Communications Sector R eport
2023-2024

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Sector Overview & Introduction

The Communications sector can be thought of as a split between two main sub-sectors; Telecommunications (Telecoms) and Media. Telecoms refers to wireless communications as well as fixed-line, broadband and cable. We use these every day to watch television and access the internet as well as make phone/video calls. Deutsche Telekom, one of our holdings, is one such company. Whilst telecoms has been a traditionally defensive non-cyclical (does not perform in line with the general economy cycle), the GICS (Global Industry Classification Standard) in 2018 added Media companies to the index thus reshuffling the sector and naming it the 'Communications Sector.'

New names also included some who would have previously been considered under technology such as Alphabet (the parent company of Google). Media on the other hand includes companies that allow for mass communication for example, social media companies like Meta or streaming services such as Netflix or Viaplay - advertising companies can sometimes fall under this bracket. Finer details of both sub-sectors will be discussed in the coming pages.

This report seeks to provide a comprehensive introduction to the communications sector and its constituent parts, as well as the forces which impact it.

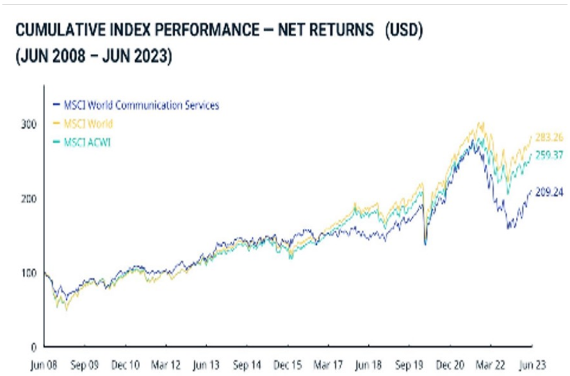
Herein we will address the key sector index's and what they tell us about the sector, the current climate overall for the sector and the state of play in the two main markets of interest for our purposes here at the SMF, Europe and the US. Moreover, we will provide valuable insights into two subsectors of particular interest for the year ahead, Media and Towers; two subsectors which may come to form a part of the SMF portfolio. In addition to this, there is a case study pertaining to the 'towers' subsector which will shed further light on the subsector through the lens of an operator in the marker, Cellnex.

Additionally, within the report you can acquaint yourself with the current holdings in our portfolio Deutsche Telekom and Alphabet. As well as all of the above the final sector which deals with risks and our strategy for the year ahead is an essential read for anyone who wishes to join in on the communications sector journey towards growth in the 2023-24 term of the fund which is sure to be one of immense vigor and interest.

Amat victoria curam.

MSCI World Communications Index

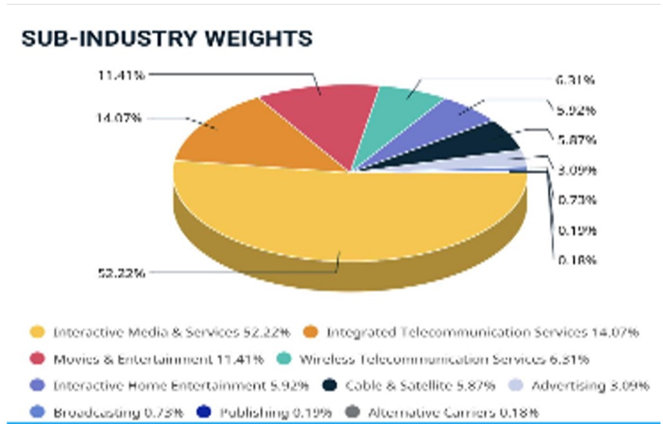
MSCI World Communications Index:
As seen below, it is clear that prior to the reshuffle of the sector, when it only included telecoms, that it was underperforming compared to the MSCI world index due to limited growth, increased competition and regulatory hurdles. However, tech stocks within media saw huge growth:

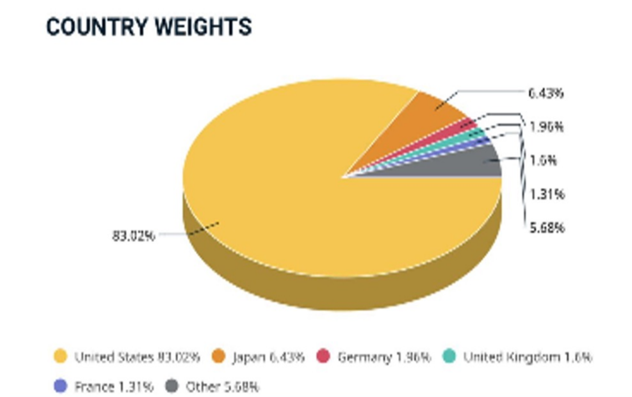


ANNUAL PERFORMANCE (%)

