

## MASTERS OF SCIENCE IN FINANCE

## MASTERS FINAL WORK PROJECT

EQUITY RESEARCH: BT GROUP PLC

SIHUI YANG

SUPERVISOR FLORENCE PINTO BASTO

NOVEMBER 2022



## MASTERS OF SCIENCE IN FINANCE

## MASTERS FINAL WORK PROJECT

EQUITY RESEARCH: BT GROUP PLC

SIHUI YANG

SUPERVISOR FLORENCE PINTO BASTO

NOVEMBER 2022

### Abstract

This report presents the valuation of BT Group PLC as a Master's in Finance Final Work Project at ISEG. It follows the equity research format recommended by the CFA Institute. BT Group PLC was selected due to its position as one of the major players in the telecom communications industry, which operates in many countries worldwide. The author had an interest in studying the industry in-depth.

The study considers publicly available information concerning the company as of 31<sup>st</sup> September 2022, such as company reports, Thomson Reuters, Bloomberg L.P., and yahoofinance.com. The target price (TP) is based on the Discounted Cash Flow method, complemented with the Adjusted Present Value, the Discounted Dividend Model, and the Relative Valuation.

The final recommendation is BUY, with a target price of **£ 1.58/share** 2023YE and a 31.3% upside potential as of 29<sup>th</sup> November 2022 with medium risk assessed. The expected revenue growth and increased profitability support this recommendation during the forecast period, especially in the consumer sector. The evolution of Covid-19 and inflationary pressure across the world are vital risks impacting the target price, which acts the company on an operational level along with the uncertainty of the global macroeconomic outlook by influencing the average revenue per user (ARPU).

JEL classification: G10; G32; G34

Keywords: Equity Research; Valuation; Mergers & Acquisitions; BT Group PLC; Telecommunication Industry

### Resumo

Este relatório apresenta a avaliação do BT Group PLC como Projeto de Trabalho Final de Mestrado em Finanças no ISEG. Segue o formato de Equity Research recomendado pelo CFA Institute. O autor escolheu o BT Group PLC devido à sua posição como um dos principais players do setor de telecomunicações, que atua em vários países do mundo. O autor tinha interesse em estudar a fundo a indústria.

O estudo considera informações publicamente disponíveis sobre a empresa em 31 de setembro de 2022, como relatórios da empresa, Thomson Reuters, Bloomberg L.P. e yahoofinance.com. O preço alvo (TP) foi obtido com base no método de Fluxos de Caixa Descontados, complementado com o Valor Presente Ajustado, o Modelo de Dividendos Descontados e a Avaliação" Relativa.

A recomendação final é COMPRAR, com um preço-alvo de £ 1,58/ação 2023YE e um potencial de valorização de 31.3% em 29 de novembro de 2022 com risco médio avaliado. O crescimento esperado da receita e o aumento da lucratividade suportam essa recomendação durante o período de previsão, especialmente no setor de consumo. A evolução da Covid-19 e a pressão inflacionária em todo o mundo são riscos vitais que impactam o preço-alvo, que atua a empresa em nível operacional juntamente com a incerteza das perspectivas macroeconômicas globais, influenciando a receita média por usuário (ARPU).

Classificação JEL: G10 ; G32; G34;

Palavras-Chave: Pesquisa de ações; Avaliação de Empresas; Fusões e Aquisições; Grupo BT PLC; indústria de telecomunicações

### Acknowledgements

Two years is not too long and not too short, but it is enough to weave a beautiful memory. In these two years, I have gone from being an educator to a graduate student in finance, which has been a joy to gain knowledge and a challenge to face in a new profession. Fortunately, I have had the support and encouragement of my classmates and friends, who have worked alongside me to keep me going. I am grateful to my family and partner, who have always been there for me, giving me the confidence and motivation to keep going when I was about to give up. I would also like to thank all the professors who have taught me during my studies and have always been patient and generous in answering questions and helping me. Finally, I would like to thank my supervisor, Florence Pinto Basto, whose rigorous approach, and careful revision made it possible to finalise this report. I would like to turn all my heart into a thank you.

## Index

Abstract	i
Resumo	ii
Acknowledgements	iii
Index	iv
List of Figures	v
List of Tables	vi
Abbreviation	vii
1. Research Snapshot	1
2. Business Description	2
3. Corporate Governance	4
4. Industry Overview and Competitive Positioning	5
5. Investment Summary	9
6. Valuation	10
7. Financial Analysis	12
8. Investment Risks	13
Appendices	1
Appendix 1: Statement of Financial Position	1
Appendix 2: Income Statement	2
Appendix 3: Cash Flow Statement	3
Appendix 4: Key Financial Ratios	4
Appendix 5: Forecasting Assumptions	5
Appendix 6: Sales, EBITDA, and Cost breakdown	6
Appendix 7: WCR	6
Appendix 8: Capex, Debt, and D&A Schedule	7
Appendix 9: Remuneration Policy	8
Appendix 10: WACC Assumption	9
Appendix 11: DCF-FCFF Model	10
Appendix 12: DCF-APV Model	10
Appendix 13: DDM Model	11
Appendix 14: Relative Valuation	11
Appendix 15: Other Minor Risks	12
Reference	13
Disclosures and Disclaimer	14

