exhibit 11 - Market Share Mobile Services



2) Telecom

The overall telecommunications market can englobe the areas of mobile services, bundled services, fixed broadband access and television signal distribution services.

Mobile Services

The total mobile access increased slightly over the last decade having a CAGR of 1,3%. The growth originates primarily from Machine-to-Machine (M2M) accesses having a CAGR of 13,4% while the mobile accesses excluding M2M with actual use developed stable having a growth rate CAGR of 0,3%. The penetration rates are exceeding 100% and growing on a low level. This indicates multiple mobile accesses per person on average implying a positive trend. As main reason for this the separation of private and business mobile services can be assumed. Overall, the two major trends underlying the growth of mobile access are first the implementation of M2M accesses and second very low level the implementation of separated business accesses.

Calls outgoing increased both in terms of numbers as well as in terms of minutes per calls. While the average minute per call was increasing stable over the last 20 years, a jump in 2020 can be detected. COVID-19 is assumed here to be the underlying factor. With the end of the pandemic, normalization is expected in 2023.

Short messages services (SMS) experienced a development very different from calls. The service which had a substantial CAGR of 30% in the first decade from 2002 until 2012 while the use of the technology decreased by a CAGR of 9% in the following decade. Nowadays less SMS are sent then 2006: SMS are a perfect example of outdated telecommunication technologies and services. It is not the demand of messaging services but the outdated technology that is responsible for this development. Modern internet-driven application like WhatsApp have taken over and ensure a better and more efficient service for the customer.

Nowadays mobile devices are used on a large extend for data-driven applications increasing the demand for mobile data. No area within the landscape of telecommunication services comes near the role mobile data plays as a trend in the industry. Over the last decade the traffic on mobile data increased 36% per year. Having a CAGR of 23% over the last three years this trend is expected to continue. New technologies like 5G have been implemented to fulfill this growing demand.

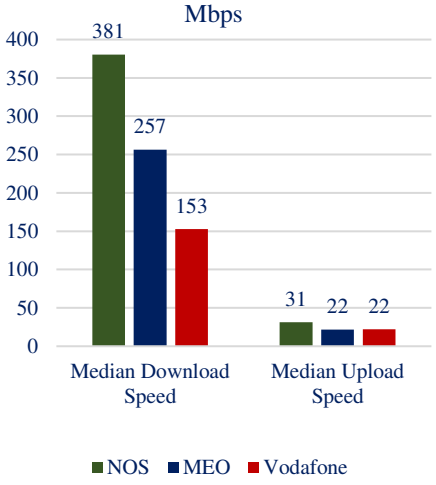
Looking at the market share of mobile services this analysis focuses on the three major players MEO, NOS and Vodafone. As result of the high penetration rate of the market major growth potential for a telecommunication company in Portugal is not primarily related to overall demand. The only way to grow beyond the demand is to attract customers from the competition. As result, the data of market share is crucial for the future perspective of a company. NOS started having the lowest market share of the top three competitors. However, with a growth rate of 7.7% over the last nine years it's the second largest telecommunication company in Portugal by now. In the same period, the market share of MEO decreased 1.7% per year and Vodafone's position

decreased even 2.8% annually. For NOS this means an increase of market position can be expected from a historical perspective.

Another driver of future mobile services growth is the infrastructure of the network for each company, quantified by the number and distribution of base stations installed in Portugal. This indicator may impact data speed and connectivity of the network with focus on the location and distribution. Regarding 5G technology, NOS has the greatest number of stations (3725) driven by the large investment in the network, followed by Vodafone (2769) and MEO (1337), according to ANACOM. In addition, NOS was the one investing the most in spectrum licenses (€165 M) compared to Vodafone (€133,2 M) and MEO (€125,2 M). However, as detailed below in Capex analysis, MEO is the company with the highest number of 2G, 3G and 4G base stations and is the only operator in the highest number of municipalities (30 out of 31 municipalities).

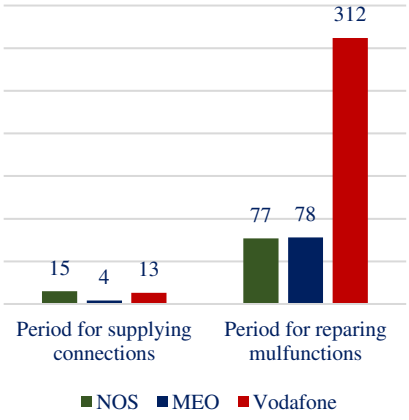
This comprises that MEO has been offering a substantial network coverage for all the previous generation technologies, but as for 5G it was not able to equal its peer's investments. This may be a threat for its future network speed, reliability, and low latency of this newest technology. The poor investment in 5G base stations may be justified by the constraints in debt and spending structure of Altice International (ultimately, on MEO), that have been furtherly aggravated in recent quarters. Alternatively, it may be solely a strategic decision to implement investments in the next few years.

Exhibit 12 - Q1-Q2 2023 Speed in Mbps



Regarding speed indicators, NOS already achieved the fastest 5G mobile network, between 1Q and 2Q of 2023 with a median download speed of 380.51 Mbps, followed by MEO with 256.50 Mbps and Vodafone with 152.63 Mbps, according to speed test Awards (by Ookla). Therefore, the main opportunity for NOS to overcome MEO's dominance is to not only focus on mobile network speed but also to prioritize coverage. In a different perspective, MEO has been offering the best quality of service in mobile fixed services. It only takes an average of 4 days for MEO to supply the network connection and activate the service, compared to 15 days for NOS and 13 days for Vodafone. In terms of average period to repair malfunctions, NOS and MEO present similar results (77 and 78 consecutive hours), but Vodafone performs badly with 312 consecutive hours, on average, to repair malfunctions. As a result, MEO delivered the lowest number of complaints in electronic communications (2Q 2023). In fact, ANACOM reported solely 4,5 thousand complaints for MEO which is equivalent to 26% of total sector. In turn, NOS and Vodafone presented significant lower performances: NOS faced 6,1 thousand complaints (35% of total sector) and Vodafone 6,3 thousand, equal to 36% of sector.

Exhibit 13 -Quality of Service , 2Q 2023



Overall, we see a major dominance by MEO in Mobile services sub segment, with a better quality of service and higher market share, Vodafone being weakening over time maintain only long-term clients. NOS is currently investing to reach the quality service of MEO and is position itself to collect unsatisfied customers from other operators.

Exhibit 14 - Multiple Pay

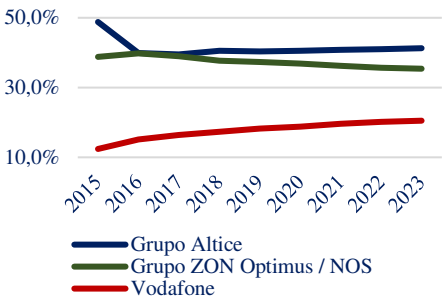


Exhibit 15 - 3P subscribers market share

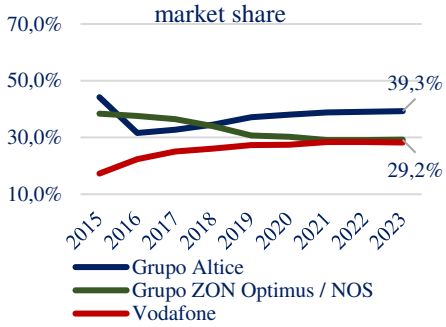


Exhibit 16 - 3P/4P/5P

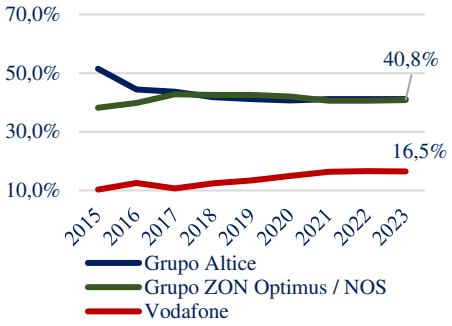


Exhibit 17 - 4P & 5P

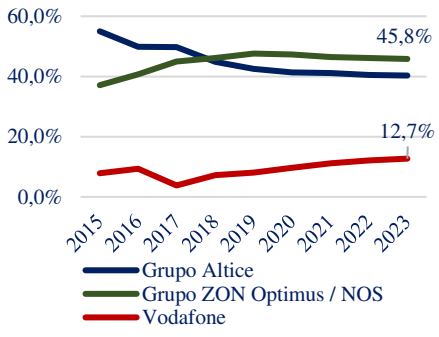
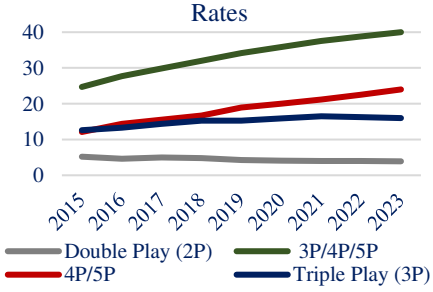


Exhibit 18 - Bundles: Penetration Rates



Bundled Packages

Telecommunication companies offer their services in bundles that combine various services like voice, internet, television, and mobile services in one package. Those are available from two up to five overall combinations. NOS is currently offering 3P and 4P bundles. While those packages offer a discount to the overall services, customers are limited by pre-defined combinations as well as lower data rates regarding high-speed internet.

When closely examining the bundles, the background of this weak development for NOS becomes evident. While customers prefer turning to competitors for home services (TV, phone, internet), increasingly towards Vodafone in the past, NOS dominates once more services come into play. In bundles that include mobile services (4P & 5P), NOS reigns over the market.

Even though NOS isn't the number one player in either the mobile services or bundles realm, it seems to hit the sweet spot that motivates customers to enter contracts with NOS. One could argue that NOS combines the best of both worlds (home & mobile) in the competitive landscape. However, MEO and NOS are also losing market share in this area to Vodafone's growth.

Contracts that include mobile services (4P & 5P) now dominate significantly over those solely focusing on home services (2P & 3P), even in terms of growth rate. Although the overall market has leaned in favor of NOS regarding 4P & 5P bundles in recent years. However, this doesn't compensate for weaknesses areas outside of mobile services, leading to an overall loss of market share for NOS.

It is striking that the pricing for the respective services from all three providers is the same down to the cent if no mobile services are included (parallel pricing). In the case of 4P bundles, the prices differ minimally, with Vodafone being exactly one euro more expensive than NOS. This difference is considered too small to have an influence on the purchasing decision.

One major opportunity for Vodafone is to continue to invest and develop its triple play bundle offer since it is the service that has been decreasing the most the gap for NOS, over the years by owning 28.2% of bundles subscribers market share, compared to 29.2% of NOS (its closest competitor). This may be related to the number of combinations and diversification options of bundles it offers (6 different options), compared to MEO (3 options) and NOS (5 options), but also may be since it offers the possibility to unlimited access to selected streaming platforms, including Disney +, HBO Max and Amazon prime, for up to 24 months. This type of offer has gained significant importance in shaping consumers choices since the increase in popularity and usage of the platforms.

Fixed Broadband Access

Fixed broadband access refers to high-speed internet access on a residential or business level using in general a fixed line infrastructure. The overall access increased over the last twenty years at 13.3% annually. However, the growth rate decreased to 4.3% over the last 5 and 3.5% over the last two years. While

Exhibit 19 - Fixed Broadband Access

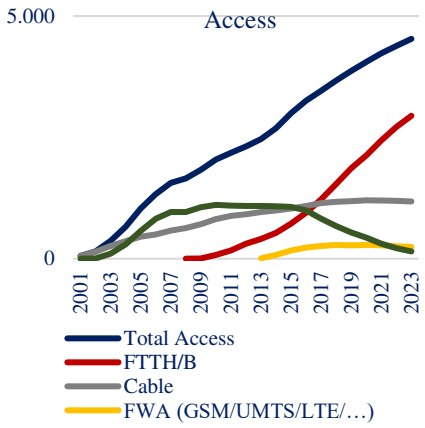


Exhibit 20 - Market Share (Broadband)

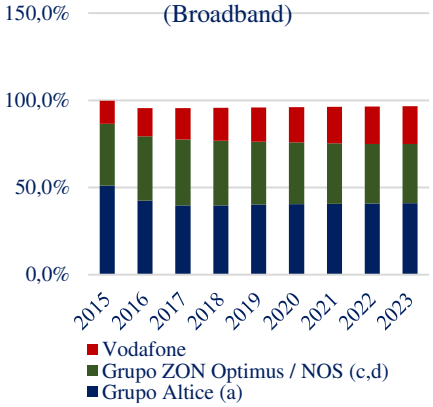


Exhibit 21 - Television Penetration

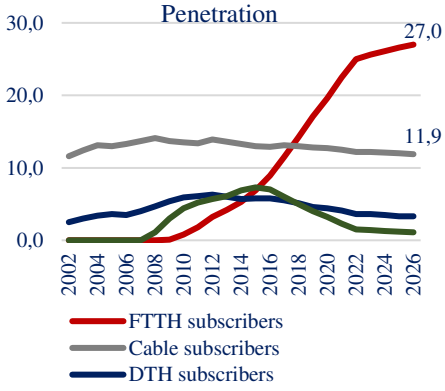
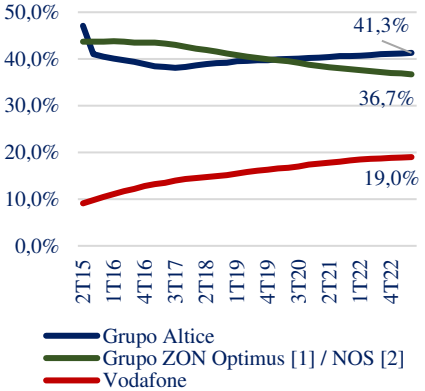


Exhibit 22 - Television Market Share



the old technologies decrease or saturate, most households use optic fiber nowadays.

The fixed broadband market is dominated by the three main competitors. MEO has currently a 41% market share, serving the most customers followed by NOS totaling 34%. Although Vodafone is on the third place with 22% market share, it's the only major player constantly expanding its position. While MEO loses 2.7% and NOS 0.6% annually, Vodafone achieved to grow impressive 6.5% per anno over the last eight years. Looking at the three-year CAGR, Vodafone was still able to grow with 2.6% while MEO was able to grow 0.5% and NOS lost 1.5% annually.

MEO has been able to maintain a competitive advantage in fixed broadband access services. A primary factor contributing to this advantage is the extensive network coverage it offers. According to Altice Portugal's report, as of the third quarter of 2023 it has the biggest network coverage in terms of homes passed with 6,311 M between homes and companies. In comparison, NOS stands below with a reported 5,369 M homes passed in the same period. Due to high FTTH penetration in Portugal (as detailed below in KPI's analysis) this indicator will slowdown in future years and service differentiation may be obtained through high speed and connectivity performances. Vodafone presented 4,4 M homes passed at the end of 2022 according to computer world, without any information added in recent quarters.

Television

The Television market transformed substantially over the last years. The implementation of internet-based technologies replaced traditional cable and dtl (satellite). While the first generation of newer technologies like DSL only satisfied a segment of the market, the latest FTTH (glass fiber) technology serves already 27% of customers and therefore more than any other technology. Over the last ten years FTTH was the only positive driver in terms of market penetration growing at 20.5% annually. In a more recent period, the glass fiber technology still increased 11.3% annually over the last three years being the only positive driver. The high penetration via FTTH is a result of implementation in new households as well as replacing older technologies.

In the same dynamic as bundled services and fixed broadband access, television is clearly dominated by MEO and NOS having a market share of 41% and 37% respectively. Being the smallest major player, Vodafone has the highest growth rate of 9.6% over the last eight and 4.4% over the last three years per anno. In the same time periods, ZON/NOS market share decreased by 2.2% and 2.4% respectively while Altice was able to turn their negative 8Y CAGR of 1.6% in the recent years to a positive 3Y CAGR of 1.1%.

Additionally, the television sub segment has been threatened by new digital products which substitute the traditional service, streaming platforms as Netflix, HBO, and Disney, have entered in the market and have experience rapid growth, driven by the increasing popularity of local content and adoption of streaming services by a young and tech-savvy population. Given the potential of customer preference swift from traditional services to Streaming, the projected CAGR of the market is 3.31% by Statista until 2028. To combat

Exhibit 23 - Video Streaming Service Usage in Portugal in 2022

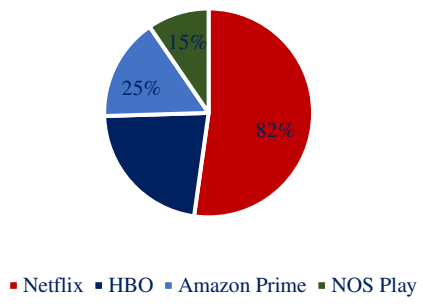


Exhibit 24 - Forecast Portuguese Cinema Market

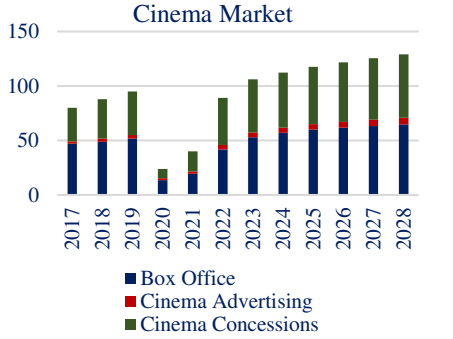
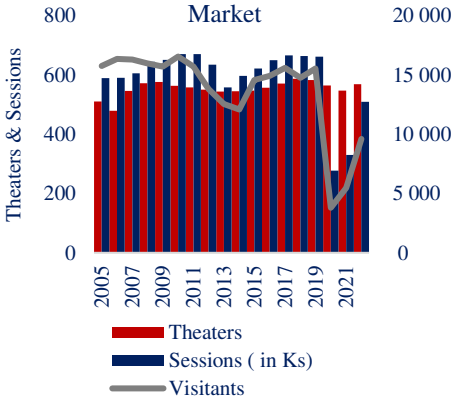


Exhibit 25 - Cinema Portuguese Market



this effect NOS has launch its own streaming platform, call NOS play, much cheaper than main streaming platforms, NOS play is available for 3.99 €. Nevertheless, the platform is still far behind the international players, where only 15% of Portuguese consumers express the use of NOS Play, where 82% use Netflix.

3) Audiovisuals

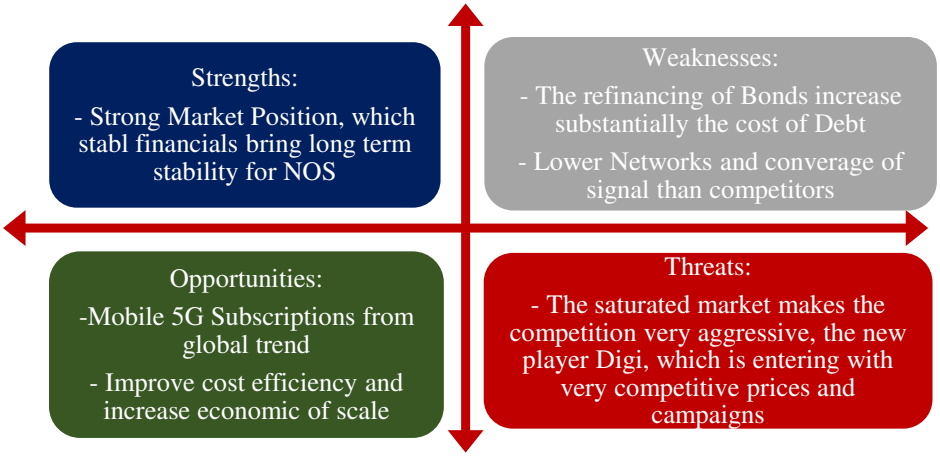
Starting from the year 2023, the weak years of audiovisuals due to COVID-19 are over. It is expected that the industry will steadily grow over the next five years continuing its pre-covid trend (Forecast Portuguese Cinema Market). A Compound Annual Growth Rate (CAGR) of 4.2% is expected.[1] The industry derives only 50% of its revenue from cinema tickets. Another 46% is generated through concessions (popcorn, drinks), with a small remainder from advertising. This ratio is expected to remain consistent in the upcoming years as well. The numbers reflected an increase from 5.5K visitants in 2021 in Portuguese Cinemas to 9.6K in 2022.

Customer preferences play a pivotal role in shaping the cinema market's trajectory. While streaming services and on-demand content have gained popularity, the allure of the big screen persists. The trends in the cinema market showcase a multifaceted landscape, which results on continuous innovation and offering premium experiences like IMAX, and 4DX screenings, to elevate cinematic encounter that transcends home entertainment, to face the increase competitive challenges from streaming services.

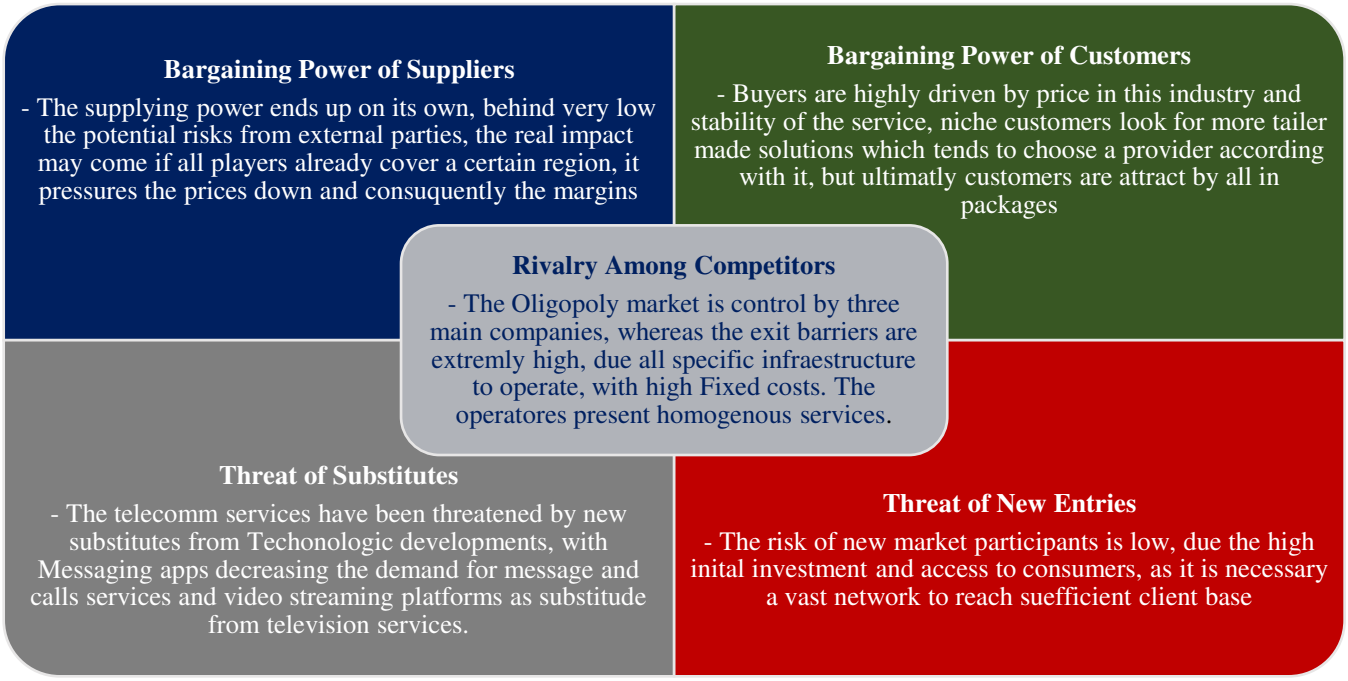
4) Strategic Market Analysis

Given the deep dive on the market segments, we position NOS with the following SWOT positioning and Portes 5 forces:

Exhibit 26 – SWOT Analysis and Portes 5 forces



[1] https://www.statista.com/outlook/amo/media/cinema/portugal#revenue



Concluding, the telecom industry has seen varied growth across mobile services, bundled offerings, broadband access, television, and audiovisuals. Mobile data demand, driven by M2M and 5G, has surged despite stable call and declining SMS usage. NOS is experiencing a decline in market share in all areas except for mobile services, where NOS exhibits the most favorable development in the competitive landscape. This highlights the strength of NOS's mobile infrastructure. This also holds true regarding 4P bundles, where NOS stands out through the combination of services. The competitive structure can be identified as 'parallel pricing'.

The future of telecom relies on adapting to evolving consumer needs and tech advancements. Companies must innovate and converge services to meet demand in mobile data, bundled offerings, and high-speed internet. Success hinges on agility in responding to changing preferences and leveraging technology to stay competitive.

III) Company Analysis

1) Telco Segment

Key Performance Indicators

For the telco segment there were identified different KPI's that allow us to have a good insight of the business.

- Homes Passed – Indicates the number of households that have access to Fiber-to-the-Home (FTTH) or Hybrid Fiber-Coaxial (HFC);
- Revenue Generating Unit (RGU) – Indicates the number of total subscribed services that customers have, not acknowledging the possibility of incorporating different services in a bundle.
- Mobile – Indicates the number of customers that have a mobile service. This includes both pre-paid and post-paid mobile services;

Exhibit 30 - NOS Broadband RGUs, in '000

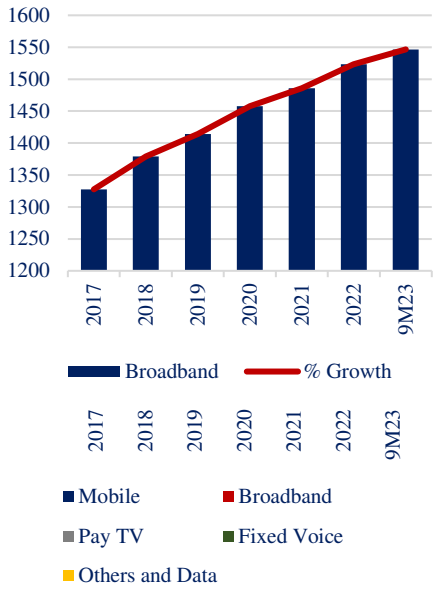


Exhibit 28 - NOS Homes Passed, in '000

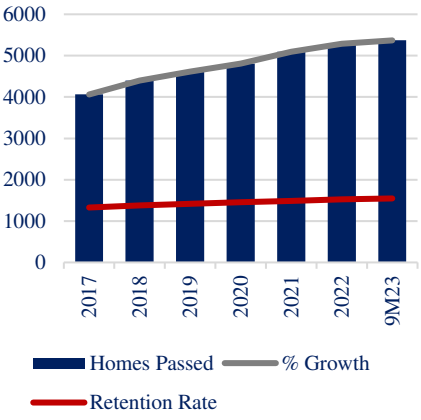
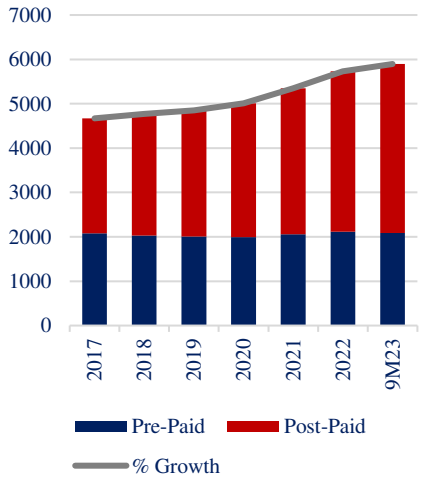


Exhibit 29 - NOS Mobile RGUs, in '000



- Pay TV – Indicates the number of customers that have subscribed to a television service. This includes both fixed access and Direct-to-Home (DTH) services;
- Fixed Voice – Indicates the number of customers that have a traditional landline or wired telephone service subscription;
- Broadband – Indicates the number of customers that have a high-speed internet service subscription;
- 3, 4 & 5 Play – Indicates the number of customers that have subscribed bundle that includes specifically three (broadband, TV, telephone), four (3P plus mobile) or five (4P plus an additional service such as smart home for example) services;
- Convergent and Integrated RGU – Indicates the number of customers that have converged or integrated different services subscriptions. It differs from the play bundles as it is not restricted to such combinations.

The high market penetration needs to be considered when analyzing most of the KPI's as it justifies the decline in some growth rates throughout the years. Services that are delivered through wired/fixed systems are more affected by it than mobile/wireless services. These fixed services mainly include fixed broadband, fixed TV, fixed voice, and multi play services, while mobile services, as the name implies, are fully wireless.

The homes passed, *exhibit 28*, is an important metric for investors in the telecommunications industry as it indicates the number of households that can potentially access to its services via FTTH or HFC reflecting the reach of the companies' services to its customers and to new potential customers. One could also think of it as the reach of the company's infrastructure. By the 3Q23 NOS estimates homes passed to be over 5369 thousand, which represents a CAGR of 4.98% since 2017. However, it is observable that the growth of this KPI has been slowing down since 2017 as there is a high penetration of FTTH in the Portuguese market. In addition to this, it is possible to calculate a retention rate, *equation 1,* for customers per homes passed. It is safe to assume that every customer subscribed to a NOS physical service has that service delivered through physical broadband, as information is transferred through it .

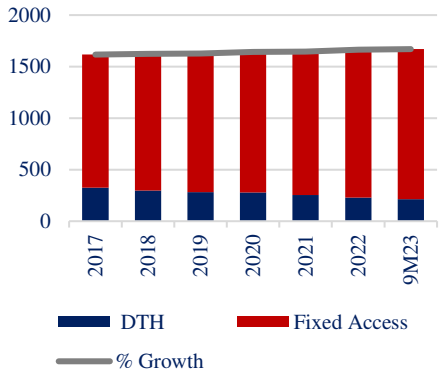
This retention rate, *exhibit 28*, is on average 34%, but it has been slowly decreasing since 2017, suggesting that NOS has been losing market share for its competitors regarding physical services, which has been discussed in the market analysis.

Despite the homes passed KPI being important to fully understand companies reach to the market, it does not provide much information regarding the number of customers NOS has. RGU is a much better metric to fully understand what is happening with the operations of a telecommunications company, as it measures the number of units that contribute to revenues for each elementary service provided (mobile, broadband, pay TV and fixed voice).

The mobile service, *exhibit 29*, is the one that has the greatest number of RGUs within NOS, accomplishing a number over 5896 thousand units by the 3Q23 thanks to the fast-paced growth throughout the years, representing a CARG of 4.14% since 2017 and a CAGR of 6.11% since 2020. This growth is justified as these services are not delivered by fixed wire networks, meaning they are

not bound by fixed delivery penetration but by mobile demand, and also due to the implementation of new technologies such as the 5G. Mobile services can be further split into pre-paid and post-paid services, with post-paid being the most demanding by the market, with over 3809 users by the 3Q23 and a CAGR of 6.64% since 2017. On the other hand, pre-paid services are stagnating as the CAGR since 2017 is 0.05%, representing 2086 thousand RGUs by the 3Q23. One of the reasons for this difference is due to the increase in bundle services, which are post-paid. Another reason is because post-paid services may be more convenient as usually pre-paid services need to be recharged regularly, whereas post-paid don't. Despite this fast-paced historical growth of mobile services, data suggests that it is slowing down as it is of 2.8% since the end of 2022.

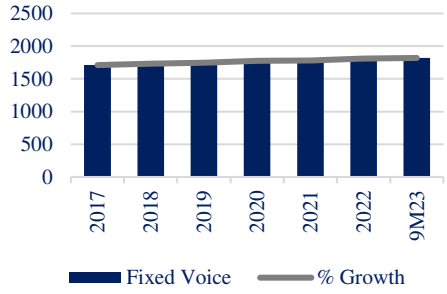
Exhibit 31 - NOS TV RGUs, in '000



Broadband growth has been slightly decreasing over the years, losing market share to the competition. There is still room for broadband to keep growing as data is transmitted through broadband. By the 3Q23, broadband represent a total of 1547 thousand RGUs with a CAGR of 2.69% since 2017, *exhibit 30*.

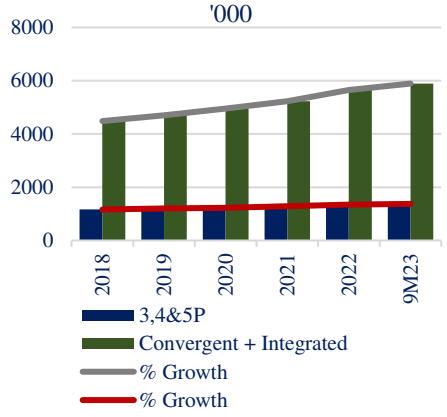
Television services, *exhibit 31*, are a key demand in the Portuguese market as it was seen in the market analysis section. This service is already highly penetrated in the Portuguese market, representing 1667 thousand of NOS RGUs, with a CAGR of 0.56% since 2017. Its analysis becomes more interesting when looking into the different ways it is being delivered to NOS customers. DTH delivery, which includes 214 thousand RGUs, has been decreasing a lot with a CAGR of -6.95% since 2017, while fixed access users, which represent over 1455 thousand RGUs, are increasing at a CAGR of 2.09%, since 2017, suggesting the effort for a digital transformation and better delivery of its services, which can also be applied to the whole market.

Exhibit 32 - NOS Fixed Voice RGUs in, '000



The fixed voice service, *exhibit 32*, is also an interesting one to look at. It makes sense that this service is becoming less and less used as mobile phones have taken over a long time ago. However, there is still a significant level of subscriptions to it, due to the high penetration of bundles that include this service. By the 3Q23, NOS has acknowledged 1820 thousand RGUs to this service, with a CAGR of 1.08% since 2017.

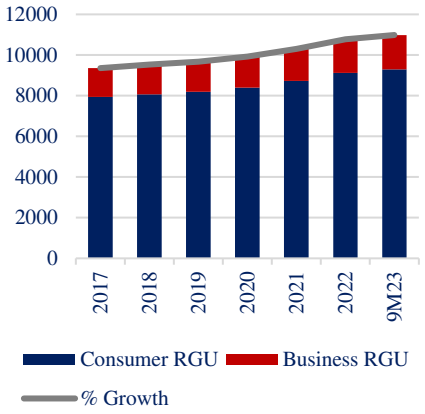
Exhibit 33 - Convergent + Integrated, and 3,4&5P RGUs, in '000



Bundles and convergent/integrated services, *exhibit 33*, are a big part of this industry. Convergent and integrated RGUs have been increasing at a CAGR of 5.92% since 2018 which has increased to 7.03% since 2021. It is no surprise that telecommunication companies provide multiple services to each customer, as society is extremely reliant on TV, internet, mobile services, and it is also cheaper than subscribing to each service through different companies. Convergent and integrated consumers correspond to a value of 5892 thousand RGUs by the 3Q23. These package solutions are becoming increasingly more popular as their growth rate have been increasing since 2019. However, multiple play bundles are growing at a slower pace than the overall bundle/package solutions, suggesting that the market is more interested in having more custom-made solutions. This can be justified by the lack of need for fixed voice services, which is included in all multiple player packages. These 3,4&5P bundles represent 1374 of the total number of convergent and integrated RGUs, by the 3Q23.

Total RGUs of NOS Telco, *equation 2*, have been growing at a good pace, with a CAGR of 2.83% since 2017 and a CAGR of 3.78% since 2020, reaching over 10984 thousand by the end of the 3Q23.

Exhibit 34 - NOS Consumer and Business RGUs, in '000

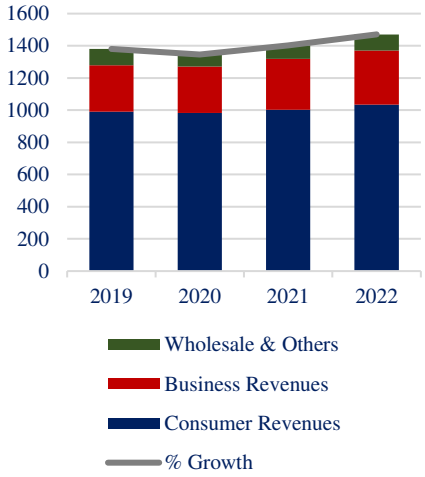


Thus, one can infer that this high growth is mostly driven by the mobile service, which represents over 53% of total RGUs of NOS by the end of the 3Q23, and not the fixed access services such as broadband, TV and fixed voice which have a share of total RGUs between 14% and 16%, and other services that represent less than 0.5% of the total number of RGUs, *exhibit 27*.

In addition to this, it is also possible to divide the number of RGUs by business and consumer sectors, *exhibit 34*. By the 3Q23, the B2C sector has a much higher number of RGUs than the B2B segment, 9297 thousand and 1687 thousand respectively, as the consumer market is generally larger than the business. Also, consumers often subscribe to a larger number of services than businesses. Despite this, both segments have been growing at a similar pace; the B2C with a CAGR of 2.77% and the B2B with a CAGR of 3.15% since 2017.

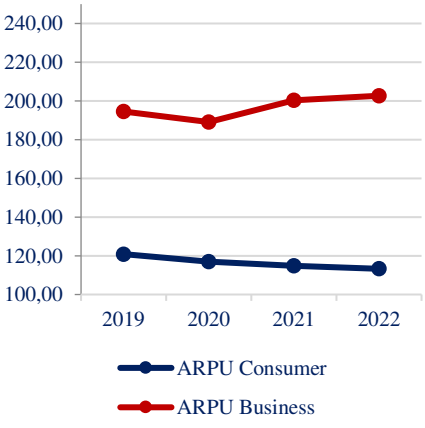
Revenue Analysis

Exhibit 35 - Telco revenue per segment



Separating into B2C and B2B operations is crucial as each of these sectors have different needs and characteristics. The B2B segment requires more robust, reliable, tailor-made, with higher capacity technical solutions, while the B2C segment requires a more user-friendly, simple yet specific solutions for each individual, requiring overall less capacity than businesses do. In this way, B2B has a higher cost per user than B2C, but at the same time its ARPU is higher than the B2C segment. In addition to this, there is a higher expectation for the economic impact of 5G technology for the B2B segment. Businesses require a higher volume of data to be managed, due to the high number of devices, machines and control services operating simultaneously, and 5G will also allow for safer, more connected, and reliable ecosystems within businesses. It will also impact the B2C segment in a very positive way due to the same reasons, but it cannot be compared with the B2B segment potential as it has more factors that can be influenced.

Exhibit 36 - B2C and B2B ARPU, in EUR

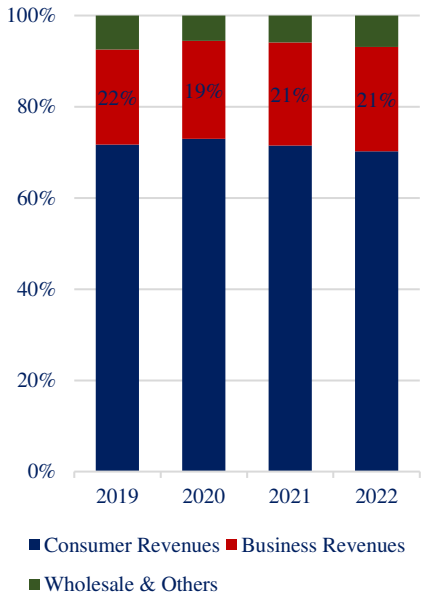


In this way, splitting the business into B2C, B2B, and wholesales & others segments is the best way to analyze the company revenues, *exhibit 35*. The B2C and B2B revenue drivers identified for the consumer and business segments were the ARPU (average revenue per RGU) and the number of RGUs, *equation 3*. The wholesales & others segment doesn't have much information regarding its drivers; thus, its revenue share is the best one available.

The consumer segment has always had a stable share of the telco revenues, slightly above 70%, 1033 million EUR by the end of 2022, *exhibit 35*. This high revenue share can be justified by the size of the B2C market, compared to the B2B, as was already discussed. It has been growing at a stable pace, with a CAGR of 1.43% since 2019. By 9M23 B2C has a revenue of 815 million EUR, representing 72% of the telco share, *exhibit 37*. The consumer ARPU, *exhibit 36*, has been decreasing since 2019 at a CAGR of -2.14%. By the end of 2022, its value was 113 EUR compared to 121 EUR in 2019. This decrease can be justified by parallel pricing, companies might have tried to take advantage of

slightly lowering their prices in order to increase customers, but this would create a chain reaction among competition, lowering the overall prices. By the 9M23 this value was 88 EUR which represents an increase compared to the 9M22 value of 85 EUR. This suggests that prices might increase by the end of 2023.

Exhibit 37 - Telco Revenue Share



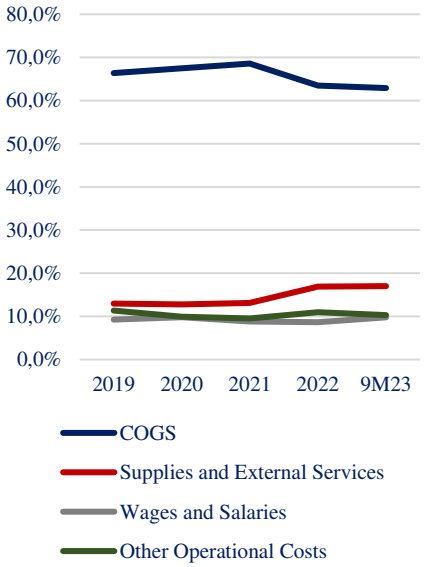
The B2B revenue share has been growing at a good pace with a CAGR of 5.27% from 2019 to 2022, representing 336 million EUR and a share of 23% of telco revenues in 2022, *exhibit 37*. By the 9M23 B2B has revenues of 243 million EUR, representing 21.5% of the telco share, compared to 254 million EUR, representing 23.3% of the telco share by the 9M22. The business ARPU, *exhibit 36*, has been increasing at a CAGR of 1.38% since 2019, *exhibit 36*. This can be attributed to the growing demand for more advanced and capable solutions, and data transportation increases.

NOS wholesaling & others revenues constitute a very small share compared to the other revenues, *exhibit 37*. Overall, these revenues haven't changed much, which suggests that NOS strategy is not to expand through wholesaling, which makes sense because advances in technology, such as 5G which increases data transfer for example, reduce the demand for wholesale services. Its revenue share has been decreasing at a GAGR of -2.62% since 2019. By the end of 2022 its share represents 6.9% of the telco revenues, 101 million EUR. However, its revenue share in the 9M23 has increased compared to the 9M22, from 6.5%, 71 million EUR, to 6.6%, 74 million EUR.

Operational Costs Analysis

Operational costs are also important to be analyzed given the nature of the industry, as the digital transformation that is being faced tends to push most of these costs down. The operational costs include costs of goods sold, wages and salaries, supplies and external services, incurred taxes, provisions and adjustments and other minor operating costs, *equation 4*. To further understand this trend, it is necessary to analyze each operational cost individually, *exhibit 38*.

Exhibit 38 - Op. Costs Breakdown



Costs of goods sold, COGS, include direct costs, cost of product sold and support services. These constitute 63.5% of total operational costs by the end of 2022. The COGS-to-revenue ratio has been decreasing since 2019 at a CAGR of -0.7%, until it reached 37.5% in 2022. In addition to this, NOS has faced a decrease of -4.8% in this ratio when comparing the 9M23 to 9M22, *exhibit 38*.

Direct costs include exhibition costs, traffic costs, capacity costs, costs related to corporate customers services, and others. By the end of 2022 these costs amount to a value of 357 million EUR, corresponding to 64.6% of COGS, ratio which has been decreasing since 2019 at CAGR of -3.9%. The direct costs-to-revenue ratio, *exhibit 39*, has also been decreasing since 2019 at a CAGR of -4.6%, corresponding to 24.3% in 2022. It is expected to be a further decrease in this ratio in 2023 as NOS has faced a decrease of -3.1% in the 9M23 compared to the same period of 2022. This decrease is a reflection of 5G benefits, as it is more energy efficient and has a higher capacity than previous generations.

Exhibit 39 - COGS-to-Revenue Ratio Breakdown

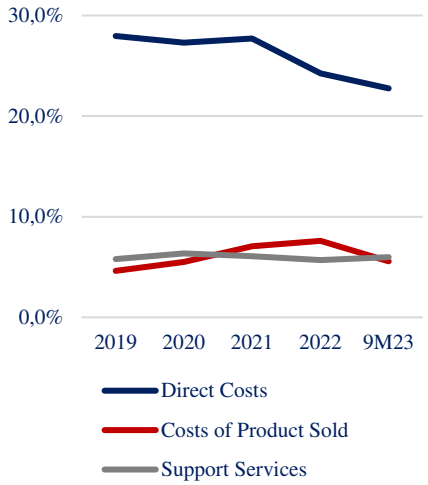


Exhibit 40 - Op. Costs-to-Revenue Ratio Breakdown

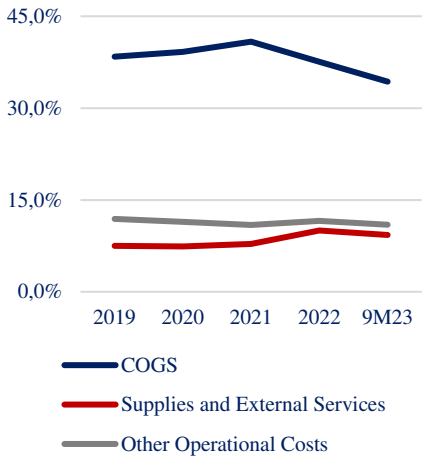
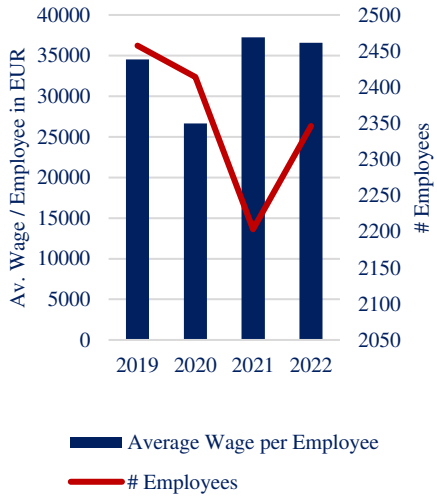


Exhibit 41 - Wages & Salaries Drivers, NOS



Cost of products sold, which correspond to the costs related to inventory acquisitions, such as invoice price, freight, and insurance costs, represent 20.2% of COGS by 2022, ratio which has been increasing since 2019 at a CAGR of 18.1%. The cost of products sold-to-revenue ratio, *exhibit 39*, was 7.6% by 2022. However, this ratio has decreased from 7.2% to 5.6% in the 9M of 2022 and 2023 respectively, still higher than in most full past years. These prices have been increasing in percentage revenue due to the impact that COVID-19 had on prices overall, such as supply chains and logistics.

Support services mainly include call centers, customer and administrative support, and information systems. Since NOS is a service provider it makes sense to include these costs in COGS, as they include support services for their provided products. In addition to this, call centers are often responsible for the acquisition of new customers, contributing directly to its revenue. These costs represented 15.2% of COGS by 2022, and the support services-to-revenue ratio, *exhibit 39*, was 5.7%, a ratio which has been decreasing at a CAGR of -0.6% since 2019. Despite this, in the 9M23 this ratio corresponded to 6.0%, compared to 5.4% of the 9M22, suggesting an increase by the end of the year.

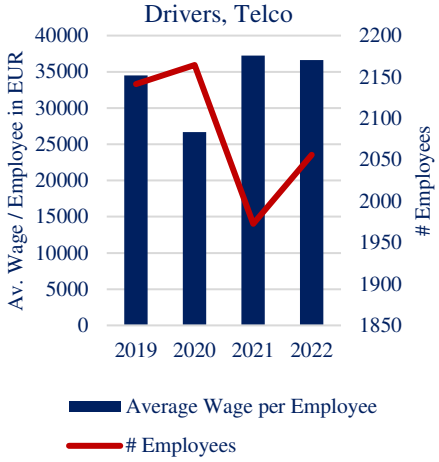
Supplies and external services, which mainly include maintenance and repair, electricity, and professional services, are another important cost to look at. These constitute 16.9% of total operational costs by the end of 2022. Its value was 147 million EUR, and the external services-to-revenue ratio, *exhibit 40*, was 10.0%, a ratio which had been increasing since 2019 at a CAGR of 10.1%. The increase in these costs are due to the increase in the outsourcing market, as telecommunication companies increasingly need specialized technicians. In the 9M23 this revenue ratio has decreased compared to the same period of 2022 from 10.2% to 9.3% respectively.