Year	MSCI World Communication Services	MSCI World	MSCI ACWI
2022	-36.93	-18.14	-18.36
2021	14.35	21.82	18.54
2020	22.98	15.90	16.25
2019	27.39	27.67	26.60
2018	-10.02	-8.71	-9.41
2017	5.82	22.40	23.97
2016	5.66	7.51	7.86
2015	2.53	-0.87	-2.36
2014	-1.91	4.94	4.16
2013	31.24	26.68	22.80
2012	6.38	15.83	16.13
2011	0.78	-5.54	-7.35
2010	10.19	11.76	12.67
2009	13.67	29.99	34.63

Below see the sector sub-industry weights and geographical breakdown:





Again, we are able to quickly identify that the US makes up the lions-share of the market.

Current Climate

Cord cutting / Cord Shaving:

The pandemic changed the way we consume media. One subsequent effect is the acceleration of ‘cord cutting,’ as people cancel their subscriptions to cable TV in an attempt to save costs (accelerated by the increase in cost of living). This is not a new phenomenon; on the contrary, the US were the trendsetters as far back as 2010 where Comcast began reporting subscriber losses at a rate higher than the prediction of analysts. According to the Multiscreen index, by 2018 we witnessed the first global decline in cable subscribers. Fast forward to today, subscribers are having an increasingly difficult time justifying the fees that they pay for cable when streaming services become increasingly prominent. This may well have a positive effect on streaming revenues, but this is yet to be confirmed. For example, Netflix reached the 10 million subscriber mark at nearly 3 times the speed that Sky did.

Price increases in EU Telecoms:

For the last couple of years, however, particularly in the last when inflation has risen, EU telecoms have increased their prices in an attempt to combat cost inflation and in some cases improve profitability. BT in the UK increased their prices by inflation + 3.9% leading to a total of a 13% increase. We have also seen price increases in countries such as France and The Netherlands. In more competitive markets such as Italy and Spain, players have found it harder to push through price increases.

Interest Rates:

Interest rates greatly affect more technology-oriented stocks. This is because these kinds of companies have a high appetite for borrowing and if the cost of borrowing increases; it becomes less appealing. Alphabet, Googles’ parent company, is one of our holdings and one that Interest rates also affect greatly. Tech stocks performed badly in 2022 due to a bad macro-outlook and investors preferring more defensive investments. As of summer 2023, inflation has begun to gradually come down especially in the US leading the market to believe that rates may, in time, start to follow. This has led a large flow into tech stocks seeing our holding Alphabet be up 20% in the last 3 months. It is worth noting that Alphabets’ stock performance has also been helped by the AI boom and beating analysts’ expectations. However, since the BOE raised its key interest rate by a quarter of a percentage point to 5.25%, investors are beginning to question their prior conviction. Interest rates rising has also had a negative effect on the valuation of companies via DCF due to the cost of capital increasing

European Commission On Mergers:

As previously mentioned, the EU’s stance on the proposed Orange Spain Masmovil merger is critical to the outlook of European telecoms. If the merger is allowed with no provisos or provisos that do not inhibit players’ ability to lower competition within a country, we could potentially see the reinvigoration of a sector that has tired investors for years. Refer to the previous page for a more in-depth analysis.

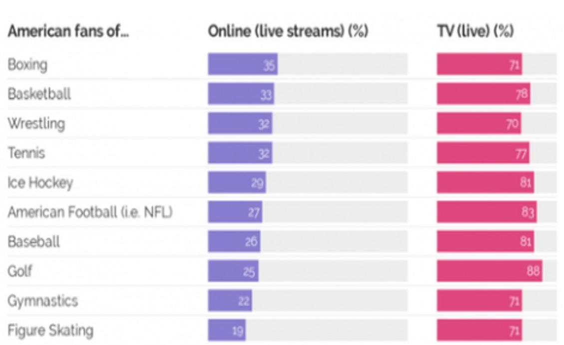
Subsectors - Media

Streaming

Media has been and is likely to continue to be a major driver of growth in the communications sector into the future. There are several household names such as Netflix who enjoyed strong returns for sustained periods of time but have in more recent times levelled off and seen lesser interest from investors.

Streaming has formed a large part of the media sector for a number of years; however, it is sports media which is of particular interest heading into this year as the proliferation of Pay Per View (PPV) sporting events and stand-alone sports subscriptions becoming de rigour.