## List of Figures

FIGURE 1: HISTORICAL PRICE AND TARGET PRICE	1
FIGURE 2: TARGET PRICE	
FIGURE 3: THE COMPANY PREDECESSOR	2
FIGURE 4: CONSOLIDATED SALES BY 2022F VS 2027F	2
FIGURE 5: CONSOLIDATED SALES BY REGION	
FIGURE 6: TOTAL REVENUE & TOTAL ARPU	2
FIGURE 7: REVENUE GROWTH BY SEGMENTS	3
FIGURE 8: OVERALL MONTHLY TRAFFIC GROWTH BETWEEN 2020 AND 2022	3
FIGURE 9: COST CONTRIBUTION BY OPENREACH	3
FIGURE 10: FREE FLOAT SHARES	3
FIGURE 11: GOVERNANCE STRUCTURE	4
FIGURE 12: SHAREHOLDER'S STRUCTURE	4
FIGURE 13: GDP GROWTH FORECAST	5
FIGURE 14: EUROPE INFORMATION TECHNOLOGY MARKET 2020 (TOTAL MARKET VALUE \$1938.38BN)	5
FIGURE 15: EUROPEAN MARKET STRUCTURE (IN BILLIONS)	5
FIGURE 16: CONSUMER PRICE INFLATION IN EUROPE	5
FIGURE 17: MOBILE CONNECTIONS BY PLAN AND 5G CONNECTIONS (IN BILLIONS)	6
FIGURE 18: GROWTH AND INFLATION PROJECTION FOR EURO AREA	6
FIGURE 19: AGGREGATE CHIP DEMAND	6
FIGURE 20: MOBILE TOTAL ASPU	6
FIGURE 21: MOBILE TOTAL ARPU (EXCLUDING IOT)	7
FIGURE 22: FIXED BROADBAND HOUSEHOLD PENETRATION	7
FIGURE 23: EUROPEAN CAPEX BY SEGMENT FOR ETNO & TOTAL EUROPE, 2015-2019 (EXCLUDING	
Spectrum)	7
FIGURE 24: DISTRIBUTION OF CAPEX PER SEGMENT, ETNO	7
FIGURE 25: TOP 10 FASTEST GROWING AND DECLINING E-COMMERCE PRODUCT CATEGORIES	8
FIGURE 26: TELECOM REVENUES BY TYPE	8
FIGURE 27: 5G SPEEDS AND AVAILABILITY	8
FIGURE 28: PORTER'S FIVE FORCES	8
FIGURE 29: MARKET SHARE OF THE RETAIL FIXED BROADBAND MARKET	9
FIGURE 30: MOBILE PERFORMANCE AMONG AIRTEL, MTN, ORANGE, AND VODACOM ACROSS AFRICA	9
FIGURE 31: OVERVIEW OF SCOPE 1, SCOPE2 GREENHOUSE EMISSIONS	9
FIGURE 32: CUSTOMER BASE AND ARPU	10
FIGURE 33: CASH FLOW FROM OPERATION VS CAPEX	11
FIGURE 34: FCF & DIVIDEND (IN MILLIONS)	11
FIGURE 35: DPS & PAYOUT RATIO	11
FIGURE 36: P&L BREAKDOWN IN 2022F	12
FIGURE 37: EBITDA VS NET DEBT	12
FIGURE 38: EBITDA VS INTEREST COVERAGE RATIO	12
FIGURE 39: RISK MATRIX	13
FIGURE 40: RISK RADAR	13
FIGURE 41: MONTE CARLO SIMULATION	
FIGURE 42: DISTRIBUTION OF GRADUATES AND NEW ENTRANTS BY FIELD	
FIGURE 43: SENSITIVITY ANALYSIS	15

## List of Tables

TABLE 1: BT MARKET PROFILE.	
TABLE 2: ANALYST'S RISK ASSESSMENT	1
TABLE 3: BOARD OF DIRECTORS	4
TABLE 4: NON-EXECUTIVE DIRECTORS	
TABLE 5: ESG METRICS	5
TABLE 6: VALUATION PRICE.	
TABLE 7: WACC ASSUMPTION	
TABLE 8: ENTERPRISE VALUE	
TABLE 9: APV MODEL	
TABLE 10: MULTIPLES VALUATION	
TABLE 11: BT'S LIQUIDITY RATIOS	
TABLE 12: SENSITIVITY ANALYSIS FOR THE PERPETUAL GROWTH RATE	13
TABLE 13: SENSITIVITY ANALYSIS FOR ARPU	
TABLE 14: MONTE CARLO STATISTICS	14

## Abbreviation

ARPU ARPC BoD Bn Capex	Average Revenue Per User Average Revenue Per Customer Board of Director Billion Capital Expenditure
CAGR	Compound Annual Growth Rate
CAPM	Capital Asset Pricing Model
CPE	Customer Premise Equipment
CSR	Corporate Social Responsibility
DCF	Discounted Cash Flow
DDM	Dividend Discounted Model
D&A	Depreciations & Amortizations
EBIT	Earnings before Interest and Taxes
ETNO BEITDA	European Telecommunications Network Operators
EV	Earnings before Interest, Taxes and D&A Enterprise Value
F	Forecast
FCFF	Free Cash-Flow to the Firm
FY	Fiscal Year
G	Growth Rate
GDP	Gross Domestic Product
ISP	Incentive Share Plans
ICTs	Information and Communication Technologies
Kd	Cost of Debt
Ke	Cost of Equity
NED	Non-Executive Director
NWC	Net Working Capital
RNA	Radio Access Network
ROA	Return on Assets
ROCE	Return on Capital Employed
ROE	Return on Equity
ROI	Return on Investment
RSP	Retention and Restricted Share Plan
SME YE	Small to Medium Enterprise
5G PPP	Year End The 5C Infrastructure Public Private Partnership
<b>JU FFF</b>	The 5G Infrastructure Public Private Partnership