Marketing and advertising are a smaller cost, but it has had an increase in its revenue margin from 2019 until 2022, with a CAGR of 2.4%. It further increased in the 9M23, by 4.3%, compared to the 9M22. This increase in due to the shift to digital marketing, and also to the competitiveness of the market requires companies to differentiate themselves and attract new customers, which is done also through marketing and advertising. Other costs such as taxes incurred, provisions and adjustments and others have kept similar cost-to-revenue ratios since 2019. Their total ratio by 2022 is 3.5%. Provisions and adjustments depend mainly on impairments of accounts receivables. The costs discussed in this paragraph constitute 10.9% of total operational costs by 2022, *exhibit 38*.

Regarding wages and salaries paid, its wages-to-revenue ratio has faced a slight decrease since 2019. By the end of 2022 this value was 5.1%, corresponding to 75 million EUR, which is 8.7% of total operational costs. However, an increase of 4.5% in this ratio was observed from 9M22 to the same period of 2023. By the 9M23 this ratio was 5.3%. Its analysis becomes more interesting when considering the cost per employee, *equation 5*.

Unfortunately, NOS does not provide information regarding the number of employees per segment. By 2022, NOS had on average 2346 employees working throughout the year, and their average salary was 36.6 thousand EUR per year, *exhibit 41*. By the 9M23 NOS number of employees was on average

Exhibit 42 - Wages & Salaries Drivers, Telco



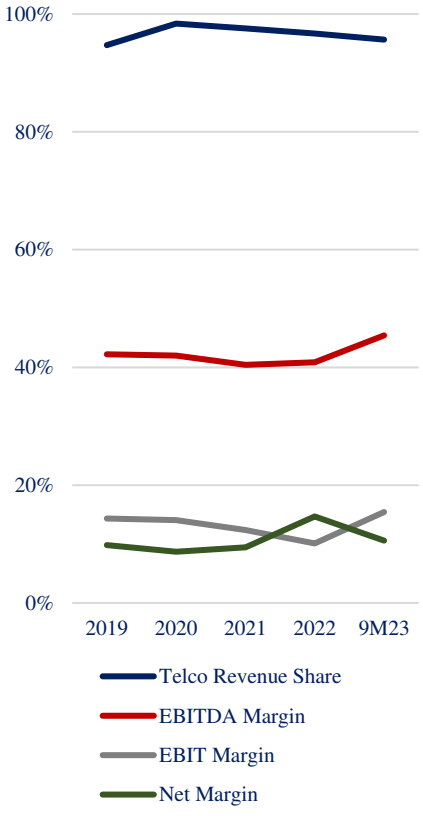
2443. Employees average salary increased to 28.2 thousand EUR, by the 9M23, compared to 27.3 thousand EUR for the same period of 2022 (note that this is not a full year salary). This increase is backed by the increase in the overall salaries in Portugal that have been taking place and probably also to the increase of the performance of the company, as most bonus are paid according to goals achieved, and NOS has been improving most of its margins this year, comparing to other years.

Some assumptions were made to estimate the average salary per employee for each NOS segment, *equation 6*. Considering the weight of each segment for this total cost, the telco segment, *exhibit 42*, was assumed to have on average 2041 employees by the end of 2022, and 2147 employees by 9M23. Its average salary in the 9M23 has increased to 28.2 thousand EUR compared to 27.3 thousand EUR for the same period of 2022.

The operational costs-to-revenue ratio has increased from 57.8% in 2019, to 59.6% in 2021. However, in 2022 this ratio has decreased to 59.1%, and a decrease of –4.9% has taken place comparing the 9M23 to 9M22, suggesting that these might start declining from now on. This decline's main driver is the decrease in direct costs associated with the 5G implementation, which will result in a higher cost-efficient business. It is also interesting to note that most of these costs have a significant increase in the 4Q of the year as some payments are done by the end of the year, which can be translated in an average increase of 17.4% in the operational costs-to-revenue ratio, from the 3Q to the 4Q of each year.

Profitability Ratios

Exhibit 43 - Telco Margins



The adjusted EBITDA can be defined as revenues minus operational costs. Its margin, *exhibit 43*, was 40.9% by the end of 2022 and has decreased at a CAGR of -1.1% from 2019 to 2022. However, when analyzing the 9M23 it has been seen an improvement in this margin to 45.4%, compared to 42.6% in the same period of 2022. This is justified by the operational costs-to-revenue ratio decrease. The EBITDA margin is expected to decrease by 4Q23, due to the increase in costs by the end of the year, as discussed. Still improvements are expected compared to 2022.

As for the EBIT, an adjustment was made as it is defined as EBITDA minus depreciations, amortizations, and impairment losses, as any other costs that might be included here are considered non-recurring. The EBIT margin, *exhibit 43*, has decreased from 2019 to 2022 at a CAGR of -10.9%, which is justified by the increase in D,A&I weight of the Income Statement. This increase in D,A&I is due to the increase in CapEx due to 5G investments in 2021 and 2022. However, similar to the EBITDA margin, the EBIT margin has improved in the 9M23 compared to the 9M22, suggesting that it will increase from 2022 to 2023, despite the end of the year decrease due to higher costs.

The net margin, *exhibit 43*, has been on average around 9% since 2019 except for 2022 where it was 14.69%. This spike is due mostly to non-recurring gains such as gains of affiliated companies and gains on the sale of assets. In this way, 2022 doesn't make a good year of reference for this margin. By the end of the 3Q23, the net margin was 10.6% which is lower than the 11.0% value of

the same period of 2021. In the current interest rate environment, the refinancing reveals significantly higher costs of debt, resulting in a reduction of the net margin. This trend will continue as the higher capital costs are gradually factored in by refinancing interest-bearing debt. The complete integration of this trend is anticipated to align with the debt maturity and therefore stabilize in 2026.

Exhibit 44 - Number of Tickets Sold per year, '000

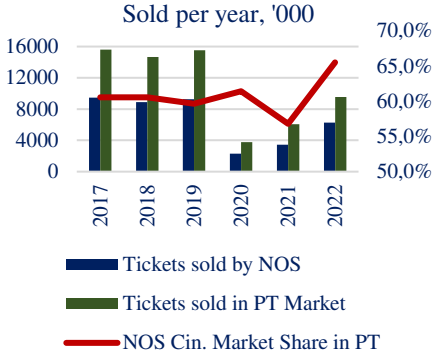


Exhibit 45 - Number of Tickets Sold per 9M, '000

Exhibit 46 - NOS Cinema Number of Screens

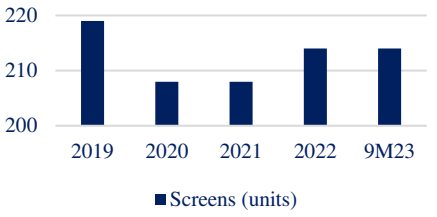
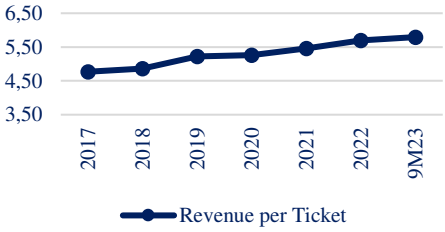


Exhibit 47 - Revenue per Ticket, EUR



2) Audiovisuals & Cinema Segment

Key Performance Indicators

For the audiovisuals & cinema segment there were identified the following KPIs:

- Tickets sold by NOS;
- Number of screens;
- Revenue per ticket sold.

The cinema market has taken a huge hit due to the covid-19 (the directly affected years were 2020 and 2021) and is still recovering revenue wise. In terms of individual quarters NOS has recorded the largest number of tickets sold in the 3Q23, surpassing the former 3Q19, with 2810 thousand and 2764 thousand tickets sold in the Portuguese market, respectively, *exhibit 45*. NOS cinema segment had sold 6346 thousand tickets so far in 2023, a number which is higher than the total number of tickets sold in 2022. This suggests that NOS will significantly improve its revenues this year compared to the former based on the recovery from covid-19 and the outlook of the industry.

NOS has detained more than 60% of the total cinema tickets sold in the Portuguese market, except for the years of 2019 and 2021 where it was still above the 56%, *exhibit 44*. By the end of 2022 this share has achieved 65.5%, its maximum from 2017 to 2022, and it further increase to 66.2%, by the third quarter of 2023.

The number of screens available, *exhibit 46*, have decreased since 2019, mainly due to the COVID-19. NOS had reduced its screens by 8 units, having 208 screens available in the 3Q20. In 2022 the number of screens available increased to 214 and have been the same ever since.

The revenue per ticket, *exhibit 47*, has been increasing since 2017 at a CAGR of 3.6% until 2022. By 2022 the average revenue per ticket was 5.70 EUR, and by the end of the 3Q23 it increased to 5.79 EUR. This increase of 9 cents increase in the 9M23 is lower than the 16 cents increase in the 9M22. This is due to the fact that overall prices increase due to COVID-19 have been stabilizing.

Exhibit 48 - Audiovisuals & Cinema Revenues, in million EUR

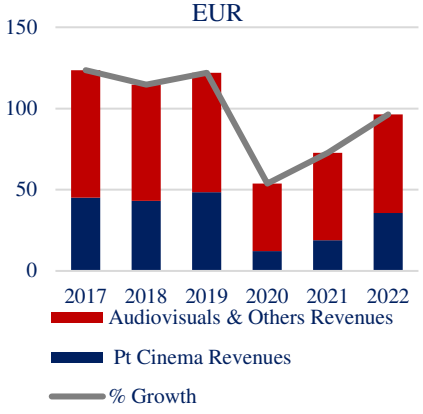


Exhibit 49 - Operational Costs Breakdown

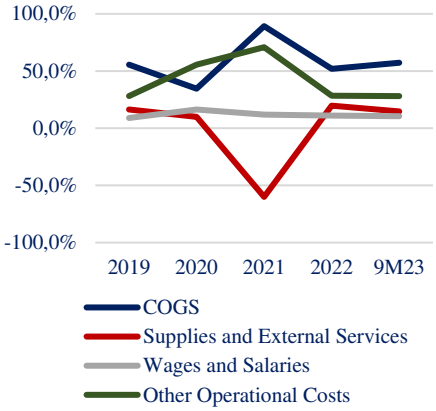


Exhibit 50 - COGS-to-Revenue Ratio Breakdown

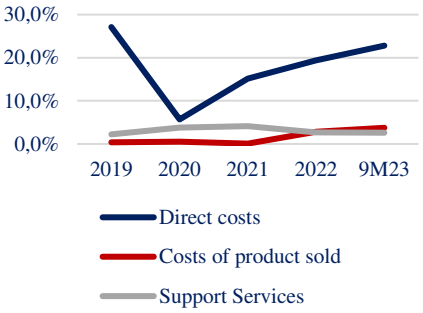
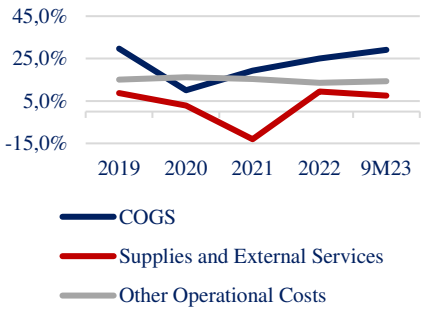


Exhibit 51 - Op. Cost-to-Revenue Ratio Breakdown



Revenues

Although NOS only provides us the overall revenues of this segment, it is possible to break these down into Portuguese cinema and audiovisuals & others revenue, *exhibit 48* and *equation 7*.

By the end of 2022, Portuguese cinema revenues were 35.7 million EUR, which represented an 89.5% growth compared the former year, and a share of 37% of total audiovisuals and cinema revenues by 2022. By the 3Q23 this value had already grown to 36.8 million EUR, compared to 24.5 million EUR of the same period of 2022, and even outperforming 35.7 million EUR of the same period of 2019 which was the year with the highest revenues from the last 6 years.

The audiovisuals & others revenues share of this segment has been on average 62%, excluding the covid-19 years where it was higher as cinema revenues were very low. However, by the 9M23, this share had decreased -5.0% to 53.4%, compared to 63.9% of the same period of the former year. Again, this is due to the increase in the Portuguese cinema revenues that was already discussed. In fact, these audiovisuals & other revenues have remained more or less the same in 9M23 as in 9M22, 42 million EUR and 43 million EUR respectively.

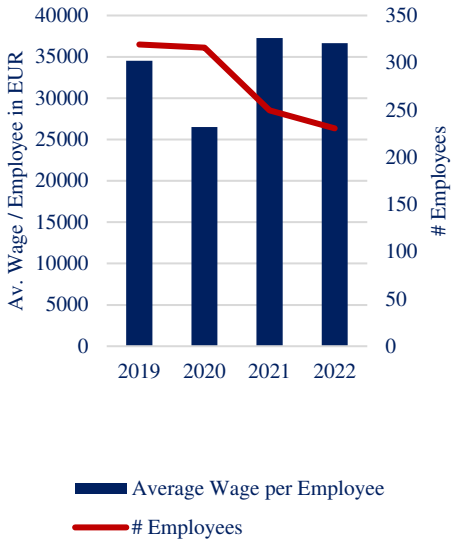
Operational Costs Analysis

It is complicated to analyze the operational costs evolution since 2019 due to the covid-19 impact the cinema segment in the years 2020 and 2021, *exhibit 49*. Therefore, this analysis focuses mainly on the comparison of the years 2019, 2022 and 2023. Although the year 2019 is set to be the best comparison to 2023 as it is considered that the cinema market has recovered from the covid-19 impact this year, due to the number of tickets sold in the 3Q23.

The operational costs-to-revenue ratio seems to be slightly decreasing throughout the years as its value for the 9M19 and 9M23 was 52.6%, 50.9%. This ratio was 47.0% for the 9M22, suggesting that there will be an increase in it this year, as many costs increase by the last quarter of the year. It is assumed that the cinema industry has higher costs and lower margins than the audiovisuals industry, because this NOS segment increased substantially its margins during covid-19, time which the cinema segment was mostly closed.

The costs of goods sold are defined in the same way as the ones for the telco segment. In the 9M23, the COGS-to-revenue ratio, *exhibit 50* and *exhibit 51*, has remained almost similar to the one from the same period of 2019. When decomposing the COGS in direct costs, costs of products sold and support services, it is observable that there is a shift of weights among them. Direct costs weight has decreased from 94.3% to 78.2%, costs of products sold weight has grown from 0.9% to 12.9%, and support services costs weight has increased from 4.9% to 8.9%, in the 9M19 compared to the 9M23, respectively. Direct costs have been decreasing as a result of the implementation of new technologies that are more cost-efficient. On the other hand, the costs of products sold have overall increased due to the increase in prices because of covid-19, as was previously discussed.

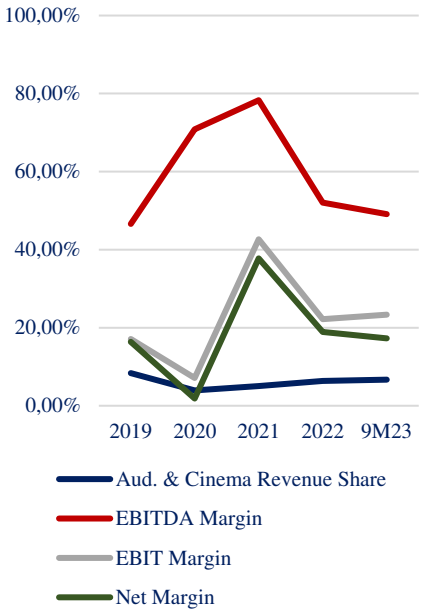
Exhibit 52 - Wages & Salaries Drivers, A&C



The remaining operational costs have also decreased in their revenue ratio when comparing the 9M19 and 9M23, *exhibit 51*. It is relevant to analyze the supplies and external costs-to-revenue ratio, *exhibit 51*, as it has a considerable weight. It has decreased from 8.6% to 7.5% comparing the 9M19 to the same period of 2023. The marketing and advertisement costs have also been decreasing, from 5.9% in the 9M19 to 4.0% in the 9M23. In addition to this, the number of employees, their wages and average wage per employee, *exhibit 52*, are calculated using the same assumptions as for the telco segment. Given this, it is important to point out the reduction from 316 to 205 employees in 2020 following the covid-19 crisis. However, as the covid crises ended, this number grew substantially, as demand for cinema operations increased. By the end of the third quarter of 2023, the number of employees was similar to pre-covid years, reaching 318 employees. Their average salary in the first three quarters of 2023 was already higher than in the same period for the previous year, suggesting an increase by the end of this year, compared to 36.66 thousand EUR in 2022. The wages and salaries revenue margin for this segment has been increasing at a CAGR of 7.21% since 2017. The remaining costs hold insignificant cost-to-revenue ratios, less than 0.5% in absolute value.

Profitability Ratios

Exhibit 53 - Aud. & Cinema Margins



The EBITDA and EBIT are adjusted in the same way as for the telco segment. These two margins, *exhibit 53*, have increased from the 9M19 to the 9M23. Similarly, the net margin, *exhibit 53*, has also increased in the same periods. However, a larger improvement was seen in the EBIT margin, a growth of 9.0%, compared to a growth of 3.7% and 4.5% for the EBITDA and net margins for the same period, respectively. These improvements are a pure reflection of overall costs decrease, as a result of the implementation of more cost-efficient technologies, and also due to the decrease in screens available which has a direct impact on all cinema operational costs and asset D,A&I. In addition to this, the current interest rate environment pushes financial costs to go up, decreasing the net margin, as was discussed before. Lastly, non-recurring lines have also had an impact on the net margin of the company as this segment usually records significant gains on financial assets, which has not been seen this year and is not expected to happen in 4Q23. Overall, this segment's profits and losses have become more profitable when comparing 2023 to 2019. However, one can say that in 2022 this segment was more profitable than it is expected to be by the end of 2023, due to the recovery of the Portuguese cinema operations, which are less profitable than the audiovisuals & other operations.

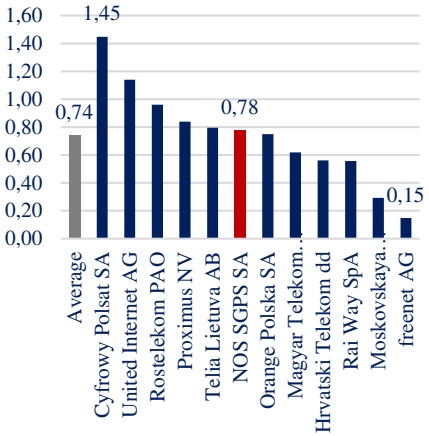
IV) Assumptions

1) General Information

The valuation of NOS SGPS includes intrinsic valuation via discounted cash flows (DCF) of the two segments Telecommunications (Telco) and Audiovisuals & Cinema (A&C), as each one has its own characteristics, as well as relative valuation based on comparable companies. Additionally, a dividend discount model is used due to the cash-cow characteristics of the company.

Regarding the forecast, it was set for a period of ten years, starting from the 3Q23 until the end of 2033. The company is in a mature state, and the market is highly penetrated, suggesting that there is limited room for significant growth or major changes in the market. Also, there are relevant drivers to breakdown the business, providing strong instruments to predict future cash flows with some degree of accuracy. In addition to this, telecommunications researchers from all over the world, such as Nokia, Ericsson, Huawei, and Samsung, are already investing in and researching 6G technology, which experts predict will appear worldwide by 2030. This goes in line with the 10-year cyclical pattern that networks tend to have. In the Portuguese market, as we saw with 4G and 5G networks, there is typically a one-year delay in the release of new network technology in comparison to the global release. For instance, 4G spectrum auctions in Portugal were in 2011 (per Anacom), after the technology was released in 2009 and reaching a global presence in 2010. For 5G, the auction took place in 2021, also one year later than the general global release and in line with the two-year delay of the pioneer release in 2019. In line with that, we expect NOS to be a heavy bidder in the 2031 spectrum auction and extend their network expansion to 2032. This aligns with their strategy to obtain the necessary resources to maintain their quality status and reputation. With this, 2033 would be the mature state where profits can be collected.

Exhibit 54- Capex to Cash Flow (FY0)
(1 to 5 Billion Market Cap)



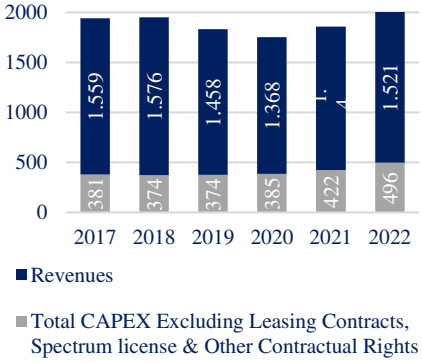
Most of the metrics used to forecast the necessary information take into consideration historical data, as the market is highly penetrated and saturated, and the company is at a mature state. However, for the Audiovisuals & Cinema segment, as the pandemic completely disrupted the amounts of tickets sold and therefore the revenues and we expect that it probably will not repeat in the future, the years of 2020 and 2021 weren't included in the forecast of the segment.

Furthermore, it is also important to acknowledge some IFRS changes that had taken place from 2018 to 2019, not making the years 2017 and 2018 truly comparable with the following years, which are summed up in the appendix's *general notes*.

2) Forecast CapEx

Telco Industry CapEx

Exhibit 55 - Historical CapEx to Revenues (Million EUR)



Capital expenditures are the motor for Telecommunications enterprises, it is the only way to keep up with technology, and successfully answer customers' demands while battling competition. For the European scene, in the relevant period (2010 onwards), Capex in percentage of revenues increased at a steady pace. The introduction of 4G and fiber possibilities brought new dynamics of expenditure comparing to 2G/3G. Portugal positions itself with high expenditure levels over the majority of the comparable European companies. Exhibit 54, showcases the CapEx to cash flow ratio, in 2023 in a €1 to €5 billion market cap filter where NOS is inserted. A higher ratio can indicate that a company is heavily investing in its future growth, but it also suggests that a large portion of the operational cash flow is tied up in these investments. This could be a concern if the company does not have sufficient liquidity for other

Exhibit 56 - Capex - Total Capex Excluding segmentation (2023 forecast)

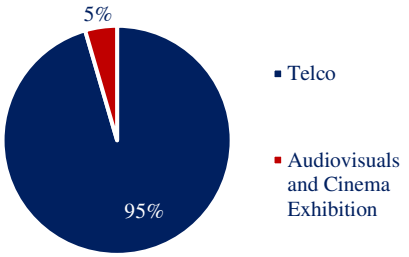


Exhibit 57 - 2G, 3G, 4G and 5G Base Stations

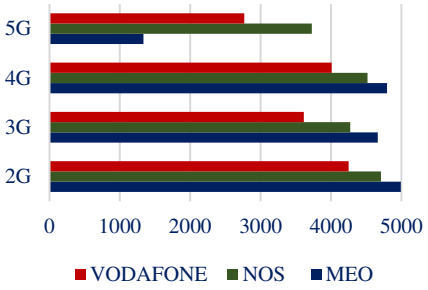


Exhibit 58 - Forecast CapEx to Revenues (2023-2028)

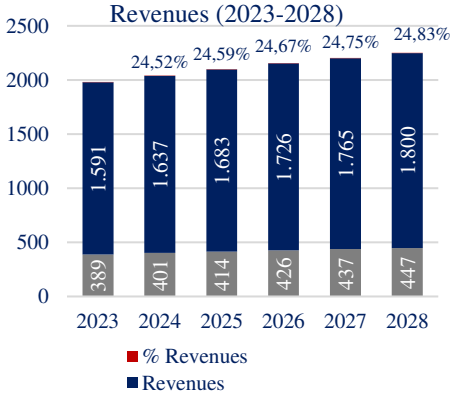


Exhibit 59 - Historical Customer Related CapEx (% Revenue)

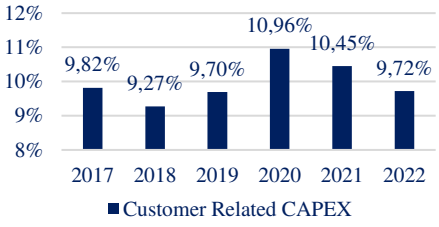
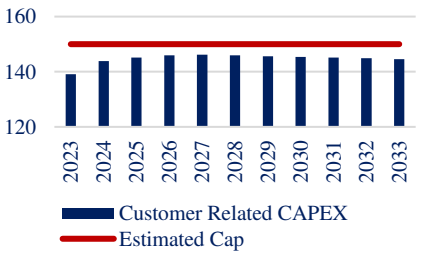


Exhibit 60 - Forecast Customer Related CapEx (Millions Eur)



needs. The company at 0,78, is above the European 0,74 average. While also not compromising liquidity, with ratios like 1,45.

NOS SGPS CapEx

Historical CapEx, exhibit 55, corresponds to the sum of acquisitions of tangible and intangible assets, customer contract chargers and usage rights and it is presented to understand the dynamics of NOS capital expenditures. Segmenting into Telecommunications (Telco) with 95% of capital expenditures and Audiovisuals, 5% weight, exhibit 56. Telco division further bifurcates into Technical Capex, which encompasses Baseline Telco and Network Expansion, and Customer Related Capex. Additionally, the analysis includes Leasing for both segments of the company and Spectrum Licenses which are only relevant in years of frequency auctions.

Due in great part to the emergence of the 5G network, NOS SGPS experienced huge expenditures in Network Expansion in 2021 and 2022, as well as in the Spectrum Licenses field, which reflects the very important win in the 5G spectrum license auction, dating back to 2021. During this time, the company's strategic investment strategies showcased the importance of a proactive approach to new technological advancements, and more than that the shift from the company's strategy in previous technological cycles. Following exhibit 57, we see the advantage of NOS in 5G base stations compared to 2G, 3G, and 4G where MEO (Altice) was always the leader.

Total CapEx Excluding Leasing's, Spectrum Licenses & Other Contractual Rights (Total Capex Excluding), exhibit 58, for 2023 has been a topic of great debate both in NOS company calls and company reports with the enterprise clearly focusing on keeping the quarterly figures under €100 million. We see this as a reasonable proposal considering the spending patterns in the first three quarters which all respect the €100 M cap. Therefore, our forecast for the year is less than €400 M (€388,97 M) which represents 24,4% of Revenues, respecting this intent with the last quarter of 2023 registering €96,14 M in Total Capex Excluding Leasing.

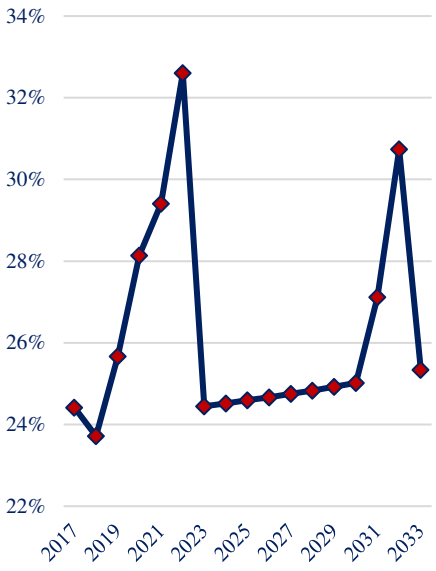
The trends for 2024 and 2025 are positive for NOS's CapEx, yet with nuances. With Leasing's and Spectrum excluded, 2024 is predicted to remain close to the €400 M mark, whereas 2025 is predicted to just surpass the limit (€414 M).

Telco is expected to decline in 2024 (percentage of revenues -0.5%) so it can then slowly increase in growth in the following years, exhibit 57. The tendency to slowly grow can be supported by the computation of the Compound Annual Growth Rate (CAGR) at 1,69%, which can then be applied to future years to estimate the level of expenditure.

Historically, Customer Related CapEx has consistently shown figures around €150 M which represent from 9,27% to 10,96% of revenues, exhibit 59. These are the expenditures related to consumer installations and are very cost optimized by the company. Not only that, but it also represents the ability of NOS to retain customers. Therefore, being a reliable indicator for future projections, suggesting a continuity of similar spending levels. This consistency can once again be quantitatively supported with the computation of the Compound Annual Growth Rate (CAGR) until 2024, at -2,06% which

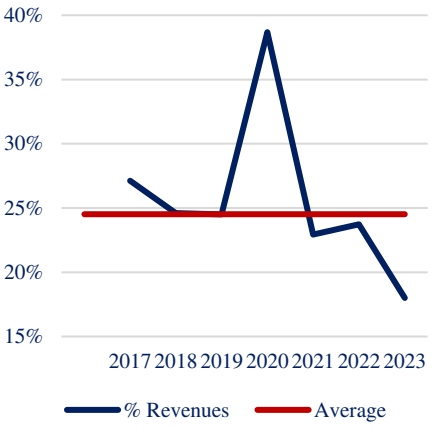
can then be applied to predict future year's expenditures, bearing in mind the increase in revenues that is expected the CAGR will allow us to keep similar levels of percentage of revenues without surpassing the €150 M cap, exhibit 60.

Exhibit 61 - CapEx in % Revenues



From 2026 until 2030, CapEx in percentage of NOS total revenues is expected to slowly increase, about 1 or 2 percentual points per year. After this, a cyclical pattern emerges, as we clearly see in exhibit 61, as in 2031 with the introduction of 6G networks we expect the expenditure levels of 2021 and 2022 to come back. Resulting in, a 2031 projected expenditure of €200 M in Spectrum auctions is forecasted, reflecting NOS SGPS's successful venture into the 5G area. The projected expenditure of approximately €200M, is grounded on the historical figures observed in previous spectrum auctions. Notably there is a €50M increase from the 4G to the 5G cycle, NOS allocated €113M in 2011 for 4G and €165M in 2021 for 5G, which ended up being reduced to €151,3M. This pattern of increase in investment indicates that for the 6G auction the investment is very justifiable. Therefore, 2031 and 2032 with resemblance to 2021 and 2022 are forecasted to jump towards the €500 M mark, representing about 30% in percentage of revenues. 2033 the last forecasted year shows the aftermath of the 6G investment and once again with similarities to 2023 we see a huge decrease in CapEx coming back to pre-investment figures at 25% of revenues.

Exhibit 62 - CapEx Audiovisuals (% Revenues)



Audiovisuals and Cinema exhibition Capex, only represents 5% of NOS's CapEx, exhibit 56, it was forecasted in terms of the sector's revenue. This showed us that specific movies and quarters can completely influence those years results. The industry is still recovering from the pandemic and this year's "Barbenheimer" sensation finally brought the industry back to pre-pandemic numbers. This is a clear indicator that if there are major blockbusters coming the traditional cinema is still very reliable. Around 25% is the metric for "normal" years, as we see in the historical exhibit 62, not accounting for Covid and this year's abnormal revenues we are comfortable with that figure. Furthermore, interestingly the percentage can be reached even considering years of high concentration of blockbusters and the pandemic with a median of historical expenditures as we reach an average of 24,62% which was used to estimate further years. This allows to take outliers of the equation and reach a comfortable average.

V) Forecast – Income Statement

It is important to split NOS SGPS into Telco and Audiovisuals & Cinema when performing its forecast, as these operate in different industries that have different drivers. The Telco segment forecast will have as its main driver the 5G implementation and prosperity, especially the impact in the B2B segment and the cost-efficiency of such technology, as it has been discussed in this report. These assumptions are about margin increase rather than revenue growth, as the market is very mature in Portugal. As for the Audiovisuals & Cinema, it is assumed that this segment has fully recovered from the covid-19 crisis. People have demonstrated that the cinema is still an interesting activity, that it hasn't died as many articles say. Though, it is not expected many changes in the cinema industry nor the audiovisuals. These assumptions will be mainly focused on margin increase, and there is expected revenue share changes, as

the cinema will keep increasing its revenues, mostly due to price increase rather than market increase, and audiovisuals are expected to decrease its revenue share, as it has been happening.

In addition to this, NOS will keep benefitting from internal transactions, accounted in the Elimination segment. The revenues of this segment will keep the same ratio to Telco plus Audiovisuals & Cinema revenues that have been occurring in previous years, and the same for every other respective line of the Eliminations income statement. Overall, the EBITDA of this segment will be zero, as the revenues will have the same value as the costs, due to being internal transactions. Thus, there will be no net operating profits expected here. There will be some non-core/non-recurring gains related to financial assets, similar to the median of past years, which will result in a positive net income of this segment, slightly increasing the overall net income of NOS SGPS.

Overall, despite the slight decrease in the Audiovisual & Cinema segment, the company's profitability is expected to increase due to the Telco segment performance increases, as it will be seen in this section, as it represents a much bigger part of NOS.

It is also important to mention that, despite that depreciations, amortizations and impairment losses are part of the income statement, the in-depth analysis for the assumptions of their forecast will be done in the balance sheet section as D,A&I are forecasted side by side with the respective assets (tangible, intangible, rights of use and contract cost).

1) Telco

The hypothesis behind the income statement forecast is that the company's margin performance will improve due to digitalization and the 5G implementation, through cost margins reductions, rather than revenue growth similar to past years, as it will be discussed in this section. The telecommunications market is highly penetrated in Portugal, so there aren't expected many changes in the growth rate of physical connections and KPI as there isn't much room to grow in the size of its physical infrastructures. This is assumed as the homes passed KPI growth have been decreasing, followed by its retention rate growth decrease since 2019 to further support this assumption. In addition to this, NOS has not been keeping up with its competitors in the broadband KPI, as was already discussed. There is indeed room for mobile growth as it is not capped by any physical connection. In addition to this, it was assumed that there is room for price increase due to the expansion of services, which is especially true for the B2B segment. The EBITDA margin is expected to increase slightly more than 1% by 2033, though the net margin is expected to experience a small decrease based on the expected increase in financial expenses.

Overall assumptions for 2024 onwards:

- Consumer and Business RGU growth rate smooth decrease until it reaches 1.0% and 1.36% by 2028;

- COGS-to-revenue ratio decrease: direct costs-to-revenue growing -4.6% per year; cost of product sold-to-revenue, and support services-to-revenue maintains as in 2023;
- Supplies and external services-to-revenue growing 5.9% per year;
- Marketing and advertising-to-revenue growing 1.8% per year;
- Provisions and adjustments ratio over current accounts receivables trade maintains as the average since 2017;
- Taxes, and other operating losses-to-revenue maintains as the average since 2017 to 2023;
- Wages and salaries increase due to employee increase and average salary per employee increase, according to increase in the Portuguese minimum salary;
- Non-recurring losses are calculated as a median of previous years, but for losses on affiliated companies;
- Financial costs are expected to increase to 4.33% by 2026;
- Effective tax rate is assumed to be the median of previous years, 13.1%.

Revenue Forecast

Exhibit 63 - Consumer Segment

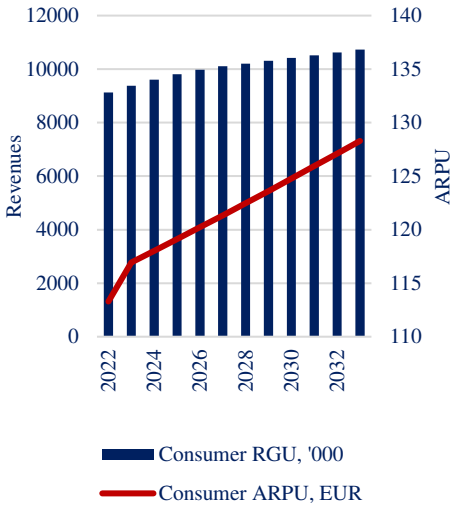
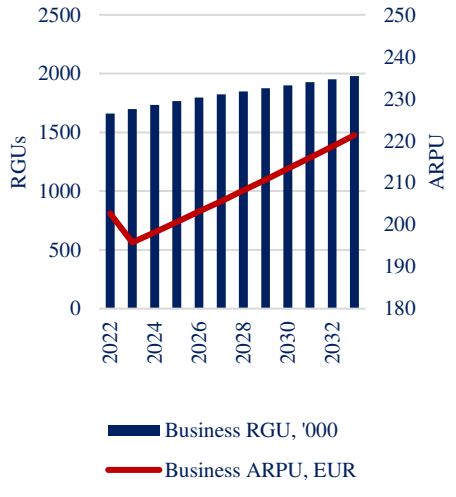


Exhibit 64 - Business Segment



As of the 4Q23 there aren't expected many differences from the other quarters of 2023, regarding RGU growth. It was assumed that both B2C and B2B RGUs will grow at 0.85% and 0.60%, respectively, which is the median growth rate of the 9M23. In the same way, the ARPU growth of the B2C is also expected to be similar to the last quarters, 0.47% on average. As for the business ARPU, 7.8%, it was identified that it usually spikes in the last quarter of the year. It was calculated as a median, to ignore outliers, of the last quarters since 2017. In the same way, wholesales & others revenue share will keep decreasing on average similarly to the 9M23, at -4.8%, to 6.1% of the total telco revenues of the 4Q23.

The 5G will also improve the number of RGUs for the telecommunications segment, *exhibit 63* and *exhibit 64*. However, evidence shows that this increase will be slightly sharper in the B2B rather than in the B2C. Although 5G will improve consumer services and can even slightly boost RGU growth, there will mainly occur a shift from 4G and older generations to 5G, as older technologies tend to be no longer used, still there is a high momentum in the market that cannot be set aside. Consumer RGUs growth is expected to smoothly decrease, starting in 2024, and stabilize by 2028 at approximately 100 thousand RGUs per year, which corresponds approximately to 1.0% until the end of the forecasted period.

There are big expectations for the economic impact of 5G in the B2B segment, as discussed before. It is expected that the number of RGUs will keep increasing, *exhibit 63* and *exhibit 64*, however, in the same way as B2C RGU growth, B2B RGU growth is also expected to start a smooth decrease in 2024, as there is high momentum right now that is expected to slightly fade away in the following years, and stabilize in 2028, at a rate of approximately 26 thousand businesses per year. This rate is higher than the B2C growth rate considering the 5G potential to the industry. It is calculated considering the relative CAGR of business RGUs over consumer RGUs, 0.37%, from 2017 until the end of the 3Q23, *equation 3*. Thus, B2B RGU growth will cap at a rate of 1.37% until the end of the forecasted year. However, it is normal for the

Exhibit 65 - Telco Revenues Forecast

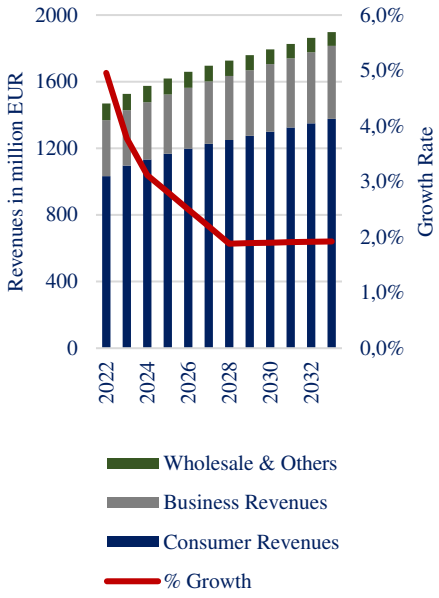


Exhibit 66 - Operational Cost Breakdown

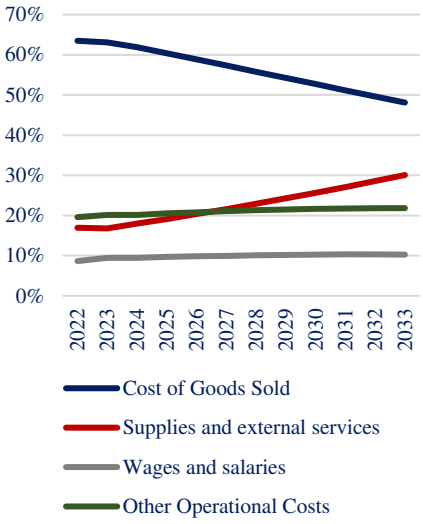
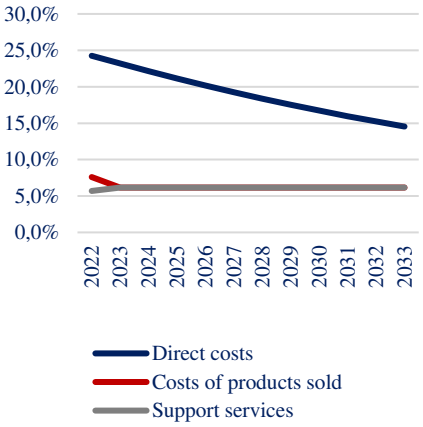


Exhibit 67 - COGS-to-Revenue Ratio Breakdown



absolute growth of consumer RGU to be higher than the business as the B2C market is much larger than the B2B market.

Although the Portuguese market is very price sensitive, the consumer ARPU, *exhibit 63*, hasn't had significant changes since 2020. It is forecasted that it will keep growing on average at the same rate, which is 0.93%, from 2024 onwards. The average is done since 2022 as it is assumed to be good years due to the ARPU increase. In previous years ARPU usually decreased, not reflecting the overall innovation of this industry for the consumer segment. As for the business ARPU, *exhibit 64*, and despite the decrease in 2023, it was assumed that it will increase from 2024 onwards, at 1.23%, which was calculated by averaging the growth rate of the years 2021, 2022 and 2023. This can be justified with the technological innovation that the 5G has been bringing since 2020, which were good years as ARPU increased and was assumed better overall performance of new technologies, bringing better and easier ways for companies to be managed.

For the wholesales & others revenues, *exhibit 65*, it is assumed that their absolute value won't be much different than the former years, meaning that their share will decrease in the future. These revenues have been decreasing in their telco share from 2017 to 2023 at a CAGR of -3.68%, and they are expected to do so from 2024 onwards, at the same rate.

Operational Costs Forecast

The principles applied to forecast the operational costs of the 4Q23 consisted in identifying whether there are some costs that increase by the end of each year. If there isn't any increase not, it was assumed that they would be similar to the 9M23.

The costs that were identified to rise by the end of the year were direct costs, costs of products sold, support services, marketing and advertising, and supplies and external services costs, as was already discussed in the company analysis. On average, these costs grow, 10.9%, 44.6%, 21.6%, 100.1%, and 8.9% in the final quarter of each year, respectively. As for the costs regarding taxes incurred, and other operating losses, their revenue margin in the 4Q23 was forecasted to be the average of the 9M23, 2.4%, 0.06%, respectively. Provisions and adjustments were forecasted based on the percentage of accounts receivables trade and as there weren't identified any peak quarters, its ratio for the 4Q23 was the average of the 9M23, 0.74%.

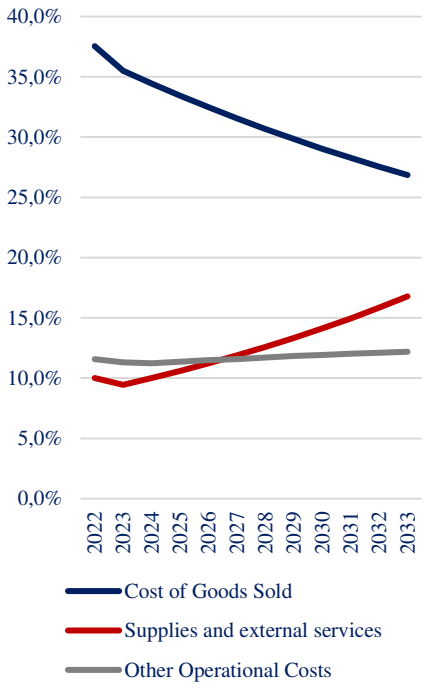
Lastly the wages & salaries costs for the 4Q23 were forecasted having in mind the increase in the number of employees and the increase in their average salary. Again, no peak quarters were identified, thus, an average of the growth rate of the 9M23 were applied to both drivers. The number of employees increased 0.06%, and their average salary increased 1.09%, respectively, as this year has been a good one performance-wise, which reflects the remuneration of its employees.

From 2024 onwards, COGS are the ones that are expected to keep decreasing in its ratio to revenues, *exhibit 67* and *exhibit 68*. Direct costs are expected to keep decreasing at the same rate as they have been since 2019, which corresponds to a CAGR of -4.56%, until they reach 14.5% in 2033. This

decrease can be justified as data will be transferred in a more cost-efficient way due to 5G, compared to previous technologies. Costs of product sold, and support services revenue margins are assumed to be the same as in 2023 (6.2% for both costs), for the following years. Overall, COGS revenue margin is decreasing at a CAGR of -3% from 2023 to 2033, changing from 35.5% to 26.9%, respectively.

Supplies and external services-to-revenue ratio, *exhibit 68*, have been increasing since 2019 and are expected to keep increasing at the same CAGR of 5.92%. These costs are expected to rise as the implementation of 5G will increase bandwidth, will work on higher frequencies than previous generations, and will have more complex networks than the previous technology. To ensure its optimal functioning, its maintenance and control are expected to increase, and it will also require additional infrastructure such as duct and poles in order to cover the most area, decreasing frequency losses or degradation due to interferences.

Exhibit 68 - Op. Cost-to-Revenue Ratio Breakdown



For the marketing and advertising costs, it was assumed that its cost-to-revenue ratio would keep increasing at the same rate as it has been increasing from 2017 to 2023, which corresponds to a CAGR of 1.8%. This is justified by the ongoing trend due to digital transformation of marketing and advertising and the competition of the market, as was discussed already. By 2033, this ratio is expected to be 3.3%, which corresponds to an increase of 0.5% over the 10 year-period.

Regarding taxes incurred and other operating losses, their cost-to-revenue ratio is assumed to stay the same as in 2023, which corresponds to 2.3% and 0.05% respectively. As for provisions & adjustments, these costs will maintain the same ratio over current accounts receivables trade, 3.6% as they have for the end of 2023.

The wages and salaries forecast took into consideration the increase in the number of employees and their average salary. The employees' growth rate was a moving average of the previous 3 years, as it is very difficult to forecast in which years there will be increases or decreases. Overall, this number is expected to increase to 2312 by the year 2033 as the company increases in size and cashflows. In addition to this, NOS is also focusing on increasing its attractiveness to future employees as seen in their report.

For the average salary growth forecast it was assumed that future growth would be proportional to future growth in the Portuguese minimum wage, using as a proportion the ratio between the average growth rates from 2017 to 2022, *equation 8*.

This is possible to compute as there is information available on the potential salaries for 2024, 2025 and 2026. On the third of October 2023, the Portuguese prime minister Antonio Costa gave an interview to CNN Portugal where he admitted that these salaries could be €810, €855, and €900 per month, for 2024, 2025, and 2026 respectively. For the yearly minimum wage, one just needs to multiply the average months by the number of remunerations in Portugal, which is 14. Given these, it is possible to calculate the CAGR of the Portuguese

minimum wage for each of those years, and by applying the formula above, the CAGR of NOS salaries for each of these years.

To reduce error and the need for future estimations, the average of each of these three CAGR of NOS wages was the growth rate applied to the growth of the average salary per employee, which was 0.7% per year.

Non-Recurring costs, Interests and Effective Tax rate

The forecast for the majority of the identified non-recurring costs is done by simply calculating the median of these costs from 2017 to 2023 for 2024 onwards, and the average of this year's costs for the final quarter of 2023.

The exception is net losses on affiliated companies, which is forecasted based on the median of its ratio over the item Investments in jointly controlled companies and associated companies presented in the balance sheet, from 2017 to 2023. As for the last quarter of 2023 this item was forecasted as the median of such margin since the start of 2023.

The interest expenses ratio over total debt was used as a proxy of financial costs, as it is a good approximation of the cost of debt, *equation 9*. For the 4Q23, it was assumed that this ratio was set to be equal to the 3Q23, 1.01%, as it was assumed that the cost of debt would remain the same. Thus, the approximated cost of debt for 2023 was 3.53%.