This area is of particular interest because sports are the last big sector to make the transition over to subscription based models which are standalone products as opposed to cable TV addons.



There are several companies operating in this space who form part of our watchlist, and we remain bullish on the future of this industry.

Technology

Moreover, there are big players in the media industry that work off a different model that is driven by advertising revenue rather than a subscription-based model. Alphabet and Meta are stalwarts of this model with services such as YouTube (which has been trying for some time now to switch towards a subscription-based model) and Instagram and Facebook which have been strong performers for their respective parent companies. As is outlined below, there are challenges presently and coming down the line for these companies. These companies are still core to the sector and ones we are paying particularly close attention to.

Both the streaming and advertisement-based models are currently enduring a hard time in terms of subscription numbers and increased regulatory pressure is making an advertisement-based model ever more challenging. That being said, the market trends clearly indicate a consistent path towards these platforms. Whilst the models in their current formats are struggling, we are bullish that the major operators mentioned above will be able to adapt and continue to deliver consistent growth into the future.

Subsectors - Towers

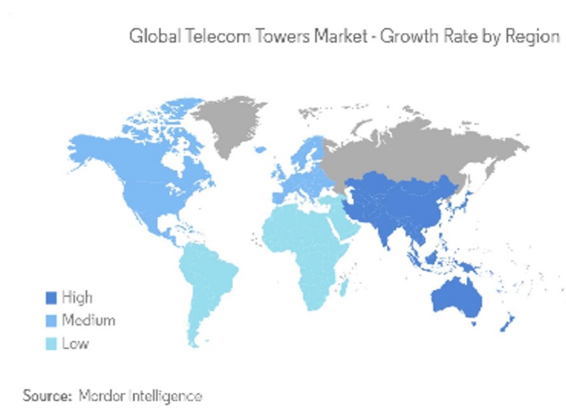
Industry Summary:
The Telecommunications infrastructure industry or 'Towers,' industry include firms who install and maintain towers which then are leased to a telco such as Telefonica (via 'collocation') who puts their equipment on for their network. This makes sense for a company like Telefonica as the money saved by renting towers for their equipment rather than constructing / maintaining towers themselves can be used for other things such as repaying debt or R&D.

The Towers companies have a very stable business model whereby they can lock these telecommunication companies into long term contracts. This creates predictable earnings with very low volatility. Furthermore, the only major costs that Towers companies will incur is the maintenance of the infrastructure. The main driver of the earnings of Towers companies is the 'tenancy ratio,' of their towers. This simply means the ratio of telcos to each tower. If there is a higher number of companies renting on each tower; the revenue for the Towers company will increase.

According to EY research, the average tenancy ratio per tower in Europe is 2.4. Within the industry, we have seen companies such as Cellnex who have consolidated a number of Towers companies to expand their portfolio. We have also seen companies such as Vodafone separate their own towers into a Towers company, subsequently partially IPO (Initial Public Offering) the business (Vantage Towers) which is now being taken private. Vodafone continues to retain a stake.

Main Players:
In the US, the biggest players are American Tower and Crown Castle International. In Europe, the biggest independent Towers company is Cellnex but there are a number of Tower cos partially owned by NMOs such as Vantage (Vodafone) and Deutsche Telekom has recently sold off a number of their towers to the Private Equity firms Digitalbridge and Brookfield who specialize in infrastructure. Other large players are Indus Towers, China Tower Corporation and SBA Comms.

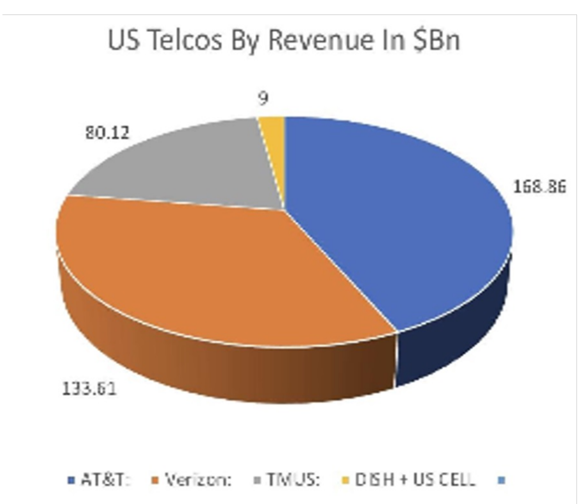
Market Trends:
- Importance of rural area network penetration is a key driver of the industry. Smartphone adoption, digital awareness, increased penetration of digital tech as well as the investment from several governments with the aim of increasing internet connectivity in these regions pose opportunity for growth for Tower companies
- In higher density urban areas, the model of simply constructing and maintaining cell towers may not provide adequate coverage. Infrastructure companies are now looking towards lamp posts and in building solutions (small cells).