## **BT Group PLC: Building Better Digital Lives**

(2023YE Price Target of £ 1.58 (+31.3%); recommendation is to Buy with Medium Risk)

### 1. Research Snapshot

We initiate a BUY recommendation for BT Group Plc (BT. L) with a 2023YE price target of £ 1.58 (Figure 2) using a DCF model (Figure 2), implying a 31.3% upside potential from the November 29th, 2022F closing price of £1.2039 (Table 1), with medium risk (Table2). Uncertainty in the market environment regarding the evolution of Covid-19, inflationary pressure, and fierce competitiveness act on the telecom industry. However, BT can rebound from declining business performance with robust 34.28% EBITDA margins and a stable increase in ARPU, which is the primary determinant for continuing outstanding growth, efficiency performance, and investment in the long run.



#### Source: Yahoo finance, the author

#### Keep Resilient to Weather the Uncertainty

Given the uncertainty in the global economic outlook, we forecast a 2023F-2027F Revenue CAGR of 0.68% with a potential slight reverse in the global sector, the free cash flow to firm with 11.4% CAGR supporting the resilience of the company to rebound against the recent industry headwind. Unprecedented supply chain disruption, economic slowdown, and inflationary pressure still overshadow the global economy and BT Group's entire risk landscape in 2023. Nevertheless, it creates an opportunity for BT to optimize its operational strategy through its global risk framework.

#### Substantial Margin Leads the Way.

As the largest landline supplier in the UK, it accounts for 38% of the market share, even during the slumping economy caused by Covid and its backlash. It has more than an EBITDA margin of more than 34%, enabling the company to have enough cash to operate the business compared to other players in the market. In the implementation of 5G, the high margin positions the company in an advantaged place to obtain a more addressable market share. The company equips itself with a strong foundation and a Source: The author strategy that customizes consumers' demands.

# BT Group Plc BT. L



#### Table 1: BT Market Profile

Market Profile			
Closing Price		£1.2039	
52-week range	£1.181-1.903		
Market Cap (Million)	£	32,838	
Shares outstanding		9,920	
EPS		0.13	
ROE		0.60	
Dividend & yield	0.0	8(5.33%)	
P/E		11.09	
P/Sales		0.69	
BV per share		0.05	

Source: Yahoo finance

Table 2: Analyst's Risk Assessment



The risk assessment reveals uncertainty economy, inflationary pressure in the economy across global after this pandemic, and people's disposable income and firms' adaption for 5G.

Source: The author

#### Figure 2: Target Price

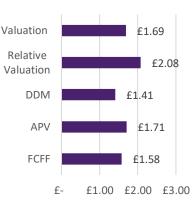


Figure 1: Historical Price and Target Price

### 2. Business Description

Sir William Fothergill Cooke founded The Electric Telegraph Company in 1846, the world's first and oldest public telegraphy company (Figure3). Today it is known as BT (British Telecom). The company was privatized in 1984. The group is one of the world's major telecom companies providing products and services in around 170 countries, and by 2022 the consumer base reached 23 million with £35.42 ARPU monthly, accounting for 46.9% of £ 21.37 billion revenue.

#### History of the Company

In 1878, the National Telephone Company (NTC) provided the telephone service in the UK, competing with General Post Office (GPO), which ended the NTC being taken over by GPO in 1912. In 1984, the Telecommunications Act received Royal Assent to privatize British Telecom, which sold more than 50 percent of British Telecom shares to the public. BT gained more than \$2 billion profit on its investment in MCI Communication Corporation. After going through a series of M&A, BT ended up with mmO2 plc, and the new BT Group plc was traded separately.

BT has started to employ its current identity and brand since 2003. In 2005, BT was bolstered by a series of significant acquisitions, including the investments of Infonet, Albacom, and Radianz. Openreach was launched to oversee the UK access network and manage infrastructure as representative of the telecom sector, which made up the BT group today with other four sectors, BT Global Services, BT Business, BT Consumer, and BT Wholesale, across all over the world (Figure 4 & Figure 5).

#### **Business Segments**

**Consumer** | The consumer sector mainly operates in the UK with the dominant position, providing services to individuals and households in this industry. Due to the intensely competitive market environment and the impact of Covid, BT's Consumer sales levelled off in 2022. Nonetheless, the consumer base has remained relatively strong in the past five years, especially in 2022. The base remained close to a 3.5% CAGR (Figure 6), which has allowed the firm to achieve a customer base of 30m so far, covering more than half of UK households. The improvement in net promoter score and lower churn made it deliver higher ARPC in 2022. With the framework of "from Telco to Techcom", the company will further the revenue of the consumer sector by continuously optimizing, simplifying, and streamlining the existing 259-customer system.