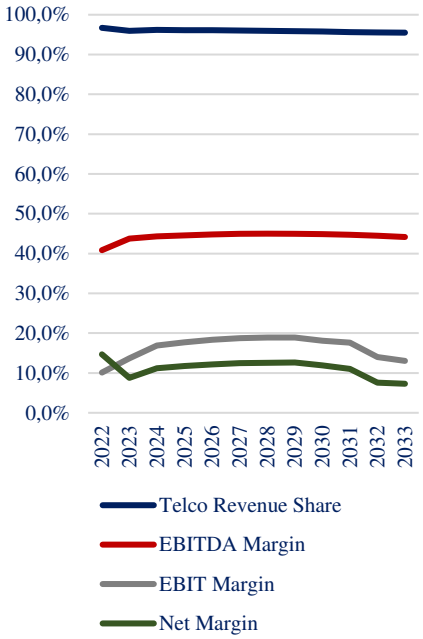
From 2024 onwards, there will be a smooth increase in this cost of debt until it reaches 4.33% in 2026, which is the cost of debt calculated that year. This cost of debt will be further explained when discussing the WACC for NOS.

The tax rate for the forecasted periods wasn't assumed to be the statutory tax of NOS, 22.5%, as it would decrease the net income and cashflows of future periods, due to the fact that NOS benefits from tax reductions, making its effective tax rate almost 40% of the statutory tax. In this way, the future effective tax rate is assumed to be equal to 13.1%, which is the median from 2017 until 2023, except in the 4Q23, in which is assumed to be the median since the beginning of 2022, 11.8%

Forecast Analysis

After the application of the assumptions to the forecast, the operational costs-to-revenue ratio decreases as expected from 56.3% in 2023 to 55.8% in 2033. As a result, the EBITDA margin, *exhibit 69*, has increased from 43.7% to 44.2%, 2023 and 2033 respectively meaning that the profitability of the company has increased. The net margin peaks in 2029 at 12.7% which is expected as NOS wants to collect profit from their 5G investments, it then decreases due to 6G investments, and increases in depreciations, amortizations and impairment losses, *exhibit 69*. Overall, it is seen a margin improvement rather than a significant revenue growth.

Exhibit 69 - Telco Margins



2) Audiovisuals and Cinema

The audiovisuals and cinema segment has taken a huge hit in the past due to the arrival of streaming platforms and covid-19. Nevertheless, the cinema

results from the 3Q23 suggests that the cinema revenue's recovery is done, as NOS sold the highest number of tickets since surpassing the former winner. Given this, it is safe to assume that the cinema industry has not seen a permanent shift in consumers' preferences, and cinema revenues have fully recovered from the hit taken in 2020 and 2021. On the other hand, the audiovisuals segment has been decreasing its share of revenues for quite some time, as analogic equipment's are being replaced with digital ones and streaming platforms, a trend which is expected to persist. Given this, the most relevant change expected in this segment is the change in revenue share. Also, recall that overall operational costs-to-revenue ratio is increasing in 2023 due to the recovery of the cinema revenues, which is a less cost-efficient industry than the audiovisuals, as it was discussed. Thus, costs from 2023 onwards are expected to maintain their cost-to-revenue ratio, apart from few exceptions that will be discussed here.

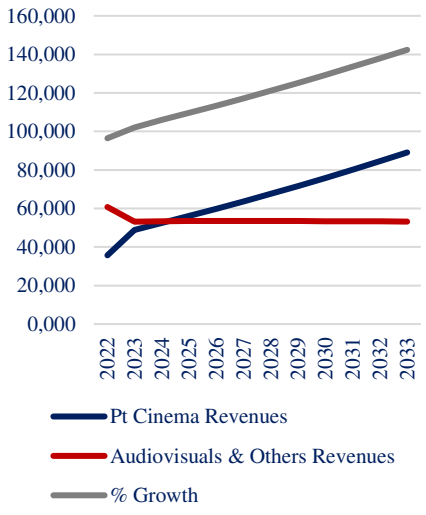
Time assumptions:

- The period from the 2Q20 to the 2Q21 were assumed exceptional as they were affected by covid-19;
- The overall results from the years 2020 and 2021 were also assumed to be influenced by covid-19;
- Tickets sold growth was assumed to be unstable from the 2Q20 until the 3Q22;
- The overall cinema tickets increase was assumed to be stable in 2017, 2018, 2019 and 2023.

Overall assumptions 2024 onwards were:

- Number of tickets sold is expected to increase 303 thousand units per year;
- Revenue per ticket will keep increasing at historical values, 19 cents per year;
- The audiovisuals and others revenue share is expected to decrease at historical rates, -3.3% per year;
- COGS-to-revenue ratio is expected to remain the same as in 2023, 29.1%, and the costs within are also expected to maintain the same cost-to-revenue ratio as in 2023;
- Wages and salaries increase due to employee increase and average salary per employee increase, according to increase in the Portuguese minimum salary;
- Provisions and adjustments are set to maintain the same ratio over accounts receivables trade as the average from 2017 to 2023, -0.6%;
- Marketing and advertising, and supplies and external services to-revenue ratio are expected to remain the same as in 2023, 3.9% and 7.5% respectively;
- Taxes and other operating losses to-revenue ratios are expected to remain equal to 2023, 0.1% for both.

Exhibit 70 - Audiovisuals & Cinema Revenues, million EUR



Revenues Forecast

The revenues of the Portuguese cinema segment for the 4Q23 are expected to decrease compared to the 3Q23, which has had the highest number of tickets

Exhibit 71 - Revenue per Ticket, EUR

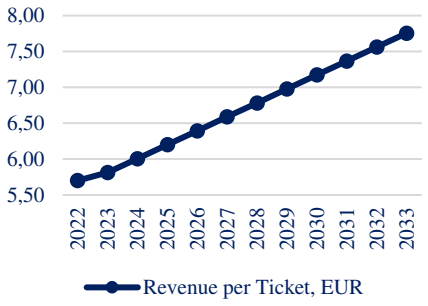


Exhibit 72 - NOS Tickets Sold in Pt, '000

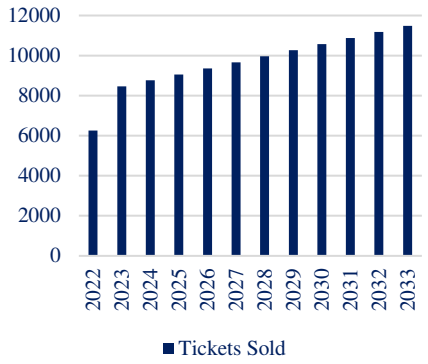


Exhibit 73 - Operational Costs Breakdown

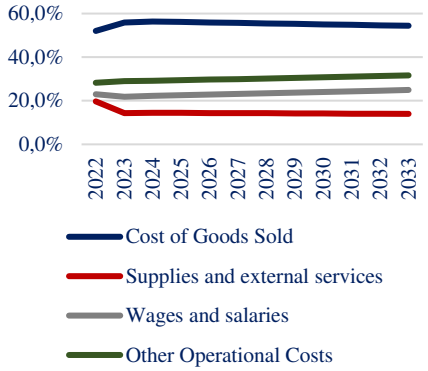
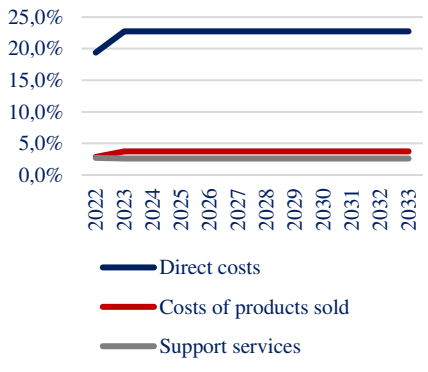


Exhibit 74 - COGS-to-Revenue Ratio



sold since 2019. Still there were released a lot of enthusiastic movies such as *Napoleon, from Ridley Scott* and *Wonka from Paul King*. As a result, the growth in the number of tickets sold was calculated considering the tickets sold in the 2Q23 and applying an increase of 76 thousand tickets, which is the average of increase of each quarter from 2017 to 2023, excluding the quarters where ticket growth was unstable due to covid-19. The revenue per ticket is expected to growth at a rate equal to the average growth of all quarters not affected by covid, 0.8%.

Audiovisuals and others revenue share is set to decrease at the same pace it has been, due to the reasons that have been discussed so far. In this way, the average growth rate of their revenue share calculated was -4.9%, since the start of 2023, decreasing it to 47.8% in this final quarter of 2023.

For 2024, the increase in the revenue per ticket, *exhibit 71*, was assumed to be 3.3% or 19 cents, which is the CAGR of revenue per ticket since 2017. Revenue per ticket has always been increasing at a steady pace in historical years, even in covid-19 years, and it is expected to keep going. It was decided that 3.3% growth per year is going to have a greater impact than desired in the long run. In this way, a fixed increase of 19 cents per year is assumed to take place from 2025 onwards on revenue per ticket. The number of tickets sold in Portugal, *exhibit 72*, in 2024 is forecasted to increase 303 thousand, which is the average increase per quarter for the considered stable years, multiplied by the four quarters of each year, *equation 10*. From 2025 onwards, the increase in tickets sold is expected to be the same as in the year 2024, 303 thousand tickets.

As for the audiovisuals and others revenues, *exhibit 70*, it is expected that their revenue share CAGR, from 2017 until 2023, holds from 2024 onwards, which represent a decrease of -3.3% per year. This is a result of digital transformation and the increase of competition such as streaming platforms, as it was discussed.

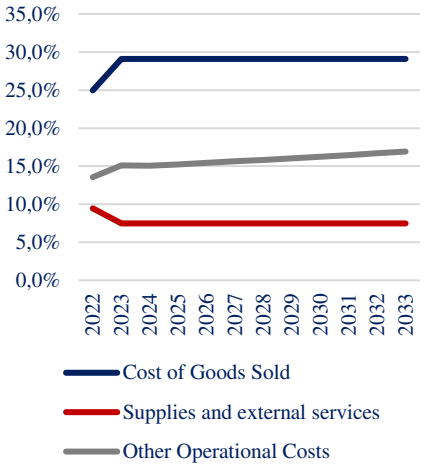
Operational Costs Forecast

The operational costs forecast for the 4Q23 in this segment have the same premise as the telecommunications segment. By this it is meant that, the objective is to identify whether or not exist recurrent increases in the last quarter of each year. However, this premise was not identified in any of the operational costs from the audiovisuals and cinema segment.

To almost every cost, it was assumed that their cost-to-revenue ratio for the 4Q23 would be equal to the average of the year. Thus, direct costs, costs of products sold, and support services revenue margin was set to be 22.5%, 3.7% and 2.7% respectively, constituting a COGS-to-revenue ratio of 28.9%; marketing and advertising, and supplies and external services costs would be 3.9% and 7.5% respectively; taxes incurred, and other operating assets would be 0.1% and 0.2% respectively. Lastly, provisions and adjustments are estimated based on the ratio between them and accounts payable trade, similarly to the telco segment. This ratio would be -0.2% for the last quarter of 2023.

From 2024 onwards, most of these cost-to-revenue ratios, *exhibit 75*, are set to remain equal to the margins of 2023 as not many changes are expected because

Exhibit 75 - Operational Costs-to-Revenue Ratio Breakdown



of the industry maturity, and also, there are no new technological implementations that have been considered to happen in the near future. Direct costs, costs of products sold, and support services to-revenue ratios, *exhibit 74*, were set to be 22.7%, 3.7% and 2.6% respectively, constituting a COGS-to-revenue ratio of 29.1%; marketing and advertising, and supplies and external services costs-to-revenue ratio would be 3.9% and 7.5% respectively.

As for taxes incurred and other operating losses, their future cost-to-revenue ratios is expected to remain the same as the average since 2017. The provisions and adjustments ratio with accounts receivables trade is also assumed to be the average since 2017.

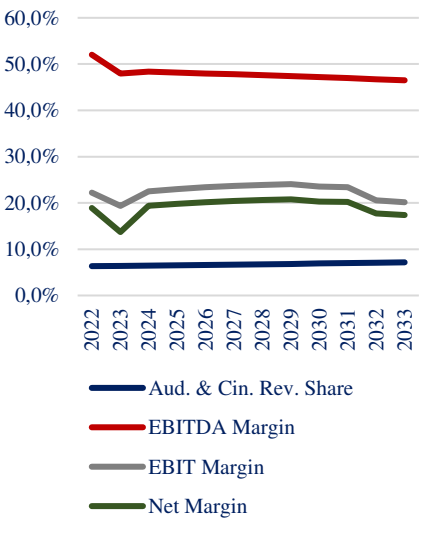
Non-Recurring costs, Interests and Effective Tax rate

The assumption for the identified non-recurring costs is like the one for the telco segment. In most of these costs, it was assumed that its future value would be the median of previous years, and for the 4Q23 it was the median since the beginning of the year. Although these costs are considered non-recurring/non-core, there is still a probability of them happening. Net losses of affiliated companies were also calculated using the same rational as in the telco segment, meaning that the ratio used as proxy was a percentage of investments made in jointly controlled companies. For the 4Q23, this ratio was assumed to be the median of the current year; and from 2024 onwards it was set to be the median from 2017 to 2023.

The forecast of interest expenses and the effective tax rate was also done using the same premises as in the telco segment. For the interest expenses, it was assumed that the approximate cost of debt would keep increasing until it reached 4.33% by 2026, and that in the last quarter of 2023 it would remain the same as in the previous quarter. As for the effective tax rate for the last quarter of 2023, it was assumed to be the median since the beginning of 2022, 20.62%. From 2024 onwards, it was assumed to be the median of the years not affected by covid.

Forecast Analysis

Exhibit 76 - Aud. & Cinema Margins



A few observations can be made after the application of the assumptions to the forecast, *exhibit 76*. Revenue is growing around the 3.4% yoy and the cinema share has been increasing throughout the years. Nevertheless, the operational costs-to-revenue ratio has been increasing due to the increase in salaries and wages, reaching 53.5% in 2033.

The EBITDA margin is set to decrease to 46.5% in 2033. This suggests that the company reduce its profitability in managing costs, but this makes sense as one of the revenue generators, the audiovisuals segment, will lose revenue share over time. On the other hand, both EBIT and Net margins increase by 2033, to 20.2% and 17.4%, compared to 2023, suggesting an increase in the company's profitability.

VI) Forecast – Balance Sheet

As throughout the company's valuation, these metrics were observed separately as telecommunications and audiovisuals & cinema segments. In line

Exhibit 77 - Increases in Assets and Capex amounts (€M)

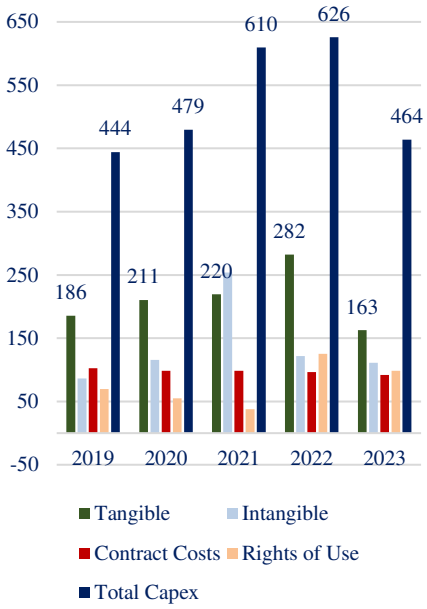


Exhibit 78 - Changes Disposals 3Q-4Q

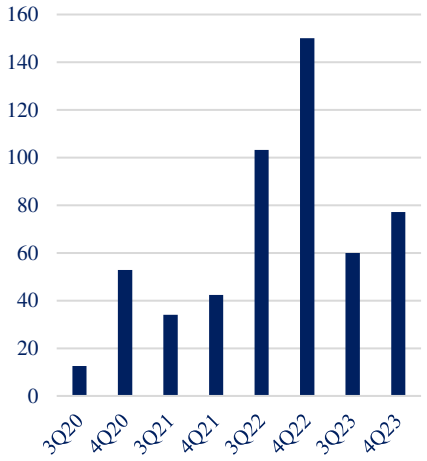
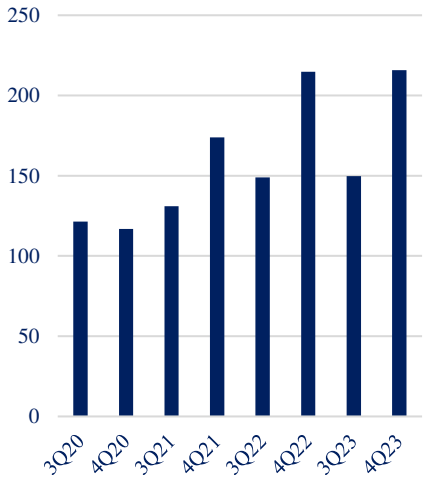


Exhibit 79 - Tangible Depreciation Changes 3Q-4Q



with the income statement, it was also included the evolution of the "eliminations" segment of the company, which deals with the transactions involving deals between companies within NOS.

The process of forecasting the balance sheet of the company was mainly made to analyze the evolution throughout the years of the main assets that compose the operating net working capital and to provide an accurate estimate for the depreciations, amortizations, and impairment losses. In addition, it was perceived as a sanity test for keeping track of main liquidity and leveraged ratios for the company: Debt/ Equity book value; Net Debt / EBITDA and Net Financial Debt / EBITDA after lease payments; current ratio; quick ratio; and cash ratio.

Several balance sheet metrics were estimated based on the evolution of revenues throughout the years. When this was the case, the fourth quarter and total year of 2023, was calculated using the estimates for all 2023 quarters of revenues. The percentage of 2023 of the implicit rubric relative to revenues was based on the average or median of the first three quarters of 2023, and from there it was computed as the average of the previous years. The assumptions for all the balance sheet items are presented in *Table 21 and 22*.

Overall Balance sheet assumptions:

- The tangible, intangible, contract costs and rights of use assets were forecasted as acquisition costs minus accumulated depreciations, amortizations, and impairment losses.
- Accounts receivable and accounts payable were estimated based on ACP and APP, respectively.
- Inventories were predicted using total revenues as a driver.
- Current and non-current borrowings were predicted as a percentage of total assets.

As mentioned in overall assumptions, those four non-current assets were forecasted in line with NOS's approach. As NOS does not separate them between both segments, it wasn't feasible and accurate to estimate the division of assets. Therefore, the forecast was made for the NOS group as a whole and, at the end, separated based on historical percentages of the segments relative to the company. Within the acquisition costs, there are included the increases in assets, its disposals and write-offs over the years and transfers of assets from one category of assets to another. As referred in Capex analysis, the increases of these assets are equal to the total group Capex in that specific period, *equation 17 and exhibit 77*. This equality only became true in 2019 with the inclusion of a rights of use asset and its respective lease recognized as depreciation (IFRS note in *Appendix*). So, we performed an average of the percentages of each asset increase in total Capex (previously forecasted) over the years and apply it for the estimated period. The trend has been for increases of assets to stabilize during the next few years as capital expenditure does but grow alongside the investment in 6G from 2029 to 2033. To solely capture the expected investment in spectrum licenses in 2031 for intangible assets, we took this effect (€200 M) out of the Capex total amount for the remaining three assets. Similarly, 2021 was not considered when computing the 2024 ratio of increases in intangible assets over Capex.

Exhibit 80 - % Telco's Depreciations and Amortizations over Total Assets

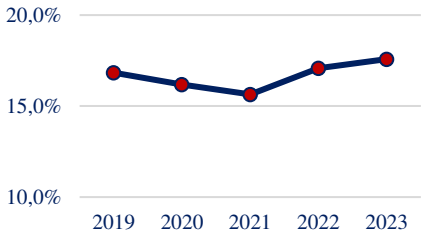


Exhibit 81 - % Cinemas Depreciations and Amortizations over Total Assets

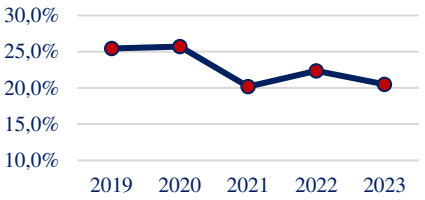


Exhibit 82 - Telco's Depreciations and Amortizations Margin

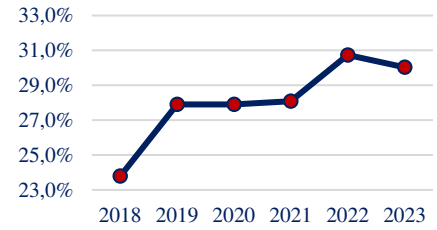
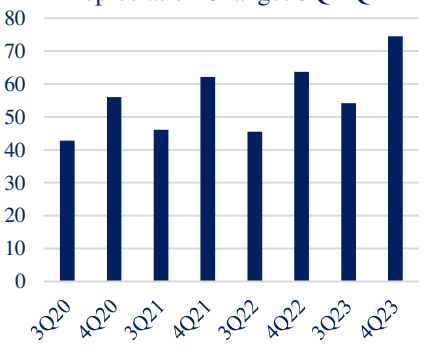


Exhibit 83 - Rights-of-use Depreciation Changes 3Q-4Q



For tangible assets, as the disposals are significantly impacted by the levels of assets increases and flow according to them, they were estimated based on a percentage of increases over the years. It is expected that the changes of values from the third quarter to the fourth one in 2023 will be similar to the ones in 2022, since disposals are still retaining the post-5G investment effects, *exhibit 78*. As these are accumulated values it wouldn't be accurate to also include the values from the first and second quarter of the year. Consequently, the growth of the 3rd quarter to the 4th one in 2022 was applied to forecast the disposals in 2023. For 2024 and the periods until 2030, it was applied an average of 2019 and 2023, excluding those three years of 5G investment, since as NOS referred, there is a deceleration of investment. We estimated that for the deployment of 6G in 2030, increases of assets will grow substantially and the disposals will behave in a similar way than during the 5G investment years. As a result, for 2030 and 2031, disposals were predicted as the average of the 2020 and 2021 levels.

For the other assets, as the disposals don't vary in a relevant way with increases (or were even inexistent), it was reasonable to use historical averages to forecast disposals. It is worthwhile to refer that the disposal of NOS towering assets due to alienation on 14 April 2020 of 2,000 sites (towers and rooftops) to Cellnex Telecom, SA, was viewed as a non-recurring operation, therefore it was not considered when forecasting the assets. Therefore, by excluding this event, transfers and others also did not present significant variations, thus they were maintained in line with previous years (for all four assets).

The accumulated depreciations and amortizations on increases were calculated as a percentage relative to the Net value of the asset in the previous year, as these metrics start only to be deducted one year after the acquisition. As in disposals, for depreciations in tangible assets and rights of use, we considered the growth from 3rd to 4th quarter to estimate the final value of 2023. As seen in *exhibit 79 and exhibit 83*, there is a clear pattern. However, for contract costs, as the value of increases is almost completely amortized in the same year, this metric was predicted based on acquisitions of assets. In a similar way, the depreciations or amortizations of disposals correspond approximately to the entire value of disposals, being therefore estimated based on them for the assets. Finally, to divide the total net value of the assets between the two segments of NOS, we applied the average of historical weights of each category of assets by Telco and Audiovisuals & Cinema.

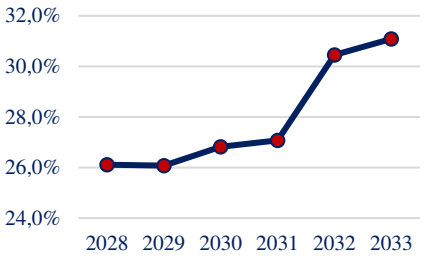
1) Depreciations and Amortizations

The depreciations were forecasted using the respective depreciations and amortizations of the four non-current assets analyzed above, *equation 18*. Once again, by not having information of the assets and their respective depreciation scrutinized by segment, it was the most accurate way to predict its values. Before 2019, as already mentioned, the total value of depreciations didn't include the depreciations of rights of use since this was an operating expense.

We started by summing the total assets values (of the four asset classes) for each segment, as computed above. Then, we applied the ratio of depreciations, amortizations, and impairment losses over total assets of the respective segment because this relation has been substantially stable over time

(especially Telco's), *exhibit 80 and exhibit 81*. This ratio was obtained by including firstly the previous year's value and secondly the growth of this ratio from one year to the other. Finally, this growth is equivalent to the variation of the ratio of the total group's depreciations and amortization over the segment's total assets, *equation 19*. As expected, depreciations and amortizations were significantly high in 2022 and 2023 following substantial 5G expenditures in assets.

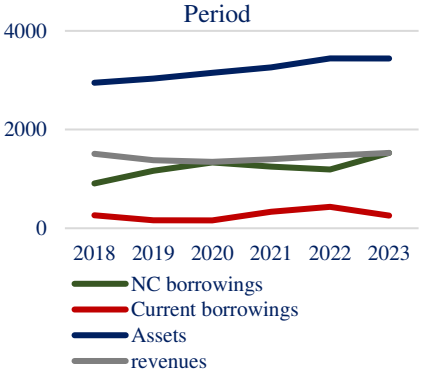
Exhibit 84 - Depreciations and Amortizations Margin



For Telco, following the trend of total assets, these values decrease significantly in 2024 and then stabilize during the next few years. As in 2021 and 2022, depreciations and amortizations increase at a higher rate during 6G investments in 2031 and 2032. By relating total depreciations and amortization's margin over revenues, we observe that it starts consuming substantially more revenues during the years of investments and deployments of new technology, *exhibit 82*. For example, from 2018 to 2019, this ratio increased 4,1% achieving 27,9% of total revenues, which is equivalent to €56,9 M. The ratio increased even further in 2022 (30,7% of revenues), something that we expect to observe for the 6G investment years (30,5% in 2032), *exhibit 84*. For the telecommunications industry, the monitorization of the Capex spendings and therefore depreciations and amortizations levels over revenues is crucial for the profitability of the company, because considering solely the inflows of the company may lead to misleading results.

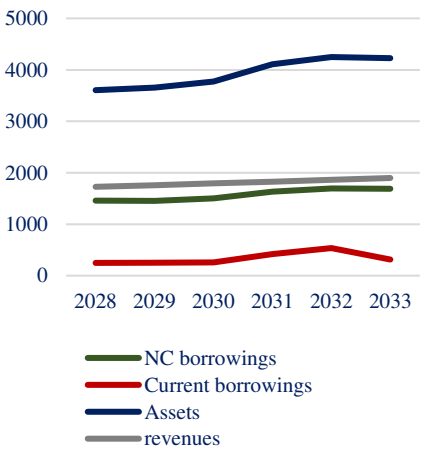
2) Borrowings

Exhibit 85 - 5G Investment Period



The non-current borrowings had a significant increase in May 2023 mainly due to the refinancing of a €300 Million DCM bond and therefore it is expected that NOS finishes the current year having a considerable higher number of borrowings when compared with previous years. These values have also been increasing in the past, aligned with the investment made in the deployment of 5G networks, *exhibit 85*. As referred by NOS, it is expected that the investments decrease during the next few years and then start to increase again as a new technology cycle begins in 2030 and 2031.

Exhibit 86 - 6G Investment Period



The value of borrowings and loans of a telecommunications company significantly depends on the acquisitions of assets required for the deployment of new technologies. Therefore, it is expected that NOS's debt will remain associated with the investments in assets throughout the years. As observed, it financed the major spendings in assets at an early stage with the use of non-current borrowings (from 2018), followed by current borrowings from 2020 onwards, *exhibit 85*, something that is expected to be seen during the financing of the 6G deployment but on a bigger scale, *exhibit 86*. However, for the next few years we expect that NOS's debt level does not fall again to pre-5G investment levels since the company has been growing with additional requirements and bigger size. In addition, new technologies are becoming more expensive, and their maintenance and repair cost may demand higher financing volumes.

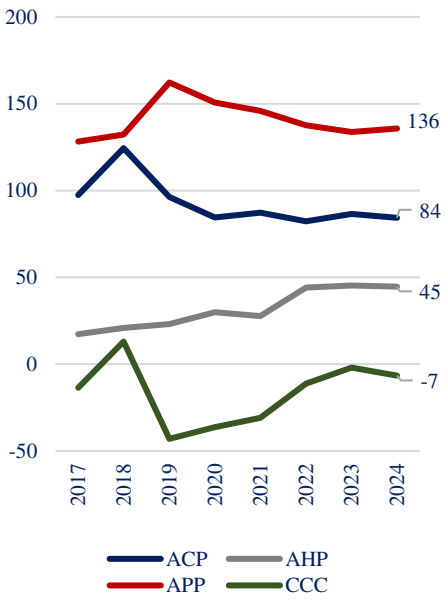
For all these reasons, both current and non-current borrowings were estimated as a percentage of total assets. For Audiovisuals & Cinemas, both borrowings were also estimated via total assets, although the 5G and 6G cycles do not have a substantial impact as observed in the other segment.

Both current and non-current borrowings value for the end of 2023 were estimated as the average of the first three quarters of 2023. But the 2024 value of non-current borrowings presented the figures of all the five previous years, since the future refinancing of loans depends on all the amounts and maturities, regardless of including or not 5G deployment years. On the contrary, since current values represent day to day operations, from the moment the spending cycle finishes it immediately starts to decrease and recovers pre-investment years values, so the 2024 figure excluded the years of 2021 and 2022. This may be seen in both 2022-2023 and 2032-2033 period changes, when the investment cycle closes and, from one side, non-current borrowings maintain or grow their figures (due to payment and refinancing situations), but from the other side, current borrowings register a faster decrease.

Historically, NOS has been able to maintain non-current borrowings levels below revenues. However, during capital-intensive years, the gap between both has substantially decreased, with 2023 debt levels being even equal to revenues. During the 6G investment period, the trend is expected to be the same with substantially close values in 2032, something that NOS needs to carefully manage, even more if revenues levels compare to total borrowings.

3) Cash Conversion cycle Analysis (CCC)

Exhibit 87- Telco (days)

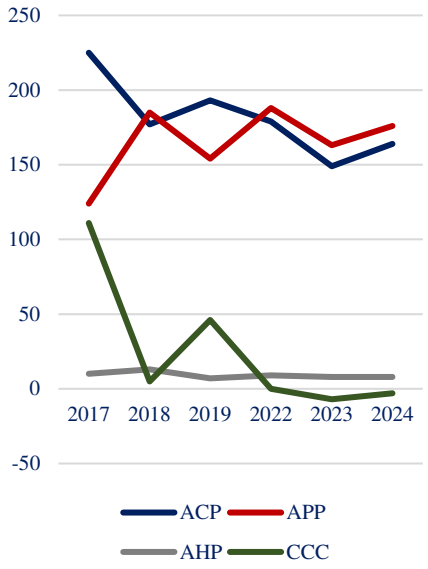


Analyzing the cash conversion cycle is vital to assess the liquidity of NOS's cash flows and the underlying short-term risk. In addition, it may represent an accurate driver for forecasting accounts receivable, accounts payable and inventories.

Starting with Telco segment, the average collection period, *equation 20*, has been decreasing since 2018 (124 days) and from 2020 onwards has been stabilizing and there are no signals of a different tendency, therefore the last value of 2024 (84 days) was assumed as fixed for the forecasted period. To compute the average payable period, we used cost of sales as the sum of cost of goods sold and supplied and external services. The average payable period, *equation 20*, has been registering a similar trend as the first metric showing decreases and successively lower variations and stabilizing mainly during 2022 and the quarters of 2023. As a result, the value of 136 days was assumed as constant throughout the years. In addition, the average holding period, *equation 20*, has been following a growing trend, but in both 2022 and 2023 it reached more stable values, that we expect to be maintained (45 days). Inventories include tangible items such as mobile phones and customer terminal equipment but also intangible ones as it owns content broadcasting rights. Due to the complexity in predicting the number of days it takes to stock these intangible rights before being sold, the holding period was not seen as an accurate driver for estimating inventories. So, this rubric was predicted as a percentage of revenues. (*Table 21).*

For all the metrics, there were not observed significant fluctuations during intensive 5G investments or pandemic periods. So, future relevant investments are not expected to impact (at least substantially) these average periods. The Cash conversion cycle for the Telco segment has been negative over the years, which is advantageous since NOS will be able to collect client's payments before it must pay to its suppliers. This trend has been turning less negative but

Exhibit 88 - Audiovisuals & Cinema (days)



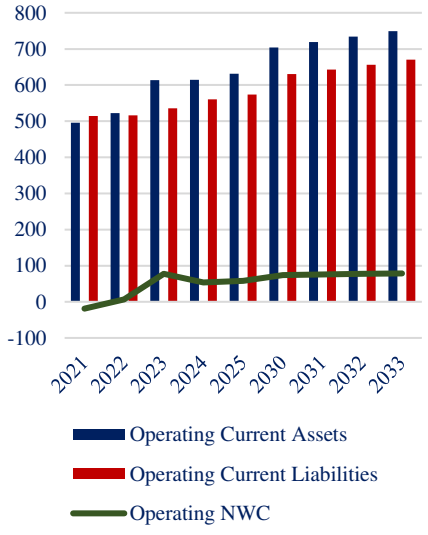
nonetheless it is expected to be maintained at a low negative number of days (-7 days), reflecting Telco's strong liquidity levels, *exhibit 87*.

For Audiovisuals & Cinema, as mentioned earlier, the 2020 and 2021 years were not considered, as the pandemic period completely disrupted the transportation of inventory and both receivables and payables deadlines. Here, the CCC has been positive with a significantly higher value in 2017 (111 days), mainly attributable to poor collections management, but decreasing over time as it reached 0 days in 2022. This was possible mainly due to better management of receivables that has been decreasing. The value is estimated to be mainly in line with the 2019 and 2023 values, as they were significantly positive years in terms of cinemas demand, something that is expected to maintain. Therefore, the 174 average collection days was considered as constant from 2024 onwards. Furthermore, the average holding period has maintained stable values, and it is expected that this trend will continue (8 days). The extremely low values of inventories in 2020 and 2021 demonstrate that it significantly flows according to revenues, so this measure was used as a driver. Finally, similarly to the collection period, the average payable period is foreseen to behave according to the tickets demand verified in 2019, 2022 and 2023, thus we assumed a period of 168 days for payment to suppliers.

In conclusion, for the Audiovisuals & Cinema segment it is expected that it takes, on average, 13 days to manage the cash flows from investments to revenues. Despite being positive, it also represents positive liquidity levels. This reflects the company's liquidity levels over time. In both segments, accounts receivable-trade and accounts payable were then forecasted with the average collection period and payable period, respectively. Despite being similar, contract assets present differences for accounts receivable (asset recognition in *Appendix*), thus it is forecasted as a percentage of revenues. Also, the other non-current accounts receivable differs from the trade one and relates to revenues (*Table 21).* Similarly, some distinctions in non-current accounts payable are mentioned in *Table 22.*

4) Operating Net Working Capital Analysis

Exhibit 89 - NOS's operating NWC



Firstly, there was the need to differentiate between accounting NWC and operating NWC. The first metric simply measures the size of current assets against current liabilities with no regard to industry specifications.

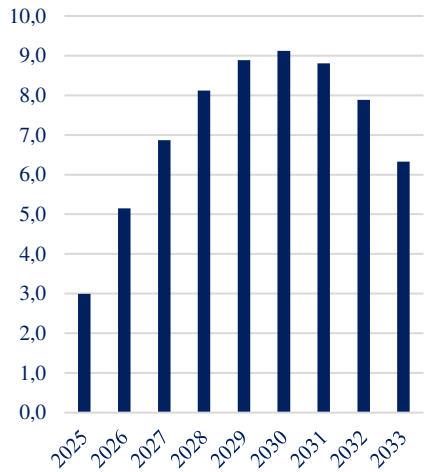
In fact, it is crucial to understand the telecommunication industry's requirements: due to rapid technology changes and significant competition, it is a capital-intensive sector with high constant leverage levels. Therefore, in periods with significant demanded investment for 5G as 2021 and 2022, it is natural that current liabilities (via current borrowings) reach substantial values. For these reasons, to provide a better liquidity indicator, the operating NWC was the one considered.

All the metrics of the current assets besides the accounts "Assets held for sale" and "Cash and cash equivalents" were included. Cash doesn't enter the computation of operating net working capital since it may be considered as a non-current asset because holding cash isn't directly related to operations unless it is used to purchase supplies and other items. As mentioned in *Table*

21, since it includes a capital fund deposit solely applied to 5G investment, cash and cash equivalents aren't exactly related with day-to-day operations. Moreover, it would represent a double counting error: firstly, it would be included in the operating NWC which influences the total EV of the company and secondly it would be discounted for net debt.

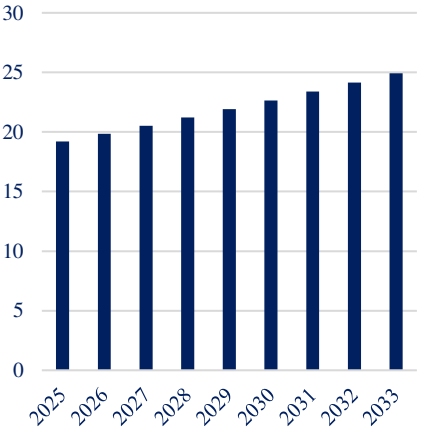
As mentioned, current borrowings were not considered since it may cause misleading conclusions and because both short-term and long-term debt that incurs interest should be excluded. In addition, "Liabilities directly associated with assets held for sale "also wasn't included. Both "other current assets" and "other current liabilities" rubrics were considered because despite also including derivative financial instruments values, which are not an operating account, most of the values (almost 100%) are tax receivables and deferred income, respectively, that impact the day-to-day operations of NOS. Since NOS's reports don't divide this account by segments, it was not possible to differentiate it by current and non-current, *equation 21*.

Exhibit 90 - Telco's Operating NWC



In telco's segment, historically, the operating NWC has been negative (since 2019), but systematically presenting lower negative values. In fact, from 2022 to 2023, this measure becomes positive (from €-18 M to €22 M), mainly due to bigger accounts receivable for the same level of operating current liabilities. In 2024, this segment presents a negative delta since there is a higher amount of tax payable and accounts payable for a constant level of operating current assets. Starting in 2025, operating current assets grow at a higher rate than operating current liabilities (from 2025 to 2033, average growth rate of 2.1% compared to 2% per year), apart from the last three years of forecasting, *exhibit 90*. During these three years, the cost of sales, and thus the accounts payable, increased, making the operating current liabilities to grow at a bigger rate than the operating current assets. Despite presenting low values, the operating NWC maintained positive figures throughout the forecasted period, meaning that NOS is liquid enough and has resources to compensate for its short-term debt. Finally, the operating NWC ratio to revenues is set to represent, on average, 0.4% of total NOS's inflows (from 2025 to 2033).

Exhibit 91 - Audiovisuals & Cinema's Operating NWC



Contrarily to previous segment, Audiovisuals & Cinema has been able to present systematically positive operating NWC values. At the end of 2023, current assets are expected to grow at a larger scale than liabilities and in 2024 the opposite happens, mainly due to decelerations in accounts receivable growth. From there, both current operating assets and liabilities grow at a similar rate, with an average rate of 3.3% from 2025 to 2033, *exhibit 91*. As a result, operating NWC is expected to be positive and higher from one year to another, which is also positive for NOS. The operating NWC margin over revenues presents substantially higher values than in the telco segment, mainly due to higher average collection periods, thus the bigger size of accounts receivable relative to current liabilities and overall inflows.

Finally, regarding Operating NWC for Eliminations, since both operating current assets and current liabilities are continuously negative and the first is always more negative than the latter, the studied metric is systematically negative. This result reduces the overall liquidity of the company and decreases the value generated by NOS's cash flows.

5) Equity book value

For NOS's equity book value forecast, we decided to estimate the consolidated values of the company, and not as two different segments as presented in the balance sheets accounts, since we consider that the shareholder's capital, own and outstanding shares, and dividends amounts refer to the entire group. Within equity, the share capital and the capital issue premium of the company have been constant since the increase in share capital on 21 April 2022, when the company used the premium for issued shares (accumulated since the increase in share capital following the merger between ZON and Optimus SGPS) of €854 M and incorporated it on the share capital amount. Since then (2nd quarter of 2022), both values were stable and therefore, in case there is no change in share capital, it is expected that the company maintains these two metrics constants. NOS's own shares, non-controlling interests and legal reserves were kept in line with what had been the values in the past because it was not defined the target level of own shares and legal reserves for the upcoming years. Therefore, NOS's equity book value is expected to follow the trend of net income over the years, presenting a decrease during the 6G investments years.

VII) Company's Ratios

1) Liquidity Ratios

Exhibit 92 - Liquidity Ratios in 2023

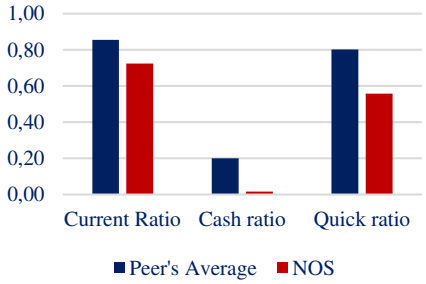
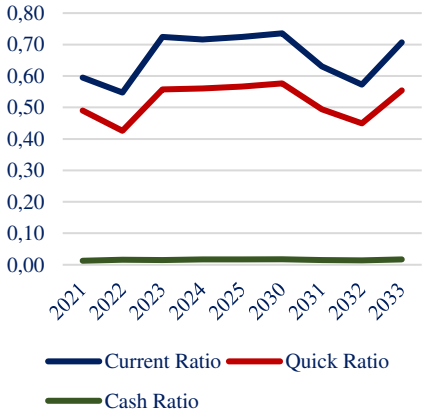


Exhibit 93 - Liquidity Ratios

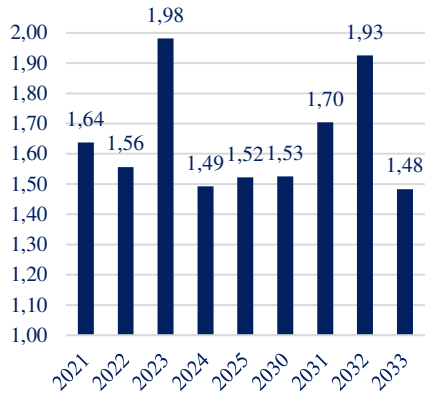


Starting with the current ratio, NOS has been dealing with values lower than 1.0, which means that the company does not have the resources to comply with its short-term obligations if they were all due at once. These values depend substantially on short-term borrowings and accounts receivable, *equation 22*. From 2023 to 2030, this ratio is expected to be significantly stable around 0.73 (on average). In both 5G and 6G investments, NOS's current ratio is substantially impacted mainly due to higher current liabilities, with an average ratio of 0.57 in 2021 and 2022 and with 0.60 in 2031 and 2032, *exhibit 93*. Comparing these results with NOS peers' ratios in 2023, we conclude that it remains clearly below the average current ratio (0.85), which might be unsafe, *exhibit 92*.

The quick ratio is used to exclude those current assets that aren't easily convertible to cash or may require additional time and discounts to do it as inventories and prepaid expenses, *equation 22*. NOS's average ratio from 2023 to 2033 is forecasted to be around 0.55 (impacted by lower values in 2031 and 2032), *exhibit 93*, once again below the comparable companies (average of 0.80), *exhibit 92 and table 23*. By solely using cash and cash equivalents, NOS would only be able to cover around 2% of its short-term obligations, *equation 22*. This cash ratio of 0.02 is expected to be maintained throughout the forecasting period, being significantly lower than the average cash ratio of the peers (0.20), *table 23*. However, companies may have different assets and liabilities structures or ways to recognize rubrics, so the results may not be completely indicative of what is the liquidity levels of NOS.

2) Debt-to-Equity Ratio

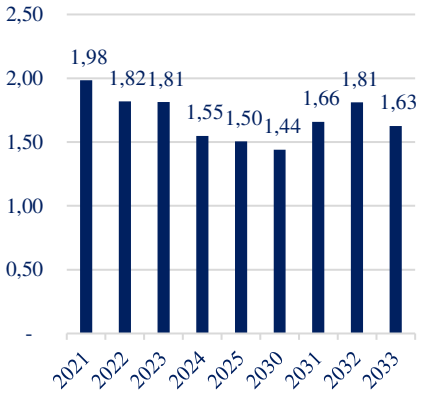
Exhibit 94 - Debt-to-Equity Ratio



Since 2020, NOS has been dealing with higher Debt-to-Equity ratios than historical ones (1.05 and 1.34 in 2018 and 2019) mostly due to investments in 5G. Due to significant increases in non-current borrowings during the present year, the ratio is expected to increase from the 2022 value of 1.56x to 1.98x at the end of this year. From 2024 onwards, it is anticipated to substantially decrease and then stabilize at an average value of 1.53x (from 2024 to 2030). Similarly, for the years of 2031 and 2032, we expect a bigger scale of borrowings due to 6G investments that will impact the ratio, *exhibit 94*. By comparing the 1.98x value at the end of 2023 with NOS's comparable companies that, on average, present a 1.01x ratio *(table 23),* we conclude that the company will need to decrease its leverage levels, to be able to deliver value creation. However, the investments and deployment of 5G in Portugal was finalized much later than the average remaining European countries. Therefore, these companies have already been deleveraging their capital structure, presenting nowadays safer debt to equity ratios.

3) Net Financial Debt / EBITDA AL

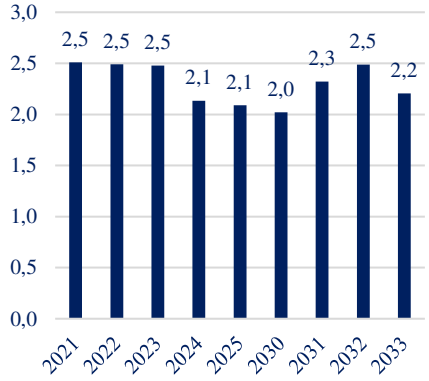
Exhibit 95 - Net Financial Debt / EBITDA AL



NOS maintains a strict policy regarding the ability to comply with its obligations and obtained loans. As defined in the company's covenants, 19% of their borrowings require a consolidated net financial debt not above 3 times EBITDA after lease payments; 4% require a ratio not above 3.5 times EBITDA AL; 6% require a ratio not higher than 4x and finally about 8% demand a ratio not above 5 times the EBITDA AL.

NOS defined a target leveraged ratio of around 2x Net Financial Debt / EBITDA AL. To compute net financial debt, *equation 22,* lease borrowings were forecasted as a percentage of total debt, and from there we deducted this value to net debt. Lease payments, as in the past, consider both depreciation of rights of use (previously forecasted), which is the principal, and interest payments on financial leases, that were estimated as a percentage over the value of lease borrowings. Over the past years, on average this ratio has been 1.82x (between 2017 to 2021) and it is estimated to be below the targeted ratio with an average of 1.61x from 2021 to 2033, *exhibit 95*. In conclusion, the ratio is forecasted to be below 2 times EBITDA AL, with increases only during highly intensive capital years. This shows low default risk and solid levels of solvability.

Exhibit 96 - Net Debt / EBITDA



4) Net Debt / EBITDA

Related to this measure, NOS also defined a target of debt level below 3 times EBITDA for the ratio Net Debt/ EBITDA. It is possible to verify that this ratio has been maintained below the defined limit with an average of 2.17x from 2017 to 2021 and based on our forecasts it will maintain the level of 2.22x from 2021 to 2033. Once again, we verify the same trend during the investment cycles for 5G and 6G, *exhibit 96*. Compared to its European peers (*table 23)*, that present an average of 1.84x, NOS is above, but the estimations show the deleveraging effect of debt on this ratio from 2024 onwards.