Market Overview - Telecoms US

Summary:
The US houses many of the worlds' major telecom companies such as AT&T, Verizon and Comcast (cable). Due to the demand for media via the internet, such companies are already putting money into and forming alliances surrounding 6G despite 5G usage only being in its infancy as well as building fibre. The country has a nationwide coverage of 2G, 3G and 4G at 99% whereas 5G currently is estimated to be at 68% by the end of 2025. Covid-19 highlighted the importance of connectivity in an ever-digitalising world thus 5G rollout and the establishment of mobile, internet and cloud ecosystems are not only driving the sector but vital to the survival of the larger economy. It is worth noting that in the US, telcos and cable are separate.

Main players (Telcos):
The major players in US telecoms are: AT&T, Verizon, T-Mobile US, DISH Network Corp and US cellular: as well as cable companies such as Comcast and Charter.



The US, unlike Europe, is not highly fragmented and market share is mainly split amongst three players. As a consequence of strict regulatory pressure however, prices are kept relatively lower for the consumer and reduce barriers to entry to the market. As a result, revenues are suppressed (though steady) as prices are low to remain competitive. This is a theme common to both US and European telcos which has tired investors over the years. Despite this, players such as AT&T and Verizon dominate and have significant nation-wide presence. Not only this, but some merging has happened as per TMUS' acquisition of Sprint in 2020.

Driving Factors:
5G rollout will continue to account for a large portion of costs for companies ($80Bn spent in 2021) with TMUS having the largest 5G coverage currently. The Internet Of Things (IoT) continues to grow with over 3 billion devices connected in the US in 2023 and a 20% annual growth rate. Edge computing, which allows businesses to optimize their IT expenses locally rather than via the cloud, was valued at USD 40 million in 2022 with a projected valuation of USD 206 billion by 2032 according to *Market.us*. Edge computing affects US telcos by impacting 5G network support, IoT connectivity, reducing network congestion and reducing cloud computing costs. Finally, the deployment of AI will affect the dynamic of the industry and the efficiency of players within it. AI may affect things such as customer experience via troubleshooting and problem solving as well as predictive analytics, network optimisation and reducing performance bottlenecks.

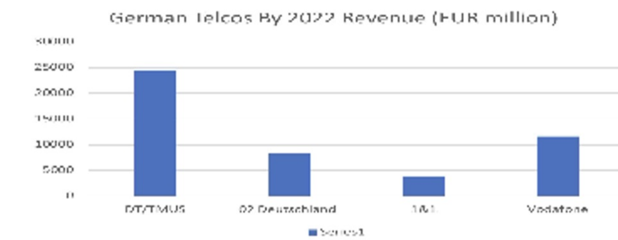
Market Overview - Telecoms US

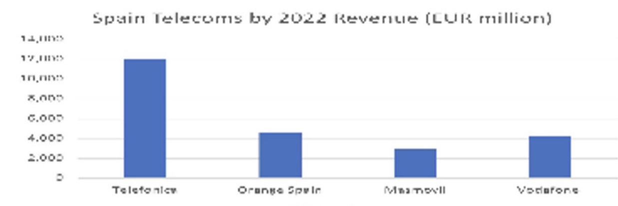
Summary:
European Telecoms, unlike the US, see both cable and Telecom companies as one in the same. Competition differs from country to country as each will have 3-5 MNOs (mobile network operators). Moreover, some companies such as Vodafone operate in multiple countries. Countries with a higher volume of players will experience higher competition and thus lower prices for consumers to remain competitive. On the other hand, other countries have seen some attempted consolidation with resistance from EU regulation; this will be discussed further in the report.

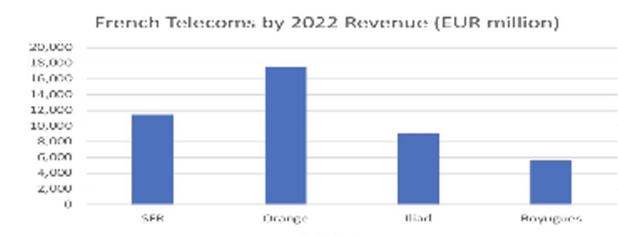
Looking forward:
European telecoms has been a sector which has traditionally tired investors for a number of reasons. Namely; high CapEx (capital expenditure) as players aim to grow their network coverage - this has been enhanced in recent years with 5G rollout. Furthermore, as previously mentioned, the inability to have M&A due to the stance of the European Commission has stifled ARPU (average revenue per user) and hindered the ability for one player to gain significant market share. However, the outlook for the sector may be brighter in the future.