**Enterprise** | The enterprise sector is a leading business provider that provides converged networks, IT services, and solutions to businesses, SMEs and corporate businesses, government departments, and the public sector in the UK and the Republic of Ireland. It aims to help organizations achieve the digital transformation goals with cutting-edge tech and networks provided by Enterprise. Due to fierce market competition, along with legacy contract exits, the revenue from this sector has declined 5% year on year, which was partly offset by revenues from new contracts, coupled with growth from voice over IP and Retail mobile. The decline in this sector was attributed to the decrease in total revenue for the BT group.

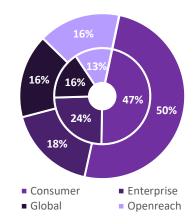
**Global** | It is the main sector in the BT group to manage the business across the world, serving business customers, such as multinational companies and governments in 180 countries. The services offered cover from the network and infrastructure to security and solutions, which attempts to aid their customers to develop and succeed in the digital business environment. Global's revenue growth saw a dip with a -7.7% CAGR for the past 5 years from 2018 to 2022, which was caused by the challenging market conditions, influence of previous year divestments, and loss from foreign exchange movement. Despite the reduced revenue, the sector established a "strategic alliance" with MTN (the biggest telecom company in Africa) from 2022, with revenue growth of 4.1% CAGR, which will drive revenue grow at 0.5% in the future (Figure 7).

Figure 3: The Company Predecessor



Source: BT Group

Figure 4: Consolidated Sales by 2022F VS 2027F



Source: The author

Figure 5: Consolidated Sales by Region

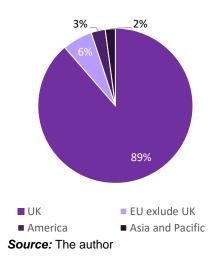


Figure 6: Total Revenue & Total ARPU



Source: The author

**Openreach** | Openreach operated the fixed access network as a customer-facing unit by building full fiber infrastructure for homes, schools, hospitals, libraries, shops, banks, mobile masts, and governments to the world. It serves 688 communication providers within the UK, covering almost 80% share of the fixed access market with 31m homes and businesses reached. Openreach witnessed a steady growth at around 6% between 2020 and 2022, consisting of 10% of the total revenue for the group. Better trading in fibre-enabled products drove this sector to grow by 6% in 2022, which was the main driver that offset the loss from the Enterprise and Global sectors in 2022 (Appendix 6). Shifting to remote working after the pandemic and 5G roll-out will lead Openreach to grow at 17% for the forecast period.

#### Key Driver for Profitability

**Demand for connectivity** | The demand for connectivity from BT Group's customers is rising, and more parts of their personal and professional life impacted by the pandemic are being supported by linked connected services. Some behavioural consequences are permanent even when the Covid-19 restrictions across the world are lifted. BT Group witnessed an overall monthly mobile traffic growth increase from 1.4x in 2020 to 2.3x in 2022 (Figure 8).

**Competitive cost base** | BT Group has a cost-saving plan via the ongoing strategy to modernise the working, operations, and product portfolio, along with shutting down legacy systems, targeting £2.5bn by the end of FY25. The early achieved goal of saving £1bn gross annualised saving this year downed the cost by 4%, which in turn contributed to an increase in EBITDA by 2%. The tight cost control over Openreach offset the revenue decline from enterprise and global segments in 2022 (Figure 9 & Appendix 6).

#### **Company Strategy**

**Digital transition** | BT Group is committed to helping businesses and individuals achieve digital transition through new platforms and services to deliver efficiency in work and life. As the oldest telecom company with the largest market share in the UK, BT aims to lead the UK's digital transition so that people can deal with problems more efficiently, such as tackling scam calls, more importantly the implementation of 5G. On top of that, it empowered and educated people on digital skills, improving their employability and resilience.

**Cost management** | The cost-saving plan of £2.5bn by 2025 will assist BT Group to be more resilient in a turbulent global economy in which supply chain disruption intertwined with inflationary pressure to deliver EBITDA growth. This plan has already achieved a 2% increase in EBITDA in 2022, offsetting the decline in revenues from two segments. Given that, we anticipate that the BT Group will deliver sales growth and EBITDA targeting £7.9bn in 2023FY.

**Modernisation** | Partnership with GXO Logistics forming its ongoing strategy and cooperation with other companies, is making progress in achieving modernisation, which ensures efficiency in the supply chain and network build plans underpinning the future products and propositions for the next generation. By introducing technological tools, BT Group will strengthen its capacity to the workflow experienced by suppliers, which could automatically engage many suppliers at once, and offer more chances for small suppliers, making tackling the issues in the supply chain much more accessible.

**Dividend policy** | BT is committed to its dividend policy for the future years, which have two dividends paid out each year starting from £0.0539 in 2022, presenting a payout ratio of 61% in 2022, with the interim dividend set at 30% of the full-year payout from the previous year. It has an excellent dividend yield of 3.7% in 2022, implying this company is a great choice for an investor to select.