Exhibit 97 - WACC vs ROCI

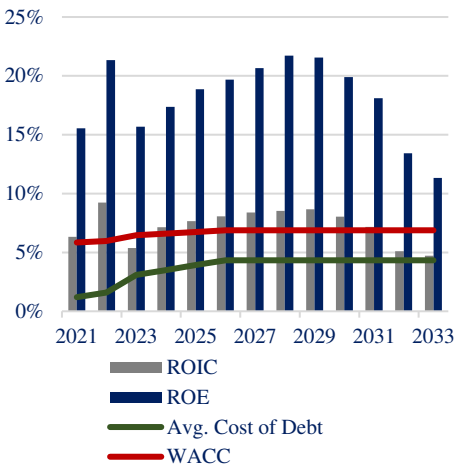


Exhibit 98 - Loan Structure Q3 2023

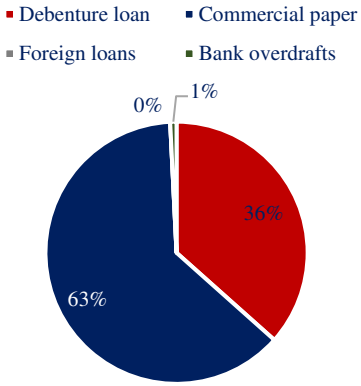
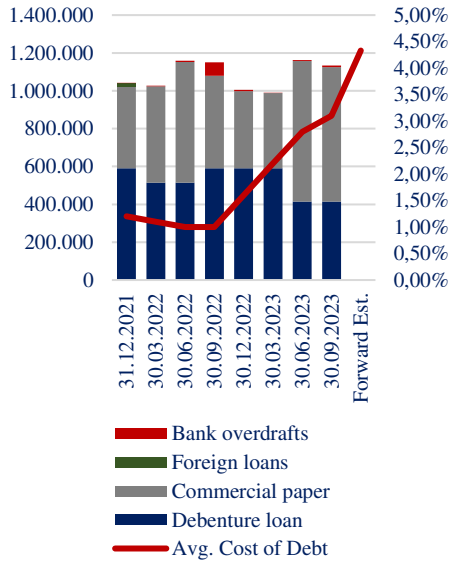


Exhibit 99 - Nominal Loan Value and Avg. Costs of Debt



5) WACC and ROIC

The ratio of WACC to Return on Invested Capital (ROIC) indicates how effectively NOS utilizes capital to generate returns. If the company generates less return than the cost of capital, it suggests inefficient operational business practices. Additionally, investment decisions of the company might not prove to be sufficiently profitable. Particularly in the current market environment, increased energy costs and inflation have impacted ROIC. However, in the case of Portugal, the influence is limited due to only a slight increase in energy costs. On the side of capital costs, Portuguese companies are significantly affected. The heightened costs of borrowed capital increase the WACC from a historical 5.9% to a long-term 6.88%. Given the average maturity of debt of 3 years, complete encirclement is expected by 2026. Especially in combination with the anticipated implementation of 6G, the company will then realize a capital return below the weighted capital costs. Concerning ROE, although the positive leverage effect is diminishing, it is still present. Thus, the company consistently manages to generate a return for shareholders that exceeds the cost of capital.

VIII) Valuation Models

1) WAAC

In line with the intrinsic valuation of the segments telecommunications and audiovisuals two DCF models are used to account for the individual specifics of the business while calculating the free cash flow to the firm (FCFF). However, the company is financing all its operations on a holding level. Therefore, the cost of financing using debt and equity proportional (WACC) is the same for both operating units.

In perspective of the capital structure the company is trading at €3,54 per 05.11.2023 having 511,41 Million outstanding shares yielding in a market capitalization of €1,810 Million. Having a total net debt of €1,760 Million the resulting Enterprise Value based on the market is €3574 Million. This total net debt includes interest bearing debt as well as leases and long-term contracts. These debt-like obligations provide a comprehensive view of the financial obligations, enabling a more accurate assessment of NOS overall equity value. However, for the cost of financing only Net Financial Debt valuing 1129,5€ Million was accounted, yielding to a debt/equity ratio of 62%.

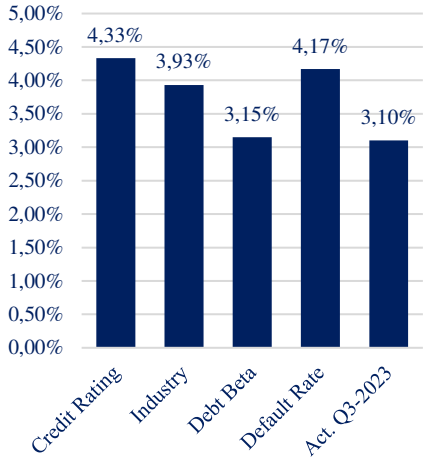
The cost of debt was calculated based on the characteristics of interest-bearing debt. In 2023 loans consists 36% out of debenture loans (bonds), 63% commercial papers as well as 1% bank overdrafts. Until last year (2022) the loan structure included foreign loans additionally. It is expected that NOS stays with the current capital structure.

While the total nominal loan value was consistent over the last year around €1.1 billion, the average cost of debt increased significantly in line with the changing interest environment. While the company was able to borrow money slightly above 1% in the past years (1% in Q3-2022), average cost of debt

increased over the last year up to 3,1% in Q3-2023. To account for the recent changes in interest rates, the interest rate environment as of December 14, 2023, was chosen as representative. At first glance, future debt capital costs might appear to fall below the current level. However, considering an average maturity of 3 years, only a portion of the increased interest expenses has been factored into NOS's current interest burden. In line with the maturity of the debt, we assume that by 2026, the entire debt has been refinanced and the interest environment has been priced in completely. At a lower level than assumed a month ago, it is anticipated that interest rates for NOS will continue to rise through refinancing until 2026.

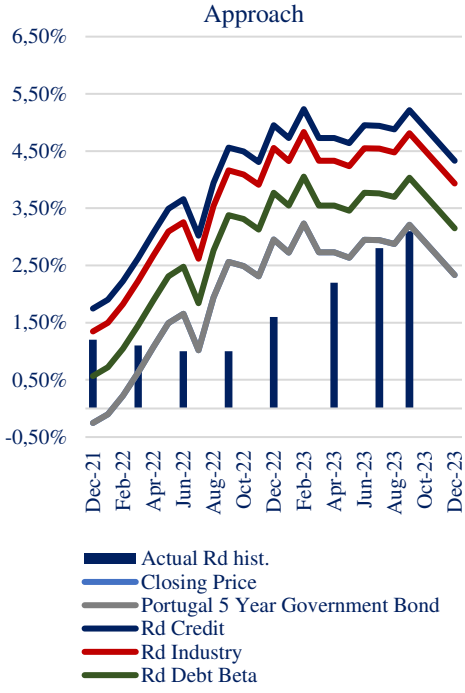
To calculate cost of debt, different approaches have been used to address the company's situation from various perspectives. In detail, cost of debt was calculated based on credit rating, industry, debt beta and default rate. To account for the latest changes in interest rates.

Exhibit 100 - Est. Cost of Debt: Multiple Approaches



For the first three approaches the Portuguese 5Y Bond was chosen based on the average maturity of 3.1 years for Nos debt. The Bond represents the risk-free considered 5Y German Bundesanleihe implying a country specific risk premium for Portugal. The additional risk spread for the company is dependent of the method used. Based on Damodaran the spread for a BBB-rated company is 2% while PWC suggests a 1,6% premium for the telecommunication sector. The debt beta for a BBB rated company is 0,1 resulting in a 0,82% premium in this case (Berk, 2013). It is to be said that this approach is based on the credit risk as well while resulting in a far lower risk premium. Finally, the cost of debt based on default rate was calculated based on the Eurozone S&P Corporate Bond Index. Nos has a default rate of 0.5% (Berk, 2013). However, S&P Global reports an increase of PD about 42.21% in the current environment of 2023, resulting in an expected PD of 0.71% for NOS. As BBB company NOS has an expected recovery rate of 43,9% which implies a loss given default of 56.1%. The calculated premium is therefore 0,4% resulting in CoD of 4,17%.

Exhibit 101 - Hist. Est. CoD by Approach



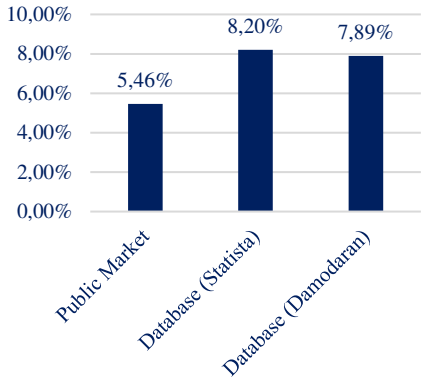
While all estimates seem rather low in perspective of the actual Q3-2023 rates, the estimates are forward looking while NOS cost of debt is delayed relative to current interest movements. This can be especially seen by comparing the development of the company's costs of debt to the relative benchmark (Portugal 5-Year Bond).

To see the accuracy of the estimates, actual historical costs are compared to estimated costs of debt using the different approaches. Here again the delay due to maturity can be seen while the estimates imply a forward looking and therefore predicting nature. After examining the graph and considering the strategy of cautiously predicting future interest rates, the estimation derived from the credit rating was selected as the most suitable approach. The chosen cost of debt is 4.33% or 3.73% after the effective tax rate. Those numbers imply a correction of 0,6% for the latest decrease in interest rates as explained above.

The cost of Equity computation was based on the CAPM Model, where it presents a relation from the risk-free market rate plus the market risk premium times the leveraged beta of the stock. The risk-free rate used was based on the long term (10 years) yield to maturity of German Bunds, which is currently 2.66%. NOS SGPS revenue has origin from Portugal and is financing itself in

the Portuguese market, however in line with CAPM Portuguese Sovereign Bonds would not fulfill the risk-free criteria. The choice of long-term yield is because of the perpetual features of our analysis. To determine the Beta, it was computed a 5-year covariance between the NOS SGPS stock price and the PSI-20 Index, Portuguese market index, and divide it by the variance of PSI-20 price, resulting in a market beta of 0.75 for NOS.

Exhibit 102 - Market Risk Premium: Multiple Approaches

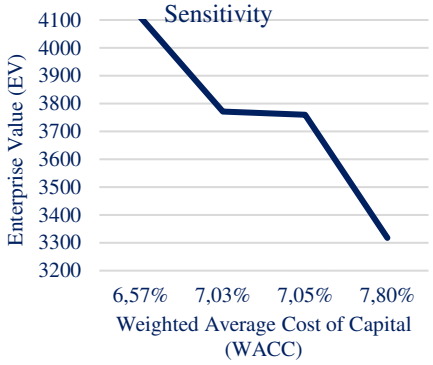


Cost of equity is determined by the sum of risk-free rate and the beta-adjusted market risk premium (MRP). MRP can normally be derived using historical market returns subtracted by the current risk-free rate. However, the significant and fast increased interest rates would be compared to historical market returns in a low interest environment resulting in a very low MRP of 5.46% which is not representative. For this reason, the Portuguese market risk premium was soured directly from Statista and Damodaran, resulting in more a reasonable MRP of 8.2% and 7.9% respectively. The Statista figure was considered more suitable given the current environment. The resulting Cost of Equity is 8.85%.

Calculating the WACC, cost of equity and cost debt after tax are weighted for their share within the capital structure. The resulting discount rate for NOS is 7,09%

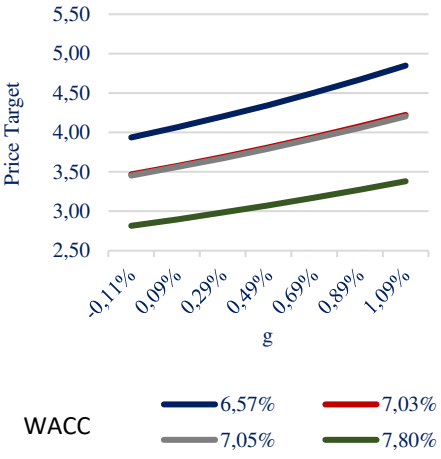
2) Discounted Cash Flow Model

Exhibit 103 - EV - WACC Sensitivity



The Discounted Cash Flow Model (DCF) is a valuation method that used expected future cash flows to estimate the value of a company or investments, discounting the respective cash flows to the present, using a discount rate. The EV represents the total net value of the company for Debtholders and Equity holders together. The Cash Flows represent the monetary amount received by the company a respective year, to represent this, it was used the Free Cash Flow to Firm (FCFF) to determine the exact cash flow incurred. To reach the FCFF, starting from the Net Income, it is sum up the non-cash costs, and Interest tax shield savings, then it is deducted the assets investments, deducting the Capex and changes in Net Working Capital, as those investments are not express in the Income Statement but absorbed totally by the Balanced Sheet.

Exhibit 104 - Price Target - Long Term Growth (g) based on WACC Sensitivity



On this model it was structured a sum of segments valuation, because of the different assumptions and predictions for each of segment, therefore it was created a DCF valuation individually for Telcom and Audiovisuals & Cinema, and sum both to estimate the consolidate group valuation. For each was predicted the next 10 years Free Cash flow, and the terminal value in perpetuity. On Telecom DCF, it was forecasted a diminishing growth rate on revenues, higher in the present reflecting the higher-than-average inflation and positive momentum from NOS. The long-term sustainable growth on this segment was estimated to be 1.3%, based on the average annual growth the telecom sector evolves each technologic cycle of 10 years. On the costs, capex, and changes of net working capital, it was used the evolution accordingly with the forecasted figures presented before. On the Audiovisuals and Cinema, the short-term growth was derived from a convergence to pre pandemic levels figures and higher than average inflation. The long-term sustainable growth was estimated to be 0.78%, based on the annual CAGR of the sector.

As discount rate was used the WACC, which represents the given structure financing costs of the company, as explain before, in the present model it was used a WACC of 6.88%. The growth rate is the sustainable long-term growth of the company, the rate which it is assume the company can growth on average in perpetuity.

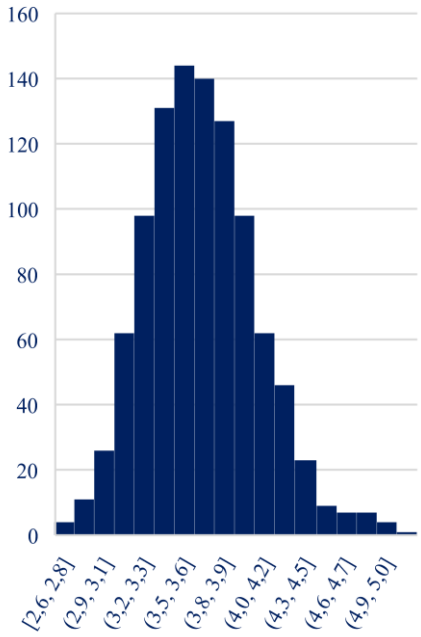
In the end, it was reached a 3 876 Mil EUR of EV from Telecom, which 56% of the value has source from the terminal value, and 236 Mil EUR of EV from Audio & Cinema, with 55% of its value coming from its Terminal Value. The total EV of the NOS group totals 4 112 Mil EUR of Enterprise value. To extract the equity price from the intrinsic value, it was deducted the book value of debt and add the cash and equivalents currently reported. Reaching the final total equity value of 2 349 Mil EUR and price target of 4.59 EUR per share.

Exhibit 103 - DCF Valuation

Telco EV		3876,230
Audiovisuals and Cinema EV		235,925
Total EV		**4112,154**
Cash		11,943
Book Value of Debt		1775,202
Other non core operating assets / liquid assets		0,000
Total Equity Value		**2348,895**
Price Target (EUR)	**€**	**4,59**
Upside/Downside		**43,1%**

3) Monte Carlo Simulation Model

Exhibit 105 - NOS Share Price Histogram



The analysis via Monte Carlo simulation allows for the manipulation of selected variables to observe the sensitivity of the Share Price based on these variables. It is advisable to choose a reasonable number of variables that capture important potential changes in assumptions without making the model excessively complex. The simulation for NOS was contingent upon the annual revenue growth, NOPAT margin, and Cost of Equity. Thus, the three fundamental pillars of valuation: growth, profitability, and discounting were captured.

Telecommunications, in general, is a very stable industry. However, fluctuations are possible due to changing market conditions. Strategies aimed at capturing market share can also induce some volatility. Additionally, the increasing profitability resulting from internal digitalization and cost optimization is expected, but the precise quantification of this development for specific years is challenging. Finally, various values for Cost of Equity or the Market Risk Premium (determined from Damodaran and Statista) differ slightly. While we can identify the range within which the expected value lies, an exact determination remains an assumption. Here, simulation helps analyze uncertainties in these assumptions.

Revenue growth and profitability were simulated separately for each year in each run, while growth rate and cost of equity were calculated for each run based on the assumptions of the DCF. A random number within a certain

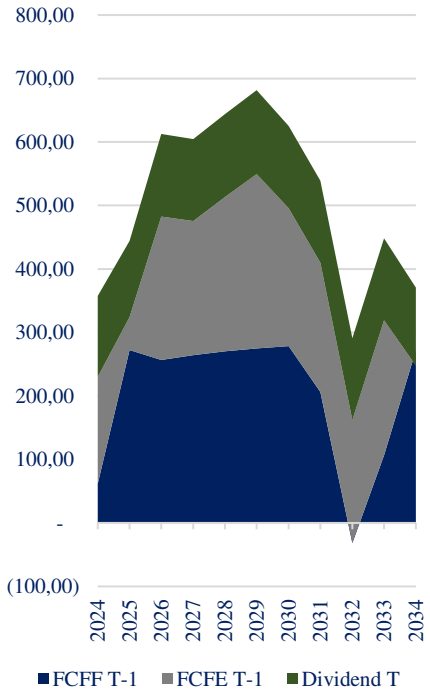
standard deviation was generated. It was assumed that the audiovisual business grows somewhat more volatile than the telecom business based on historic figures.

The analysis was conducted analogously to the DCF via Sum of Parts. The resulting Enterprise Values were summed and determined via Net Debt to Equity Value or Share Price. Through 10,000 simulations, the observable distribution of the valuation of NOS was represented in a histogram.

The calculated prices per share range from €2.5 to €6.7, with an average price of €4.15. The skewness is 0.54, indicating a longer right tail in the distribution. While most values cluster around the average, significantly higher valuations can occur under certain circumstances. Calculating the mode, €3.95 is the most frequently simulated stock price. Hence, most simulated values are close to the average of €4.15. Additionally, the median of €4.12 and the standard deviation of 0.5 indicate low dispersion. Overall, 99% of simulated prices are above the current stock price. However, considering the simulated average of €4.15 compared to the calculated DCF value of €4.59, it becomes evident that this result is based on rather optimistic assumptions.

4) Discounted Dividend model

Exhibit 106 - DDM Forecast



The dividend discounted model expresses the target price based on the future expected dividends by the company. To create this relation, we use as basis the Gordon's Growth Model, where the expected dividends per share divided by the cost of equity minus the sustainable perpetual growth rate, returns the price target of the stock. In the case of NOS SGPS, the use of this model is in line which the company practice of regular dividend payments, following mainly a stable dividend amount policy with extra exceptional payments in case of higher-than-expected earnings.

The determination of future Dividends in our model was based on expected future FCFE, due a higher consistency of Payout rate versus FCFE than Earnings over the last 9 years. The average of payout ratios resulted in 41%. Which it was used to determine the future Dividends payments from the FCFE. To determine the future FCFE, it is start from the FCFF computed from the DCF valuation model discussed previous, we subtract the interest expense incurred in the period adjusted to the respective tax shield and we sum the Net Borrowing of the period. After the future FCFE are estimated, we apply the payout ratio of 41% to extract the expected Dividend payments. To be consistent with the stable dividend policy of NOS SGPS, it was also incorporated the average between the estimated dividend from the FCFE with the current policy.

The growth rate across the first ten years is incorporated in the DCF model. Afterwards we estimated the long-term sustainable rate to be 1.46%, based on the Return on Equity and estimated Retention Rate. The ROE was compute based on Earnings divided by Total Equity, then the retention rate was an estimation of 10% based on the high Dividend payments policy the company lives with.

Concluding, the model penalizes heavy NOS due upcoming debt payments in 2/3 years times, reflecting a negative net borrowing which negatively impacts

the FCFE, and it is expected the company may not sustain the high level of dividends that has been practice so far. We use the expected Dividends and the Cost of Equity to discount to the present value those dividends amount. Summing all together and dividing by the number of current shares outstanding to reach the final price target of 3.02 EUR, representing a -6% of downside versus the current price, at 15 of December.

5) Relative Valuation Comparables

The relative value model consists of determine the value of NOS SGPS based on a selected peer group key price ratio. The ratios and metrics choose were based on the sector characteristics of Communication Services, a sector mainly mark by "Cash Cow" companies, with stable income and revenue generation. Therefore, besides the standard ratios as PE and EV to EBITDA, we have also applied income generation ratios as Price to Sales and EV to Sales, and structure quality ratio as Price to Book and EV to Invested Capital. In the model It has been excluded Free Cash Flow multiples due the low cash level produced by NOS currently, mainly related to the high CAPEX expense for new technologies as 5G. The use of FCF multiples would substantially underestimate the value of the company versus its peers.

Exhibit 105 - Price Ratios Used

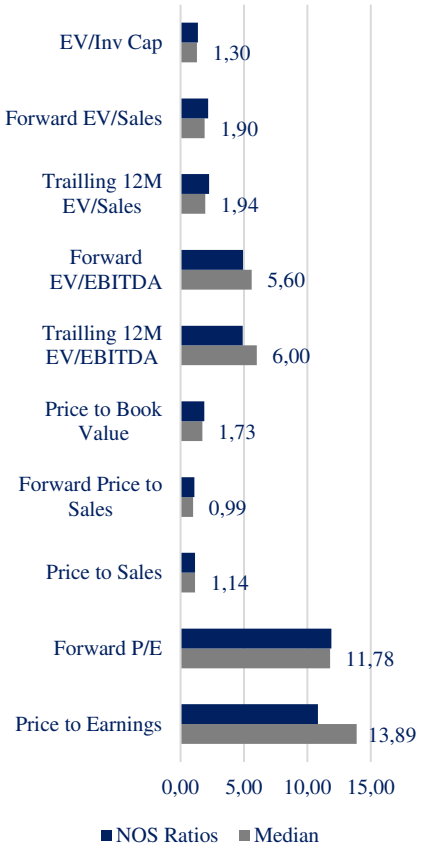
Price to Earnings	Trailing 12M EV/EBITDA
Forward P/E	Forward EV/EBITDA
Price to Sales	Trailing 12M EV/Sales
Forward Price to Sales	Forward EV/Sales
Price to Book Value	EV/Inv Cap

To extract the impact of future expectations, it was incorporated four blended forward ratios, the Forward P/E to express the future expectation on EPS, the Forward P/S which included the future expected Sales Per Share, Forward EV/EBITDA with the expected EBITDA over next year and Forward EV/Sales.

The peer selection is fundamental to price correctly NOS and avoid distortions in value from other company-specific factors, therefore an individual assessment of each company was done with three main criteria's:

1. Geographic breakdown of revenues, excluding countries highly underdeveloped or with geopolitical tensions/controversial. This restriction was imposed due the high impact on company operations and development regarding the existing sanctions and restrictive policies to countries under geopolitical tensions, as example it was excluded "ROSTELECOM PJSC", due its operational focus on Russian Federation. On other side, highly underdeveloped countries were also excluded because the lack of technology and infrastructure open opportunities and investments which can have high

Exhibit 107 - Ratios Median vs NOS



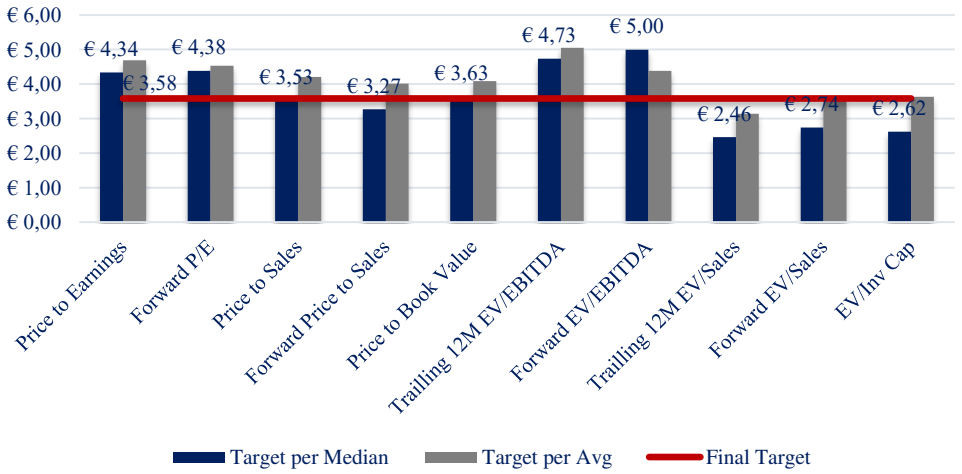
ROE/ROA that are unreachable for NOS now a days. As example, it was excluded "VEON LTD" due its focus to Pakistan market and still developing its 4G network.

2. Segmentation breakdown of revenues, peers without core operations on television broadcast, mobiles services and internet services has been excluded. A company excluded this filtering was "UNITED INTERNET AG" because it has 25% of revenue generation from Cloud Apps, a segment that NOS is not even part of. In this restriction we did not consider the audiovisual and cinema, as it is very rare to exist companies with the exact breakdown of 90% telecom 10% cinema in this sector.
3. Special Situations, companies under stress and special situations were excluded, and additionally with a wide divergence in capital structure as those differences can highly influence the metrics because of factors that don't affect the NOS SGPS case. As example, it was excluded "KABEL DEUTSCHLAND HOLDING AG" because of recently takeover by Vodafone Group squeeze-out the Kabel.

Applying the three filters we reached a peers group of 15 companies, from a start of 38 peers. From the graph at the side, it is possible to understand NOS is under value versus the select peers in some dimension, being the most notable the EBITDA ratios, and EPS ratios, where the overall group present a much higher valuation. The factor behind is the latest investments of NOS and lack of operations efficiency to optimize earnings and operations resources. We believe NOS SGPS will pivot the situation with a stable network of 5G and switch its focus to cost optimization.

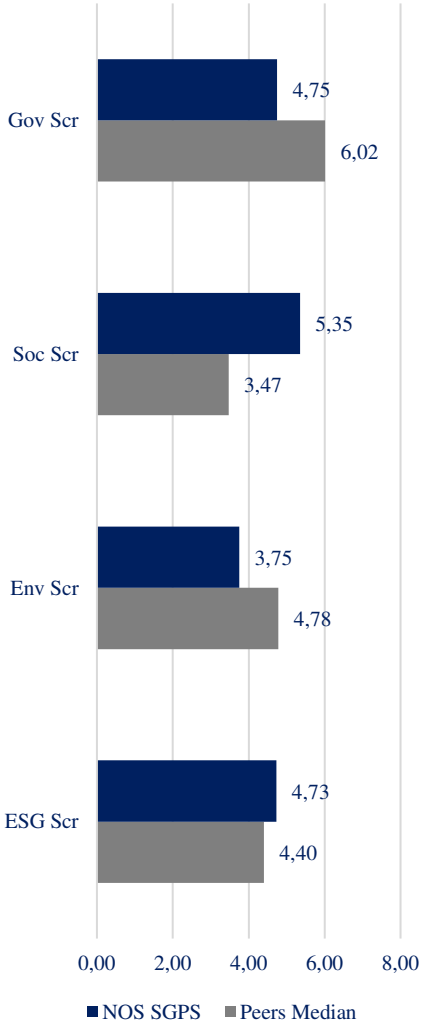
From those medians, then it was applied the NOS SGPS figures, which the trailing 12 M were used the last 4 quarter's results, and for the blended Forward ratios it was used our predictions from the forecast of income statement for 2024. For the extrapolation of Enterprise value to the price target it was use the current level of Cash and Equivalents and current value of Debt and Non-controlling interests. To compute the invested capital, it was used the latest levels of Assets, current cash & equivalents, and current liabilities. The Application of the formulas, *equation 24*. for each ratio resulted in the following targets, as we can see the Earnings and EBITDA ratios are the strength of value for NOS, coming from the company above average margins, marked in an industry where they are tight. In opposition the Sales Ratios push the target price down, a secondary effect of the focus on Portuguese market, where the client base is limited to Portugal population, thus is very small compared to other countries. Overall, the final target price for NOS SGPS from our Relative Valuation mode is 3.58 EUR per share, representing a upside of 11.61%

Exhibit 108 - Target Price per Ratio



IX) ESG Analysis

Exhibit 109 - ESG Scores Comparables



ESG stand for Environmental, Social, and Governance. Non-financial factors that have gain major importance to access material risks and growth opportunities in the company, as they pretend to give insights about the long-term sustainability of operations and existence of the company. Even though the factors are incorporated across the three pillars, the issues, and situations they represent are interlinked. The ESG factors have a measurable character, but it can be difficult to assign them a monetary value. In the case of NOS SGPS, it has been awarded for its practices and strategy for multiple institutions, including a score of 59/100 on the Corporate Sustainability Assessment from S&P Global, a ESG risk rating of 14.3 by Morningstar representing low risk of suffering a relevant financial impact from environmental, social and governance factors. At the same time recently, NOS improved the Bloomberg gender equality index score, reaching a score of 84.11%, and improved its performance in ESG factors assessment carried out by Moody's ESG solutions, with a score of 66/100.

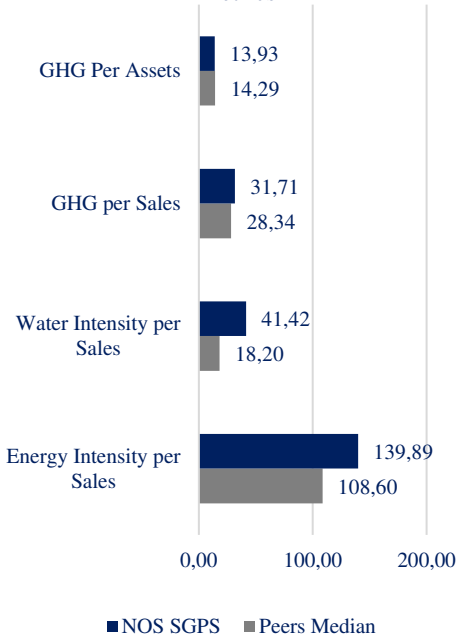
On the latest results release, NOS announced an international sustainability label "ECO rating" in stores, to enable costumers and operators to compare equipment and make more informed choices, encourages suppliers to develop more sustainable products, and mobilizes all agents to increase transparency and reduce the sector's environmental footprint. NOS believes that this evaluation system will improve transparency and help raise awareness of the environmental impact of the mobile phones. Additionally signed up to ambitious new targets to reduce e-waste and boost circularity of the mobile industry, by 2030, the number of used mobile devices collected through operator take- back schemes amounts to at least 20% of the number of new mobile devices distributed directly to customers. Also, by 2030, 100% of used mobile devices collected through operator take-back schemes will be repaired, reused, or transferred to controlled recycling organizations. NOS continues to strengthen the link between its financing costs and sustainability performance, highlighting and demonstrating its strategic relevance and commitment, at every organizational level, to achieve best-in-class targets in ESG

(Environmental, Social and Corporate Governance) indicators, namely through new sustainable financing lines, with secured 350 million in sustainable financing lines.

Currently NOS have a ESG score of 4.73 on Bloomberg, being consider "Above Median" vs Peers, which is the same group of peers selected for the relative valuation model. Inside of each pillar, the strength of NOS is the Social Score of 5.35, lagging on the other two. NOS is part of the allocation in 163 ESG funds, which 3 of them are Article 9 funds.

Environmental, 3.75 score.

Exhibit 110 - Environmental Metrics



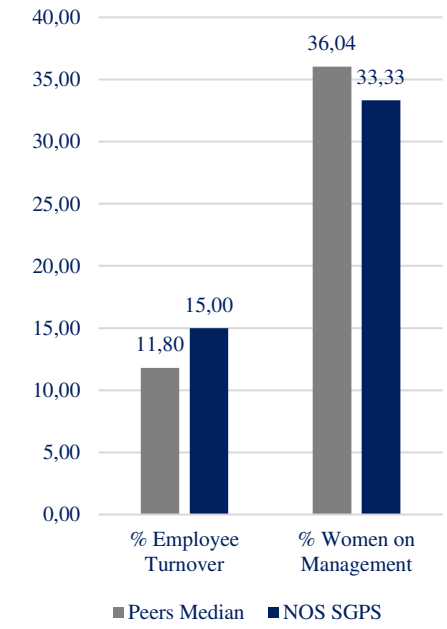
Environmental factors refer to an organization's environmental impact(s) and risk management practices. These include direct and indirect greenhouse gas emissions, management's stewardship over natural resources, and the firm's overall resiliency against physical climate risks (like climate change, flooding, and fires).

In Energy management, NOS is leading mainly due data centers environmental sustainability and Energy efficiency policy, but the total energy consumption increased 10% to 212.77 Mwh, due the implementation of 5G technology. From this energy consumption, only 31% is from renewable energy. In the Sustainable product field, it is expected NOS to improve with its strategic plan until 2025 to push take back programs and promote the recycling of products. To finalize the waste reduction policy and low climate exposure to transition risk, contributes positively for their score on this pillar.

NOS reported a Water intensity per sales of 41.42 L, higher than the peer's median of 18.2, the energy intensity per sales at 139.89, higher than the peer's median of 108.60. The Greenhouse Gas (GHG) per assets located slightly below the median of 14.29, being the last reported of 13.93.

Social, 5.35 score.

Exhibit 111 - Social Metrics



The social pillar refers to an organization's relationships with stakeholders. Examples of factors that a firm may be measured against include human capital management metrics (like fair wages and employee engagement) but also an organization's impact on the communities in which it operates. A hallmark of ESG is how social impact expectations have extended outside the walls of the company and to supply chain partners, particularly those in developing economies where environmental and labor standards may be less robust.

On operational risk management, a key advantage on NOS is its Cybersecurity Risk Management and Service Continuity Policy. On Ethics and compliance, the company reached the maximum score because of no fines for bribery, corruption, and anti-competition, at the same time has an anti-bribery, business Ethics, and Anti-competition policy in place.

In Data security and customer privacy, NOS benefits from having a Net Neutrality Policy, and Consumer data protection policy but something where it could improve was the creation of Behavioral Advertising Policy, and a Product data security policy. Also, an improving point for NOS would be the reduction of Data breaches, the company reported 232 data breaches in 2022.

On Marketing and Labeling field, NOS takes the highest score because of zero fines related to his marketing practices and labeling, a strong point on NOS is the existence of Responsible Advertising Policy.

In Labor and Employment Practices, NOS more recently reported a 15% turnover per year and reported an average of 3.63 hours spent by the firm in training initiates per employee. At the same time, the company reports 33% of the management to be woman, and it has an Equal Opportunity Policy in place, the area of improvement would be the creation of a company diversity target.

Governance, 4.75 score.

Corporate governance refers to how an organization is led and managed. ESG analysts will seek to understand better how leadership's incentives are aligned with stakeholder expectations, how shareholder rights are viewed and honored, and what types of internal controls exist to promote transparency and accountability on the part of leadership.

On the Board Composition theme, NOS is overall lagging versus peers, mainly because of the low percentage of independent directors, being the latest report 5.88%, and have a high percentage of Non-executive Directors of 56%. Also, negative factors for the weak score of NOS in this field is the inexistence of Independent Chairperson, and CEO duality. On the positive points, the company has a vast board size with 17 members, where 12 of them serve on the board for more than 5 years.

On Executive Compensation, NOS is on Median of the overall field, positive points is their Incentive structure, where it is well balanced between variable and fixed payments, with use of cash and stock options, a factor to improve would be the creation of ESG linked compensation.

The shareholder rights policies on NOS are a bit over the median, due the existence of only one class of shares with equal voting rights, and does not have a cumulative voting system, to finalize, NOS has a median board duration, of 3years term.

On the last field, Audit, NOS is lagging versus peers, because of not financial expert part of the committee and no leadership independence, on the opposite side, good points on the audit segment of NOS, is the size of the committee (5 members) with a record of 100% attendance in every meeting. The latest auditor opinion was "Unqualified", meaning the NOS financial statements presents fairly in all material respects, the financial position, and results of the entity.

X) Risk Analysis

NOS SGPS emphasizes the importance of risk management in its operational culture, attributing a lot of effort and detail to this matter in every annual report. This approach is not merely a compliance requirement; it is a pillar of their management culture, and it reflects on the stability and growth of the company.

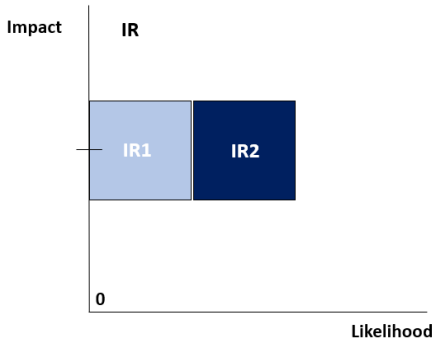
Central to NOS's approach is a structured risk management model, which includes a thorough risk management policy that defines procedures, roles, and responsibilities. This policy is instrumental in guiding periodical risk assessments that clearly prioritize and categorize risks, ensuring they are systematically evaluated and dealt with. In addition, the model has a strict internal control system that is based on the internal control manual and supplies a framework for financial, operational and IT (Information Technology) controls in addition to adhering to ISO standards. Integral to this model is the execution of internal and external management system audits, which strengthen compliance and risk mitigation techniques.

Complementing this model is the Enterprise Risk Management (ERM) method, which is a 5-stage process that starts with a detailed assessment of the risk environment, then investigates consequences and probabilities. After that, the risk is quantified to enable the creation of customized management plans. The last stage is continuous monitoring, which makes sure that if internal and external factors change, the risk profile is updated continuously as well. This ERM approach, used by NOS, highlights their commitment to protecting stakeholder interests and company operations in a changing and unpredictable business environment. It also supports their proactive approach to risk management.

In their more recent risk analysis, NOS highlighted 26 major risks under 4 distinct categories, Intrinsic, Context, Sustainability and Financial risks (Appendix X). The great level of detail and professionalism that NOS implemented led us to use NOS's intake in a number of risks, which we felt like were unbiased and thoroughly explained but added our updated inherent risks and strategy, highlighting the intrinsic risk and action. The result being a matrix designed by a mixture of the team's approach and NOS's strategy, appendix X.

(Impact, Likelihood)

Exhibit 112 - Risk Matrix IR



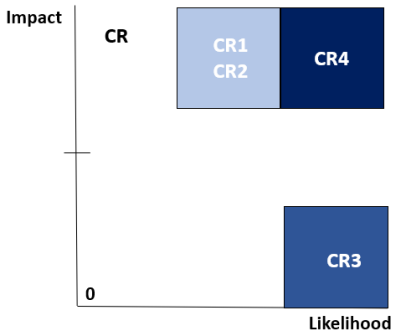
Intrinsic Risks (IR):

Technological Change (IR1): (Medium, Low) NOS's leading position regarding technology, requires a continuous commitment to investment. The company need to keep high standards, since there is always the opportunity of failing to capitalize on technological advancements. Ex: The speed at which NOS is implementing 5G in the enterprise sector (5G Stadium, 5G Hospital, 5G Beach, 5G School, 5G Harbor). Action: Use cases of the 5G network shown great signs of fast paced adaptation from NOS. Constant research and continuity of investment in research funds (Ex: 5G Fund)

Digital Transformation (IR2): (Medium, Medium) Technology is changing, and with it, the customer profile is also experiencing serious shifts. Physical is no longer sufficient, and virtual is the way to go. Being a traditional business, NOS needs to make sure that it is possible to ensure the digital transformation. Action: Processes at NOS have already been heavily changed in the past few years. NOS implemented the NOS TV app, among others, and right now has a

digital first approach with the intent of healthy ecosystem usage across all businesses.

Exhibit 113 - Risk Matrix CR



Context Risks (CR):

Competition (CR1): (High, Medium) There is fierce competition in the Portuguese telecom sector. The market share and income of NOS SGPS may be impacted by shifts in customer preferences or market conditions. New entrees like DIGI, which are mentioned in company reports, can be concerning due to pricing issues or aggressive techniques, resulting in potential market share loss and difficulty in attracting and retaining customers. Action: NOS reputation certainty helps their situation when we wonder about the entry of new players or customer loyalty; however, the company needs to focus on prioritizing innovation, delivering excellence in customer service, and conducting market research to enable prompt adjustments to dynamic market conditions. For the low-cost market, NOS SGPS is also apparently prepared to be able to effectively answer any threats (WOO).

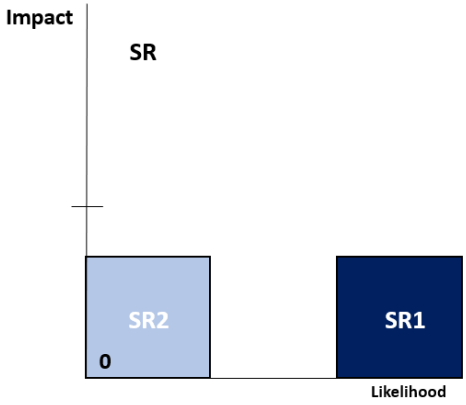
Legal and Regulation (CR2): (High, Medium) Highly regulated industry with a lot of policy changes and requirements which can directly impact the overall operation, dynamics, and costs. For instance, ongoing judicial reviews of ANACOM's decisions regarding the payment of Annual Fees of Activities which can amount to millions of euros (NOS SA: 2022 €9,850 thousand) (Note 44 of 3Q2023). Action: To reduce future legal risks, NOS should keep contesting rulings in court and participating in legal defense. It should also make sure that all regulatory obligations are met. NOS Compliance Officer needs to ensure that there is compliance with new regulations.

Cyber Attacks and Data Breaches (CR3): (Low, High) Telecom companies are attractive victims to cybercriminals due to the valuable information they hold about their customers. Their extensive, complicated, and consistently updating network poses serious security risks. The repercussions can range from a fraction of customers being unhappy or frustrated because their phones are not working to a scandalous data breach that can cause serious harm to the company. T-Mobile in the U.S. market exemplifies the impact of data breaches. After agreeing to pay €350 million to settle a lawsuit and investing a further €150 million in cyber security, T-Mobile has once again reported a compromise of 37 million customers (about four times the population of Portugal). A series of incidents that not only caused a huge financial expenditure but also deteriorated the company's reputation. Action: NOS develops and maintains Cybersecurity measures, with the aim of protecting their customers and related parties from possible threats. NOS has a CISO - Chief Information Security Officer and a Cybersecurity Team that are responsible for monitoring, identifying, and exploiting any security issues.

Market Exposure (CR4): (High, High) NOS's revenues as a top player in the telecommunications market are highly impacted by the overall state of the economy. Despite an inflationary and unpredictable economic environment, NOS has recently grown its consolidated revenues by 5.3% in 9M23 (yoy), indicating both its durability but also a possible vulnerability to prolonged

economic downturns. Action: NOS's attempts to battle the uncertainty with diversification being the only telecommunications company in Portugal to offer Audiovisuals and Cinema services, which as seen in 3Q23 can be very valuable for the company which achieved an all-time record in ticket sales.

Exhibit 114 - Risk Matrix SR

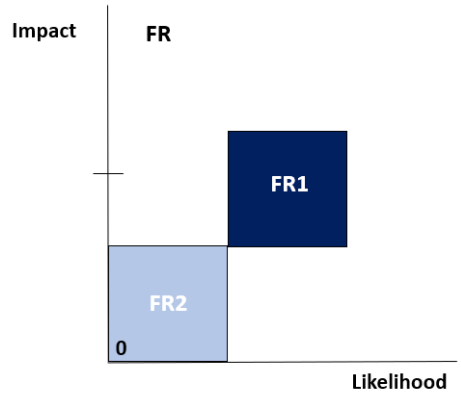


Sustainability Risks (SR):

Corruption and Related Offenses (SR1): (Low, High) Corruption cases in the telecom industry happen all over the world, and Portugal is no exception. In July 2023, Altice´s co-founder was detained with accusations of corruption, tax fraud, and money laundering. Resulting in a period of very shaky leadership in the company, a serious number of managers, workers, and legal representatives were also suspended, resulting in a high disturbance for Altice. Action: Mix between internal and external audits to guarantee compliance and transparency. Clearly communicate the code of Conduct and the code of ethics.

Customer Experience Quality (SR2): (Low, Low) Customer expectations are consistently evolving and, therefore, can sometimes not be met. Action: NOS offers benefits to reward loyalty without any changes to the contract of the customer. The company also promotes a high level of interaction and feedback-based environments in their apps.

Exhibit 115 - Risk Matrix FR



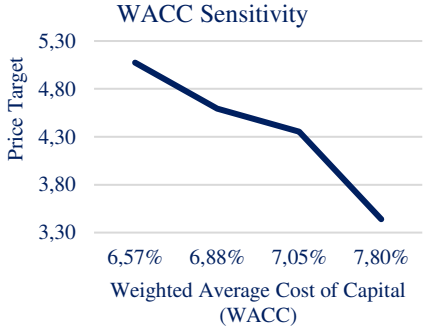
Financial Risks (FR):

Interest Rates (FR1): (Low, Medium) Interest rates have been rising at a record pace, the European Central Bank, prior to the recent decision of stopping the growth, raised the rates 10 consecutive times. ECB president is predicting the rates to stay the same for a couple of months, however current levels of 4% deposit and 4,5% main rate remain concerning for enterprises. Action: NOS's uses swaps to hedge interest rate risk, decreasing considerable the vulnerability to floating rate debt.

Tax Inspections (FR2): (Low, Low) Following tax inspections for the 2001–2021 financial years, the Group received notifications of corrections totaling over €38 million, which were totally contested. Action: In addition to contesting and respecting the principle of prudence, NOS has provided guarantees demanded by the tax authorities. (Note 44 and 42, 3Q2023)

Analysis of Risks:

Exhibit 116 - Price Target - WACC Sensitivity



Scenario Analysis: We computed a DCF enterprise value and price target, which was submitted to a sensitivity analysis and Monte Carlo simulation.

Sensitivity Analysis: The sensitivity analysis helped us stress the reliability of our main assumptions. Both sectors were calculated and then added together.

Starting by testing the WACC used, exhibit 116, the Team's assumption was compared to industry forecasts (Damodaran) both for Telecom Wireless and Telecom Services, and also for industry return on equity forecast (Damodaran) using the Team's return on debt. We conclude that Telecom Wireless rates, 6,57% WACC are more beneficial for the price target assumption. However

Exhibit 117 - Price Target - Tax Rate based on WACC Sensitivity

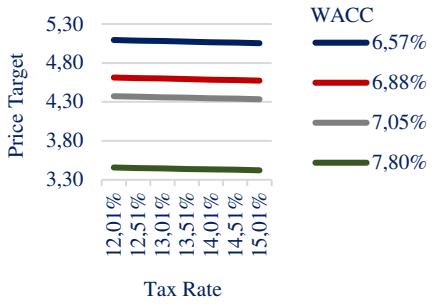


Exhibit 118 - Price Target - CapEx % Change

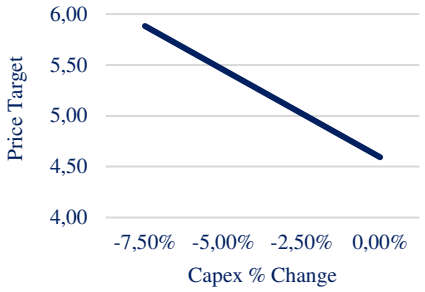
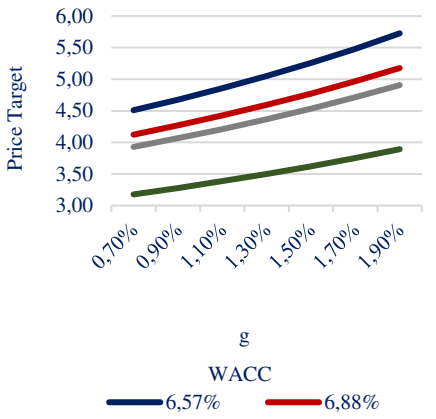


Exhibit 119 - Price Target - Long Term Growth (g) based on WACC Sensitivity



when assumptions are crossed we get closer to the recommendation, with 7,05% WACC. The effective tax rate being used was also tested, exhibit 117, and no concerning differences were found just stressing the difference of impact when comparing to WACC, maximum difference observed was €0,041.

CapEx was also subject to a sensitivity analysis in order to get a better understanding of the impacts of NOS's optimistic scenario, exhibit 118. Decreasing the forecast in 2,5%, 5% and 7,5% in the DCF valuation. Bearing in mind a forecasted share price of €4,59 the biggest impact was logically the 7,5% decrease which represents a 28% difference compared to the forecast at €5,88, while the 2,5% is going to generate a 9,36% upside.