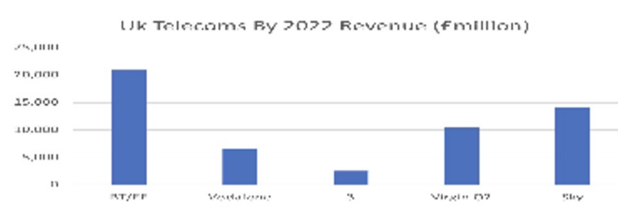
It seems that CapEx and 5G rollout is in its mature stage (99.8% of Europe has some form of coverage). This would mean that whilst previously telcos may be highly leveraged (have a lot of debt), they may now focus on generating strong FCF (they may use some of this to de-leverage the business). This is exemplified by Orange France having completed 90% of its fibre rollout. More importantly, the awaited stance of the EU on the merger between Orange and Masmovil in Spain greatly affects the outlook of the industry.

Geographical Breakdown of MNOS:



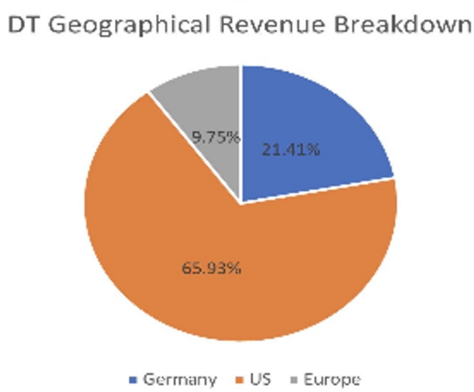






Current Holdings – Deutsche Telekom (DTE.DE - XETRA)

Summary:
Deutsche Telekom is a German telecommunications company. It is the leading telco in Germany and is well diversified across 10 countries in Europe. DT offers a number of services that include mobile services (phone plans and data packages), fixed line technology, Internet / broadband and digital TV. DT also owns a 50% stake in the very cash generative T Mobile US which leads AT&T and Verizon in post-paid net adds. DT operates in generally rational markets - 2 have only 2 MNOs and 6 have 3; DT aims to be number one or two in each.



Investment Thesis:
DT now owns a 50% stake in T Mobile US which is winning market share from AT&T and Verizon. The cash generated from this business can be used to de-leverage DT thus making it, in time, more and more attractive to investors. Guidance FY 2023 indicates low to mid-single digit % EBITDA growth, lower CapEx and very strong FCF (Free Cash Flow) - partially helped by TMUS (FCF before dividends estimated at EUR 16Bn). Management has a very good track record of meeting expectations and revenue growth is guided across all segments. Whilst TMUS is focused on stock repurchases, CapEx should be reduced as DT are in their mature stage of 5G rollout. The stock will also be affected by the EU consolidation stance.

Therefore, what we have is a strong reliable business which has been forecasted by a reliable management to continue growing. Furthermore, due to DT's solid position, there is not a large downside even if for whatever reason they were not to do as good as expected. This is a stock that will not make large amounts of money overnight but rather consistently generate good returns over a long period of time.

Euro BN:	ACTUAL	ACTUAL	FORECAST	FORECAST	FORECAST
	2021	2022	2023e	2024e	2025e
Revenue:	108	114	114	115	117
Growth YOY %	N/A	5.50%	0%	0.80%	1.70%
EBITDA:	38	40	41	43	45.2
% Margin:	35%	35%	35%	37%	38.60%
Maintenance CapEx:	-11.9	-12.6	-12.6	-12.7	-12.9
Growth CapEx:	-4.3	-7	-3.2	-3.3	-3.5
Total CapEx:	-16	-20	-15.8	-16	-16.4
As a percent of revenue:	15%	17.10%	13.80%	13.80%	14%
FCF after lease before dividends:	20.8	20.6	25.2	27.1	28.8

Current Holdings *– Alphabet Inc - GOOGL (NasdaqGS)*

Summary:
Alphabet Inc. is a multinational conglomerate that serves as the parent company to various subsidiaries, including Google, arguably the most well known entity not just in the tech sphere but the western hemisphere . Founded in 2015, Alphabet's primary aim is to manage and support its diverse range of businesses, which span technology, advertising, cloud services, and innovation projects. Google, the most prominent subsidiary, offers services like search, advertising, YouTube, and cloud computing.