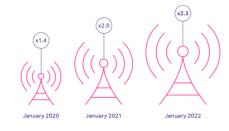
**Shareholder structure** | BT has a very stable shareholder structure in which close to 30% of the issued share capital, representing 30 million shares of a nominal value of  $\pounds 4.335$  m, were held as treasury shares. BT has 6.2 billion floating shares in the market,

#### Figure 7: Revenue Growth by Segments



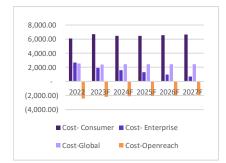


**Figure 8:** Overall Monthly Traffic Growth between 2020 and 2022



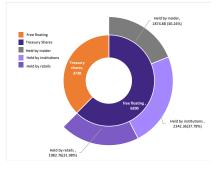
Source: BT Group

Figure 9: Cost Contribution by Openreach



Source: BT Group

#### Figure 10: Free Float Shares



Source: Yahoo finance

presenting nearly 70% of outstanding shares, in which 30.24% of free floating shares are owned by insiders, whereas institutions hold 37.78%. 9 of 10 BT's top shareholders are institutional investors worldwide, even though the most prominent holding is an individual, Billionaire Patrick Drahi, with 18% of holdings. Meanwhile, BT announced that 4.16% of the issued capital could be employed to fulfil outstanding share options and awards, especially for directors based on their performance (Appendix 9).

### 3. Corporate Governance

Adam Crozier succeeded Jan du Plessis as Chairman on 1 December 2021. Prior to this, Adam, with over 20 years of working as a CEO in four different sectors, served as Chairman of ASOS, Stage Entertainment BV, and Vue International Cinema Group and a non-executive director of Sony Corporation. He was the CEO of ITV from 2010 to 2017 after spending seven years as the chief executive of Royal Mail. Philip Jansen was appointed CEO in 2019 and started to chair the Colleague Board and the Executive Committee afterwards. Also, he works as a member of the Investigatory Powers Governance Committee. Before joining BT, he was CEO of Worldpay after stepping down as CEO and then chairman at Brakes Group from 2010 to 2015. The other ten executive committee members shared a similar background in academics and served as leaders for a company with a certain tenure (Appendix 9).

#### **Board Structure and Remuneration Policy**

The Board of Directors (BoD) is composed of 11 members, comprised of 7 Non-Executive (NED) and 4 executive officers, of which 6 of the members are independent (Table 3). According to the practice law in the UK, the Remuneration should be formed by at least three members who should be independent non-executive directors (Appendix 9).

BT's remuneration policy is a mixture of fixed pay and variable pay based on the bonus scorecard in tandem with divisional scorecards for Philip Jansen and Simon Lowth. Fixed pay that will increase by 2% in 2022 is set to pay NED, which consists of three parts, base salary, pension allowance, and benefits, while variable pay consists of an annual bonus, retention and restricted share plan (RSP) awards according to the seven critical financial and non-financial performances, with the weighting of 70% and 30% respectively. This year, a change to variable pay has also been made, and BT has added two underpins for the next financial year, depending on health and safety and EBITDA performance.

In the diversity and inclusion part, four females make up 36% of the 11 Board directors, and two of the directors are ethnic minorities accounting for 18% in 2022, which is in line with BT's target of 46% female representation and 16% ethnic minority by 2025.

#### **Governance Model and Shareholders**

The Anglo-Saxon model adopted by BT Group, in which shareholders' rights are valued, the right to elect board members, and who are involved in important decisions, which ensures independence from the management, and contributes to transparency and efficiency of corporate governance. Compliance with normal rules on that non-executive members are stand for three years term when elected. As a benchmark in the UK, the corporate governance code (2018) suggests that all directors are subject to annual re-election. On top of that, BT Group adhered to all the provisions of the code and its guiding principles throughout the year.

BT Group complied with the principle of one-share-one-vote, so in the show of hands, shareholders present in person or by proxy shall be entitled to vote without restrictions on exercising voting rights. As a listed company with good corporate governance, BT Group's largest shareholder is an individual, Billionaire Patrick Drahi. He increased his holdings from 12,1% to 18% this year, followed by institutions, T-Mobile holdings with 12%, and BNP Paribas (Suisse) SA with 7.52%. Drai Patrick, the largest shareholder, has raised concerns about national security from the British government. Currently, the UK government will not take action to cut his holdings, but it assesses every transaction he undertakes.

#### Table 3: Board of Directors

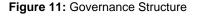
Director	Position	Independent
Adam Crozier	Chairman	No
Philip Jansen	Chief Executive	No
Simon Lowth	Chief Financial Officer	No
Adel Al-Saleh	NED	No
Sir Ian Cheshire	NED	Yes
lain Conn	NED	Yes
Isabel Hudson	NED	Yes
Matthew Key	NED	Yes
Allison Kirkby	NED	Yes
Sara Weller	NED	Yes
Sabine Chalmer	Group General Counsel, Company Secretary and Director of Regulatory Affairs	No

#### Source: BT Group

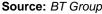
#### Table 4: Non-Executive Directors

List of Non-Executive Directors				
Adel Al-Saleh	T-Systems GmbH	CEO		
		NED		
Sir lan Cheshire	Independent	NED		
Iain Conn	Independent	NED		
Isabel Hudson	Independent	NED		
Matthew Key	Independent	NED		
Allison Kirkby	Independent	NED		
Sara Weller	Independent	NED		
Sabine Chalmers	Group General Counsel	Secretary Director of Regulatory Affairs		