Long Term Growth (g), exhibit 119, being a topic of discordance was also tested providing a maximum of €5,73 a minimum of €3,18 and a mean of €4,4, not showing concerning differences.

Monte Carlo: The Monte Carlo simulation used 10,000 iterations to reach an average price of €4,15 with a range from €2,5 to €6,7, with a standard deviation of 0,5 and a median of €4,1 indicating low dispersion. The skewness is 0.54, indicating a longer right tail in the distribution. While most values cluster around the average, significantly higher valuations can occur under certain circumstances.

Overall, 99% of simulated prices are above the current stock price. However, considering the simulated average of €4.15 compared to the calculated DCF value of €4,59, it becomes evident that this result is based on rather optimistic assumptions.

XI) Valuation Summary

In this analysis, NOS has been assessed from various perspectives to form a comprehensive view regarding the company's potential. The DCF valuation yields the highest estimate, with the Teams assumptions projecting an expected stock price of €4.59. Looking at NOS's future cash flows, there appears to be a 43% upside potential. Despite this being the highest valuation in the analysis, it remains notably below the pre-COVID valuation levels. This accounts for the anticipated future market conditions as well as the current interest rate environment, which is yet to fully impact NOS.

NOS stands poised for a more positive future, especially with its focus on mobile network successful implementation of 5G, potentially outperforming the current market valuation. This strategic advantage, set to unfold in the future, is also reflected in the relative valuation via comparables. Here, NOS achieves a valuation of €3.58, indicating a 12% upside potential. Being lower than the result via DCF shows that the entire telecommunications sector in Portugal is currently grappling with uncertainties, a factor not entirely captured in the DCF analysis. Comparables are focusing more on past and present aspects. The DCF may not fully encompass the current disruptions in the market caused by significant events like COVID-19, the Ukraine conflict, and the increasing interest rate environment from the perspective of investors while it focuses more on future potential.

Moreover, a high DCF valuation could stem from overly optimistic assumptions. This is where a Monte Carlo Simulation analysis becomes instrumental. By factoring in the expected range of parameters rather than fixed assumptions, this simulation method can highlight overly optimistic valuation results or provide a more nuanced perspective on the DCF valuation. In fact, the Monte Carlo Simulation suggests a valuation of €4.15, indicating a potential of 29%. While the DCF analysis might lean toward optimism, in 99% of simulations relative to the current stock valuation, scenarios consistently result in an upside potential.

When considering NOS as a steady dividend-paying cash cow, an investment based solely on dividend payouts is not justified, resulting in a valuation of €3.02, indicating a 6% decline.

Taking an average of these methodologies, a target price of €3.84 per share emerges, suggesting an upside potential of 19.5%. Therefore, based on this analysis, the recommendation for NOS SGPS S.A. is BUY.

Exhibit 120 – Valuation Summary

Price Target // % Change	€3,84	19,50%
Recommendation	**BUY**	
D/E	62%	
R_d	3,73%	
R_e	8,85%	
WACC	6,88%	
LT Growth Telecomm	1,30%	
LT Growth Audiovisuals	0,78%	

Valuation Model	Price Target	Upside/Downside
DCF	€4,59	43,1%
Monte Carlo	€4,15	29,4%
DDM	€3,02	-6,0%
Comparables	€3,58	11,6%
Current Price	Nos SGPS SA (XLIS:NOS)	€3,21

Approach	Min.	Est.	Max.
DCF	€4,13	€4,59	€5,05
Monte Carlo	€3,74	€4,15	€4,57
DDM	€2,71	€3,02	€3,32
Comparables	€3,22	€3,58	€3,94
Average	€3,45	€3,84	€4,22
Upside/Downside	7,6%	19,5%	31,5%

XII) APPENDIX

1) General Notes:

IFRS:

The category of contract costs was introduced with the IFRS 15 in 2018. This asset correspond to incremental costs of obtaining a contract (for example external legal fees to perform due diligence), that are recognized as an asset if they are expected to be recovered from the client; or costs to fulfil a contract, that are recognized as assets if it generate resources that might be used in future obligations and if, once again, is seen as recoverable.

From 1st of January 2019, the IFRS 16 policy adopted a new lease recognition: previously, it was treated as a cost in operating expenses (supplies and external services) but from this year onwards it began to be considered as a rights-of-use depreciation.

Recognition of contract assets:

NOS recognizes contract assets whenever it fulfils a contract duty; nevertheless, payment is not guaranteed until other obligations are completed. Contrarily, since receivables represent an unconditional right to payment, these two rubrics were forecasted individually, but summed as a total rubric named accounts receivables and contract assets. Contract assets were estimated based on total revenues.

Peer Group

TELENET GROUP HOLDING NV - Telenet Group provides telephone and internet services through a network of fiber-optic and coaxial cable. The company offers customized packages to businesses and individual clients in Belgium.

TELIA CO AB - Telia Company AB offers telecommunication services. The Company offers mobile communications services as well as operates fixed networks throughout Eurasia.

PROXIMUS - Proximus SA provides communication services and products to residential, business and corporate customers both domestically and internationally. The Group offers multimedia products, payphones, pagers, operator services and calling cards. Proximus also provides mobile phone and Internet services.

HELLENIC TELECOMMUN ORGANIZA - Hellenic Telecommunications Organization S.A. (OTE S.A.) provides telecommunications services. The Company offers fixed-line television and mobile telecommunication services, including voice, broadband, data, and leased lines. OTE S.A. serves the audio-visual, communications, industrial, and residential industries, as well as public customers. Its client base is in Europe.

ELISA OYJ - Elisa Oyj provides telecommunication solutions. The Company provides local, long distance, mobile telephone, and data transmission services.

Elisa also operates as a service integrator by connecting customers' telecom solutions and related IT (information technology) applications. The company sells to private individuals and businesses in Finland.

VODAFONE GROUP PLC - Vodafone Group PLC provides wireless communication services. The Company offers mobile telecommunications services including voice and data communications. Vodafone Group serves customers worldwide. The company is direct competitor to NOS SGPS as being also one of the main providers of telecom services and tv broadcast in Portugal.

FREENET AG - Freenet AG operates as an independent mobile communications service provider. The Company offers mobile tariffs and devices, digital lifestyle products, Internet, energy and digital TV services. Freenet offers its products through stores and the Web in Germany.

TURK TELEKOMUNIKASYON AS - Turk Telekomunikasyon A.S. is an integrated telecommunications services provider for businesses and individuals. The Company offers land and mobile telecommunications solutions, as well as Internet services.

BT GROUP PLC - BT Group PLC is a provider of fixed and mobile telecommunications and related secure digital products, solutions, and services. The Company offers managed telecommunications, security and network and IT infrastructure services. BT Group serves customers globally.

KONINKLIJKE KPN NV - Koninklijke. is a telecommunications and IT provider in the Netherlands, serving both consumer and business customers with its fixed and mobile networks for telephony, broadband and television. The Company offers customers telephone and internet services and solutions in IT services such as cloud, security and workspace. KPN offers third party telecom providers access to its phone networks.

SWISSCOM AG-REG - Swisscom AG operates public telecommunications networks and offers network application services. The Company provides local, long-distance, and mobile telephone, as well as integrated voice and data digital services. Swisscom provides network solutions to national and international telecommunications operators.

TELEFONICA DEUTSCHLAND HOLDI - Telefonica Deutschland Holding AG provides telecommunications services in Germany. The Company offers fixed-line and mobile telephone, Internet, and data transmission services to residential and corporate customers.

DEUTSCHE TELEKOM AG-REG - Deutsche Telekom AG offers telecommunications services. The Company offers a full range of fixed-line telephone services, mobile communications services, Internet access, and combined information technology and telecommunications services for businesses.

SES - SES SA through subsidiaries, offers global satellite broadband communications services. The Company offers feeds for cable television

networks, Internet access, corporate networks, network facilities, telecommunications services, and audiovisual broadcasting.

ORANGE POLSKA SA - Orange Polska S.A. operates as a telecommunication provider, operating in all segments of the Polish telecom market. The Company offers mobile and fixed telecommunications services that include calls, messaging, content, access to the Internet and television, leased lines, data transmission, other telecommunications value-added services, and the sale of telecom equipment.

2) Tables

a) Income Statement

Table 1 - Income Statement Forecast

NOS SGPS, Consolidated IS (Million EUR)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Telco	1381	1346	1401	1471	1527	1574	1618	1659	1695	1727	1760	1793	1827	1862	1898
% Total Revenue	94.7%	98.4%	97.6%	96.7%	95.9%	96.2%	96.1%	96.1%	96.0%	95.9%	95.8%	95.8%	95.7%	95.6%	95.5%
Audiovisuals & Cinema	122	54	73	96	102	106	110	113	117	121	125	129	134	138	142
% Total Revenue	8.4%	3.9%	5.1%	6.3%	6.4%	6.5%	6.5%	6.6%	6.6%	6.7%	6.8%	6.9%	7.0%	7.1%	7.2%
Eliminations	(45)	(32)	(38)	(46)	(37)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)
% Total Revenue	-3.1%	-2.3%	-2.7%	-3.0%	-2.3%	-2.7%	-2.7%	-2.7%	-2.7%	-2.7%	-2.7%	-2.7%	-2.7%	-2.7%	-2.7%
Revenues	**1458**	**1368**	**1436**	**1521**	**1591**	**1637**	**1683**	**1726**	**1765**	**1800**	**1836**	**1873**	**1910**	**1948**	**1988**
% Growth	-7.5%	-6.2%	5.0%	5.9%	4.6%	2.9%	2.8%	2.6%	2.3%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Wages and Salaries	85	85	82	86	93	95	100	104	107	111	114	118	121	125	128
% Op. Costs	5.8%	6.2%	5.7%	5.6%	5.8%	5.8%	5.9%	6.0%	6.1%	6.2%	6.2%	6.3%	6.4%	6.4%	6.4%
Direct Costs	385	349	367	345	352	343	336	329	321	312	303	295	287	279	272
% Op. Costs	26.4%	25.5%	25.5%	22.7%	22.1%	20.9%	20.0%	19.0%	18.2%	17.3%	16.5%	15.8%	15.0%	14.3%	13.7%
Costs of products sold	64	74	99	115	98	101	104	106	109	111	113	115	117	120	122
% Op. Costs	4.4%	5.4%	6.9%	7.5%	6.1%	6.2%	6.2%	6.2%	6.2%	6.2%	6.2%	6.2%	6.2%	6.1%	6.1%
Marketing and advertising	37	25	29	35	34	37	39	40	42	44	46	48	50	52	54
% Op. Costs	2.6%	1.8%	2.0%	2.3%	2.1%	2.2%	2.3%	2.3%	2.4%	2.4%	2.5%	2.5%	2.6%	2.7%	2.7%
Support services	82	86	85	83	94	97	100	102	105	107	109	111	113	115	117
% Op. Costs	5.6%	6.3%	5.9%	5.5%	5.9%	5.9%	5.9%	5.9%	5.9%	5.9%	5.9%	5.9%	5.9%	5.9%	5.9%
Supplies and external services	113	101	110	155	155	164	179	194	209	225	243	262	282	304	328
% Op. Costs	7.7%	7.4%	7.6%	10.2%	9.7%	10.0%	10.6%	11.2%	11.9%	12.5%	13.2%	14.0%	14.8%	15.6%	16.5%
Other operating losses	1	1	1	1	1	2	2	2	2	2	2	2	2	3	3
% Op. Costs	0.0%	0.1%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Taxes	33	33	31	35	36	37	38	38	39	40	41	42	42	43	44
% Op. Costs	2.3%	2.4%	2.2%	2.3%	2.3%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%
Provisions and adjustments	19	11	10	15	13	12	13	13	13	13	14	14	14	15	15
% Op. Costs	1.3%	0.8%	0.7%	1.0%	0.8%	0.8%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%
Operational Costs	**818**	**765**	**812**	**870**	**875**	**888**	**909**	**928**	**947**	**965**	**985**	**1007**	**1030**	**1055**	**1083**
% Revenue	56.1%	55.9%	56.6%	57.2%	55.0%	54.3%	54.0%	53.8%	53.7%	53.6%	53.7%	53.8%	53.9%	54.2%	54.5%
EBITDA	**640**	**603**	**624**	**651**	**717**	**749**	**774**	**798**	**818**	**835**	**851**	**866**	**880**	**893**	**905**
EBITDA Margin	43.9%	44.1%	43.4%	42.8%	45.0%	45.7%	46.0%	46.2%	46.3%	46.4%	46.3%	46.2%	46.1%	45.8%	45.5%
D,A&I	421	410	419	481	488	459	462	466	473	480	488	511	526	603	628
% Revenue	28.9%	30.0%	29.2%	31.6%	30.6%	28.0%	27.5%	27.0%	26.8%	26.6%	26.6%	27.3%	27.6%	31.0%	31.6%
EBIT	**219**	**193**	**204**	**170**	**229**	**290**	**312**	**331**	**346**	**355**	**363**	**355**	**354**	**290**	**277**
EBIT Margin	15.0%	14.1%	14.2%	11.2%	14.4%	17.7%	18.6%	19.2%	19.6%	19.7%	19.8%	18.9%	18.5%	14.9%	13.9%
Non-Recurring Losses	11	43	(2)	(128)	(8)	1	1	1	1	1	1	1	1	1	1
Financial Costs	21	22	34	32	64	62	68	72	73	76	75	78	90	98	88
EBT	**175**	**102**	**161**	**257**	**165**	**217**	**235**	**249**	**262**	**269**	**277**	**267**	**253**	**181**	**179**
EBT Margin	12.0%	7.4%	11.2%	16.9%	10.4%	13.3%	13.9%	14.4%	14.9%	15.0%	15.1%	14.2%	13.3%	9.3%	9.0%
Income Tax	33	16	12	33	24	30	32	34	36	37	38	36	35	25	25
% Effective tax	18.6%	16.1%	7.3%	12.7%	14.5%	13.8%	13.7%	13.7%	13.7%	13.7%	13.6%	13.7%	13.7%	13.9%	13.9%
Net Income	**143**	**92**	**150**	**224**	**141**	**187**	**202**	**215**	**226**	**233**	**240**	**230**	**219**	**156**	**154**
Net Margin	9.8%	6.7%	10.4%	14.8%	8.9%	11.5%	12.0%	12.5%	12.8%	12.9%	13.0%	12.3%	11.4%	8.0%	7.7%

b) Balance Sheet

Table 2 – Balance Sheet Forecast, Assets

NOS Balance Sheet (Millions EUR)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
ASSETS															
Tangible assets	1035	992	1041	1107	1058	1082	1105	1131	1153	1172	1198	1256	1330	1371	1350
Intangible assets	1014	1041	1205	1210	1209	1199	1195	1193	1196	1200	1207	1233	1474	1507	1504
Contract costs	163	162	162	161	161	160	160	159	159	158	158	157	157	156	156
Rights of use	218	260	236	298	322	312	303	301	305	314	316	333	360	422	416
Investments in jointly controlled companies and associated companies	18	11	18	39	33	33	33	33	33	33	33	33	33	33	33
Accounts receivable - other	4	8	6	5	4	5	5	5	5	5	5	5	6	6	6
Other financial assets non-current	1	1	3	17	18	18	18	18	18	18	18	18	18	18	18
Deferred income tax assets	80	83	81	90	92	94	97	100	102	104	106	108	110	113	115
TOTAL NON - CURRENT ASSETS	**2534**	**2557**	**2753**	**2926**	**2898**	**2903**	**2916**	**2940**	**2971**	**3005**	**3042**	**3143**	**3488**	**3626**	**3598**
Inventories	34	44	44	67	70	72	74	76	78	79	80	82	84	85	87
Acc. Receivables (trade & other) + Contract Assets	458	381	404	396	423	430	443	454	465	474	484	494	505	515	526
Other receivables (short term) / current assets	5	3	3	7	7	6	6	6	7	7	7	7	7	7	8
Prepaid expenses	44	34	45	52	62	53	55	56	57	58	59	61	62	63	64
Cash and cash equivalents	13	153	11	15	12	14	14	14	15	15	15	16	16	16	17
Assets held for sale	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL CURRENT ASSETS	**554**	**615**	**506**	**538**	**574**	**575**	**592**	**607**	**621**	**633**	**646**	**660**	**673**	**687**	**701**
TOTAL ASSETS	**3088**	**3173**	**3259**	**3463**	**3472**	**3478**	**3508**	**3547**	**3592**	**3638**	**3688**	**3803**	**4161**	**4313**	**4299**

Table 3 - Balance Sheet Forecast, Liabilities

NOS Balance Sheet (Millions EUR)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
TOTAL EQUITY	**1012**	**956**	**963**	**1052**	**902**	**1080**	**1072**	**1093**	**1096**	**1071**	**1111**	**1157**	**1207**	**1162**	**1356**
LIABILITIES															
Borrowings	1217	1364	1276	1210	1556	1392	1412	1412	1436	1490	1482	1528	1664	1726	1723
Provisions	95	73	83	81	85	87	89	92	94	96	98	100	102	104	106
Accrued expenses	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Accounts Payable - other	0	39	39	42	42	40	40	40	40	40	40	40	40	40	40
Other non-current liabilities	9	45	43	45	43	43	43	43	43	43	43	43	43	43	43
Deferred income tax liabilities	12	5	5	50	52	33	34	35	36	36	37	38	38	39	40
TOTAL NON - CURRENT LIABILITIES	**1333**	**1527**	**1445**	**1429**	**1777**	**1595**	**1619**	**1622**	**1648**	**1705**	**1700**	**1749**	**1887**	**1952**	**1952**
Borrowings	143	167	301	427	231	220	219	222	225	228	231	237	394	512	288
Accounts payable	293	261	277	265	255	265	270	275	279	284	289	294	301	308	316
Tax payable	68	52	62	39	38	51	53	54	55	57	58	59	60	61	62
Accrued expenses	204	176	176	212	226	227	234	240	245	250	255	261	266	271	277
Other current liabilities	34	34	36	39	43	39	41	42	43	44	45	46	46	47	49
Liabilities directly associated with assets held for sale	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL CURRENT LIABILITIES	**743**	**689**	**851**	**982**	**793**	**803**	**817**	**832**	**847**	**862**	**877**	**897**	**1067**	**1199**	**991**
TOTAL LIABILITIES	**2076**	**2216**	**2296**	**2411**	**2570**	**2398**	**2435**	**2454**	**2496**	**2567**	**2577**	**2646**	**2954**	**3152**	**2944**

Table 1 – Balance Sheet Ratios Forecast

NOS Balance Sheet (Millions EUR)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
D/E Book Value	1.34	1.60	1.64	1.56	1.98	1.49	1.52	1.50	1.52	1.60	1.54	1.53	1.70	1.93	1.48
Invested Capital	2338	2437	2363	2433	2631	2627	2644	2667	2697	2729	2764	2859	3047	3067	3260
Net Income	143	92	150	224	141	187	202	215	226	233	240	230	219	156	154
ROIC	6.1%	3.8%	6.3%	9.2%	5.4%	7.1%	7.7%	8.1%	8.4%	8.5%	8.7%	8.1%	7.2%	5.1%	4.7%
ROE	14.2%	9.6%	15.5%	21.3%	15.7%	17.4%	18.9%	19.7%	20.7%	21.7%	21.6%	19.9%	18.1%	13.4%	11.3%
Net Working Capital	-189	-74	-345	-445	-218	-228	-225	-226	-227	-228	-230	-237	-394	-512	-290
Operating Current Assets	541	462	496	523	562	561	578	593	606	618	631	644	657	671	685
Operating Current Liabilities	565	489	514	516	519	544	557	569	580	591	602	614	627	640	655
Operating NWC	-24	-27	-19	6	43	18	21	24	26	28	29	30	31	30	30
Net Debt	1347	1377	1566	1622	1775	1598	1618	1620	1646	1702	1697	1750	2042	2221	1994
Lease borrowings	254	575	534	630	668	602	610	611	621	642	640	660	769	836	752
% of total debt	*18.7%*	*37.6%*	*33.9%*	*38.5%*	*37.4%*	*37.4%*	*37.4%*	*37.4%*	*37.4%*	*37.4%*	*37.4%*	*37.4%*	*37.4%*	*37.4%*	*37.4%*
Net Financial Debt	1094	802	1032	992	1107	996	1008	1009	1025	1061	1057	1090	1273	1385	1243
Net Debt / EBITDA	2.11	2.28	2.51	2.49	2.48	2.13	2.09	2.03	2.01	2.04	1.99	2.02	2.32	2.49	2.20
EBITDA after lease payments	579	536	520	545	611	643	670	694	714	729	743	756	767	765	764
Depreciation of rights of use (Principal)	52	56	62	64	74	82	80	78	77	78	80	81	80	92	108
Interests payments financial leases	8	11	26	26	31	23	25	26	27	28	28	29	33	36	33
Net financial Debt/EBITDA AL	**1.89**	**1.50**	**1.98**	**1.82**	**1.81**	**1.55**	**1.50**	**1.45**	**1.44**	**1.45**	**1.42**	**1.44**	**1.66**	**1.81**	**1.63**

c) Telco Segmented Reporting

Table 5 – Telco Income Statement Forecast, Revenues

Telco IS (Million EUR)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Consumer Revenues	990	982	1002	1033	1096	1134	1168	1199	1227	1250	1275	1299	1325	1350	1377
% Revenue	*71.7%*	*73.0%*	*71.5%*	*70.3%*	*71.8%*	*72.0%*	*72.2%*	*72.3%*	*72.4%*	*72.4%*	*72.4%*	*72.5%*	*72.5%*	*72.5%*	*72.5%*
Consumer RGU, '000	*8193*	*8391*	*8726*	*9122*	*9377*	*9605*	*9804*	*9973*	*10108*	*10209*	*10311*	*10414*	*10518*	*10624*	*10730*
% Growth		*2.4%*	*4.0%*	*4.5%*	*2.8%*	*2.4%*	*2.1%*	*1.7%*	*1.4%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*
Absolute Growth ('000)		*197*	*335*	*396*	*255*	*228*	*199*	*168*	*135*	*101*	*102*	*103*	*104*	*105*	*106*
Consumer ARPU, EUR	*121*	*117*	*115*	*113*	*117*	*118*	*119*	*120*	*121*	*122*	*124*	*125*	*126*	*127*	*128*
% Growth		*-3.2%*	*-1.9%*	*-1.3%*	*3.2%*	*0.9%*	*0.9%*	*0.9%*	*0.9%*	*0.9%*	*0.9%*	*0.9%*	*0.9%*	*0.9%*	*0.9%*
Business Revenues	288	982	1002	1033	1096	1134	1168	1199	1227	1250	1275	1299	1325	1350	1377
% Revenue	*20.9%*	*73.0%*	*71.5%*	*70.3%*	*71.8%*	*72.0%*	*72.2%*	*72.3%*	*72.4%*	*72.4%*	*72.4%*	*72.5%*	*72.5%*	*72.5%*	*72.5%*
Business RGU, '000	*1483*	*1528*	*1580*	*1660*	*1698*	*1733*	*1766*	*1796*	*1824*	*1849*	*1874*	*1900*	*1926*	*1952*	*1979*
% Growth		*3.1%*	*3.4%*	*5.1%*	*2.2%*	*2.1%*	*1.9%*	*1.7%*	*1.5%*	*1.4%*	*1.4%*	*1.4%*	*1.4%*	*1.4%*	*1.4%*
Absolute Growth ('000)		*46*	*51*	*80*	*37*	*35*	*33*	*30*	*28*	*25*	*25*	*26*	*26*	*26*	*27*
Business ARPU, EUR	*195*	*189*	*200*	*203*	*196*	*198*	*201*	*203*	*206*	*208*	*211*	*213*	*216*	*219*	*221*
% Growth		*-2.8%*	*5.9%*	*1.2%*	*-3.4%*	*1.2%*	*1.2%*	*1.2%*	*1.2%*	*1.2%*	*1.2%*	*1.2%*	*1.2%*	*1.2%*	*1.2%*
Revenues	**1381**	**1346**	**1401**	**1471**	**1527**	**1574**	**1618**	**1659**	**1695**	**1727**	**1760**	**1793**	**1827**	**1862**	**1898**
% Growth	*-8.3%*	*-2.6%*	*4.1%*	*5.0%*	*3.8%*	*3.1%*	*2.8%*	*2.5%*	*2.2%*	*1.9%*	*1.9%*	*1.9%*	*1.9%*	*1.9%*	*1.9%*

Table 6 - Telco Income Statement Forecast Operational Costs

Telco IS (Million EUR)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Wages and Salaries	74	77	73	75	81	83	87	90	93	96	99	102	104	107	109
% Op. Costs	*5.4%*	*5.6%*	*5.1%*	*4.9%*	*5.1%*	*5.1%*	*5.2%*	*5.2%*	*5.3%*	*5.3%*	*5.4%*	*5.4%*	*5.5%*	*5.5%*	*5.5%*
# Employees	*2141*	*2164*	*1973*	*2056*	*2103*	*2086*	*2126*	*2150*	*2166*	*2193*	*2216*	*2239*	*2263*	*2287*	*2312*
Av. Salary per Employee	*34515*	*35363*	*37231*	*36604*	*38490*	*39748*	*40844*	*41911*	*42890*	*43787*	*44606*	*45352*	*46030*	*46646*	*47204*
Direct Costs	386	367	388	357	354	348	342	334	326	317	308	300	292	284	276
% Op. Costs	*26.5%*	*26.9%*	*27.0%*	*23.5%*	*22.3%*	*21.3%*	*20.3%*	*19.4%*	*18.5%*	*17.6%*	*16.8%*	*16.0%*	*15.3%*	*14.6%*	*13.9%*
% Revenue	*28.0%*	*27.3%*	*27.7%*	*24.3%*	*23.2%*	*22.1%*	*21.1%*	*20.2%*	*19.2%*	*18.4%*	*17.5%*	*16.7%*	*16.0%*	*15.2%*	*14.5%*
Costs of products sold	64	74	99	112	94	97	100	102	104	106	108	110	113	115	117
% Op. Costs	*4.4%*	*5.4%*	*6.9%*	*7.4%*	*5.9%*	*5.9%*	*5.9%*	*5.9%*	*5.9%*	*5.9%*	*5.9%*	*5.9%*	*5.9%*	*5.9%*	*5.9%*
% Revenue	*4.6%*	*5.5%*	*7.1%*	*7.6%*	*6.2%*	*6.2%*	*6.2%*	*6.2%*	*6.2%*	*6.2%*	*6.2%*	*6.2%*	*6.2%*	*6.2%*	*6.2%*
Marketing and advertising	38	33	38	44	42	44	46	48	50	52	53	55	58	60	62
% Op. Costs	*2.6%*	*2.4%*	*2.6%*	*2.9%*	*2.6%*	*2.7%*	*2.7%*	*2.8%*	*2.8%*	*2.9%*	*2.9%*	*3.0%*	*3.0%*	*3.1%*	*3.1%*
% Revenue	*2.8%*	*2.4%*	*2.7%*	*3.0%*	*2.7%*	*2.8%*	*2.8%*	*2.9%*	*2.9%*	*3.0%*	*3.0%*	*3.1%*	*3.1%*	*3.2%*	*3.3%*
Support services	80	86	85	84	94	97	100	102	104	106	108	110	113	115	117
% Op. Costs	*5.5%*	*6.3%*	*5.9%*	*5.5%*	*5.9%*	*5.9%*	*5.9%*	*5.9%*	*5.9%*	*5.9%*	*5.9%*	*5.9%*	*5.9%*	*5.9%*	*5.9%*
% Revenue	*5.8%*	*6.4%*	*6.1%*	*5.7%*	*6.2%*	*6.2%*	*6.2%*	*6.2%*	*6.2%*	*6.2%*	*6.2%*	*6.2%*	*6.2%*	*6.2%*	*6.2%*
Supplies and external services	104	100	109	147	144	157	171	186	202	217	235	253	273	295	319
% Op. Costs	*7.1%*	*7.3%*	*7.6%*	*9.7%*	*9.1%*	*9.6%*	*10.2%*	*10.8%*	*11.4%*	*12.1%*	*12.8%*	*13.5%*	*14.3%*	*15.1%*	*16.0%*
% Revenue	*7.5%*	*7.4%*	*7.8%*	*10.0%*	*9.4%*	*10.0%*	*10.6%*	*11.2%*	*11.9%*	*12.6%*	*13.3%*	*14.1%*	*15.0%*	*15.8%*	*16.8%*
Other operating losses	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1
% Op. Costs	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.1%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*
% Revenue	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.1%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*
Taxes	33	33	31	35	36	36	37	38	39	40	41	41	42	43	44
% Op. Costs	*2.2%*	*2.4%*	*2.2%*	*2.3%*	*2.3%*	*2.2%*	*2.2%*	*2.2%*	*2.2%*	*2.2%*	*2.2%*	*2.2%*	*2.2%*	*2.2%*	*2.2%*
% Revenue	*2.4%*	*2.4%*	*2.2%*	*2.4%*	*2.4%*	*2.3%*	*2.3%*	*2.3%*	*2.3%*	*2.3%*	*2.3%*	*2.3%*	*2.3%*	*2.3%*	*2.3%*
Provisions and adjustments	19	11	10	16	13	13	13	14	14	14	15	15	15	15	16
% Op. Costs	*1.3%*	*0.8%*	*0.7%*	*1.1%*	*0.8%*	*0.8%*	*0.8%*	*0.8%*	*0.8%*	*0.8%*	*0.8%*	*0.8%*	*0.8%*	*0.8%*	*0.8%*
% Acc. Receivables trade	*5.2%*	*3.6%*	*3.0%*	*4.8%*	*3.6%*	*3.6%*	*3.6%*	*3.6%*	*3.6%*	*3.6%*	*3.6%*	*3.6%*	*3.6%*	*3.6%*	*3.6%*
Operational Costs	**798**	**781**	**835**	**870**	**859**	**877**	**897**	**915**	**933**	**950**	**968**	**988**	**1010**	**1034**	**1060**
% Revenue	54.7%	57.1%	58.1%	57.2%	54.0%	53.6%	53.3%	53.0%	52.8%	52.8%	52.7%	52.8%	52.9%	53.1%	53.3%

Table 7 - Income Statement Forecast, Net Income

Telco IS (Million EUR)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
EBITDA	**583**	**565**	**567**	**601**	**668**	**697**	**722**	**743**	**762**	**777**	**792**	**805**	**817**	**829**	**838**
EBITDA Margin	*40.0%*	*41.3%*	*39.5%*	*39.5%*	*42.0%*	*42.6%*	*42.9%*	*43.1%*	*43.2%*	*43.2%*	*43.1%*	*43.0%*	*42.8%*	*42.5%*	*42.2%*
D,A&I	385	376	394	452	458	431	435	438	444	451	459	481	495	567	590
% Revenue	*26.4%*	*27.5%*	*27.4%*	*29.7%*	*28.8%*	*26.4%*	*25.8%*	*25.4%*	*25.2%*	*25.1%*	*25.0%*	*25.7%*	*25.9%*	*29.1%*	*29.7%*
% Assets that D,A&I	*16.8%*	*16.2%*	*15.6%*	*17.1%*	*17.6%*	*16.5%*	*16.6%*	*16.6%*	*16.6%*	*16.7%*	*16.8%*	*16.9%*	*15.7%*	*17.3%*	*18.2%*
EBIT	**198**	**190**	**173**	**149**	**209**	**266**	**287**	**305**	**318**	**326**	**333**	**324**	**323**	**261**	**248**
EBIT Margin	*38.4%*	*39.2%*	*40.8%*	*37.5%*	*35.5%*	*34.5%*	*33.4%*	*32.5%*	*31.6%*	*30.7%*	*29.8%*	*29.0%*	*28.3%*	*27.6%*	*26.9%*
Non-Recurring Losses	16	42	0	(127)	(8)	2	2	2	2	2	2	2	2	2	2
Financial Costs	18	20	33	31	62	61	66	70	72	74	74	76	89	97	87
% Total Debt	*1.4%*	*1.2%*	*1.9%*	*2.2%*	*3.5%*	*3.8%*	*4.1%*	*4.3%*	*4.3%*	*4.3%*	*4.3%*	*4.3%*	*4.3%*	*4.3%*	*4.3%*
EBT	**164**	**127**	**141**	**244**	**156**	**203**	**219**	**232**	**244**	**250**	**257**	**246**	**232**	**163**	**160**
EBT Margin	*15.1%*	*16.2%*	*14.9%*	*15.2%*	*17.3%*	*17.9%*	*18.4%*	*19.0%*	*19.5%*	*20.1%*	*20.6%*	*21.2%*	*21.8%*	*22.4%*	*22.9%*
Income Tax	29	17	8	28	21	27	29	31	32	33	34	32	30	21	21
% Effective Tax	*17.7%*	*13.1%*	*5.8%*	*11.6%*	*13.5%*	*13.1%*	*13.1%*	*13.1%*	*13.1%*	*13.1%*	*13.1%*	*13.1%*	*13.1%*	*13.1%*	*13.1%*
Net Income	**136**	**117**	**132**	**216**	**134**	**176**	**190**	**202**	**212**	**217**	**223**	**214**	**201**	**141**	**139**
Net Margin	*9.8%*	*8.7%*	*9.4%*	*14.7%*	*8.8%*	*11.2%*	*11.8%*	*12.2%*	*12.5%*	*12.6%*	*12.7%*	*11.9%*	*11.0%*	*7.6%*	*7.3%*

Table 8 – Telco's Balance Sheet Assets Forecast

Telco Balance Sheet (Millions EUR)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
ASSETS															
Tangible assets	1022	981	1031	1098	1048	1071	1094	1120	1142	1160	1187	1244	1317	1358	1338
acquisition costs minus accumulated depreciations															
Intangible assets	922	952	1116	1117	1114	1104	1101	1099	1102	1106	1112	1136	1358	1389	1385
acquisition costs minus accumulated amortizations															
Contract costs	163	162	162	161	161	160	160	159	159	158	158	157	157	156	156
acquisition costs minus accumulated amortizations															
Rights of use	183	227	207	270	285	276	268	267	270	278	280	302	327	384	369
acquisition costs minus accumulated depreciations															
Investments in jointly controlled companies and associated companies	74	115	127	123	117	117	117	117	117	117	117	117	117	117	117
last year value															
Accounts receivable - other	76	40	49	44	45	46	48	49	50	51	52	53	54	55	56
% Telco revenue	*5.5%*	*2.9%*	*3.5%*	*3.0%*	*2.9%*	*3.0%*	*3.0%*	*3.0%*	*3.0%*	*3.0%*	*3.0%*	*3.0%*	*3.0%*	*3.0%*	*3.0%*
Other assets non-current	1	1	3	17	18	18	18	18	18	18	18	18	18	18	18
last year value															
Deferred income tax assets	69	71	71	82	85	85	87	90	92	93	95	97	99	101	103
% Telco revenue	*5.0%*	*5.3%*	*5.1%*	*5.5%*	*5.6%*	*5.4%*	*5.4%*	*5.4%*	*5.4%*	*5.4%*	*5.4%*	*5.4%*	*5.4%*	*5.4%*	*5.4%*
TOTAL NON - CURRENT ASSETS	**2509**	**2548**	**2766**	**2911**	**2872**	**2878**	**2893**	**2918**	**2949**	**2982**	**3018**	**3123**	**3447**	**3577**	**3540**
Inventories	33.4	43.2	43.5	66.7	69.6	71.3	73.3	75.2	76.8	78.3	79.7	81.3	82.8	84.4	86.0
% Telco revenue	*2.4%*	*3.2%*	*3.1%*	*4.5%*	*4.6%*	*4.5%*	*4.5%*	*4.5%*	*4.5%*	*4.5%*	*4.5%*	*4.5%*	*4.5%*	*4.5%*	*4.5%*
Accounts receivable - trade	364.2	311.5	334.8	331.6	361.7	363.9	374.1	383.5	391.9	399.2	406.8	414.5	422.4	430.5	438.8
ACP	*96*	*84*	*87*	*82*	*86*	*84*	*84*	*84*	*84*	*84*	*84*	*84*	*84*	*84*	*84*
Contract Assets	68.1	61.6	61.8	60.1	59.7	64.3	66.1	67.8	69.3	70.6	71.9	73.3	74.7	76.1	77.5
% Telco revenue	*4.9%*	*4.6%*	*4.4%*	*4.1%*	*3.9%*	*4.1%*	*4.1%*	*4.1%*	*4.1%*	*4.1%*	*4.1%*	*4.1%*	*4.1%*	*4.1%*	*4.1%*
Other current assets	2.9	1.9	1.2	4.8	5.0	4.2	4.3	4.5	4.6	4.6	4.7	4.8	4.9	5.0	5.1
% Telco revenue	*0.2%*	*0.1%*	*0.1%*	*0.3%*	*0.3%*	*0.3%*	*0.3%*	*0.3%*	*0.3%*	*0.3%*	*0.3%*	*0.3%*	*0.3%*	*0.3%*	*0.3%*
Prepaid expenses	42.4	33.3	44.0	50.9	61.4	51.9	53.4	54.7	55.9	57.0	58.0	59.1	60.3	61.4	62.6
% Telco revenue	*3.1%*	*2.5%*	*3.1%*	*3.5%*	*4.0%*	*3.3%*	*3.3%*	*3.3%*	*3.3%*	*3.3%*	*3.3%*	*3.3%*	*3.3%*	*3.3%*	*3.3%*
Cash and cash equivalents	12.0	152.7	10.2	14.3	11.1	12.6	12.9	13.2	13.5	13.8	14.0	14.3	14.6	14.9	15.1
% Telco revenue	*0.9%*	*11.3%*	*0.7%*	*1.0%*	*0.7%*	*0.8%*	*0.8%*	*0.8%*	*0.8%*	*0.8%*	*0.8%*	*0.8%*	*0.8%*	*0.8%*	*0.8%*
Assets held for sale	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Telco revenue	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*
TOTAL CURRENT ASSETS	**523**	**604**	**495**	**528**	**569**	**568**	**584**	**599**	**612**	**623**	**635**	**647**	**660**	**672**	**685**
TOTAL ASSETS	**3032**	**3152**	**3261**	**3439**	**3440**	**3446**	**3477**	**3517**	**3561**	**3605**	**3653**	**3771**	**4106**	**4249**	**4225**

Table 9 – Telco's Balance Sheet Liabilities Forecast

Telco Balance Sheet (Millions EUR)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
TOTAL EQUITY	**1036**	**1004**	**997**	**1075**	**912**	**1094**	**1086**	**1110**	**1112**	**1088**	**1128**	**1176**	**1205**	**1152**	**1343**
LIABILITIES															
Borrowings	1165	1333	1252	1188	1527	1365	1385	1384	1408	1462	1453	1501	1634	1695	1689
% Total Assets	*38.4 %*	*42.3 %*	*38.4 %*	*34.5 %*	*44.4 %*	*39.6 %*	*39.8 %*	*39.3 %*	*39.5 %*	*40.5 %*	*39.8 %*	*39.8 %*	*39.8 %*	*39.9 %*	*40.0 %*
Provisions	88	66	74	74	77	79	82	84	85	87	89	90	92	94	96
% Telco revenue	*6.4%*	*4.9%*	*5.3%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*
Accrued expenses	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
% Telco revenue	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*
Accounts Payable - other	0	39	39	42	42	40	40	40	40	40	40	40	40	40	40
average of last years															
Other non-current liabilities	9	45	43	45	43	43	43	43	43	43	43	43	43	43	43
last year values															
Deferred income tax liabilities	11	5	5	49	51	33	34	35	35	36	37	37	38	39	39
% Telco revenue	*0.8%*	*0.3%*	*0.3%*	*3.4%*	*3.4%*	*2.1%*	*2.1%*	*2.1%*	*2.1%*	*2.1%*	*2.1%*	*2.1%*	*2.1%*	*2.1%*	*2.1%*
TOTAL NON - CURRENT LIABILITIES	**1275**	**1488**	**1412**	**1398**	**1739**	**1560**	**1584**	**1585**	**1612**	**1668**	**1662**	**1712**	**1848**	**1911**	**1907**
CURRENT LIABILITIES:															
Borrowings	161	162	332	434	254	237	239	242	245	248	251	259	417	536	312
% Total Assets	*5.3%*	*5.1%*	*10.%*	*12.%*	*7.4%*	*6.9%*	*6.9%*	*6.9%*	*6.9%*	*6.9%*	*6.9%*	*6.9%*	*10.%*	*12.%*	*7.4%*
Accounts payable	282	259	273	264	252	260	265	270	274	278	282	288	294	300	308
% Telco revenue	*20.%*	*19.%*	*19.%*	*17.%*	*16.%*	*16.%*	*16.%*	*16.%*	*16.%*	*16.%*	*16.%*	*16.%*	*16.%*	*16.%*	*16.%*
APP (days)	*162*	*151*	*146*	*138*	*134*	*136*	*136*	*136*	*136*	*136*	*136*	*136*	*136*	*136*	*136*
Tax payable	65	50	60	37	37	50	51	52	53	54	55	56	57	59	60
% Telco revenue	*4.7%*	*3.7%*	*4.3%*	*2.5%*	*2.4%*	*3.1%*	*3.1%*	*3.1%*	*3.1%*	*3.1%*	*3.1%*	*3.1%*	*3.1%*	*3.1%*	*3.1%*
Accrued expenses	186	164	159	199	211	212	218	224	229	233	238	242	247	251	256
% Telco revenue	*13.5 %*	*12.2 %*	*11.4 %*	*13.5 %*	*13.8 %*	*13.5 %*	*13.5 %*	*13.5 %*	*13.5 %*	*13.5 %*	*13.5 %*	*13.5 %*	*13.5 %*	*13.5 %*	*13.5 %*
Other current liabilities	26	25	28	32	36	33	34	35	36	36	37	38	38	39	40
% Telco revenue	*1.9%*	*1.9%*	*2.0%*	*2.2%*	*2.4%*	*2.1%*	*2.1%*	*2.1%*	*2.1%*	*2.1%*	*2.1%*	*2.1%*	*2.1%*	*2.1%*	*2.1%*
Liabilities directly associated with assets held for sale	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Telco revenue	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*
TOTAL CURRENT LIABILITIES	**721**	**660**	**852**	**966**	**789**	**792**	**807**	**822**	**836**	**849**	**863**	**883**	**1054**	**1186**	**975**
TOTAL LIABILITIES	**1996**	**2149**	**2264**	**2364**	**2529**	**2352**	**2391**	**2407**	**2448**	**2517**	**2525**	**2595**	**2902**	**3097**	**2883**

d) Audiovisuals & Cinema Segmented Reporting

Table 10 – Audiovisuals & Cinema Income Statement Forecast, Revenues

Audiovisuals & Cinema IS (Million EUR)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Pt Cinema	48	12	19	36	49	53	56	60	64	68	72	76	80	85	89
% Revenue	*39.7%*	*22.6%*	*25.9%*	*37.0%*	*47.9%*	*49.6%*	*51.3%*	*52.8%*	*54.4%*	*55.9%*	*57.3%*	*58.7%*	*60.0%*	*61.3%*	*62.6%*
Rev. per Ticket, EUR	*5.23*	*5.26*	*5.46*	*5.70*	*5.81*	*6.01*	*6.20*	*6.40*	*6.59*	*6.78*	*6.98*	*7.17*	*7.37*	*7.56*	*7.76*
Absolute Growth	*0.36*	*0.04*	*0.20*	*0.24*	*0.11*	*0.19*	*0.19*	*0.19*	*0.19*	*0.19*	*0.19*	*0.19*	*0.19*	*0.19*	*0.19*
% Growth	*7%*	*1%*	*4%*	*4%*	*2%*	*3%*	*3%*	*3%*	*3%*	*3%*	*3%*	*3%*	*3%*	*3%*	*3%*
Tickets Sold, '000	*9269*	*2310*	*3451*	*6261*	*8455*	*8759*	*9062*	*9365*	*9668*	*9971*	*10274*	*10577*	*10880*	*11183*	*11486*
% Growth	*6%*	*-76%*	*61%*	*57%*	*35%*	*4%*	*1%*	*3%*	*3%*	*3%*	*3%*	*3%*	*3%*	*3%*	*3%*
Absolute growth	*380*	*-6959*	*1140*	*2810*	*2194*	*303*	*303*	*303*	*303*	*303*	*303*	*303*	*303*	*303*	*303*
Aud. & Others	74	42	54	61	53	53	53	53	53	53	53	53	53	53	53
% Revenue	*60.3%*	*77.4%*	*74.1%*	*63.0%*	*52.1%*	*50.4%*	*48.7%*	*47.2%*	*45.6%*	*44.1%*	*42.7%*	*41.3%*	*40.0%*	*38.7%*	*37.4%*
% Growth	*-3%*	*28%*	*-4%*	*-15%*	*-17%*	*-3%*	*-3%*	*-3%*	*-3%*	*-3%*	*-3%*	*-3%*	*-3%*	*-3%*	*-3%*
Revenues	**122**	**54**	**73**	**96**	**102**	**106**	**110**	**113**	**117**	**121**	**125**	**129**	**134**	**138**	**142**
% Growth	*6%*	*-56%*	*35%*	*33%*	*6%*	*4%*	*3%*	*3%*	*3%*	*3%*	*3%*	*3%*	*3%*	*3%*	*3%*