Under the "Other Bets" category, Alphabet invests in experimental ventures. The company's business model revolves around generating revenue from advertising, cloud services, and other sources. While enjoying strengths in innovation and diversification. In more recent years, Alphabet has faced challenges related to regulation and competition both in the US and EU. Additionally, in an Irish context, Google's EU headquarters is based in Dublin.

Alphabet is a corporation that operates globally, however no one geography is equal to another in terms of reach and share of revenue. The United States accounts for the lion's share of revenue with 48% whilst the EMEA region accounts for 29%. The increasing regulatory pressures that big tech are facing both in the United States and Europe have been particularly tough on Alphabet with Antitrust lawsuits and unfavourable regulation.

Thesis:
Alphabet is a legacy holding that dates back to the previous term of the SMF. The thesis from that time related to the google 'Search Division' as the market leader and Google's most profitable service. The thesis outlined the use of AdWords, which are auctions which advertisers pay for the rights to keywords. In Q2 2023 this represented 57.1% of Google's $74.6 Bn in revenue.

Understanding Google's market leading position and AdWords auctions is important as changes Apple introduced recently which give users the choice not to be tracked by app developers has led to a reduction of 40% return on investment for advertisers, as such this has led to a 25% decrease in ad spent on mobile by large advertisers, a trend we expect to continue into the future. Considering that this makes up the largest percentage of revenue for Alphabet, this is of particular concern.

***Current Holdings** – Alphabet Inc - GOOGL (NasdaqGS)*

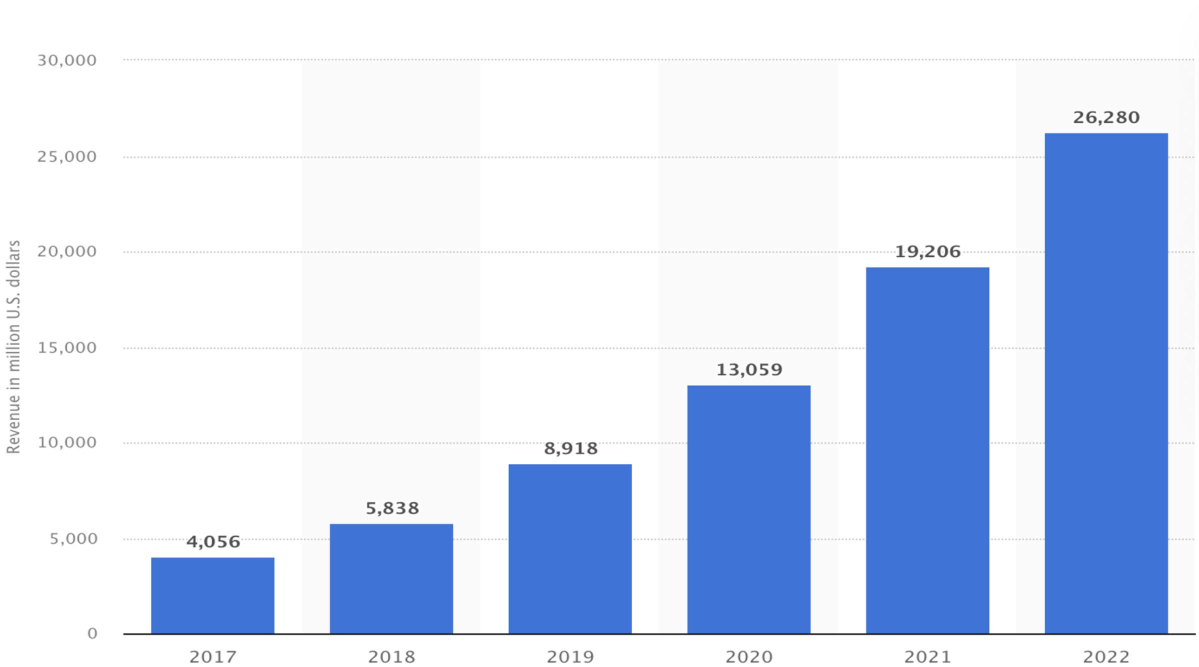
Risk to Thesis
A potential change to this thesis is the search engine which Apple are mooted to be developing for release in 2026. At present Google pays Apple in the region of $18-20 Bn for the right to act as the default browser on Apple products. However, if Apple were to introduce their own search engine this would have a significant impact on this thesis. This combined with reduced ad spend and increased regulatory pressure in both Europe and the USA, Google's place as the largest search engine in the market be in question, and as a direct result of these factors, so too may the large margins they have enjoyed to date.
We recommended that Alphabet is still a strong hold in the medium term and still represents good upside potential.