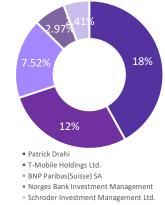
Source: BT Group







#### Figure 12: Shareholder's Structure



Source: MarketScreener

#### **Responsible Business for a Sustainable Future**

BT remaining ESG rating of AA for the last three years in a row is a leader among 73 firms in the telecom industry, which implies outperforming other peers in the key metrics MSCI evaluated for its industry in the environment, social, and governance dimensions. Also, BT has a combined score of 76.56(A-) considering 15 perspectives in Reuters (Table 5). BT's commitments contributed to 8 of 17 UN's sustainable development goals. BT Group invested £604m in R&D this year and launched a new Digital Unit to accelerate innovation targeting healthcare, AI, and data industries. BT encourages people from various backgrounds to pursue a digital job through its digital talent movement, Accelerate Digital, which helped build a diverse talent pipeline to power the development of the UK's digital economy.

As the largest network provider in the UK, BT Group enabled broadband access to lowincome households with full fiber covering 7.2m households. Also, BT Group also rollout 5G, assisting more people with getting connected to the internet. On top of that, BT Group decreased scope 1 and 2 carbon emissions by 55% since 2016/17 by employing 100% renewable electricity, shifting the petrol-fuelled fleet to electric vehicles, and transforming its buildings into emission-reduction buildings. In the future, BT is expected to reduce scope 3 emissions through its value chain, contribute more to achieve its sustainability goal, and fulfill its responsibilities.

## 4. Industry Overview and Competitive Positioning

#### Economy Outlook for Telecom Industry and European Market Structure

Looking at GDP in Figure 13, it is observable a significant fall in 2020 due to the pandemic, but a significant recovery is expected in the following years so that the level of GDP in 2019 will be surpassed in 2022. However, there were big losses in most of the economies and industries. Telecommunications was not that much affected. Comparing Telecommunications companies share performance with other sectors, we see that the telco industry was less impacted. Telco services were crucial for people to work at home, and telcos adapted themselves and offered, for example, freely additional content to incentivize people to "stay-at-home" and much more.

As a result of the pandemic, the normalization of the work-from-home trend and inhouse entertainment prompted have triggered a surge in data traffic, which has boosted the value of connectivity and mobile network in Europe. As one of the biggest industries in the world, telecom is expected to grow at a CAGR of 8.5% in 2022 and a CAGR of 7.4% in 2026.

From utility to the lifeline, telecommunications providers are being appreciated as critical infrastructure providers in times of need. European telecom market is expected to stabilize at 289€B from 2020 to 2025F, declining slightly at a 0.10% CAGR (Figure 14). The Western European market accounts for approximately 20% of the European telecom market share, in which Germany, the U.K. and France have the most significant market share (Figure 15), considering the historical and forecasted market shares.

#### Inflationary Pressure and Ukraine War

The challenging market conditions and the rising cost of unprecedented inflation have threatened revenue growth for telecom companies worldwide. UK inflation soared to 10.1% (Figure 16) in July compared to 9.8% inflation in EU, which has significantly influenced customers spending on mobile phone services and network services. Telecom executives aim to avoid margin squeeze due to the soaring inflation, which has put more pressure on energy costs, staff costs, leases, Capex, and external services.

Ukraine War also had a pronounced impact on economic growth worldwide, especially trade disruptions of metal, oil and gas, which is upending the economic recovery in the EU and UK after the pandemic. On top of that, raising government interest rates to target the surge in inflation will scale down the investment in the Telecom industry, coupled with the increased cost of capital, posing strong headwinds in this industry.

#### Table 5: ESG Metrics

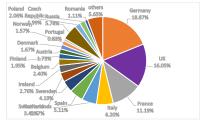
<b>76.56(A-)</b> 100(A+) 86.02(A) 69.94(B+)
69.94(B+)
82.60(A-)
94.14(A+)
98.26(A+)
62.75(B)
80.52(A-)
51.584(B-)
80.52(A-)
71.26(A-)
79.82(A-)
86.84(A)
90.08(A)

Figure 13: GDP Growth Forecast



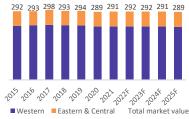
Source: IMF

Figure 14: Europe Information Technology Market 2020 (Total Market Value \$1938.38bn)



Source: IMF

Figure 15: European Market Structure (in billions)



Source: Analysis Mason

Figure 16: Consumer Price Inflation in Europe



**Source**: Fitch Ratings, Eurostat, Office for National Statistics

When telecom companies managed to pass the increasing cost burden, such as energy prices and labour costs, down to their customers, northern and southern telecom operators could not adopt the same market strategy of price hikes to combat the inflation pressure. ARPU and revenues saw an increase in the UK, Norway, and Belgium, both remained primarily stable in Germany, France, Switzerland, and the Netherlands. In comparison, the counterparts in southern Europe experienced a drop in both figures.