Table 11 – Audiovisuals & Cinema Income Statement Forecast, Operational Costs

Audiovisuals & Cinema IS (Million EUR)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Wages and Salaries	11	9	9	11	12	12	13	13	14	15	16	16	17	18	19
% Op. Costs	*0.8%*	*0.7%*	*0.6%*	*0.7%*	*0.8%*	*0.8%*	*0.8%*	*0.8%*	*0.8%*	*0.9%*	*0.9%*	*0.9%*	*0.9%*	*1.0%*	*1.0%*
# Employees	*316*	*250*	*231*	*290*	*332*	*338*	*344*	*350*	*356*	*362*	*369*	*375*	*382*	*388*	*395*
Av. Salary per Employee	*34543*	*26499*	*37258*	*36662*	*34894*	*36034*	*37211*	*38426*	*39681*	*40977*	*42315*	*43697*	*45125*	*46598*	*48120*
Direct Costs	33	3	11	19	23	24	25	26	27	28	28	29	30	31	32
% Op. Costs	*50.8%*	*19.6%*	*69.8%*	*40.4%*	*43.7%*	*44.0%*	*43.9%*	*43.7%*	*43.6%*	*43.4%*	*43.2%*	*43.1%*	*42.9%*	*42.7%*	*42.5%*
% Revenue	*27.1%*	*5.7%*	*15.2%*	*19.4%*	*22.7%*	*22.7%*	*22.7%*	*22.7%*	*22.7%*	*22.7%*	*22.7%*	*22.7%*	*22.7%*	*22.7%*	*22.7%*
Costs of products sold	0	0	0	3	4	4	4	4	4	5	5	5	5	5	5
% Op. Costs	*0.7%*	*1.9%*	*0.4%*	*6.0%*	*7.2%*	*7.2%*	*7.2%*	*7.2%*	*7.2%*	*7.1%*	*7.1%*	*7.1%*	*7.0%*	*7.0%*	*7.0%*
% Revenue	*0.4%*	*0.5%*	*0.1%*	*2.9%*	*3.7%*	*3.7%*	*3.7%*	*3.7%*	*3.7%*	*3.7%*	*3.7%*	*3.7%*	*3.7%*	*3.7%*	*3.7%*
Support services	3	2	3	3	3	3	3	3	3	3	3	3	3	4	4
% Op. Costs	*4.2%*	*13.1%*	*19.0%*	*5.7%*	*5.0%*	*5.1%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*4.9%*	*4.9%*	*4.9%*
% Revenue	*2.2%*	*3.8%*	*4.1%*	*2.7%*	*2.6%*	*2.6%*	*2.6%*	*2.6%*	*2.6%*	*2.6%*	*2.6%*	*2.6%*	*2.6%*	*2.6%*	*2.6%*
Marketing and advertising	7	(1)	3	3	4	4	4	4	5	5	5	5	5	5	6
% Op. Costs	*11.3%*	*-3.3%*	*17.7%*	*6.2%*	*7.6%*	*7.6%*	*7.6%*	*7.6%*	*7.5%*	*7.5%*	*7.5%*	*7.4%*	*7.4%*	*7.4%*	*7.4%*
% Revenue	*6.0%*	*-0.9%*	*3.8%*	*3.0%*	*3.9%*	*3.9%*	*3.9%*	*3.9%*	*3.9%*	*3.9%*	*3.9%*	*3.9%*	*3.9%*	*3.9%*	*3.9%*
Supplies and external services	11	2	(9)	9	8	8	8	8	9	9	9	10	10	10	11
% Op. Costs	*16.3%*	*9.9%*	*#####*	*19.7%*	*14.4%*	*14.5%*	*14.4%*	*14.4%*	*14.3%*	*14.3%*	*14.2%*	*14.2%*	*14.1%*	*14.0%*	*14.0%*
% Revenue	*8.7%*	*2.9%*	*#####*	*9.5%*	*7.5%*	*7.5%*	*7.5%*	*7.5%*	*7.5%*	*7.5%*	*7.5%*	*7.5%*	*7.5%*	*7.5%*	*7.5%*
Other operating losses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Op. Costs	*0.1%*	*0.4%*	*0.3%*	*0.4%*	*0.3%*	*0.2%*	*0.2%*	*0.2%*	*0.2%*	*0.2%*	*0.2%*	*0.2%*	*0.2%*	*0.2%*	*0.2%*
% Revenue	*0.0%*	*0.1%*	*0.1%*	*0.2%*	*0.2%*	*0.1%*	*0.1%*	*0.1%*	*0.1%*	*0.1%*	*0.1%*	*0.1%*	*0.1%*	*0.1%*	*0.1%*
Taxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Op. Costs	*0.2%*	*0.5%*	*0.4%*	*0.3%*	*0.2%*	*0.3%*	*0.3%*	*0.3%*	*0.3%*	*0.3%*	*0.3%*	*0.3%*	*0.3%*	*0.3%*	*0.3%*
% Revenue	*0.1%*	*0.2%*	*0.1%*	*0.1%*	*0.1%*	*0.1%*	*0.1%*	*0.1%*	*0.1%*	*0.1%*	*0.1%*	*0.1%*	*0.1%*	*0.1%*	*0.1%*
Provisions and adjustments	(0)	0	(0)	(1)	(0)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
% Op. Costs	*-0.2%*	*1.8%*	*-2.0%*	*-1.7%*	*-0.9%*	*-1.2%*	*-1.2%*	*-1.2%*	*-1.2%*	*-1.2%*	*-1.2%*	*-1.2%*	*-1.1%*	*-1.1%*	*-1.1%*
% Acc. Receivables trade	*-0.2%*	*0.6%*	*-0.8%*	*-2.1%*	*-0.9%*	*-0.6%*	*-0.6%*	*-0.6%*	*-0.6%*	*-0.6%*	*-0.6%*	*-0.6%*	*-0.6%*	*-0.6%*	*-0.6%*
Operational Costs	**65**	**16**	**16**	**46**	**53**	**55**	**57**	**59**	**61**	**63**	**66**	**68**	**71**	**73**	**76**
% Revenue	*53.4%*	*29.1%*	*21.7%*	*48.0%*	*52.1%*	*51.6%*	*51.8%*	*52.0%*	*52.2%*	*52.4%*	*52.6%*	*52.8%*	*53.0%*	*53.3%*	*53.5%*

Table 12 – Audiovisuals & Cinema Income Statement Forecast, Net Income

Audiovisuals & Cinema IS (Million EUR)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
EBITDA	**57**	**38**	**57**	**50**	**49**	**51**	**53**	**54**	**56**	**58**	**59**	**61**	**63**	**64**	**66**
EBITDA Margin	*46.6%*	*70.9%*	*78.3%*	*52.0%*	*47.9%*	*48.4%*	*48.2%*	*48.0%*	*47.8%*	*47.6%*	*47.4%*	*47.2%*	*47.0%*	*46.7%*	*46.5%*
D, A&I	36	34	26	29	29	27	28	28	28	29	29	31	31	36	38
% Revenue	*29.5%*	*63.8%*	*35.6%*	*29.8%*	*28.6%*	*25.9%*	*25.2%*	*24.6%*	*24.1%*	*23.7%*	*23.3%*	*23.7%*	*23.6%*	*26.2%*	*26.4%*
% Assets that D,A&I	*25.4%*	*25.7%*	*20.2%*	*22.3%*	*20.5%*	*19.5%*	*19.8%*	*20.0%*	*20.2%*	*20.2%*	*20.4%*	*21.9%*	*19.5%*	*21.2%*	*21.0%*
EBIT	**21**	**4**	**31**	**21**	**20**	**24**	**25**	**27**	**28**	**29**	**30**	**30**	**31**	**28**	**29**
EBIT Margin	*17.1%*	*7.1%*	*42.7%*	*22.2%*	*19.4%*	*22.5%*	*23.0%*	*23.4%*	*23.7%*	*23.9%*	*24.1%*	*23.5%*	*23.4%*	*20.6%*	*20.1%*
Non-Recurring Losses	(5)	1	(2)	(1)	1	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
Financial Costs	2	2	2	0	2	2	2	2	2	2	2	2	2	2	2
% Total Debt	*1.8%*	*2.2%*	*2.0%*	*0.2%*	*2.4%*	*3.1%*	*3.7%*	*4.3%*	*4.3%*	*4.3%*	*4.3%*	*4.3%*	*4.3%*	*4.3%*	*4.3%*
EBT	**24**	**1**	**31**	**23**	**17**	**24**	**25**	**26**	**28**	**29**	**30**	**30**	**31**	**28**	**29**
EBT Margin	*19.3%*	*1.1%*	*42.7%*	*23.5%*	*16.6%*	*22.4%*	*22.9%*	*23.3%*	*23.6%*	*23.9%*	*24.0%*	*23.5%*	*23.3%*	*20.5%*	*20.1%*
Income Tax	4	(0)	4	4	3	3	3	4	4	4	4	4	4	4	4
% Effective Tax	*15.3%*	*#####*	*11.5%*	*19.6%*	*17.4%*	*13.5%*	*13.5%*	*13.5%*	*13.5%*	*13.5%*	*13.5%*	*13.5%*	*13.5%*	*13.5%*	*13.5%*
Net Income	**20**	**1**	**27**	**18**	**14**	**21**	**22**	**23**	**24**	**25**	**26**	**26**	**27**	**24**	**25**
Net Margin	*16.3%*	*1.8%*	*37.8%*	*18.9%*	*13.7%*	*19.4%*	*19.8%*	*20.2%*	*20.4%*	*20.6%*	*20.8%*	*20.3%*	*20.2%*	*17.7%*	*17.4%*

Table 13 – Audiovisuals & Cinema Balance Sheet Forecast, Assets

Audiovisuals & Cinema BS (Millions EUR)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
ASSETS															
NON - CURRENT ASSETS															
Tangible assets	13	11	10	9	10	10	11	11	11	11	11	12	13	13	13
acquisition costs minus accumulated depreciations															
Intangible assets	92	89	89	93	95	94	94	94	94	94	95	97	116	119	118
acquisition costs minus accumulated amortizations															
Contract Costs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
acquisition costs minus accumulated amortizations															
Rights of use	36	34	29	27	37	36	35	35	35	36	36	30	33	39	48
acquisition costs minus accumulated depreciations															
Investments in jointly controlled companies and associated companies	48	48	47	46	46	46	46	46	46	46	46	46	46	46	46
last year values															
Accounts receivable - other	3	3	3	3	3	3	3	4	4	4	4	4	4	4	5
% Aud. & Cinema Revenues	*2.4%*	*5.4%*	*4.1%*	*3.2%*	*3.2%*	*3.2%*	*3.2%*	*3.2%*	*3.2%*	*3.2%*	*3.2%*	*3.2%*	*3.2%*	*3.2%*	*3.2%*
Other assets non-current	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
last year values															
Deferred income tax assets	11	12	10	8	8	9	10	10	10	11	11	11	12	12	12
% Aud. & Cinema Revenues	*9.2%*	*22.3 %*	*13.7 %*	*8.3%*	*7.5%*	*8.8%*	*8.8%*	*8.8%*	*8.8%*	*8.8%*	*8.8%*	*8.8%*	*8.8%*	*8.8%*	*8.8%*
TOTAL NON - CURRENT ASSETS	**204**	**197**	**189**	**187**	**200**	**200**	**199**	**199**	**201**	**203**	**204**	**202**	**224**	**233**	**243**
CURRENT ASSETS:															
Inventories	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1
% Aud. & Cinema Revenues	*0.6%*	*0.8%*	*0.7%*	*0.6%*	*0.6%*	*0.6%*	*0.6%*	*0.6%*	*0.6%*	*0.6%*	*0.6%*	*0.6%*	*0.6%*	*0.6%*	*0.6%*
Acc. Receivables (trade & other) + Contract Assets	64	48	69	47	52	54	56	58	60	62	64	66	68	70	73
% Aud. & Cinema Revenues	*52.9 %*	*90.0 %*	*94.8 %*	*49.1 %*	*51.1 %*	*51.1 %*	*51.1 %*	*51.1 %*	*51.1 %*	*51.1 %*	*51.1 %*	*51.1 %*	*51.1 %*	*51.1 %*	*51.1 %*
Accounts receivable - trade	64	48	69	47	42	50	52	54	56	58	60	62	64	66	68
ACP	*193*	*329*	*346*	*179*	*149*	*174*	*174*	*174*	*174*	*174*	*174*	*174*	*174*	*174*	*174*
Contract Assets	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other current assets	2	1	1	2	2	2	2	2	2	2	2	2	2	2	2
% Aud. & Cinema Revenues	*1.8%*	*2.6%*	*1.8%*	*2.2%*	*1.7%*	*1.7%*	*1.7%*	*1.7%*	*1.7%*	*1.7%*	*1.7%*	*1.7%*	*1.7%*	*1.7%*	*1.7%*
Prepaid expenses	2	1	1	2	1	2	2	2	2	2	2	2	2	2	2
% Aud. & Cinema Revenues	*1.5%*	*2.8%*	*1.9%*	*1.8%*	*1.4%*	*1.6%*	*1.6%*	*1.6%*	*1.6%*	*1.6%*	*1.6%*	*1.6%*	*1.6%*	*1.6%*	*1.6%*
Cash and cash equivalents	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
% Aud. & Cinema Revenues	*0.7%*	*1.1%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*
Assets held for sale	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL CURRENT ASSETS	**70**	**52**	**73**	**53**	**57**	**59**	**61**	**64**	**66**	**68**	**70**	**73**	**75**	**77**	**80**
TOTAL ASSETS	**274**	**249**	**262**	**239**	**257**	**259**	**261**	**263**	**266**	**271**	**274**	**274**	**299**	**311**	**322**

Table 14 – Audiovisuals & Cinema Balance Sheet Forecast, Liabilities

Audiovisuals & Cinema BS (Millions EUR)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
TOTAL EQUITY	**79**	**104**	**122**	**107**	**115**	**112**	**114**	**112**	**113**	**114**	**114**	**112**	**126**	**131**	**137**
LIABILITIES															
NON - CURRENT LIABILITIES:															
Borrowings	111	66	70	64	75	72	73	74	75	76	77	77	84	87	91
% Total Assets	*40.%*	*26.%*	*26.%*	*26.%*	*29.%*	*27.%*	*27.%*	*28.%*	*28.%*	*28.%*	*28.%*	*28.%*	*28.%*	*28.%*	*28.%*
Provisions	7	7	9	8	8	8	8	8	8	9	9	9	9	10	10
% Aud. & Cinema Revenues	*5.7%*	*13.%*	*11.%*	*7.9%*	*8.0%*	*7.1%*	*7.1%*	*7.1%*	*7.1%*	*7.1%*	*7.1%*	*7.1%*	*7.1%*	*7.1%*	*7.1%*
Accrued expenses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other non-current liabilities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Deferred income tax liabilities	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
% Aud. & Cinema Revenues	*0.0%*	*0.0%*	*0.0%*	*0.1%*	*0.4%*	*0.4%*	*0.4%*	*0.4%*	*0.4%*	*0.4%*	*0.4%*	*0.4%*	*0.4%*	*0.4%*	*0.4%*
TOTAL NON - CURRENT LIABILITIES	**118**	**74**	**79**	**72**	**83**	**80**	**81**	**83**	**83**	**85**	**87**	**87**	**94**	**98**	**101**
CURRENT LIABILITIES:															
Borrowings	24	33	12	17	14	20	18	18	18	18	19	19	20	21	22
% Total Assets	*8.8%*	*13.%*	*4.7%*	*7.2%*	*5.5%*	*7.7%*	*6.8%*	*6.8%*	*6.8%*	*6.8%*	*6.8%*	*6.8%*	*6.8%*	*6.8%*	*6.8%*
Accounts payable	20	11	19	17	17	18	19	19	20	20	21	22	23	23	24
APP (days)	*154*	*570*	*1507*	*188*	*163*	*168*	*168*	*168*	*168*	*168*	*168*	*168*	*168*	*168*	*168*
Tax payable	3	2	1	1	1	2	2	2	2	2	2	2	2	3	3
% Aud. & Cinema Revenues	*2.2%*	*3.0%*	*1.6%*	*1.4%*	*1.1%*	*1.8%*	*1.8%*	*1.8%*	*1.8%*	*1.8%*	*1.8%*	*1.8%*	*1.8%*	*1.8%*	*1.8%*
Accrued expenses	22	17	21	17	20	20	21	21	22	23	24	24	25	26	27
% Aud. & Cinema Revenues	*18.%*	*31.%*	*28.%*	*17.%*	*19.%*	*18.%*	*18.%*	*18.%*	*18.%*	*18.%*	*18.%*	*18.%*	*18.%*	*18.%*	*18.9%*
Other current liabilities	8	9	8	7	7	7	7	7	8	8	8	8	9	9	9
% Aud. & Cinema Revenues	*6.7%*	*16.%*	*10.%*	*7.3%*	*6.4%*	*6.4%*	*6.4%*	*6.4%*	*6.4%*	*6.4%*	*6.4%*	*6.4%*	*6.4%*	*6.4%*	*6.4%*
TOTAL CURRENT LIABILITIES	**77**	**71**	**61**	**60**	**59**	**67**	**66**	**68**	**70**	**72**	**74**	**76**	**79**	**82**	**85**
TOTAL LIABILITIES	**195**	**144**	**140**	**132**	**142**	**147**	**147**	**151**	**153**	**157**	**160**	**162**	**173**	**180**	**186**

e) Telco Key Performance Indicators

Table 15 – Telco Key Performance Indicators

Historical Telco KPIs	2017	2018	2019	2020	2021	2022	9M22	9M23
Homes Passed	**4061**	**4394**	**4613**	**4807**	**5097**	**5284**	**5217**	**5369**
% Growth		*8.2%*	*5.0%*	*4.2%*	*6.0%*	*3.7%*		*2.9%*
Retention Rate	*39.8%*	*36.9%*	*35.3%*	*34.2%*	*32.3%*	*31.5%*	*31.8%*	*31.1%*
Mobile	4670	4768	4851	5008	5350	5734	5642	5896
% Growth		*2.1%*	*1.7%*	*3.2%*	*6.8%*	*7.2%*		*4.5%*
Post-Paid	2590	2738	2843	3016	3291	3622	3540	3809
% Growth		*5.7%*	*3.8%*	*6.1%*	*9.1%*	*10.0%*		*7.6%*
Pre-Paid	2080	2029	2008	1992	2059	2112	2103	2086
% Growth		*-2.4%*	*-1.0%*	*-0.8%*	*3.4%*	*2.6%*		*-0.8%*
Fixed Voice	1711	1731	1749	1774	1783	1809	1799	1820
% Growth		*1.2%*	*1.0%*	*1.5%*	*0.5%*	*1.5%*		*1.1%*
Pay TV	1617	1623	1627	1642	1646	1664	1659	1670
% Growth		*0.4%*	*0.2%*	*0.9%*	*0.2%*	*1.1%*		*0.6%*
Fixed Access	1292	1325	1345	1363	1393	1434	1424	1455
% Growth		*2.5%*	*1.5%*	*1.3%*	*2.2%*	*3.0%*		*2.2%*
DTH	324	299	283	280	253	230	235	214
% Growth		*-7.9%*	*-5.4%*	*-1.0%*	*-9.6%*	*-9.1%*		*-8.9%*
Broadband	1328	1379	1414	1458	1486	1524	1513	1547
% Growth		*3.9%*	*2.5%*	*3.1%*	*1.9%*	*2.5%*		*2.2%*
Others and Data	30.75	31.56	34.80	37.21	41.57	51.92	50.76	53.04
% Growth		*2.7%*	*10.3%*	*6.9%*	*11.7%*	*24.9%*		*4.5%*
Total RGUs	**9356**	**9532**	**9676**	**9919**	**10305**	**10782**	**10665**	**10985**
% Growth		*1.9%*	*1.5%*	*2.5%*	*3.9%*	*4.6%*		*3.0%*
3,4&5P RGUs	1129	1163	1201	1230	1287	1345	1330	1374
% Growth		*3.1%*	*3.2%*	*2.5%*	*4.6%*	*4.5%*		*3.3%*
Convergent + Integrated RGUs	**N.A.**	**4483**	**4705**	**4956**	**5232**	**5645**	**5539**	**5892**
% Growth			*4.9%*	*5.3%*	*5.6%*	*7.9%*		*6.4%*

Table 16 – Total RGUs Share

Share of RGUs	2017	2018	2019	2020	2021	2022	9M22	9M23
Mobile	4670	4768	4851	5008	5350	5734	5642	5896
% Total RGUs	*49.9%*	*50.0%*	*50.1%*	*50.5%*	*51.9%*	*53.2%*	*52.9%*	*53.7%*
Post-Paid	2590	2738	2843	3016	3291	3622	3540	3809
% Mobile	*55.5%*	*57.4%*	*58.6%*	*60.2%*	*61.5%*	*63.2%*	*62.7%*	*64.6%*
Pre-Paid	2080	2029	2008	1992	2059	2112	2103	2086
% Mobile	*44.5%*	*42.6%*	*41.4%*	*39.8%*	*38.5%*	*36.8%*	*37.3%*	*35.4%*
Fixed Voice	1711	1731	1749	1774	1783	1809	1799	1820
% Total RGUs	*18.3%*	*18.2%*	*18.1%*	*17.9%*	*17.3%*	*16.8%*	*16.9%*	*16.6%*
Pay TV	1617	1623	1627	1642	1646	1664	1659	1670
% Total RGUs	*17.3%*	*17.0%*	*16.8%*	*16.6%*	*16.0%*	*15.4%*	*15.6%*	*15.2%*
Fixed Access	1292	1325	1345	1363	1393	1434	1424	1455
% Pay TV	*79.9%*	*81.6%*	*82.6%*	*83.0%*	*84.6%*	*86.2%*	*85.8%*	*87.2%*
DTH	324	299	283	280	253	230	235	214
% Pay TV	*20.1%*	*18.4%*	*17.4%*	*17.0%*	*15.4%*	*13.8%*	*14.2%*	*12.8%*
Broadband	1328	1379	1414	1458	1486	1524	1513	1547
% Total RGUs	*14.2%*	*14.5%*	*14.6%*	*14.7%*	*14.4%*	*14.1%*	*14.2%*	*14.1%*
Others and Data	31	32	35	37	42	52	51	53
% Total RGUs	*0.3%*	*0.3%*	*0.4%*	*0.4%*	*0.4%*	*0.5%*	*0.5%*	*0.5%*

Table 17 – B2C and B2B RGUs

Historical Telco KPIs	2017	2018	2019	2020	2021	2022	9M22	9M23
Consumer RGUs	7943	8072	8193	8391	8726	9122	9025	9297
% Growth		*1.6%*	*1.5%*	*2.4%*	*4.0%*	*4.5%*		*3.0%*
Business RGUs	1412	1461	1483	1528	1580	1660	1640	1687
% Growth		*3.4%*	*1.5%*	*3.1%*	*3.4%*	*5.1%*		*2.9%*
Total RGUs	**9356**	**9532**	**9676**	**9919**	**10305**	**10782**	**10665**	**10985**
% Growth		*1.9%*	*1.5%*	*2.5%*	*3.9%*	*4.6%*		*3.0%*

Table 18 – B2C and B2B Total RGUs Share

Share of RGUs	2017	2018	2019	2020	2021	2022	9M22	9M23
Consumer RGUs	7943	8072	8193	8391	8726	9122	9025	9297
% Total RGUs	*84.9%*	*84.7%*	*84.7%*	*84.6%*	*84.7%*	*84.6%*	*84.6%*	*84.6%*
Business RGUs	1412	1461	1483	1528	1580	1660	1640	1687
% Total RGUs	*15.1%*	*15.3%*	*15.3%*	*15.4%*	*15.3%*	*15.4%*	*15.4%*	*15.4%*

f) Audiovisuals & Cinema Key Performance Indicators

Table 19 – Audiovisuals & Cinema Key Performance Indicators

Historical Portuguese Cinema KPIs	2017	2018	2019	2020	2021	2022	9M19	9M22	9M23
Revenue per Ticket, EUR	4.77	4.86	5.23	5.26	5.46	5.70	3.45	5.61	5.79
% Growth		*1.9%*	*7.5%*	*0.7%*	*3.7%*	*4.4%*		*62.7%*	*3.2%*
NOS Tickets Sold, '000	9451	8889	9269	2310	3451	6261	6861	4370	6346
% Growth		*-5.9%*	*4.3%*	*-75.1%*	*49.4%*	*81.4%*		*-36.3%*	*45.2%*
Screens	219	218	219	208	208	214	218	214	214

Table 20 – NOS Portuguese Cinema Tickets Sold Share

Share of Total Tickets Sold in Portugal	2017	2018	2019	2020	2021	2022	9M19	9M22	9M23
NOS Tickets Sold, '000	9451	8889	9269	2310	3451	6261	6861	4370	6346
% Total tickets Sold	*60.5%*	*60.6%*	*59.7%*	*61.4%*	*56.8%*	*65.5%*		*65.1%*	*66.2%*
Tickets Sold in Portugal, '000	15610	14679	15536	3762	6076	9555	11497	6713	9589

g) Balance Sheet Assumptions

Table 21- Balance Sheet Assumptions, Assets

Balance Sheet Assets assumptions 2023-2033	
	Assumptions
Tangible assets	Increases forecasted as a % of Capex. Disposals estimated based on a % of increases in tangible assets. Depreciations calculated as a % relative to Net value of asset in previous year. Average of historical weights of tangible assets by Telco and Cinema
Intangible assets	Increases forecasted as a % of Capex. Historical averages to estimate disposals. Amortizations calculated as a % relative to Net value of asset in previous year. Average of historical weights of intangible assets by Telco and Cinema
Contract costs	Increases forecasted as a % of Capex. Historical averages to estimate disposals. Amortization computed as a % of increases. Average of historical weights of contract costs by Telco and Cinema
Rights of use	Increases forecasted as a % of Capex. Historical averages to estimate disposals. Depreciations calculated as a % relative to Net value of asset in previous year. Average of historical weights of rights-of-use by Telco and Cinema
Investments in jointly controlled companies and associated companies	impacted by the performance of external entities or associated companies, so it is not accurate to predict those values as % of revenues. They were assumed to be equal to the average of last 3 quarters and constant from there
Accounts receivable - other	Includes loans provided by NOS to other companies and its respective receivable interests; and advances to suppliers. Estimated as % of revenues
Other financial assets non-current	impacted by the performance of external entities or associated companies, so it is not accurate to predict those values as % of revenues. They were assumed to be equal to the average of last 3 quarters and constant from there
Deferred income tax assets	Considers overpayment or advanced payment of taxes. These taxes refer to overall results so they were estimated as % of revenues
Inventories	Estimated as % of revenues
Acc. Receivables (trade & other) + Contract Assets	Computed assuming the average collection period that has been stable since 2020 so the last value was assumed to be constant (84 days).
Other current assets	Includes tax receivables that depend substantially on revenues, so it was estimated as % of revenues.
Prepaid expenses	Fairly stable over time, estimated as % of revenues
Cash and cash equivalents	Predicted as % of revenues. It includes the Capital Fund NOS 5G, for major spendings needed in new technology deployment. It is expected that these values will continue increasing at a small but stable rate for 6G
Assets held for sale	It only presented values in 2Q22 and 3Q22, all the other periods it was 0. It was assumed that it will not impact NOS in the future

Table 22- Balance Sheet Assumptions, Liabilities

Balance Sheet Liabilities assumptions 2023-2033	
	Assumptions
Non-current Borrowings	Forecasted as % of total assets. Significantly depends on the acquisitions of assets related to deployment of new technologies. For 2024 onwards, moving average of previous years was considered because erlier years will affect refinancing of borrowings.
Provisions	Very stable value over the years, estimated as % of revenues
Accrued expenses	Estimated as % of revenues. It did not include in the average values from 2017 as they were not seen as recurring
Accounts Payable - other	Correspond to the contractual rights of the sharing agreement with Vodafone. As payments are significantly similar it was assumed to remain connstant for the upcoming periods (since it represents a 20-year contract)
Other non-current liabilities	Extremely stable values since 2020, it is expected that it remains constant and equal to the average of 2023 quarters
Deferred income tax liabilities	Forecasted as % of revenues
Current Borrowings	Estimated as % of total assets as equal to non-current borrowings. For 2024 onwards, the average of the previous years (excluding 2021 and 2022) was considered. For 2030, 2031 and 2032 the % of total assets in 2021, 2022 and 2023 were applied
Accounts payable	Estimated using the constant value of the average payable period (136 days), that has been stable in the past two years
Tax payable	As the others tax rubrics, it was estimated as % of revenues
Accrued expenses	Included expenses that are recognizable before it has been paid. As refers to expenses of the core business, it was estimated as % of revenues.
Other current liabilities	Include deferred income dependent on revenues so estimated as % of this rubric
Liabilities directly associated with assets held for sale	As the assets held for sale, it only presented values in 2Q22 and 3Q22, all the other periods it was 0. It was assumed that it will not impact NOS in the future

h) CapEx Forecast

Table 23- CapEx Forecast, Part 1

CAPEX Forecast (Million EUR)	2019	2020	2021	2022	2023	2024
NOS SGPS						
Total CAPEX Excluding Leasing Contracts, Spectrum license & Other Contractual	374,40	384,90	422,3	495,9	388,97	401,3
% Revenues	*25,7%*	*28,1%*	*29,4%*	*32,6%*	*24,4%*	*24,5%*
Telco	344,50	364,10	405,6	473,0	370,60	375,3
o.w. Technical CAPEX	203,10	214,20	255,5	325,1	231,45	231,4
% Growth	11,0%	8,3%	14,6%	21,2%	-31,4%	-3,0%
% Telco Revenues	*14,7%*	*15,9%*	*18,2%*	*22,1%*	*15,2%*	*14,70%*
CAGR						*1,69%*
o.w. Customer Related CAPEX	141,40	149,90	150,1	147,9	139,14	143,86
% Consumer Revenues	*14,3%*	*15,3%*	*15,0%*	*14,3%*	*12,7%*	*12,7%*
CAGR						*-2,08%*
Audiovisuals and Cinema Exhibition	29,90	20,80	16,7	22,9	18,37	26,00
% Revenues	*24,52%*	*38,68%*	*22,92%*	*23,73%*	*18,00%*	*24,52%*
Leasing Contracts & Other Contractual Rights	69,80	94,50	36,2	129,9	75,15	59,04
% Telco + Audio Revenues	*4,64%*	*6,75%*	*2,45%*	*8,29%*	*4,61%*	*3,51%*
Telco part	58,43	82,30	31,71	118,00	66,53	52,27
% Telco Revenue	*4,23%*	*6,12%*	*2,26%*	*8,02%*	*4,36%*	*3,32%*
Audiovisuals and Cinema Part	11,37	12,20	4,47	11,88	8,62	6,77
% Audiovisuals and Cinema Part	*9,33%*	*22,68%*	*6,15%*	*12,32%*	*8,45%*	*6,39%*
Spectrum licenses	0,00	0,00	151,3	0,0	0,0	0,0
Total Group CAPEX	444,20	479,40	609,8	625,8	464,1	460,3

Table 24- CapEx Forecast, Part 2

2025	2026	2027	2028	2029	2030	2031	2032	2033
413,9	425,8	436,9	447,0	457,6	468,5	518,1	599,0	503,6
24,6%	*24,7%*	*24,7%*	*24,8%*	*24,9%*	*25,0%*	*27,1%*	*30,7%*	*25,3%*
387,1	398,1	408,2	417,3	426,9	436,8	485,3	565,2	468,7
241,9	252,2	262,0	271,5	281,2	291,4	340,2	420,3	324,1
1,7%	1,7%	1,7%	1,7%	1,7%	1,7%	14,6%	21,2%	-24,3%
14,95%	*15,20%*	*15,46%*	*15,72%*	*15,98%*	*16,25%*	*18,62%*	*22,57%*	*17,07%*
145,13	145,90	146,16	145,90	145,64	145,38	145,12	144,86	144,60
12,4%	*12,2%*	*11,9%*	*11,7%*	*11,4%*	*11,2%*	*11,0%*	*10,7%*	*10,5%*
26,88	27,79	28,72	29,69	30,68	31,69	32,74	33,80	34,90
24,52%	*24,52%*	*24,52%*	*24,52%*	*24,52%*	*24,52%*	*24,52%*	*24,52%*	*24,52%*
60,72	62,28	63,69	64,95	66,24	144,55	147,44	150,40	94,16
3,51%	*3,51%*	*3,51%*	*3,51%*	*3,51%*	*7,52%*	*7,52%*	*7,52%*	*4,61%*
53,76	55,13	56,38	57,50	58,64	131,33	133,96	136,65	83,35
3,32%	*3,32%*	*3,33%*	*3,33%*	*3,33%*	*7,32%*	*7,33%*	*7,34%*	*4,39%*
6,97	7,14	7,31	7,45	7,60	13,22	13,49	13,76	10,80
6,35%	*6,30%*	*6,24%*	*6,15%*	*6,07%*	*10,23%*	*10,10%*	*9,98%*	*7,59%*
0,0	0,0	0,0	0,0	0,0	0,0	200,0	0,0	0,0
474,7	488,1	500,6	512,0	523,8	613,0	865,5	749,4	597,8

i) WACC Computation

Table 25- WACC Computation

Inputs

NOS	
Share Price (5.11)	3,54
No. Shares Outstanding	511,41
Tax Rate	13,91%

Public Market	
Risk Free Rate (10Y Bund)	2,66%
Market Return (PSI 20 5Y)	8,12%
Market Risk Premium	5,46%

Database (Statista)	
Market Risk Premium	8,20%

Database (Damodaran)	
Market Risk Premium	7,89%

Capital Structure (€ Mio.)

Market Capitalization	1810,39	D/EV	38%
Financial Debt (BV)	1141,40	E/EV	62%
Cash & Equivalents	11,90	D/E	62%
Net Financial Debt	1129,50		
Net Debt	1763,30		
EV	3573,69		

Risk of Debt

Yield (Investment Grade)	3,77%
Spread Credit Rating (BBB)	2%
Spread Telecom	1,60%
Prob. Of Default	0,71%
Recovery Rate BBB	43,90%
Loss given Default	56,10%
Prob. Of Default * Loss give	0,003985905
Debt Beta BBB	0,1 Book

Cost of Debt 15.12.2023

Avg. Bond Maturity	5Y
Bundesanleihe 5Y	2,02%
PT Country Spread	0,31%
PT Bond 5Y	2,33%

Rd by Credit Rating	
PT Bond 5Y	2,33%
Spread Credit Rating (BBB)	2,00%
Rd	**4,33%**
Rd aT	**3,73%**

Rd by Debt Beta	
PT Bond 5Y	2,33%
Debt Beta	0,1
Risk Premium	0,82%
Rd	**3,15%**

Rd by Industry	
PT Bond 5Y	2,33%
Spread Telecom	1,60%
Rd	**3,93%**
Rd aT	**3,38%**

Rd by Default Rate	
Yield (Investment Grade)	3,77%
Prob. Of Default	0,7%
Loss given Default	56,1%
PDxLGD	0,4%
Rd	**4,17%**

Cost of Equity

Beta 5Y Market	0,75
Beta unlevered	0,49
Re	**8,85%**

Cost of Capital

Cost of Equity (Re)	8,85%
Cost of debt (Rd)	3,73%
WACC	**6,88%**

j) Discounted Cash Flow Model

Table 26- Telco DCF Model

Telco DCF	4Q23	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	TV
t	0.25	1.25	2.25	3.25	4.25	5.25	6.25	7.25	8.25	9.25	10.25	10.25
Revenues	395	1574.1	1618.3	1658.7	1695.1	1727.0	1759.6	1793.1	1827.3	1862.3	1898.2	
YOY growth		*3.1%*	*2.8%*	*2.5%*	*2.2%*	*1.9%*	*1.9%*	*1.9%*	*1.9%*	*1.9%*	*1.9%*	*1.3%*
Costs, Losses and other gains	241.3	876.7	896.6	915.4	932.9	949.8	968.0	988.0	1009.9	1033.8	1059.8	
EBITDA	**153.7**	**697.4**	**721.7**	**743.3**	**762.2**	**777.2**	**791.6**	**805.0**	**817.3**	**828.5**	**838.4**	
D,A&I	118.9	431.4	434.6	438.4	444.3	451.0	458.8	480.8	494.8	567.2	590.1	
EBIT	**34.8**	**266.0**	**287.1**	**304.9**	**317.9**	**326.2**	**332.8**	**324.2**	**322.5**	**261.3**	**248.3**	
Taxes	11.8%	13.1%	13.1%	13.1%	13.1%	13.1%	13.1%	13.1%	13.1%	13.1%	13.1%	
NOPAT	**30.7**	**231.0**	**249.3**	**264.8**	**276.1**	**283.3**	**289.0**	**281.6**	**280.1**	**226.9**	**215.6**	
NOPAT %	*8%*	*15%*	*15%*	*16%*	*16%*	*16%*	*16%*	*16%*	*15%*	*12%*	*11%*	
D&A	118.9	431.4	434.6	438.4	444.3	451.0	458.8	480.8	494.8	567.2	590.1	
Capex	99.9	427.6	440.8	453.2	464.6	474.8	485.5	568.1	819.3	701.8	552.1	
ΔNWC - Telco	-56.9	-21.5	2.5	2.2	1.7	1.3	0.8	0.2	-0.3	-0.9	-1.6	
ΔNWC - Eliminations	48.2	-0.9	-1.0	-0.9	-0.8	-0.7	-0.7	-0.8	-0.8	-0.8	-0.8	
FCF	**58.3**	**257.4**	**241.5**	**248.8**	**254.9**	**258.9**	**262.3**	**194.8**	**-43.3**	**94.0**	**256.1**	**4648.6**
WACC	*6.88%*	*6.88%*	*6.88%*	*6.88%*	*6.88%*	*6.88%*	*6.88%*	*6.88%*	*6.88%*	*6.88%*	*6.88%*	*6.88%*
PV(FCF)	**57.4**	**236.8**	**208.0**	**200.4**	**192.1**	**182.6**	**173.1**	**120.3**	**-25.0**	**50.8**	**129.5**	**2350.3**

Total PV(FCF)	1,525.9	
PV(TV)	2,350.3	60.6%
Telco EV	**3,876.2**	

Table 27- Audiovisuals & Cinema DCF Model

Audiovisuals and Cinema DCF	4Q23	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	TV
t	0.25	1.25	2.25	3.25	4.25	5.25	6.25	7.25	8.25	9.25	10.25	10.25
Revenues	23.2	106.0	109.6	113.3	117.2	121.1	125.1	129.3	133.5	137.9	142.3	
YOY growth		*3.9%*	*3.4%*	*3.4%*	*3.4%*	*3.4%*	*3.3%*	*3.3%*	*3.3%*	*3.3%*	*3.2%*	*0.8%*
Costs, Losses and other gains	13.0	54.8	56.8	59.0	61.2	63.5	65.8	68.3	70.8	73.4	76.2	
EBITDA	**10.2**	**51.3**	**52.8**	**54.4**	**56.0**	**57.6**	**59.3**	**61.0**	**62.7**	**64.4**	**66.2**	
D&A	8.9	27.4	27.6	27.9	28.3	28.7	29.2	30.6	31.5	36.1	37.5	
EBIT	**1.4**	**23.8**	**25.2**	**26.5**	**27.7**	**28.9**	**30.1**	**30.4**	**31.2**	**28.4**	**28.6**	
Taxes	20.6%	13.5%	13.5%	13.5%	13.5%	13.5%	13.5%	13.5%	13.5%	13.5%	13.5%	
NOPAT	**1.1**	**20.6**	**21.8**	**22.9**	**24.0**	**25.0**	**26.0**	**26.3**	**27.0**	**24.5**	**24.8**	
NOPAT %	*5%*	*19%*	*20%*	*20%*	*20%*	*21%*	*21%*	*20%*	*20%*	*18%*	*17%*	
D&A	8.86	27.44	27.64	27.89	28.26	28.69	29.19	30.59	31.48	36.08	37.54	
Capex	5.34	32.77	33.84	34.93	36.03	37.14	38.28	44.91	46.22	47.56	45.70	
ΔNWC	1.49	0.52	0.63	0.65	0.67	0.69	0.71	0.73	0.74	0.76	0.78	
FCF	**3.1**	**14.8**	**14.9**	**15.2**	**15.6**	**15.9**	**16.2**	**11.2**	**11.5**	**12.3**	**15.8**	**261.5**
WACC	*6.88%*	*6.88%*	*6.88%*	*6.88%*	*6.88%*	*6.88%*	*6.88%*	*6.88%*	*6.88%*	*6.88%*	*6.88%*	*6.88%*
PV(FCF)	**3.1**	**13.6**	**12.9**	**12.3**	**11.7**	**11.2**	**10.7**	**6.9**	**6.7**	**6.6**	**8.0**	**132.2**

Total PV(FCF)	103.7	
PV(TV)	132.2	56.05%
Audiovisuals and Cinema EV	**235.9**	

k) Monte Carlo Input Parameters

Table 28- Telco DCF Monte Carlo Parameters

Telco DCf: Monte Carlo Parameters	Mean	Std Dev	Reference
Sales growth			
2024	3,12%	0,25%	3,2%
2025	2,81%	0,25%	2,9%
2026	2,50%	0,25%	2,0%
2027	2,19%	0,25%	2,3%
2028	1,88%	0,25%	2,2%
2029	1,89%	0,25%	2,3%
2030	1,90%	0,25%	1,7%
2031	1,91%	0,25%	2,0%
2032	1,92%	0,25%	1,8%
2033	1,93%	0,25%	2,5%
TV	1,30%	0,25%	1,4%
NOPAT margin			
2024	14,68%	0,5%	14,2%
2025	15,41%	0,5%	16,0%
2026	15,97%	0,5%	15,9%
2027	16,29%	0,5%	16,9%
2028	16,41%	0,5%	17,0%
2029	16,42%	0,5%	16,9%
2030	15,70%	0,5%	15,8%
2031	15,33%	0,5%	15,7%
2032	12,18%	0,5%	12,1%
2033	11,36%	0,5%	11,0%
Cost of equity	8,85%	0,50%	9,4%

Table 29 - Audiovisuals & Cinema DCF Monte Carlo Parameters

Audiovisuals and Cinema DCF: Monte Carlo Parameters	Mean	Std Dev	Reference
Sales growth			
2024	3,91%	0,35%	3,3%
2025	3,39%	0,35%	3,6%
2026	3,38%	0,35%	3,3%
2027	3,37%	0,35%	3,0%
2028	3,36%	0,35%	3,6%
2029	3,33%	0,35%	3,0%
2030	3,31%	0,35%	3,3%
2031	3,29%	0,35%	2,7%
2032	3,26%	0,35%	3,4%
2033	3,23%	0,35%	3,3%
TV	0,78%	0,35%	1,0%
NOPAT margin			
2024	19,45%	0,5%	19,3%
2025	19,86%	0,5%	20,2%
2026	20,22%	0,5%	20,5%
2027	20,47%	0,5%	21,0%
2028	20,67%	0,5%	20,6%
2029	20,81%	0,5%	21,3%
2030	20,34%	0,5%	20,2%
2031	20,23%	0,5%	19,1%
2032	17,78%	0,5%	17,7%
2033	17,41%	0,5%	17,3%
Cost of equity	8,85%	0,50%	9,4%

Table 30 – Monte Carlo Results

Monte Carlo Results (10,000 Simulations)			
Min Price	2,5	Skewness	0,54
Max Price	6,7	Mode	3,95
Mean Price	**4,15**		
Median	4,12	# upsides	9855
Std. Dev	0,5	%	99%

l) Relative Valuation

Table 31 –NOS Peer Companies Ratios

Company Name	Current Ratio (FY0)	Cash Ratio (FY0)	Quick Ratio (FY0)	Net Debt to EBITDA (FY0)	Debt /Equity (FY0)
SES SA	1.33	0.64	1.31	2.71	0.78
Elisa Oyj	1.01	0.12	0.88	1.7	1.09
freenet AG	0.7	0.16	0.62	1.5	0.63
Orange Polska SA	0.86	0.2	0.8	1.89	0.58
Hellenic Telecommunications Organization SA	0.72	0.33	0.69	0.54	0.71
Koninklijke KPN NV	0.83	0.24	0.8	2.42	1.72
Proximus NV	0.62	0.1	0.56	1.72	1.07
Telia Company AB	0.88	0.16	0.81	2.24	1.39
Telefonica Deutschland Holding AG	0.65	0.18	0.62	1.52	0.84
Swisscom AG	0.89	0.03	0.86	1.62	0.65
BT Group PLC	0.91	0.04	0.88	2.42	1.65
Average	**0.85**	**0.20**	**0.80**	**1.84**	**1.01**

m) Sensitivity Analysis Telecommunications

Table 32 – Telco Sensitivity Analysis, WACC x Effective Tax Rate

		Weighted Average Cost of Capital (WACC)			
	6,88%	6,57%	6,88%	7,05%	7,80%
EV	3876,23	4109,51	3876,23	3760,25	3317,70

		6,88%	Weighted Average Cost of Capital (WACC)			
	EV	3876,23	6,57%	6,88%	7,05%	7,80%
Tax Rate 2024 (F)		11,65%	4113,20	3879,90	3763,91	3321,33
		12,15%	4111,97	3878,68	3762,69	3320,12
		12,65%	4110,74	3877,45	3761,47	3318,91
		13,15%	4109,51	3876,23	3760,25	3317,70
		13,65%	4108,28	3875,01	3759,03	3316,49
		14,15%	4107,06	3873,78	3757,81	3315,28
		14,65%	4105,83	3872,56	3756,58	3314,07
		13,15%				

n) Sensitivity Analysis Audiovisuals and Cinemas

Table 33 – Audiovisuals & Cinema Sensitivity Analysis, WACC x Effective Tax Rate

		Weighted Average Cost of Capital (WACC)			
	6,88%	6,57%	6,88%	7,05%	7,80%
EV	235,92	248,71	235,92	229,51	204,69

	6,88%	Weighted Average Cost of Capital (WACC)			
EV	235,925	6,57%	6,88%	7,05%	7,80%
Tax Rate 2024 (F)					
	12,01%	255,542	242,403	235,814	210,307
	12,51%	253,265	240,244	233,713	208,435
	13,01%	250,988	238,084	231,613	206,563
	13,51%	248,711	235,925	229,512	204,691
	14,01%	246,434	233,765	227,411	202,818
	14,51%	244,158	231,606	225,311	200,946
	15,01%	241,881	229,446	223,210	199,074
	13,51%				

o) Sensitivity Analysis NOS SGPS

Table 34 – NOS SGPS Sensitivity Analysis, WACC x Effective Tax Rate

		6,88%	6,57%	6,88%	7,05%	7,80%
EV		4112,15	4358,22	4112,15	3989,76	3522,39
Price Target	€	4,59	5,07	4,59	4,35	3,44

	6,88%	Weighted Average Cost of Capital (WACC)			
Price Target	4,593	6,57%	6,88%	7,05%	7,80%
Tax Rate 2024 (F)					
	11,90%	5,095	4,613	4,373	3,458
	12,40%	5,088	4,606	4,367	3,452
	12,90%	5,081	4,600	4,360	3,446
	13,40%	5,074	4,593	4,354	3,440
	13,90%	5,067	4,586	4,347	3,434
	14,40%	5,060	4,580	4,341	3,428
	14,90%	5,054	4,573	4,334	3,422

Table 35 – NOS SGPS Sensitivity Analysis, WACC x Long Term Growth

	6,88%	Weighted Average Cost of Capital (WACC)			
Price Target	4,593	6,57%	6,88%	7,05%	7,80%
g (Long Time Growth)	0,70%	4,510	4,122	3,928	3,176
	0,90%	4,677	4,269	4,064	3,278
	1,10%	4,856	4,425	4,210	3,386
	1,30%	5,049	4,593	4,366	3,501
	1,50%	5,257	4,773	4,533	3,623
	1,70%	5,482	4,967	4,713	3,753
	1,90%	5,727	5,177	4,907	3,892

3) Equations

Equation 1: Retention rate of homes passed

$$Retention\ Rate = \frac{Broadband\ RGUs}{Homes\ Passed}$$

Equation 2: Total Telco RGUs

$$Total\ RGUs = Mobile\ RGUs + Broadband\ RGUs + TV\ RGUs + Fixed\ Voice\ RGUs + Others$$

Equation 3: Revenue drivers

$$Revenue = ARPU * RGUs$$

Equation 4: Total operational Costs

$$Op.Costs = COGS + Wages\ \&\ Salaries + + Supplies\ and\ External\ \ Services + + Marketing\ \&\ Advertizing + Taxes + Provisions\ \&\ Adjustments + + Other\ Op.Losses$$

Equation 5: Wages and Salaries Drivers

$$Wages\ \&\ Salaries = \#Employees * Average\ salary\ per\ employee$$

Equation 6: Employees per segment

$$\#\ Employees_{Segment} = \#\ NOS\ Employees * \frac{Wages\ and\ Salaries_{Segment}}{Total\ Wages\ and\ Salaries}$$

Equation 7: Portuguese Cinema and Audiovisuals & Others Revenue drivers

$$Portuguese\ Cinema\ Revenues = Rev.per\ Ticket * \#Tickets\ sold$$

$$Aud.\&\ others\ Rev. = Total\ Aud.\&\ Cinema\ Rev. - Pt.Cinema\ Rev.$$

Equation 8: Wages and Salary growth relation to Portuguese minimum wage growth

$$\frac{Average\ growth\ rate\ NOS\ wages_{17-22}}{Average\ growth\ rate\ Portuguese\ minimum\ wage_{17-22}} = = \frac{CAGR\ NOS\ wages_{22-X}}{CAGR\ Portuguese\ minimum\ wage_{22-X}}$$

, where X is the target year.