A Note on Cloud Services
With the increasing strain and pressure that is being applied to the advertising revenues that the Alphabet group of companies has enjoyed to date.

In recent times Cloud computing has been the driver of Googles revenue growth. There has been a push to incorporate generative AI also into its services which is particularly helpful with regards to their cloud services.

Increasingly, the focus has been on developing the cloud division and letting it drive growth across the group. This is evidenced in the continual growth in revenue over the past 5 years.

See Graph below:



Case Study - Cellnex (CLNX.MC)

Overview:
Cellnex is a Spanish Towers company and the main neutral operator for wireless telecommunication in Europe. It is a parent company with 101,802 sites with a planned 125,098 sites by 2030. Market Cap of 24.3BN. Its main source of revenue is the tenancy of satellites on its towers. Put simply, Cellnex owns a number of towers throughout Europe which companies such as Iliad, Altice etc will pay money to place their cell site equipment.

Industry Overviews:
Towers is a low concentration industry with very few players. This makes it hard for new entrants to break in. Whilst in previous years, providers had to set up their own tower network, there is now a common usage of neutral host networks such as Cellnex. Firms such as Cellnex bought these towers and leased them out to operators under contract thus creating a 'non-cyclical' business. Businesses that are similar include but are not limited to: Vantage Towers, INWIT, American Towers and SBA Comms.

Investment Thesis - An undervalued company:
A few months ago, Cellnex announced a new direction for the company. Previously, Cellnex had spent a lot of money acquiring other tower businesses in order to increase their size. This led to the business being highly leveraged (118% Debt/Equity compared to 40.40% competitor Vantage) and unattractive to investors.

The new direction of management is one of reducing debt and focusing on organic growth. This is a very realistic prospect due to how Cellnex generates its money: the long-term contractual nature of its revenue not only ties in companies but makes earnings very easy to predict. Pair this with the minimal CapEx only needed to maintain the towers and strong free cash-flow, Cellnex could end up being a business that is stable and gradually reducing its debt. Furthermore, Cellnex is in discussion with ratings agency S&P who say that to move from HY to IG they need to reduce leverage. Cellnex believes they can do this within the next year. Bottom line is that Cellnex is a fundamentally good business with strong reliable growth which is easy to understand and possibly could become a target for a bigger company such as American Tower.

Company:	P/E	Debt/Equity	EV/EBITDA	P/S	P/B	EBITDA
Cellnex	**N/A**	**118.00%**	**19.48**	**8.23X**	**1.81X**	**1.7B**
Vantage	46.1X	40.40%	23.28	16.18X	3.08X	605.8M
INWIT	40.4X	96.46%	18.41	11.28X	2.14X	508.14M
American Towers	22.74X	311%	20.28	9.69X	16.31X	6.35B
SBA Comms	24.92X	N/A	30.49	12.8X	N/A	1.62B

Risks

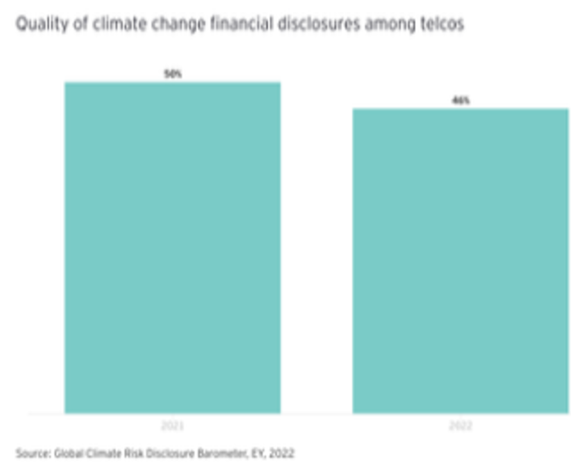
The communications sector is one which has and continues to face strict regulation and state involvement across the world, most particularly in Europe and the United States.

Streaming Model

Disney, who have been increasingly active in the streaming industry in recent years, have outlined that their subscriber base fell by 11.7 million subscribers in the second quarter of 2023. This was largely due to the loss of the rights over the Indian Cricket Premier league, the largest sports league in India and one of the largest in the world. Such violent shifts, especially in relation to subscription-based models can have long lasting effects and illustrates the brittle nature of the streaming industry. As such, over reliance on particular industries or markets is a key risk within the sector that we must be cautious about when assessing investments on their merits.