#### **Digital Transition and Supply Chain Disruption**

As the European Commission is committed to delivering a Europe fit for the digital age, based on the notion that the digital transformation will benefit everyone, including people, businesses, and governments, countries in the EU are putting efforts to advance digital societies and economies through technology, such as AI and 5G. Meanwhile, member states of the EU are still lagging in digital skills, the digital transformation of SMEs, and mid-band 5G implantation compared with North America and East Asia. However, a joint initiative of 5G PPP pushed the EU ahead of other regions in the current research successes (Figure 18).

The global supply chain disruption caused by the pandemic also hit the telecom industry hard with severe shortages of semiconductors and microchips. The primary semiconductor market, such as microcontrollers, microprocessors, and Field Programmable Gate Array, is expected to be tight in 2022 and constrained well into 2023, so the supply chain issue is spurring the current spike and hampering the development and growth of 5G, cloud, and IoT, the latest trends in the telecom industry. Although big chip manufacturers, Texas Instruments, Intel, and TSMC, are planning to increase production by investing more in semiconductor fabrication plants, these issues exist in the near future.

Given the findings from European Chip Survey Report, the demand for microchips is estimated to double by 2030 (Figure 19), implying that semiconductors are of significant importance to the EU telecom industry. To promote the microchips as strategic assets, the European Commission passed the European Chips Act in February 2022, aiming to accomplish both digital and green transitions by enhancing the competitiveness and resilience of semiconductor technologies and applications in the EU. The European Chips Act will mobilize more than  $\notin$ 43Bn of public and private investments to react to any supply chain disruptions so that European telecoms can equip themselves to compete in the rollout of 5G and digital transition.

#### **Key Profitability Drivers**

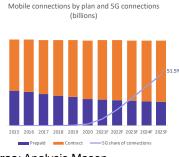
Telecom key profitability drivers can be addressed by three main indicators: Average Revenue Per User (ARPU), Capital Expenditures (CAPEX) and Borrowing Costs.

**ARPU** | In the analysis of the ARPU, it is relevant to consider the average unit service price (AUSP) and the units sold, highlighting, for the purpose, average spending per user (ASPU). AUPS reported an average variation rate of 2.69% in the last twelve months. The difference between the variation of Telco prices and the CPI was -3.03 p.p. in the respective period. Mobile total ASPU (excluding IoT SIMs) is forecasted to remain stable, growing at a CAGR of 0.12% (Figure 20), in line with the steady expected growth in the fixed broadband ASPU, with 0.18% CAGR for the forecasted period. Nevertheless, the broadband ASPU trajectory will be dependent on market competitiveness and the demand for high-speed access. As the pandemic has fortified the importance of fast and reliable connectivity, it is forecasted that the fixed broadband service will continue to grow thanks to declining access costs (Figure 21).

Total mobile ARPU (excluding IoT) is expected to remain solid with a historical 0.38% CAGR 2015-2020 and 0.25% forecasted CAGR 2020-2025 for Western Europe (Figure 22). The launch of 5G services will have a minimal impact on ARPU because competition will limit premium services prospects, resulting in a mostly flat ARPU forecast trend.

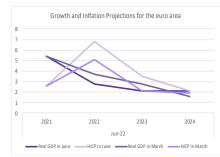
**CAPEX** | Due to the high infrastructure requirements for business operations, Telco is a CAPEX-intensive industry. Total European CAPEX, including non-ETNO (European

**Figure 17:** Mobile Connections by Plan and 5G Connections (in billions)



Source: Analysis Mason

**Figure 18:** Growth and Inflation Projection for Euro Area



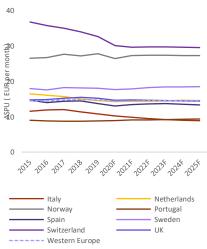


#### Figure 19: Aggregate Chip Demand



Source: European Chip Survey Report

Figure 20: Mobile Total ASPU



Source: Analysis Mason

Telecommunications Network Operators), presented a declining 1.01% CAGR between 2015-2019, contrasting with the steady 0.11% CAGR in total ETNO CAPEX (Figure 23). Between 2015-2019, with a decline of 1.62% CAGR on mobile segment CAPEX and an increase of 4.8% CAGR in the fixed networks, the two segments weight for 31.7% and 30.1% of the total ETNO CAPEX, respectively, in 2019 (Figure 24).

Prior to the pandemic, investment in European Telcos was already strengthening, with ETNO members highlighting a 6.3% AGR in 2019. In the same year, CAPEX on both mobile and fixed networks also rose, 8.61% and 3.77%, respectively (Figure 23), as well in relation to revenue.

Mobile CAPEX increase is related to the 5G initiatives, which tends to be concentrated in the hands of the operators. This CAPEX's segment is expected to continue to increase, but at a slower pace due to the trend of more network sharing.

Fixed network CAPEX is distributed among a greater diversity of players, some outside the Telco orbit. As migration from copper to fibre occurs, fixed access is becoming more fragmented and, in some cases, less vertically integrated and more competitive.

**Borrowing costs** | The Telco is an investment-intensive industry, which requires funding. Borrowing costs are critical since a high-interest burden characterizes the industry. Consequently, the current economic outlook can negatively impact Telco since ECB expects to lift its asset purchase, followed by an interest rate hike, resulting in an increased cost of debt for the industry.