Equation 9: Cost of debt approximation for the financial costs forecast.

$$Cost\ of\ Debt\ Approx. = \frac{Interest\ Expenses}{Total\ Debt}$$

Equation 10: Tickets increase for 2024

$$Tickets\ increase\ yoy = Average\ increase\ per\ quarter_{2Q17-4Q19} * 4$$

Equation 11. Generic DCF Model

$$Intrinsic\ \ Value = \frac{CF_1}{1+WACC} + \cdots \frac{CF_{10}}{(1+WACC)^{10}} + \frac{\frac{CF_{10} \times (1+g)}{WACC-g}}{(1+WACC)^{10}}$$

Equation 12. Free Cash Flow to Firm

$$FCFF = NI + NCC + Int(1-Tax) - Capex - \Delta NWC$$

Equation 13. CAPM Model

$$Re = Risk\ Free\ Rate + Beta \times (Market\ Risk\ Premium)$$

$$Beta = \frac{Covariance(Stock, Market\ Index)}{Variance\ (Market\ Index)}$$

Equation 14. Free Cash Flow to Equity

$$FCFE = FCFF - Interest\ Expense\ \times\ (1-Tax) + Net\ Borrowing$$

Equation 15. Gordon's Growth Model

$$Stock\ Price = \frac{Div\ Per\ Share}{Re-g}$$

Equation 16. Sustainable Growth Rate

$$Long\ Term\ Growth = ROE\ \times\ Retention\ Rate$$

Equation 17. Increases in Assets

$$Total\ Capex = Increases\ in\ Tangible\ Assets +$$

$$+Increases\ in\ Intangible\ Assets + Increases\ in\ Contract\ Costs +$$

$$+Increases\ in\ Rights\ of\ Use$$

Equation 18. Total NOS's depreciations, amortizations, and impairments losses

$$Total\ D, A\&I = \ accumulated\ D, A\&I\ in\ Tangible\ Assets + \ Intangible\ Assets + \ Contract\ Costs + Rights\ of\ Use$$

Equation 19. Variation of the percentage of NOS's D, A&I to Telco's and Audiovisuals & Cinema's total assets

$$\text{Growth in } \% = \frac{\%\ of\ Total\ Group\ D,A\&I\ over\ total\ segment's\ assets\ _{year\ x+1}}{\%\ of\ Total\ Group\ D,A\&I\ over\ total\ segment's\ assets\ _{year\ x-1}} - 1$$

Equation 20. Cash Conversion Cycle computation (in days)

$$ACP = \left(Current\ Acc.Receivables \frac{1}{Sales}\right) * 365$$

$$APP = \left(Current\ Acc.Payable \frac{1}{Cost\ of\ Sales}\right) * 365$$

$$AHP = \left(Inventories \frac{1}{Cost\ of\ Product\ Sold}\right) * 365$$

$$CCC = ACP + AHP - APP$$

Equation 21. Operating Net Working Capital

$$Operating\ Current\ Assets = Inventories + Total\ Acc.receivable + Other\ current\ assets + Prepaid\ Expenses$$

$$Operating\ Current\ Liabilities = Acc.Payable + Tax\ payable + Accrued\ Expenses$$

$$Operating\ NWC = Operating\ current\ assets - Operating\ current\ liabilities$$

Equation 22: Liquidity Ratios

$$Current\ Ratio = \frac{Current\ Assets}{Current\ Liabilities}$$

$$Quick\ Ratio = \frac{(Current\ Assets - Inventory - Prepaid\ Expenses)}{Current\ Liabilities}$$

$$Cash\ Ratio = \frac{Cash\ and\ cash\ equivalents}{Current\ Liabilities}$$

Equation 23. Net Financial Debt / EBITDA After leases

$$Net\ Financial\ Debt = Loans - Leasings - Cash\ and\ Cash\ Equivalents$$

$$EBITDA\ AL = EBITDA - Lease\ payments\ (principal\ and\ interest)$$

Equation 24. Target Price extrapolated from Ratios.

$$Target\ Price = Median\ PE \times NOS\ EPS$$

$$Traget\ Price = Median\ PS \times NOS\ Sales\ Per\ Share$$

$$Target\ Price = Median\ PB \times NOS\ Book\ Value\ Per\ Share$$

$$Target\ EV = \left(Median \frac{EV}{EBITDA} \times NOS\ EBITDA\right)$$

$$Target\ EV = Median \frac{EV}{Sales} \times NOS\ Sales$$

$$Target\ EV = Median \frac{EV}{Invested\ Capital} \times NOS\ Inv\ Capital$$

$$Target\ Price = \frac{Target\ EV - Debt\ and\ Non\ Controlling\ Interest + Cash\ and\ Equivilants}{NOS\ Shares\ Outstanding}$$

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Abstract

This paper explores the transformative potential of 5G technology for telecommunications firms in realizing additional value creation. Despite the widespread availability of 5G in Portugal, its impact on profitability isn't per-se. While NOS leads in 5G coverage, the substantial investment by major operators hasn't directly translated into increased customer prices. Unlike prior generations, 5G offers potential beyond speed, potentially fostering new industries like autonomous vehicles, ga ming, and VR. This study focuses on monetizing 5G beyond traditional mobile services and its implications on the company valuation of NOS.

Keywords: Corporate Finance, Financial Markets, Equity Research, Stock Valuation

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Table of Content

A. Introduction

This paper examines the transformative potential of 5G technology for telecommunications companies in terms of additional value creation. 5G refers to the fifth generation of mobile networks. The technology is already widely available in Portugal, with 75% of residents having coverage, placing Portugal slightly behind the EU average of 81% (European 5G Observatory 2023). NOS currently provides the best Portuguese 5G network in terms of speed and coverage (Speedtest by Ookla 2023). As a successor to LTE or 4G technology, it can technically achieve data rates up to forty times higher—up to 20 Gbit/s (Deloitte 2023).

In recent years, significant excitement has surrounded the new technology, justifiably so from both a technological perspective and given its potential applications, such as autonomous vehicles. However, excitement isn't necessarily the case in terms of a telecommunications company's profitability and revenue. NOS has already invested €420 million in expanding the new technology (The Portugal News 2023). However, these costs cannot simply be passed on to customers in the form of higher prices. Past years, such as with the implementation of 4G, have shown that new telecom technologies cannot justify higher prices when delivering just the same service. Revenue growth could be achieved by expanding market share due to the size and speed of the respective networks of operators. However, the differences between networks are minimal, leading to the assumption that 5G does not generate market share related additional revenue in the mobile services. 5G offers more than just high-speed data rates for mobile devices. It is seen as a catalyst for new segments such as autonomous driving, drone coordination and control, real-time 3D gaming, virtual reality, and industry applications. Therefore, the potential of 5G lies beyond the traditional use of mobile networks and outside the classic telecommunications business model. While thanks to 5G, an end-user can download a movie in a few seconds, the real added value lies beyond traditional mobile services (J.P. Morgan 2023).

Fundamentally, capitalizing on this technology stands as a paramount concern within the telecommunications industry. This paper distinctly delves into short and mid-term monetization strategies beyond traditional mobile services, assessing their potential impacts on the company's valuation. Focused specifically on developments within the next decade reliant on 5G technology, the aim is to identify corresponding revenue drivers, quantify their effects on the Portuguese market, and ultimately calculate their influence on the valuation of NOS SGPS, SA.

B. Research

I. Unlocking the Potential of 5G Technology

Despite significant investments in 5G infrastructure, the current approach of telcos may only yield a fraction of the anticipated returns. The telecommunications industry is witnessing a global decline in revenue per customer, with forecasts expecting a sideways trend. It is deemed unlikely that the substantial investments in 5G technology will be recouped solely through traditional mobile services (IBM Institute for Business Value 2023). NOS also experienced a decline in profitability due to the high 5G Capex in recent quarters (Reuters 2023). Fully leveraging the potential of 5G could result in an incremental revenue of $156 billion on an international scale by 2030. One of the most prominent application areas is the Internet of Things (Appendix 1), for instance, serving as the foundation for autonomous driving, which is expected to generate data levels forty times higher. This innovation is as relevant for telecommunications companies as the implementation of the smartphone. Therefore, 5G isn't merely a new generation of telecommunication technology but rather the cornerstone of a new level and form of communication (Morgan Stanley 2023). Concerning the Portuguese market, the 5G potential is estimated to reach €17 billion across industries by 2035, with €1.9 billion attributed to the Information & Communication sector (Deloitte 2023).

II. The three levels of monetizing 5G

To fully harness its potential, telecommunications companies must navigate three distinct phases of 5G business development (Appendix 2): Core Connectivity, Premium Connectivity, and Platforms/Solutions, each offering unique opportunities for revenue generation—all beyond traditional mobile services.

In the initial phase of 5G, leveraging the existing 5G infrastructure is possible. The aim here is to market 5G access via Fixed Wireless Access (FWA), extending core connectivity (fixed broadband) using 5G (McKinsey & Company 2023). The new technology is serving as last-mile connectivity, providing high-speed internet to households without direct FTTH access (J.P. Morgan 2023). The revenue potential for this step stands globally at $10 to $20 billion (McKinsey & Company 2023).

Depending on geography, competition, and market structure, this could lead up to a 3% revenue increase in the Mobile Services division. At a second level, telecoms can offer tailored solutions for enterprises. Crucial to this are private networks, edge computing, and other technologies made possible in this form only through 5G. The personalized business segment could generate worldwide value of $30 billion to $50 billion—expecting an additional revenue boost in the Mobile Services of up to 5% (McKinsey & Company 2023).

The ultimate stage concerning 5G opportunities lies in Platforms and Solutions—a step far from the current telco business model. Telecommunications companies must reinvent themselves, transitioning from infrastructure providers to entities offering end-to-end solutions. However, areas such as the Metaverse, Virtual Reality, and Autonomous Vehicles are only relevant in the long term and cannot be scaled yet (McKinsey & Company 2023). This analysis focuses solely on the short- and medium-term impacts, thus does not account for this third level.

III. Specificities of the Portuguese Market

These insights must be adapted to the specificities of the Portuguese market. The estimated impact of 5G on Information and Communication for Portugal corresponds to a relative sales enablement of 9.9% according to Deloitte. These assumptions are valid for 2035 and encompass all three horizons (Deloitte 2023).

In this context, the previously mentioned areas of Core Networking and Premium Networking have been fully factored into these future expectations. However, the third stage, Platform/Solutions, has been only marginally considered (Appendix 3). This is due to the long-term nature of new concepts such as autonomous driving or virtual reality.

It is also to note that the potential of these three horizons was assessed not specifically for Portugal but with an international perspective. Therefore, these general assumptions need to be adjusted to the Portuguese market and subsequently to NOS as a company. The benchmarks for this are the expected potential of Level 1 and 2. The third level will not be derived as there is no explicit expectation horizon for Portugal by now.

The Mobile Services segment accounts for 33% of Information & Communication in Portugal (Deloitte 2023). This analysis implies the conservative assumption the ratio will remain constant resulting in a revenue potential of €627 million for the Portuguese telecommunications industry. Using its current market share of 28.9%, NOS could generate incremental revenues as high as €181 million. This aligns with the projected relative sales enablement of 9.9% for NOS Revenues in 2033, resulting in an additional €188 million in sales (Appendix 4).

C. Quantitative Determination

I. Potential of NOS for Core Connectivity (Level 1)

The potential in the field of core networking in the context of FWA (Fixed Wireless Access) refers to utilizing the 5G network to deliver Fixed Broadband Service. This entails extending the fiber optic network to reach households without direct fiber connections. The goal is to align international acceptance, currently at 3% up to 2028, specifically for Portugal and NOS.

Portugal currently employs various technologies in the realm of Fixed Broadband. The oldest technology used for data transmission is ADSL, relying on telephone cables (copper) consistently from the provider to the customer. Hence, DSL only allows data rates of up to 24 Mbps. Presently, 1.4% of residents in Portugal have a DSL connection (ANACOM 2023).

The most widespread alternative to fiber optic, cable internet, represents the successor technology, providing data rates of up to 500 Mbps (ANACOM 2023). This technology exhibits considerable headroom for future advancements. For instance, streaming movies in 4K requires a data rate of 15 Mbps according to Netflix recommendations. Gaming, on the other hand, already demands data rates exceeding 25 Mbps for a single user. Therefore, households with multiple users typically find data rates of 100 Mbps entirely sufficient today and in the next few years (Forbes 2023). Consequently, cable customers are not expected to transition to fiber optic by now but within the next ten years. Presently, 11.3% of residents have a cable connection, and this number remains stable in line with data rate expectations (ANACOM 2023).

Fiber optic has been the dominant technology in Portugal since 2017. Currently, 28.1% of residents have a fiber optic connection, either FTTH (Fiber to the Home) or FTTB (Fiber to the Building) (ANACOM 2023). FTTB describes fiber optic up to the building, with individual units serviced through copper. Conversely, FTTH describes continuous fiber optic connections up to the end-user (Deutsche Telekom 2022).

FWA explicitly serves as a technology for regions and countries where FTTH/FTTB is technically challenging or economically unfeasible (Boston Consulting Group 2022). In the European context, Portugal ranks highly in fiber optic adoption, securing the third position. This means that 90.9% of Portuguese households can access a fiber optic connection (ISPreview 2023). Even in rural areas, Portugal ranks among the top five countries in the European Union, with 70% coverage (FTTH Council Europe 2022). Consequently, the implementation of 5G FWA as an alternative to fiber optic in Portugal shows relatively low potential.

Customers who already have some form of FWA (GSM/UMTS/LTE) are unlikely to switch to fiber optic. The assumption is grounded in the fact that these customers would have already shifted to cable. It is foreseeable that these customers will transition to 5G FWA. Historically, companies utilizing 4G/LTE FWA have been able to monetize excess capacity in their networks. This is particularly relevant with 5G's extensive capacities. Telecommunication companies can opportunistically leverage the surplus capacity of the 5G network. This presents an intriguing prospect for NOS, especially considering they possess the best 5G network in Portugal. This provides an opportunity to leverage their strong strategic position in the mobile sector to fortify the Fixed Broadband Division.

Thus, it's crucial to examine NOS's services. They offer FTTH/FTTB-based solutions with data rates of 100 or 1000 Mbps priced at €29.99 and €39.99, respectively. Simultaneously, an FWA (without direct connection) offers data rates of 30 Mbps and 100 Mbps for €24.99 and €29.99 EUR, respectively. Via 4G hotspot 150 Mbps are available for €33.50 (NOS 2022). It's evident that pricing is based on data rates, irrespective of the underlying technology. Moreover, the implementation of 5G FWA at NOS has not yet occurred. Therefore, this analysis can factor in the entire potential, estimating it at €10 per existing connection (upgrading 100 Mbps to 1 Gbps) and conservative €30 per new customer.

In comparison to competitors, NOS aligns with Vodafone concerning technology, with the international company achieving data rates of up to 300 Mbps over their 4G network (Vodafone Portugal 2023). Conversely, MEO already offers 5G internet as FWA, reaching a maximum speed of 1.775 Gbps (MEO Portugal 2023). Through FWA, NOS could expand its fixed broadband position, considering their leading position in the mobile sector. Despite the country-specific challenges for FWA, it presents significant potential for NOS as a company.

1. Forecast Fixed Broadband Market & NOS Market Share

To estimate the development of FWA, understanding the future composition of Fixed Broadband Services is crucial. Initially, this can be determined by the demand for data rates or high-speed internet and the capacities of respective technologies. The American Fiber Broadband Association (FBA) has released a forecast in this regard. Historical private demand for data rates has been similar across the entire Western world, hence this forecast is considered representative for Portugal as well. Consequently, a data requirement exceeding >1000 Mbps is predicted for a household by 2028 (Allconnect 2021). As a result, all technologies besides FTTH and 5G are deemed obsolete from 2028 onwards. It is assumed that DSL will be discontinued by 2028 at the latest (Appendix 5). Likewise, a decline in cable in favor of fiber optic is expected to commence around 2026, following a decrease similar to the previous technology (DSL) (Appendix 6).

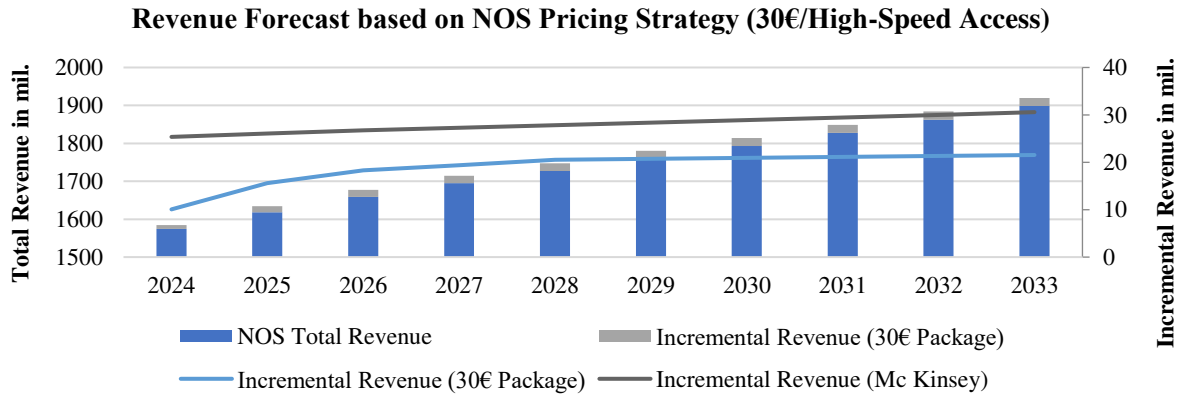
Regarding the implementation of 5G FWA, a similar effect to the implementation of 4G is anticipated. This stems from the relative data rate of 4G in comparison to fixed broadband (cable), which behaves similarly to today's relationship between 5G and fixed broadband (FTTH) (Tutela 2018). In 2015, 4G served as a wireless alternative for DSL and cable for many households, while 5G is now being offered as an alternative to FTTH. Accordingly, the growth figures of 4G FWA were considered representative of the implementation of 5G FWA in the analysis. However, FWA was established with 4G/LTE in Portugal, and this effect cannot be

accounted for the 5G solution. Overall, a less abrupt but more sustainable growth is expected (Appendix 7).

For this analysis, it was assumed that NOS would continue its current trend of losing slightly market share which can be seen as conservative (Appendix 11). While the company has experienced minor losses in the Fixed Broadband sector, the excellent positioning with the 5G infrastructure also presents an opportunity to continue securing market shares. Out of those assumptions the fixed broadband market composition was forecasted (Appendix 12).

2. Forecast 5G Incremental Revenue

The implementation of Fixed Wireless Access (FWA) based on 5G has the potential to generate additional revenues. This analysis assumes that NOS introduces a corresponding receiver with 5G technology into the market (similar to MEO) and maintains the current pricing for fixed broadband. Overall, this strategic move could allow NOS to leverage the existing 5G network. The focus will be on 5G-FWA new customers that NOS captures according to its dynamic market share. Compared to the international potential, the FWA potential in Portugal may be lower due to the very good Fiber-to-the-Home (FTTH) infrastructure. Using the historical development of 4G FWA as a reference for 5G FWA, NOS achieves, in 2028, a 2.2% incremental revenue concerning wireless connections, which represents 1.2% of the total revenue for that year. Consequently, between now and 2033, NOS could cumulatively generate an additional €189 million in revenue (Appendix 15).



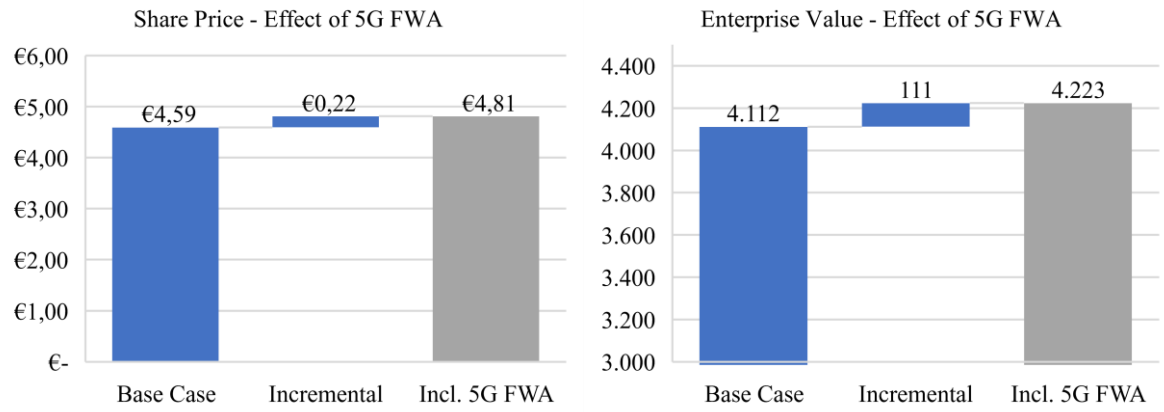
3. DCF-Model - Core Connectivity

It has been previously stated that Fixed Wireless Access (FWA) is a tool to utilize 'excess' network capacity. Therefore, there are no additional costs incurred for the network or installation. Only a receiver needs to be plugged into a power outlet. The cost of this is typically transferred to the customer through the sales price. Furthermore, the assumption is made that there are no product-specific marketing costs. Additionally, it is assumed that the current price of €30/month for high-speed connections can be maintained. Any reductions in this amount through bundles are not considered.

It is assumed that existing customers will not experience higher pricing or switch to 5G for data volume. Consequently, only new customers based on 5G-FWA services are accounted for.

To incorporate the effects of 5G into the valuation of NOS SGPS, the 'base case' Discounted Cash Flow (DCF) was expanded to include the respective expected revenues. It is explicitly mentioned again that no additional costs are expected due to this strategic use of the existing 5G network. Thus, the analysis focuses exclusively on revenue and the resulting effects.

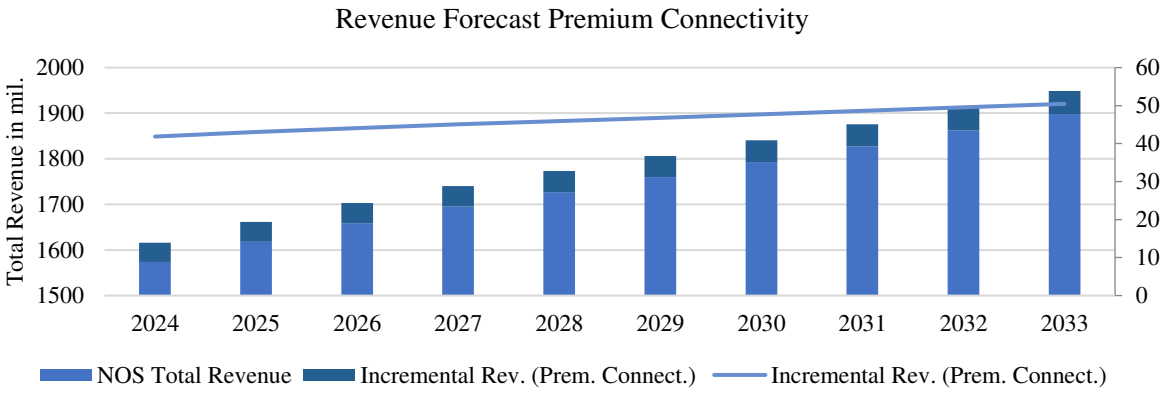
Through the implementation of 5G FWA, NOS could potentially increase its corporate value by up to €283 million. However, this scenario assumes the optimal implementation of 5G FWA and its integration into NOS services, which is currently not in place. The additional revenue without directly offsetting costs enhances the overall profitability of the conglomerate and thus significantly influences the valuation via terminal value. Assuming that the effects and benefits of FWA are relevant only until 2033 and therefore excluding the effect on terminal value, there is a potential increase in the company's value of €111 million. This result is considered a 'best-case' scenario regarding the implementation of 5G FWA. In perspective of the stock, a value addition of up to €0.22 per share could be realized by implementing 5G FWA.



II. Potential of NOS for Premium Connectivity (Level 2)

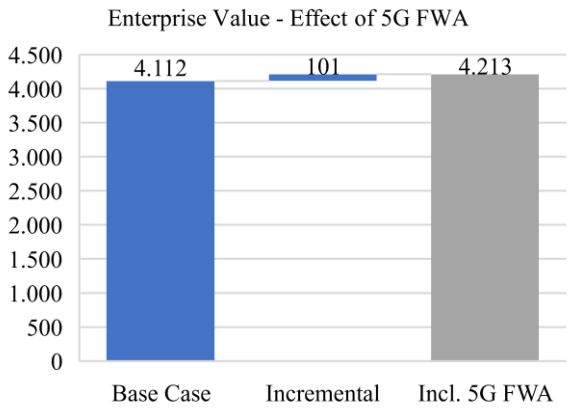
1. Forecast Premium Connectivity Incremental Revenue

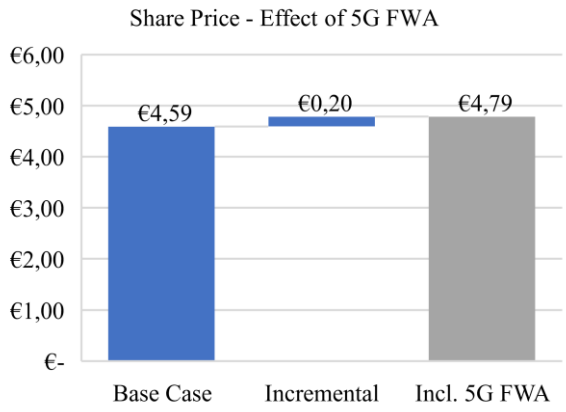
Premium connectivity refers to tailored 5G solutions for businesses. For example, it involves optimizing warehouses or production lines via 5G connectivity. This enables real-time uploading and analysis of images to identify vacancies or bottlenecks at an early stage. Therefore, telecommunications companies need to establish entirely new business fields that go beyond simply providing a network. Unlike Level 1, completely new business units need to be developed, incurring costs at all levels (McKinsey & Company 2023). A detailed analysis of this level is not feasible within the scope of this paper. The results would be too diverse across various areas of premium connectivity. To gauge the potential impact for NOS, the international 5% revenue potential is taken relative to mobile services as a reference. NOS Mobile Services historically accounted for 53.18% of the Revenue Generating Units. This value is assumed to be representative for the future. It's worth mentioning that NOS primarily serves individual customers, and the revenue share from business customers has remained constant at 15.3% in the last five years. This illustrates the significant potential for NOS in this domain. Overall, under these conditions, NOS could generate an additional cumulative Revenue of €463 million by 2033 (Appendix 19).



2. DCF-Model – Premium Connectivity

For the assessment in the field of Premium Connectivity, it was simplistically assumed that the company's profitability (NOPAT Margin) remains unaffected. Again, the 5% relative to the Mobile Services sector is considered a best-case scenario. The implementation of this level is significantly more complex than the opportunistic use of FWA, which implies that the likelihood of actually achieving the calculated values is considerably lower. In contrast to FWA, the associated costs exert a substantial influence on the Free Cash Flow (FCF), anticipated to align closely with those of traditional telecom services. Hence, these costs are maintained by preserving the NOPAT Margin. Consequently, in this best-case scenario, it results in an additional enterprise value of €101 million or €0.20 per share. Therefore, due to the lower margin, the potential of Premium Connectivity is lower than that of Core Connectivity, despite the considerably higher expected revenue if the respective business areas are established.



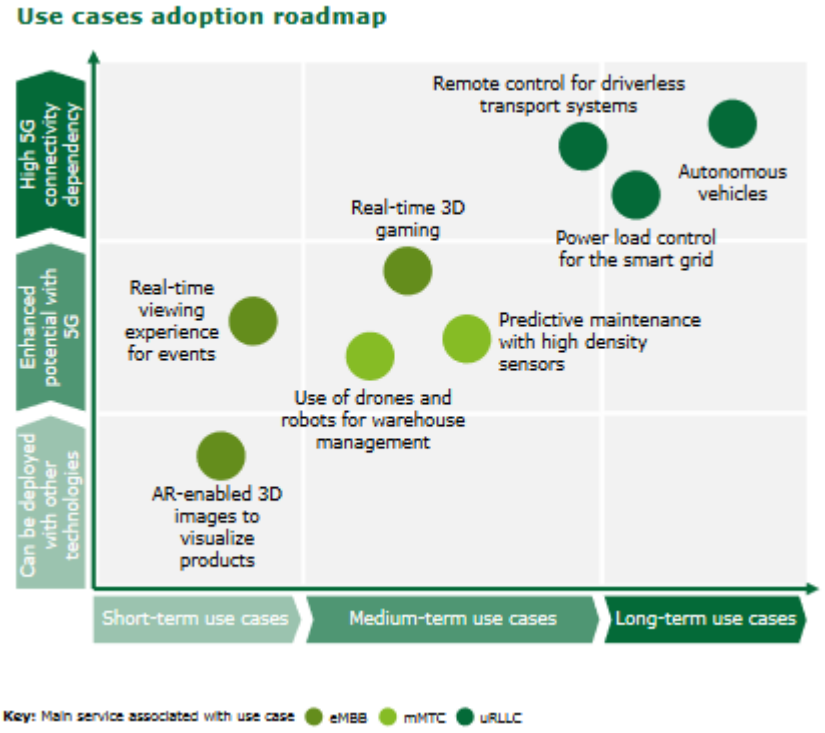


D. Conclusion

Even without the anticipated major milestones of 5G, such as autonomous vehicles or 5G - controlled drones, there exist fundamental potentials for telecommunications companies. This holds true for Portugal and specifically for NOS SGPS. Mid-term prospects revolve around Fixed Wireless Access as an alternative to FTTH, alongside new business models serving as end-to-end solutions for corporate clients. Demand for FWA persists despite robust FTTH penetration. The present landscape for implementing FWA as an alternative to fixed broadband mirrors the introduction of 4G FWA, primarily leveraging surplus capacities within the 5G infrastructure, rendering it highly cost-effective. However, the implementation of new business models as comprehensive solutions for corporate clients necessitates not only the creation of new services but also the adaptation and expansion of NOS's current corporate business model—shifting from a mere network provider to an all-encompassing service provider. The profitability of these models is expected to fluctuate significantly depending on the service, yet an overall profitability in line to the current operating business is assumed. The implementation of 5G FWA potentially yields a cumulative revenue increase of €189 million for NOS over the next decade, representing only 73% of the international potential in the mobile services sector, at 2.2% incremental mobile services revenue. Consequently, the company's valuation could increase by €111 million or 22 cents per share. In contrast, the introduction of end-to-end services presents a revenue potential of €463 million, corresponding to the internationally projected 5% incremental revenue in mobile services. Due to associated costs, the potential increase in the company's valuation amounts to €101 million or 20 cents per share. Overall, optimal utilization of 5G technology offers a mid-term revenue potential of €652 million and a company valuation increase of €212 million or 41 cents per share. This analysis illustrates that 5G can be monetized beyond conventional mobile services using its full potential by implementing new business strategies.

E. Appendix

I. IoT - the use cases of 5G outside of traditional mobile services



II. Three levels of 5G monetization outside of mobile services

Most mobile operators need to shift their mindsets and business approaches to advance along the three horizons of 5G business building and monetization.

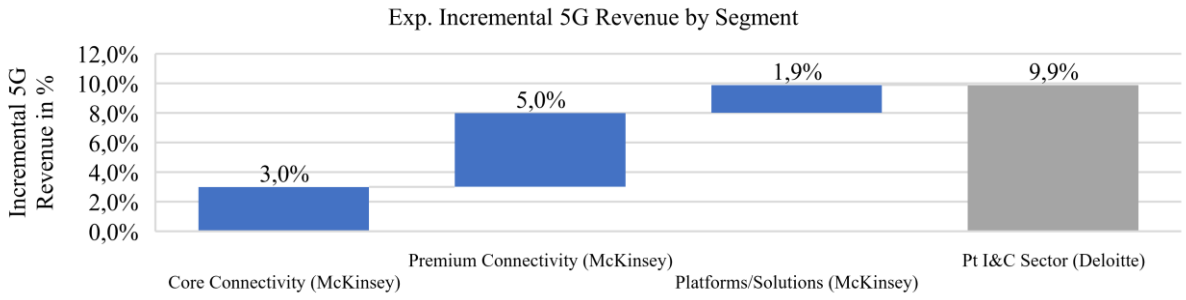
Horizon overview

	Horizon 1 Core connectivity	Horizon 2 Premium connectivity	Horizon 3 Platforms and solutions
Description	Operators spur add-ons or pure connectivity offerings	Operators orchestrate premium connectivity solutions	Operators develop end solutions that support a variety of use cases
Key 5G-enabled offerings	Fixed wireless access (FWA); enhanced mobile wireless	Edge computing; private networks	Augmented reality/virtual reality (AR/VR); computer vision; mobile vehicle-to-everything (V2X); Internet of Things
Current number of capable operators globally[1]	32	19	7

[1]Global scan of 100 operators, 42 of which are considered pre-horizon. Pre-horizon = no commercial 5G offering; horizon 1 = basic 5G service (eg, mobile, FWA); horizon 2 = tailored network solutions (eg, network slicing, private network); horizon 3 = commercially available 5G end solutions (eg, V2X, AR/VR).

McKinsey & Company

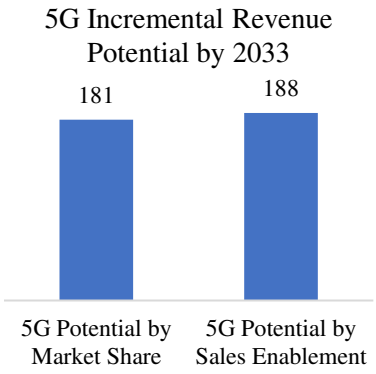
III. Relative Incremental Revenue Potential across Studies – McKinsey & Deloitte



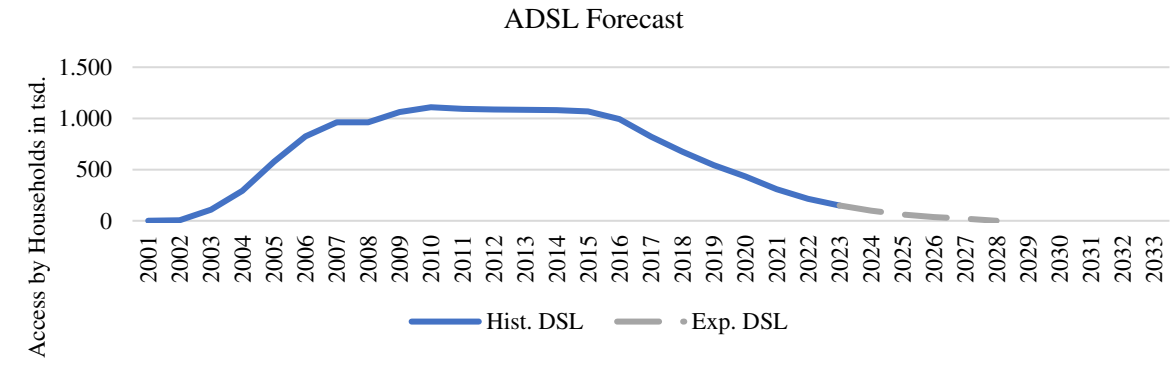
IV. Incremental Revenue Potential of NOS across Methods – Deloitte

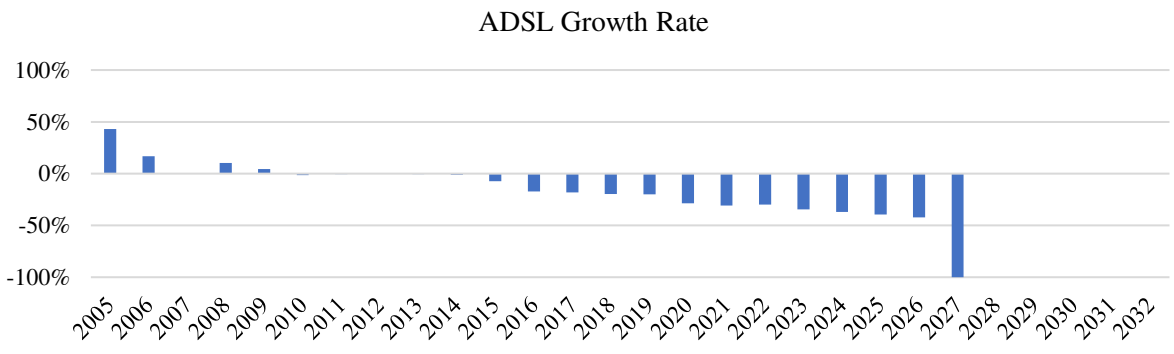
Exp. Incremental 5G Revenues by Market Share	
5G Potential for "Inform. & Communication" in Portug	1.900
thereof "Mobile Services" Share %	*33,0%*
"Mobile Services" Share	627
thereof NOS Market Share (current)	*28,9%*
NOS Incremental 5G Revenue Potential	181

Exp. Incremental 5G Revenues by Sales Enablement	
Est. Revenues of NOS 2033	1899
Est. Total Sales Enablement	9,90%
NOS Incremental 5G Revenue Potential	188

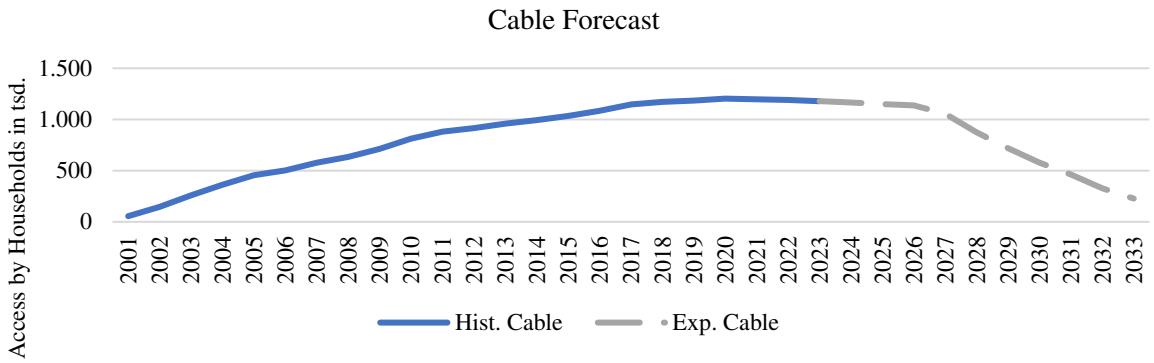


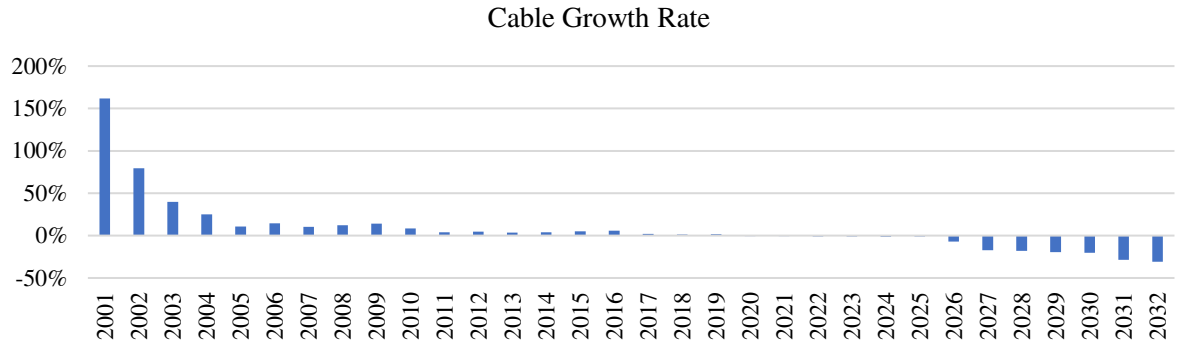
V. Forecast DSL



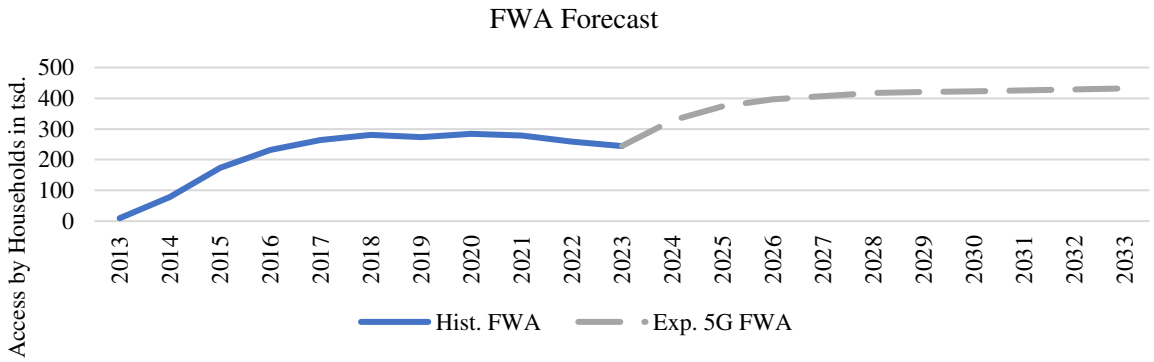


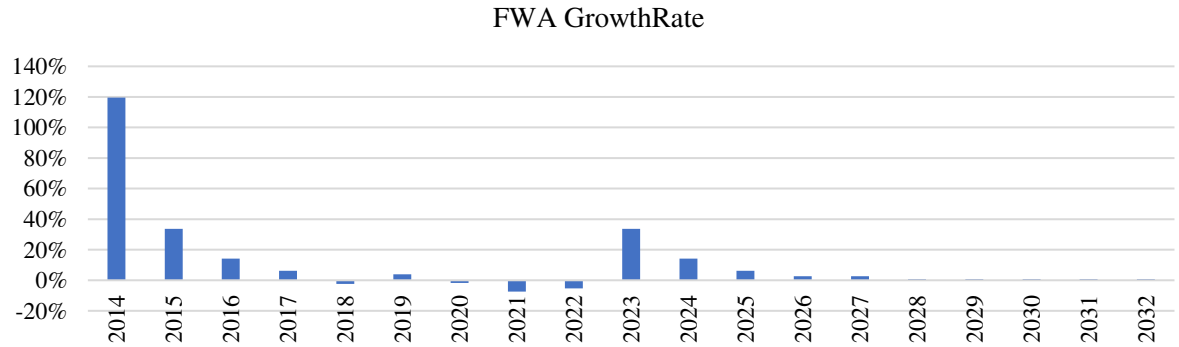
VI. Forecast Cable



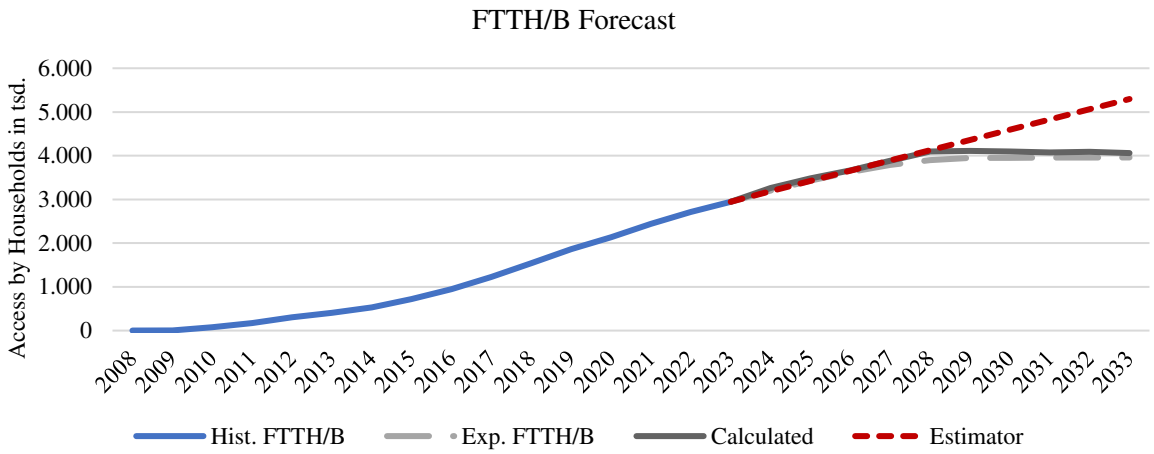


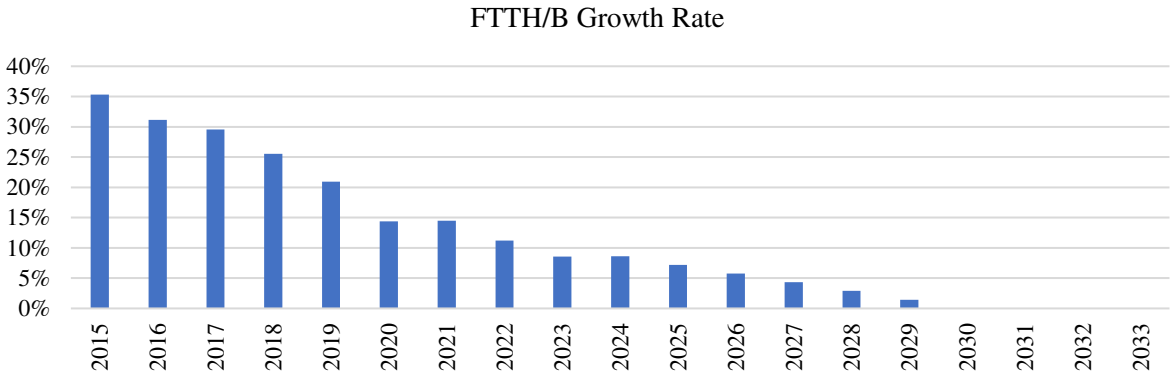
VII. Forecast FWA



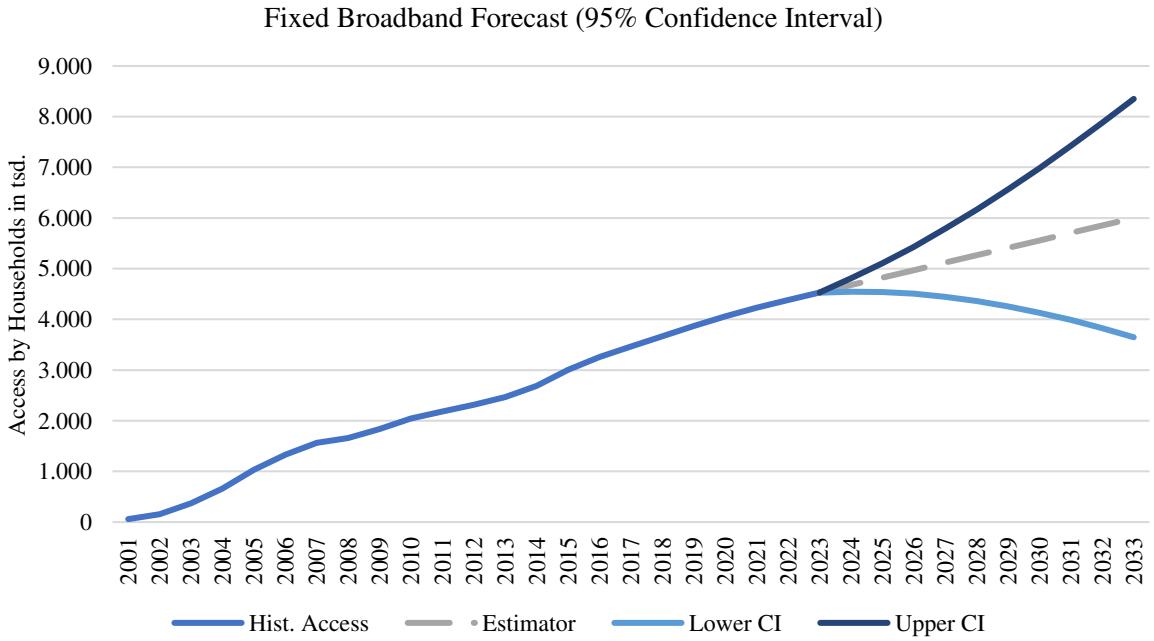


VIII. Forecast FTTH/FTTB

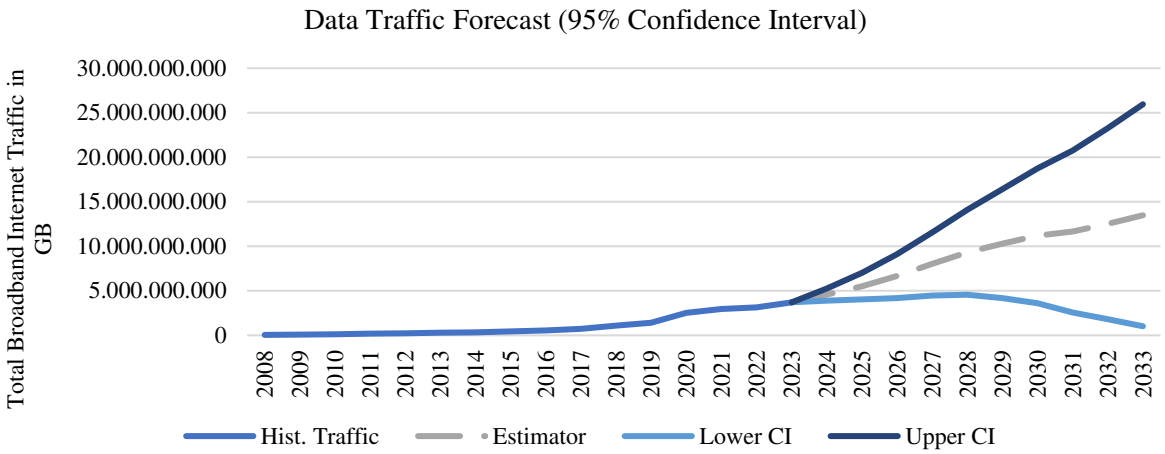




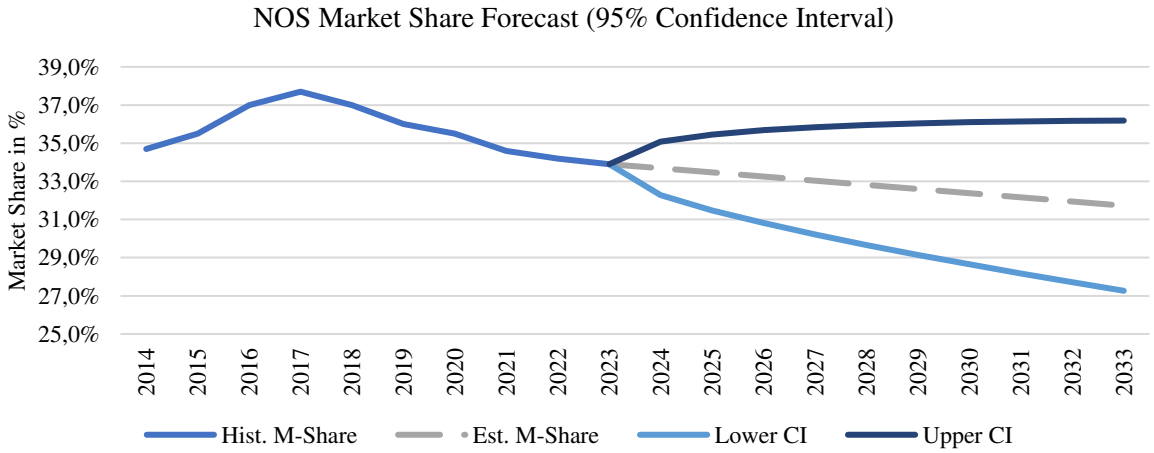
IX. Forecast Total Fixed Broadband



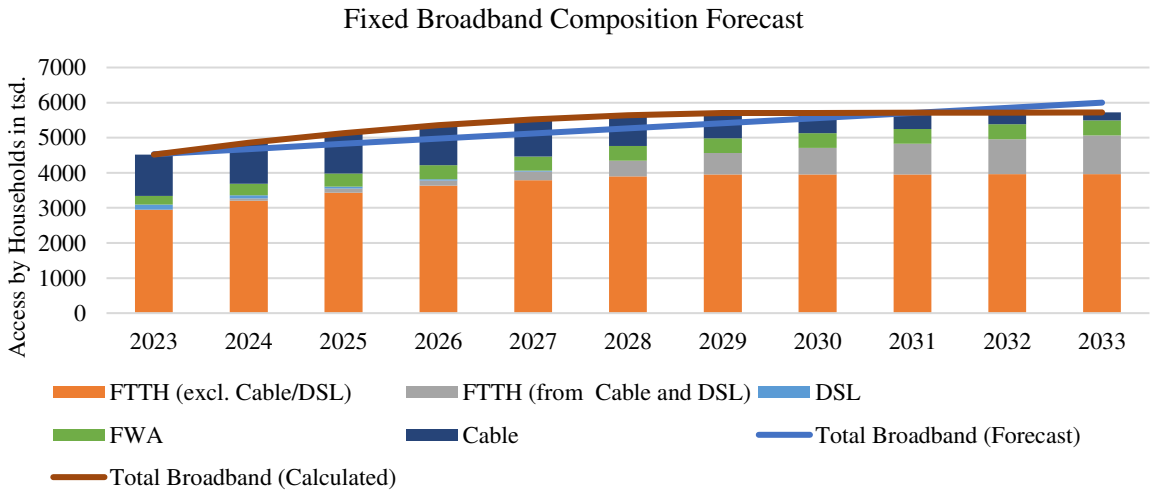
X. Forecast Total Data Traffic



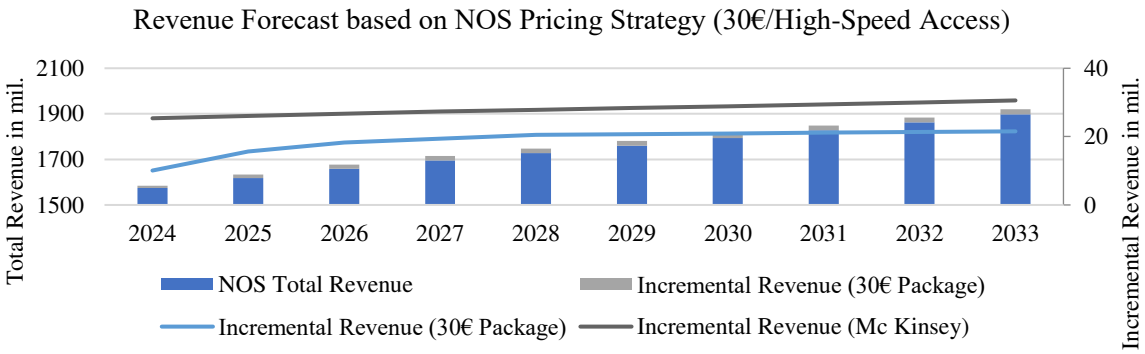
XI. Forecast NOS Market Share



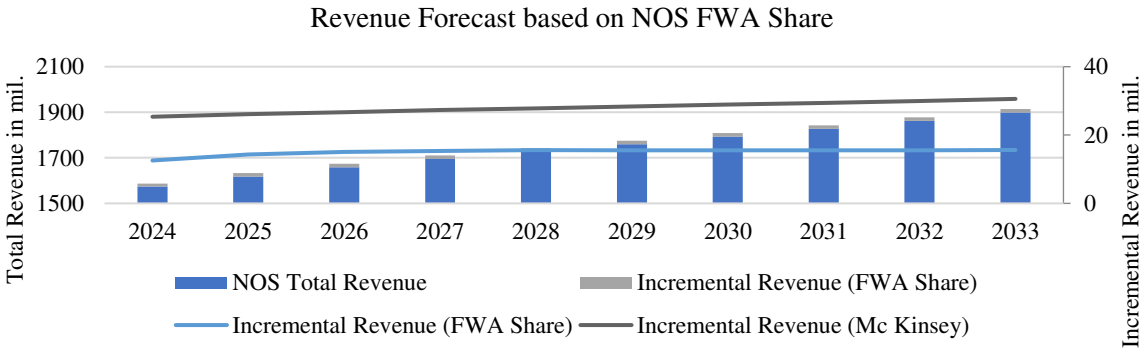
XII. Forecast Fixed Broadband Market Composition