The Carbon Transition

Lack of focus on Reports such as the Global Climate Risk Disclosure Barometer published by EY notes that the quality of companies operating in the telecoms sector have been on a downward trajectory regarding their climate change disclosures, which have worsened year-over-year, while reporting of environmental, social and governance (ESG) metrics such as renewable energy consumption and e-waste management is often lacking.



What's more, 39% of telcos don't disclose a specific net-zero strategy, transition plan or decarbonization pathway. Customer needs are also evolving rapidly: 47% of large businesses do not think that vendor 5G and IoT use cases adequately address their sustainability needs. In order to ensure continued success operators must raise their game if they are to adapt to a changing landscape of stakeholder expectations, and conversely deliver for shareholders.

Risks

Insufficient Response to the Cost-of-Living Crisis

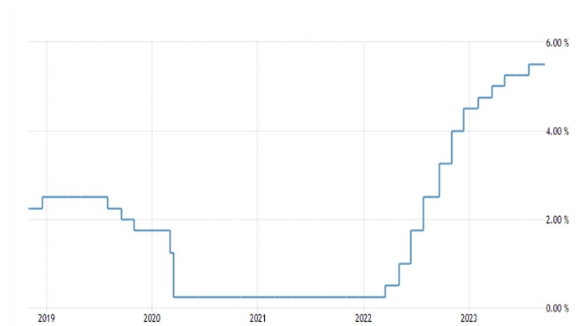
A pertinent consideration which we cannot ignore is the shift in the consumer mindset towards the services provided by telecos, specifically regarding broadband & Subscription based media.

By way of context, the pandemic triggered higher demand for connectivity and content services, which acted as a lifeline for many people during lockdowns. Now the cost-of-living crisis has forced households to readjust their spending priorities. Research across several countries shows that six in ten households are worried about future increases in broadband subscription prices. Meanwhile, nearly half (45%) believe they overpay for content services, and a similar proportion (44%) believe their broadband provider doesn't do enough to direct them to the best deal. With households planning to reduce spend, risks of churn and "spin down" are increasing.

However, given these current challenges, it is probable that in the medium term we will see a large level of capex across the industry as operators race to update their technology which may bring potentially strong investment opportunities as these companies push to raise capital.
Note: this is an economy wide risk and not exclusive to the telecom sector, however we believe that it is worth noting as we believe that it could play a serious role in the growth of the sector moving forward.

Interest Rates
Interest rates have dominated the news agenda in a way that they have not since the 1980s in Europe and America. The ever rising rates are of concern to all investors across all sectors. However, in the context of the communications sector it is worth considering the capital-intensive infrastructure required to keep the ever-global world connected. The Undersea cables that drive intercontinental communications, the cell towers from which our phones function and all of the other infrastructure such as data centers which underpin global communication and indeed the global economy.

The concern is not so much the rate rises but the rate at which they will plateau. The era of near 0% interest rates is now gone, how industry moves forwards and adapts to this changed environment will likely be a key indicator of performance over the coming years.



US FRED (Effective Rate)

Strategy for the Year Ahead

Investment Strategy / Opportunities:

The landscape for the communications sector is proving to be a tricky one. Looking back towards the beginning of last summer, there was the possibility that European Telcos were going to see an inflow of investment pending the EU's regulatory stance. However, this has has not come yet (it is expected at the end of this year or the beginning of next). Whilst revenues remain stable within European telecoms, the increased FCF is yet to be seen. This may present some opportunities to buy fundamentally good companies at a discount.

On the media subsector, we are being presented some exciting opportunities with the emergence of AI. Alphabet over the summer was up 20% when there was an inflow of investment into tech stocks. Previously, it was believed that Microsoft was leading the front with its partnership with OpenAI however Alphabet's projects such as Bard Extensions (a chart bot for Google accounts) is changing this prior conception.

In the same vein, Meta‘s innovation with their AI tool Llama hopes to rival players such as OpenAI. Moreover, they are beginning to roll out generative AI tools for advertising which may also positively affect the stock price. The fund maintains a positive outlook on the company as a fundamentally good business and as a potential buy.

In this way we will, as a sector, attempt to take advantage of the increased interest in media tech stocks which have proven capable of generating good upsides in relatively short periods of time.

Conclusion:

Despite these exciting new innovations, we cannot forget the core investment strategy of the fund; to seek out undervalued companies with good fundamentals. By this, we mean a company who can steadily increase its revenues and profit, gain market share and have management with a track record of success and a clear vision for the future in both the near and long term.

We hope that you have found this sector report informative and interesting. We look forward to working with the fund and the Junior Analysts of the sector to learn more about it and take advantage of the opportunities that lie ahead.

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