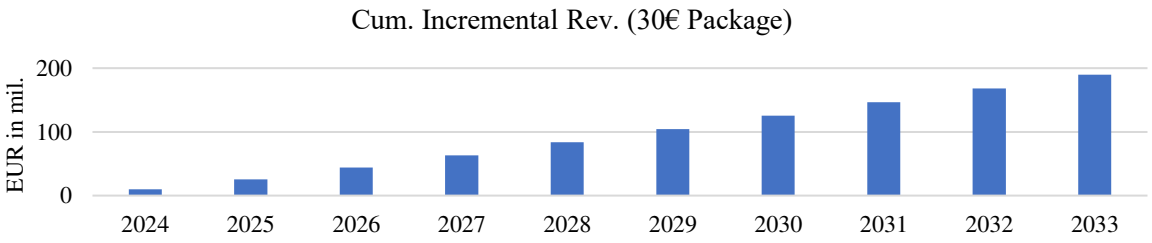
XIII. Forecast 5G FWA Revenue by NOS Pricing Strategy



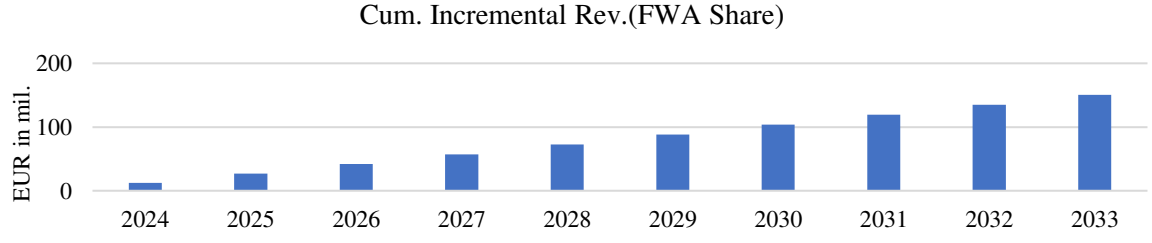
XIV. Forecast 5G FWA Revenue by NOS FWA Share



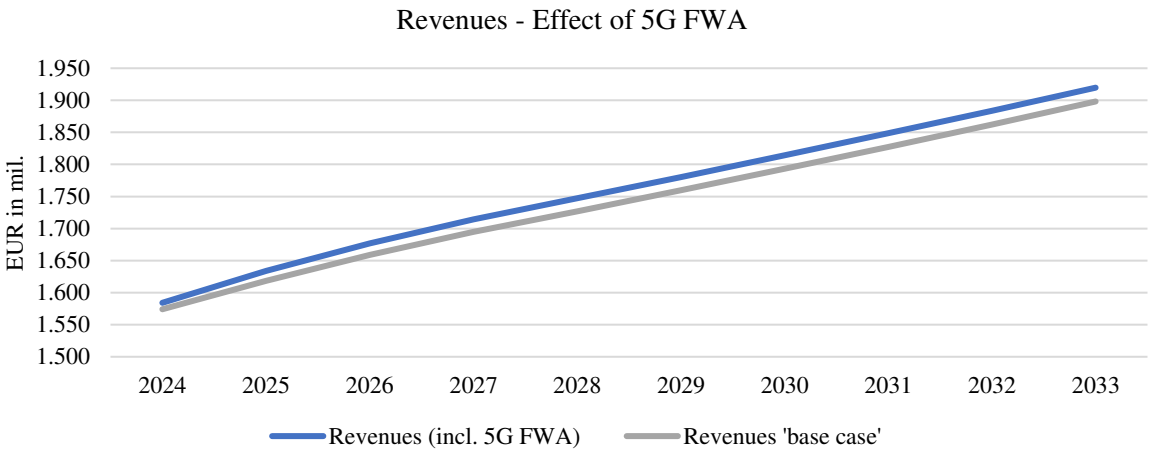
XV. Forecast Cumulative 5G FWA Revenue by NOS Pricing Strategy

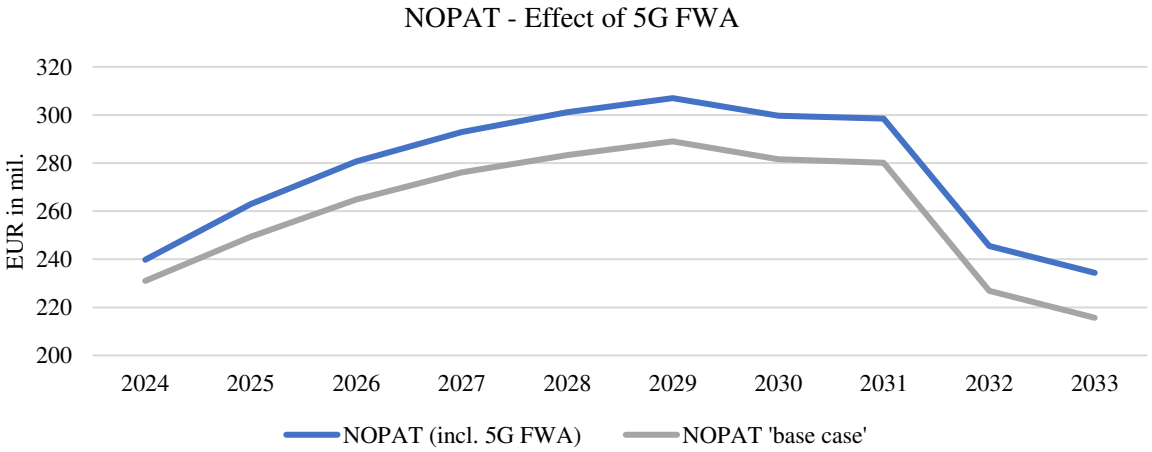


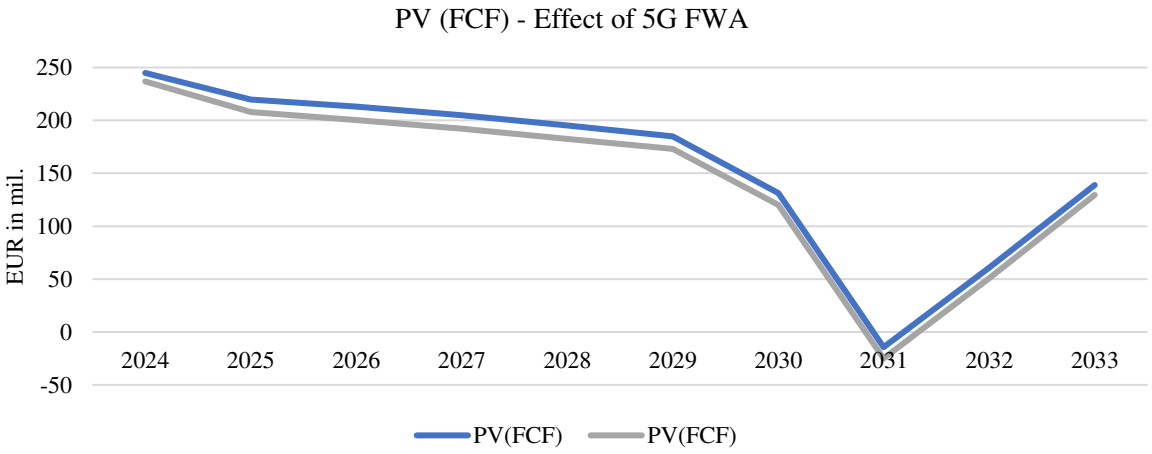
XVI. Forecast Cumulative 5G FWA Revenue by NOS FWA Share



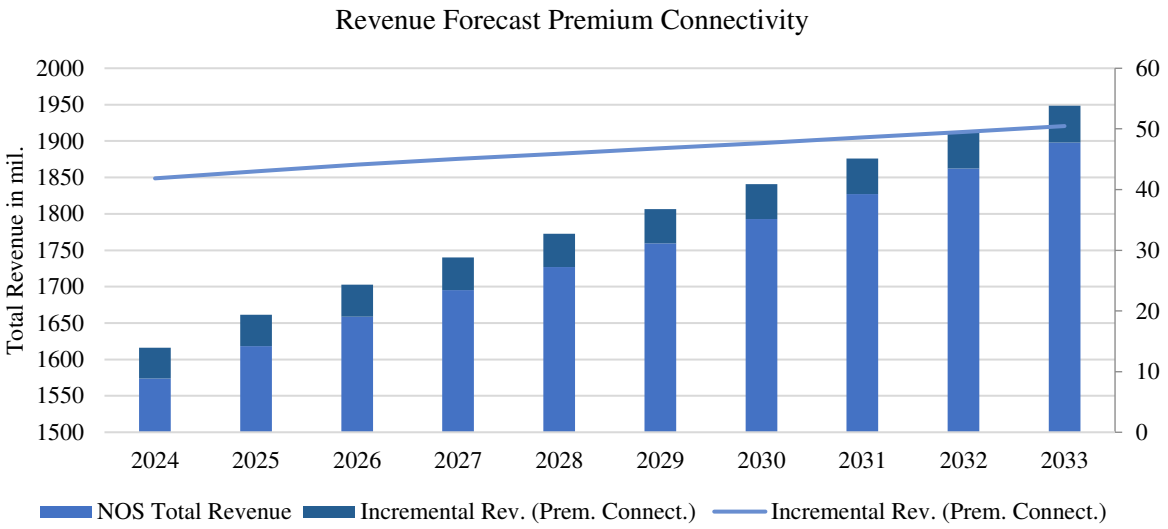
XVII. Financial Effect of 5G FWA on NOS



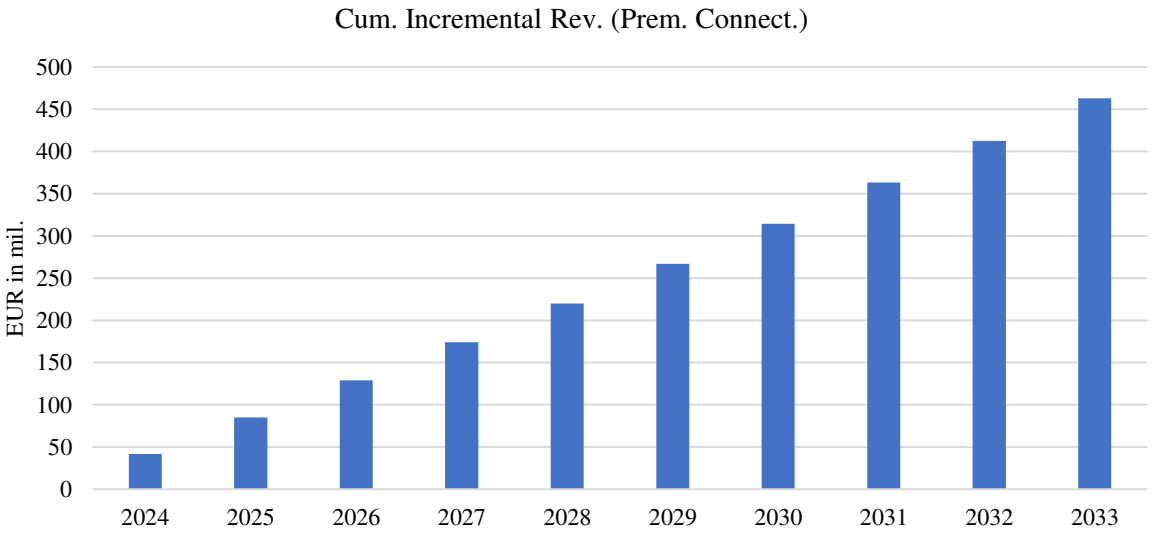




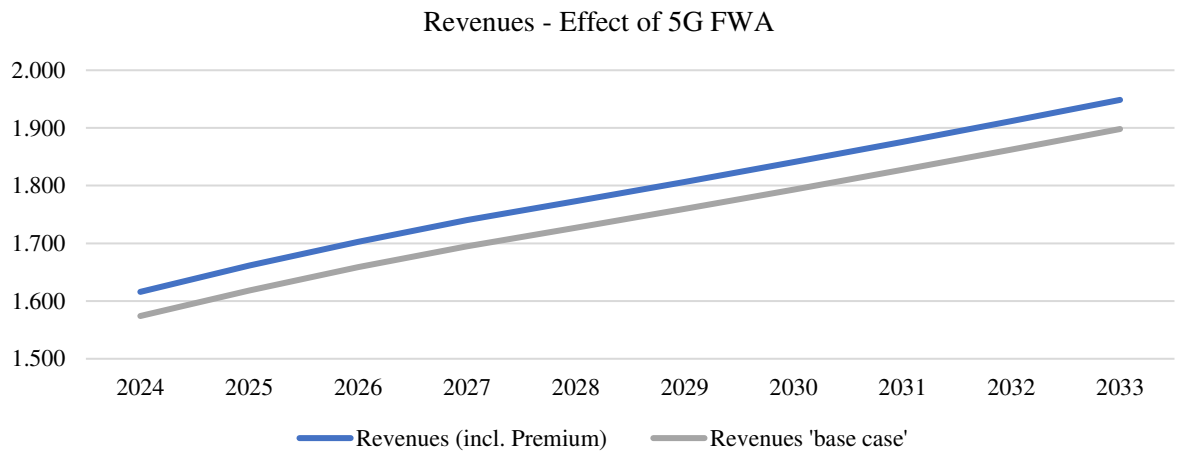
XVIII. Forecast 5G Premium Connectivity Revenue by McKinsey Forecast

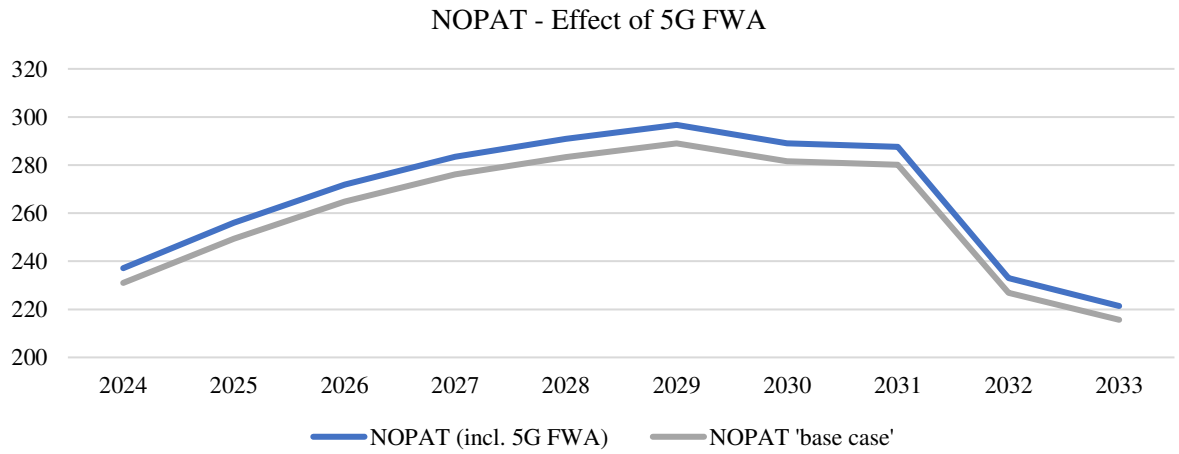


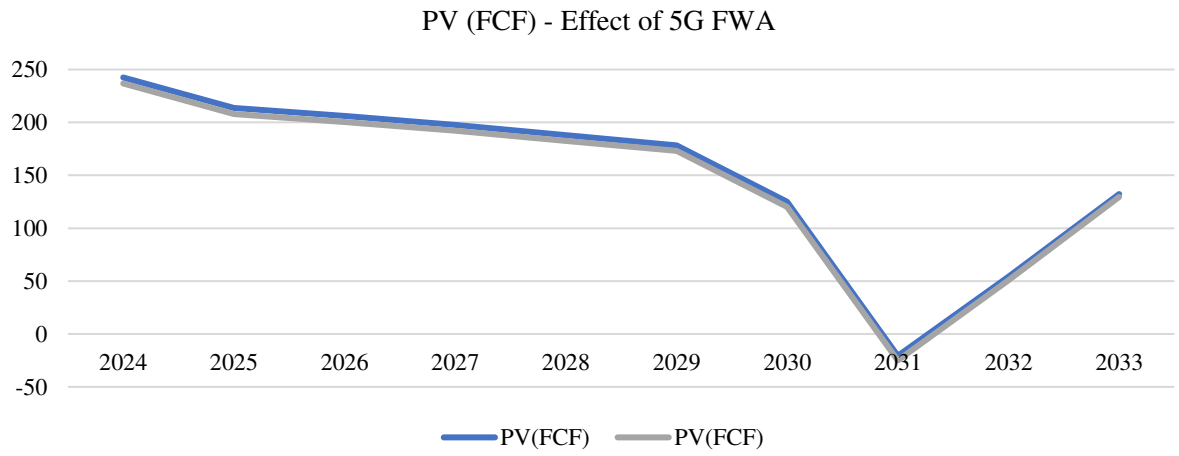
XIX. Forecast Cumulative 5G Premium Connectivity Revenue by McKinsey Forecast



XX. Financial Effect of 5G Premium Connectivity on NOS







XXI. Data Tables

1. Forecast DSL

Forecast ADSL

Date	Hist. DSL	Growth Rate	Exp. DSL
2001	1		
2002	6	815%	
2003	108	1840%	
2004	293	173%	
2005	576	96%	
2006	824	43%	
2007	962	17%	
2008	962	0%	
2009	1.061	10%	
2010	1.109	4%	
2011	1.093	-1%	
2012	1.086	-1%	
2013	1.085	0%	
2014	1.081	0%	
2015	1.069	-1%	
2016	992	-7%	
2017	822	-17%	
2018	673	-18%	
2019	542	-20%	
2020	433	-20%	
2021	309	-29%	
2022	213	-31%	
2023	150	-30%	150
2024		-34%	98
2025		-37%	62
2026		-40%	37
2027		-42%	22
2028		-100%	0
2029			
2030			
2031			
2032			
2033			

2. Forecast Cable

Forecast Cable			
Date	Hist. Cable	Growth Rate	Exp. Cable
2001	55		
2002	145	162%	
2003	260	79%	
2004	363	40%	
2005	454	25%	
2006	503	11%	
2007	576	15%	
2008	635	10%	
2009	713	12%	
2010	814	14%	
2011	881	8%	
2012	915	4%	
2013	959	5%	
2014	994	4%	
2015	1.034	4%	
2016	1.085	5%	
2017	1.147	6%	
2018	1.171	2%	
2019	1.184	1%	
2020	1.204	2%	
2021	1.197	-1%	
2022	1.191	-1%	
2023	1.179	-1%	1.179
2024		-1%	1165
2025		-1%	1150
2026		-1%	1138
2027		-7%	1056
2028		-17%	875
2029		-18%	717
2030		-20%	577
2031		-20%	461
2032		-29%	328
2033		-31%	227

3. Forecast FWA

Forecast FWA			
Date	**Hist. FWA**	**GrowthRate**	**Exp. 5G FWA**
2013	9		
2014	79	738%	
2015	173	120%	
2016	231	34%	
2017	264	14%	
2018	281	6%	
2019	274	-2%	
2020	284	4%	
2021	279	-2%	
2022	258	-7%	
2023	245	-5%	245
2024		34%	327
2025		14%	373
2026		6%	397
2027		3%	407
2028		3%	417
2029		1%	420
2030		1%	423
2031		1%	426
2032		1%	429
2033		1%	432

4. Forecast FTTH/B

FTTH/B							
						95% Confidence Interval	
Date	**Hist. FTTH/B**	**Growth Rate**	**Exp. FTTH/B**	**Calculated**	**Estimator**	**Lower CI**	**Upper CI**
2008	1						
2009	7	438%					
2010	78	972%					
2011	174	122%					
2012	307	77%					
2013	410	33%					
2014	534	30%					
2015	723	35%					
2016	948	31%					
2017	1.228	30%					
2018	1.541	26%					
2019	1.864	21%					
2020	2.131	14%					
2021	2.440	14%					
2022	2.714	11%					
2023	2.946	9%	2946	2946	2.946	2.946	2.946
2024		9%	3200	3265	3.185	3.059	3.311
2025		7%	3431	3482	3.420	3.160	3.679
2026		6%	3629	3665	3.654	3.226	4.082
2027		4%	3786	3883	3.889	3.265	4.513
2028		3%	3895	4098	4.124	3.280	4.967
2029		1%	3952	4110	4.358	3.275	5.442
2030		0%	3953	4094	4.593	3.249	5.936
2031		0%	3955	4072	4.827	3.206	6.448
2032		0%	3957	4090	5.062	3.146	6.978
2033		0%	3959	4061	5.297	3.070	7.523

5. Forecast Total Fixed Broadband

Total Fixed Broadband				
			95% Confidence Interval	
Date	**Hist. Access**	**Estimator**	**Lower CI**	**Upper CI**
2001	58			
2002	154			
2003	371			
2004	660			
2005	1.034			
2006	1.331			
2007	1.561			
2008	1.656			
2009	1.833			
2010	2.046			
2011	2.185			
2012	2.316			
2013	2.468			
2014	2.690			
2015	3.002			
2016	3.260			
2017	3.465			
2018	3.670			
2019	3.868			
2020	4.058			
2021	4.231			
2022	4.384			
2023	4.530	4.530	4.530	4.530
2024		4.677	4.545	4.808
2025		4.824	4.542	5.105
2026		4.970	4.508	5.433
2027		5.117	4.447	5.788
2028		5.264	4.363	6.166
2029		5.411	4.257	6.565
2030		5.558	4.131	6.985
2031		5.705	3.987	7.423
2032		5.852	3.825	7.879
2033		5.999	3.647	8.350

6. Forecast Data Traffic

Data Traffic				
			95% Confidence Interval	
Date	**Hist. Traffic**	**Estimator**	**Lower CI**	**Upper CI**
2008	49.086.997			
2009	97.807.528			
2010	134.333.839			
2011	177.641.600			
2012	231.466.387			
2013	286.898.671			
2014	349.249.425			
2015	456.657.486			
2016	564.266.149			
2017	742.516.897			
2018	1.095.749.851			
2019	1.407.664.768			
2020	2.536.480.659			
2021	2.947.253.030			
2022	3.151.433.392			
2023	3.702.733.172	3.702.733.172	3.702.733.172	3.702.733.172
2024		4.578.529.523	3.882.829.040	5.274.230.006
2025		5.527.428.125	4.035.542.438	7.019.313.811
2026		6.651.097.384	4.199.680.958	9.102.513.810
2027		8.015.943.846	4.463.832.482	11.568.055.211
2028		9.339.114.687	4.560.807.656	14.117.421.718
2029		10.305.940.785	4.187.448.445	16.424.433.124
2030		11.183.510.698	3.619.713.792	18.747.307.604
2031		11.661.357.052	2.554.229.037	20.768.485.067
2032		12.537.886.473	1.794.866.170	23.280.906.777
2033		13.486.785.075	1.021.007.211	25.952.562.939

7. Forecast NOS Market Share (Fixed Broadband)

Forecast NOS Market Share (Fixed Broadband)				
			95% Confidence Interval	
Date	**Hist. M-Share**	**Est. M-Share**	**Lower CI**	**Upper CI**
2014	34,7%			
2015	35,5%			
2016	37,0%			
2017	37,7%			
2018	37,0%			
2019	36,0%			
2020	35,5%			
2021	34,6%			
2022	34,2%			
2023	33,9%	33,9%	33,9%	33,9%
2024		33,7%	32,3%	35,1%
2025		33,5%	31,5%	35,5%
2026		33,2%	30,8%	35,7%
2027		33,0%	30,2%	35,8%
2028		32,8%	29,7%	36,0%
2029		32,6%	29,1%	36,0%
2030		32,4%	28,7%	36,1%
2031		32,2%	28,2%	36,1%
2032		31,9%	27,7%	36,2%
2033		31,7%	27,3%	36,2%

8. Market Share (Mobile Services)

Market Share (Mobile Services)			
	MEO	**Vodafone**	**NOS**
2014	47,3%	34,5%	16,0%
2015	47,1%	31,1%	19,9%
2016	45,4%	29,6%	23,5%
2017	45,8%	28,3%	24,1%
2018	46,0%	27,6%	24,4%
2019	45,6%	28,0%	24,2%
2020	45,4%	27,4%	25,1%
2021	44,5%	26,5%	26,5%
2022	44,8%	24,4%	28,4%
2023	43,0%	25,1%	28,9%

9. Revenue Forecast Core Connectivity

Revenue Forecast Core Connectivity

	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Total Broadband (Forecast)	**4530**	**4677**	**4824**	**4970**	**5117**	**5264**	**5411**	**5558**	**5705**	**5852**	**5999**
FTTH (excl. Cable/DSL)	2946	3200	3431	3629	3786	3895	3952	3953	3955	3957	3959
FTTH (from Cable and DSL)		65	117	153	251	454	612	752	868	1000	1101
FTTH	2946	3265	3547	3782	4036	4349	4563	4705	4823	4958	5061
DSL	150	98	62	37	22	0	0	0	0	0	0
FWA	245	327	373	397	407	417	420	423	426	429	432
Cable	1179	1165	1150	1138	1056	875	717	577	461	328	227
Total Broadband (Calculated)	**4519**	**4856**	**5133**	**5354**	**5521**	**5641**	**5700**	**5705**	**5710**	**5715**	**5720**
Delta	*11*	*-179*	*-309*	*-383*	*-404*	*-376*	*-289*	*-147*	*-5*	*137*	*279*

	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
FWA	245	327	373	397	407	417	420	423	426	429	432
Incremental 5G		83	129	152	162	172	175	178	181	184	187
NOS Market Share		34%	34%	33%	33%	33%	33%	33%	32%	32%	32%
Incremental 5G NOS		28	43	51	54	57	58	58	59	59	60
Incremental Revenue (30€ Package)		10	16	18	19	20	21	21	21	21	22
Cum. Incremental Rev. (30€ Package)		10	26	44	63	84	105	125	147	168	189
% NOS Total Revenue (5G FWA)		0,6%	1,0%	1,1%	1,1%	1,2%	1,2%	1,2%	1,2%	1,1%	1,1%
% Nos Wireless Revenue (5G FWA)		1,2%	1,8%	2,1%	2,1%	2,2%	2,2%	2,2%	2,2%	2,1%	2,1%

	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
NOS Total Revenue	1574	1618	1659	1695	1727	1760	1793	1827	1862	1898
NOS Wireless Revenue (53,7%)	845	869	891	910	927	945	963	981	1000	1019
NOS Broadband Revenue (11,4%)	179	184	189	193	197	201	204	208	212	216
Incremental Revenue (FWA Share)	13	14	15	15	16	16	16	16	16	16
Cum. Incremental Rev.(FWA Share)	13	27	42	57	73	88	104	120	135	151
% NOS Total Revenue (5G FWA)	0,8%	0,9%	0,9%	0,9%	0,9%	0,9%	0,9%	0,9%	0,8%	0,8%
% Nos Wireless Revenue (5G FWA)	1,5%	1,6%	1,7%	1,7%	1,7%	1,6%	1,6%	1,6%	1,6%	1,5%

	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Forecast McKinsey % Wireless Revenue	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Incremental Revenue (Mc Kinsey)	25	26	27	27	28	28	29	29	30	31

10. Revenue Forecast Premium Connectivity

Revenue Forecast Premium Connectivity

	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
NOS Total Revenue	1574	1618	1659	1695	1727	1760	1793	1827	1862	1898
Incremental Rev. (Prem. Connect.)	42	43	44	45	46	47	48	49	50	50
Cum. Incremental Rev. (Prem. Connect.)	42	85	129	174	220	267	314	363	413	463

11. Assumptions Forecast Premium Connectivity

Assumptions Forecast Premium Connectivity

NOS %RGU of Wireless Services	53,18%
Est. Incremental Revenue (Mc Kinsey)	5%

12. DCF Core Connectivity

Discounted Cash Flow incl. 5G FWA

Telco DCF	4Q23	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	TV
t	0,25	1,25	2,25	3,25	4,25	5,25	6,25	7,25	8,25	9,25	10,25	10,25
Revenues (incl. 5G FWA)	394,964	1584,165	1633,889	1677,032	1714,454	1747,456	1780,327	1813,971	1848,402	1883,637	1919,691	
NOS 'base case' Revenues	394,964	1574,094	1618,287	1658,729	1695,062	1726,959	1759,617	1793,051	1827,274	1862,303	1898,153	
Incremantal 5G FWA Revenue		10,071	15,602	18,303	19,392	20,497	20,709	20,920	21,128	21,334	21,538	
YOY growth			*3,14%*	*2,64%*	*2,23%*	*1,92%*	*1,88%*	*1,89%*	*1,90%*	*1,91%*	*1,91%*	*1,30%*
Costs, Losses and other gains	241,271	876,678	896,624	915,430	932,887	949,769	968,042	988,023	1009,948	1033,799	1059,768	
EBITDA	**153,693**	**707,487**	**737,265**	**761,602**	**781,568**	**797,687**	**812,285**	**825,947**	**838,455**	**849,838**	**859,923**	
D,A&I	118,850	431,421	434,582	438,395	444,324	450,993	458,811	480,821	494,795	567,239	590,104	
EBIT	**34,843**	**276,066**	**302,683**	**323,207**	**337,244**	**346,694**	**353,474**	**345,126**	**343,660**	**282,600**	**269,818**	
Taxes	11,8%	13,1%	13,1%	13,1%	13,1%	13,1%	13,1%	13,1%	13,1%	13,1%	13,1%	
NOPAT (incl. 5G FWA)	**30,745**	**239,771**	**262,889**	**280,714**	**292,906**	**301,114**	**307,003**	**299,752**	**298,479**	**245,446**	**234,345**	
NOPAT %	*8%*	*15%*	*16%*	*17%*	*17%*	*17%*	*17%*	*17%*	*16%*	*13%*	*12%*	
D&A	118,850	431,421	434,582	438,395	444,324	450,993	458,811	480,821	494,795	567,239	590,104	
Capex	99,899	427,551	440,818	453,186	464,558	474,842	485,519	568,125	819,277	701,833	552,056	
ΔNWC - Telco	-56,877	-21,511	2,529	2,153	1,725	1,250	0,761	0,239	-0,320	-0,918	-1,560	
ΔNWC - Eliminations	48,227	-0,948	-0,973	-0,899	-0,817	-0,729	-0,747	-0,765	-0,783	-0,802	-0,820	
FCF	**58,346**	**266,101**	**255,097**	**264,669**	**271,763**	**276,743**	**280,280**	**212,974**	**-24,901**	**112,572**	**274,775**	**4988,198**
WACC	*6,88%*	*6,88%*	*6,88%*	*6,88%*	*6,88%*	*6,88%*	*6,88%*	*6,88%*	*6,88%*	*6,88%*	*6,88%*	*6,88%*
PV(FCF)	**57,384**	**244,864**	**219,628**	**213,200**	**204,823**	**195,150**	**184,921**	**131,469**	**-14,382**	**60,832**	**138,926**	**2522,032**

Telecom Valuation (adapted)	
Total PV(FCF)	1.636,82
PV(TV incl. 5G FWA)	2.522,03
PV(TV 'base case')	2.350,34
Telco EV ('5G FWA' TV)	**4.158,85**
Telco EV ('base case' TV)	**3.987,15**

Audiovisual & Cinema Valuation	
Total PV(FCF)	103,693
PV(TV)	132,231
A&C EV EV	**235,925**

Discounted Cash Flow 'Base Case'

Telco DCF	4Q23	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	TV
t	0,25	1,25	2,25	3,25	4,25	5,25	6,25	7,25	8,25	9,25	10,25	10,25
Revenues 'base case'	394,964	1574,094	1618,287	1658,729	1695,062	1726,959	1759,617	1793,051	1827,274	1862,303	1898,153	
YOY growth			*2,81%*	*2,50%*	*2,19%*	*1,88%*	*1,89%*	*1,90%*	*1,91%*	*1,92%*	*1,93%*	*1,30%*
Costs, Losses and other gains	241,271	876,678	896,624	915,430	932,887	949,769	968,042	988,023	1009,948	1033,799	1059,768	
EBITDA	**153,693**	**697,416**	**721,663**	**743,299**	**762,175**	**777,190**	**791,575**	**805,027**	**817,326**	**828,504**	**838,385**	
D,A&I	118,850	431,421	434,582	438,395	444,324	450,993	458,811	480,821	494,795	567,239	590,104	
EBIT	**34,843**	**265,995**	**287,081**	**304,904**	**317,852**	**326,197**	**332,765**	**324,206**	**322,532**	**261,265**	**248,280**	
Taxes	11,8%	13,1%	13,1%	13,1%	13,1%	13,1%	13,1%	13,1%	13,1%	13,1%	13,1%	
NOPAT 'base case'	**30,745**	**231,024**	**249,338**	**264,818**	**276,064**	**283,311**	**289,016**	**281,583**	**280,128**	**226,917**	**215,639**	
NOPAT %	*8%*	*15%*	*15%*	*16%*	*16%*	*16%*	*16%*	*16%*	*15%*	*12%*	*11%*	
D&A	118,850	431,421	434,582	438,395	444,324	450,993	458,811	480,821	494,795	567,239	590,104	
Capex	99,899	427,551	440,818	453,186	464,558	474,842	485,519	568,125	819,277	701,833	552,056	
ΔNWC - Telco	-56,877	-21,511	2,529	2,153	1,725	1,250	0,761	0,239	-0,320	-0,918	-1,560	
ΔNWC - Eliminations	48,227	-0,948	-0,973	-0,899	-0,817	-0,729	-0,747	-0,765	-0,783	-0,802	-0,820	
FCF	**58,346**	**257,354**	**241,546**	**248,772**	**254,921**	**258,941**	**262,293**	**194,804**	**-43,251**	**94,042**	**256,068**	**4648,608**
WACC	*6,88%*	*6,88%*	*6,88%*	*6,88%*	*6,88%*	*6,88%*	*6,88%*	*6,88%*	*6,88%*	*6,88%*	*6,88%*	*6,88%*
PV(FCF)	**57,384**	**236,815**	**207,961**	**200,395**	**192,129**	**182,596**	**173,054**	**120,253**	**-24,980**	**50,819**	**129,468**	**2350,335**

Telecom Valuation (not adapted)	
Total PV(FCF)	1.525,89
PV(TV)	2.350,34
Telco EV	**3.876,23**

Audiovisual & Cinema Valuation	
Total PV(FCF)	103,693
PV(TV)	132,231
A&C EV	**235,925**

Valuation Effect of 5G FWA

	Base Case	Incremental	Incl. 5G FWA
Telco EV	3876,23	110,92	3987,15
Audiovisuals and Cinema EV	235,92	0,00	235,92
Total EV	**4.112**	**111**	**4.223**
		-	
Cash	11,94		11,94
Book Value of Debt	1775,20		1775,20
Total Equity Value	**2.349**	**111**	**2.460**
		-	
Price Target (EUR)	**€ 4,59**	**€ 0,22**	**€ 4,81**
Upside/Downside (Current €3,21)	43,1%		49,8%

13. DCF Premium Connectivity

Discounted Cash Flow incl. Premium Connectivity

Telco DCF	4Q23	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	TV
t	0,25	1,25	2,25	3,25	4,25	5,25	6,25	7,25	8,25	9,25	10,25	10,25
Revenues (incl. Premium)	394,964	1615,948	1661,316	1702,833	1740,133	1772,878	1806,404	1840,726	1875,860	1911,820	1948,623	
NOS 'base case' Revenues	394,964	1574,094	1618,287	1658,729	1695,062	1726,959	1759,617	1793,051	1827,274	1862,303	1898,153	
Incremantal 'Premium Connec.' Revenue		41,854	43,029	44,104	45,070	45,919	46,787	47,676	48,586	49,517	50,470	
YOY growth			*2,81%*	*2,50%*	*2,19%*	*1,88%*	*1,89%*	*1,90%*	*1,91%*	*1,92%*	*1,93%*	*1,30%*
NOPAT (incl. 5G FWA)	**30,745**	**237,167**	**255,968**	**271,859**	**283,404**	**290,844**	**296,701**	**289,070**	**287,576**	**232,950**	**221,372**	
NOPAT %	*8%*	*15%*	*15%*	*16%*	*16%*	*16%*	*16%*	*16%*	*15%*	*12%*	*11%*	
D&A	118,850	431,421	434,582	438,395	444,324	450,993	458,811	480,821	494,795	567,239	590,104	
Capex	99,899	427,551	440,818	453,186	464,558	474,842	485,519	568,125	819,277	701,833	552,056	
ΔNWC - Telco	-56,877	-21,511	2,529	2,153	1,725	1,250	0,761	0,239	-0,320	-0,918	-1,560	
ΔNWC - Eliminations	48,227	-0,948	-0,973	-0,899	-0,817	-0,729	-0,747	-0,765	-0,783	-0,802	-0,820	
FCF	**58,346**	**263,497**	**248,176**	**255,813**	**262,261**	**266,474**	**269,978**	**202,291**	**-35,803**	**100,076**	**261,802**	**4752,695**
WACC	*6,88%*	*6,88%*	*6,88%*	*6,88%*	*6,88%*	*6,88%*	*6,88%*	*6,88%*	*6,88%*	*6,88%*	*6,88%*	*6,88%*
PV(FCF)	**57,384**	**242,468**	**213,669**	**206,067**	**197,661**	**187,908**	**178,124**	**124,875**	**-20,678**	**54,080**	**132,367**	**2402,962**

Telecom Valuation (adapted)	
Total PV(FCF)	1.573,92
PV(TV)	2.402,96
Telco EV ('5G FWA' TV)	**3.976,89**

Audiovisual & Cinema Valuation	
Total PV(FCF)	103,693
PV(TV)	132,231
A&C EV EV	**235,925**

Discounted Cash Flow 'Base Case'

Telco DCF	4Q23	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	TV
t	0,25	1,25	2,25	3,25	4,25	5,25	6,25	7,25	8,25	9,25	10,25	10,25
Revenues 'base case'	394,964	1574,094	1618,287	1658,729	1695,062	1726,959	1759,617	1793,051	1827,274	1862,303	1898,153	
YOY growth			*2,81%*	*2,50%*	*2,19%*	*1,88%*	*1,89%*	*1,90%*	*1,91%*	*1,92%*	*1,93%*	*1,30%*
Costs, Losses and other gains	241,271	876,678	896,624	915,430	932,887	949,769	968,042	988,023	1009,948	1033,799	1059,768	
EBITDA	**153,693**	**697,416**	**721,663**	**743,299**	**762,175**	**777,190**	**791,575**	**805,027**	**817,326**	**828,504**	**838,385**	
D,A&I	118,850	431,421	434,582	438,395	444,324	450,993	458,811	480,821	494,795	567,239	590,104	
EBIT	**34,843**	**265,995**	**287,081**	**304,904**	**317,852**	**326,197**	**332,765**	**324,206**	**322,532**	**261,265**	**248,280**	
Taxes	11,8%	13,1%	13,1%	13,1%	13,1%	13,1%	13,1%	13,1%	13,1%	13,1%	13,1%	
NOPAT 'base case'	**30,745**	**231,024**	**249,338**	**264,818**	**276,064**	**283,311**	**289,016**	**281,583**	**280,128**	**226,917**	**215,639**	
NOPAT %	*8%*	*15%*	*15%*	*16%*	*16%*	*16%*	*16%*	*16%*	*15%*	*12%*	*11%*	
D&A	118,850	431,421	434,582	438,395	444,324	450,993	458,811	480,821	494,795	567,239	590,104	
Capex	99,899	427,551	440,818	453,186	464,558	474,842	485,519	568,125	819,277	701,833	552,056	
ΔNWC - Telco	-56,877	-21,511	2,529	2,153	1,725	1,250	0,761	0,239	-0,320	-0,918	-1,560	
ΔNWC - Eliminations	48,227	-0,948	-0,973	-0,899	-0,817	-0,729	-0,747	-0,765	-0,783	-0,802	-0,820	
FCF	**58,346**	**257,354**	**241,546**	**248,772**	**254,921**	**258,941**	**262,293**	**194,804**	**-43,251**	**94,042**	**256,068**	**4648,608**
WACC	*6,88%*	*6,88%*	*6,88%*	*6,88%*	*6,88%*	*6,88%*	*6,88%*	*6,88%*	*6,88%*	*6,88%*	*6,88%*	*6,88%*
PV(FCF)	**57,384**	**236,815**	**207,961**	**200,395**	**192,129**	**182,596**	**173,054**	**120,253**	**-24,980**	**50,819**	**129,468**	**2350,335**

Telecom Valuation (not adapted)	
Total PV(FCF)	1.525,89
PV(TV)	2.350,34
Telco EV	**3.876,23**

Audiovisual & Cinema Valuation	
Total PV(FCF)	103,693
PV(TV)	132,231
A&C EV	**235,925**

Valuation Effect of 5G FWA

	Base Case	Incremental	Incl. 5G FWA
Telco EV	3876,23	100,66	3976,89
Audiovisuals and Cinema EV	235,92	0,00	235,92
Total EV	**4.112**	**101**	**4.213**
		-	
Cash	11,94		11,94
Book Value of Debt	1775,20		1775,20
Total Equity Value	**2.349**	**101**	**2.450**
		-	
Price Target (EUR)	**€ 4,59**	**€ 0,20**	**€ 4,79**
Upside/Downside (Current €3,21)	43,1%		49,2%

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