## Telecommunication Supply and Demand Drivers Supply Drivers

Western Telco companies have been betting on ICTs (Information and Communication and Technologies) services, the revenue (Figure 26) has been increasing at a 13.31% CAGR between 2015-2020, and it is expected to continue increasing at 5.95% CAGR until 2025. However, this increase is not enough to offset the changes in fixed services revenue, which has been slightly decreasing at -0.94% CAGR between 2015-2020 and expected to continue decreasing at a 0.91% CAGR until 2025. This led to a decrease in total revenues since 2017 of -1.03% CAGR to 2020 and is expected to continue to decrease at a slower pace of -0.19% CAGR until 2025. The global tech trends, such as next-level process automation, applied AI, next-gen computing, and trust architecture, will mainly impact the telecommunications sector, requiring new types of infrastructure. Consequently, new investments will have to be applied.

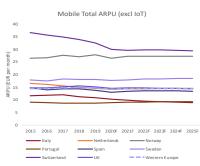
#### **Demand Drivers**

**Consumption behaviour** | The demand entirely depends on consumption behaviour. Different generations have different consumption behaviour. For example, Generation X is a traditional media channel generation that watches TV; Millennials are online videos, music streaming, online TV, and online magazine streaming. Generation Z more widely uses digital channels for communications.

**Cocooning is back** | The latest COVID trend, Cocooning, defined as when people choose to stay at home and isolate themselves from social life, has been widely embraced by people who have been forced to spend more time at home. It has also presented an opportunity to create new valuable services and monetize the home service. The new hybrid workforce is estimated to spend about 40% of time at home. It has redefined the way we live and shop. As such, over the past year, e-commerce platforms, tele-conferencing and tele-medicine apps have seen a surge in usage. During the Pandemic, inflated anxiety and deflated income caused consumers to change their spending habits. Figure 25 shows the top 10 fastest growing and declining E-Commerce product categories. These habits will continue until people feel more secure once the threat of Covid has passed.

Accelerated digitalization | The pandemic is driving demand for technology as people increasingly rely on the internet while working from home. Given lockdown conditions, a huge percentage of people have embraced digitalization in new ways, and people

## Figure 21: Mobile Total ARPU (excluding IoT)



Source: Analysis Mason

Figure 22: Fixed Broadband Household Penetration

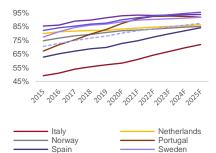


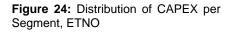


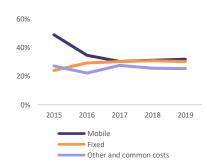
Figure 23: European CAPEX by Segment for ETNO & Total Europe, 2015-2019 (excluding Spectrum)

UK



Source: Analysis Mason





Source: Analysis Mason

are expected to continue because it is useful and convenient. US consumers are accelerating the adoption of digital channels, a trend seen across global regions. Digital adoption in Europe jumped from 81 % to 95 % due to the COVID-19 crisis. The surge in the adoption of online services is no temporary phenomenon: over 70% of respondents said they expected to continue using digital services with the same frequency as they do now or even more often.

**5G and IoT** | 5G is the newest, fastest generation of mobile networking. In Automotive, Industrial Manufacturing, Smart Cities, Smart buildings, Smart homes, Healthcare and Utilities areas, those companies struggling to implement 5G. 5G networks also will go a long way towards improving the performance and reliability of IoT connected devices 5G makes IoT seamless in connecting their devices. Figure 27 shows that consumers in the U.K. using 5G are more satisfied with their provider than using 4G. 5G encourages service innovation, in addition to high-speed data and broadband, 5G and IOT will offer and enrich customer experience in the following areas: enhanced video (4K, 8K and formats like 360-degree video), Live sports streaming; Music and gaming (mobile and cloud), Augmented and virtual reality (AR/VR), Consumer IoT services, Incar entertainment and connectivity, Digital advertising.

However, telecom faces uncertain challenges, 5G and fiber networks will meet delayed delivery in most countries, affecting revenue and CAPEX.

#### **Competitive Positioning**

Figure 28 represents a chart of our analysis regarding Porter's Five Forces, where level 1 is attributed to the lowest threat (the threat of new buyers) and level 5 is for the highest threat (competitive rivalry in the market).

**Competitive rivalry in the market – HIGH (5)** | The telecommunications industry is constituted by several firms, making the rivalry among competitors high. The existence of these major players results in tougher competition and intense pricing competition. Besides, the time to take advantage of innovation is key. Once a breakthrough is made in the market, there is not much time until the change is copied, resulting in fierce competition. In addition, the cost to exit this industry is exceptionally high due to the heavy investment, which dissuades firms from leaving, and increases the amount of competition.

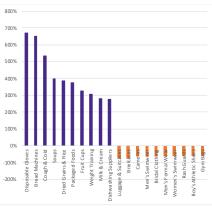
Threat of substitutes – MODERATE TO HIGH (4) [The threat of facing substitutes services is moderate to high because of the dependence on innovation in technology. Nowadays, one of the biggest threats is the VOIP, a technology that allows clients to communicate through phone calls using the Internet instead of the traditional telephone lines. These alternatives provide a more affordable service, with the possibility of unifying telecommunication sources, making the landline obsolete.

Threat of new entrants – LOW (1) | The barriers set to enter are high enough to restrain new firms; thus, the threat of newcomers is low. To penetrate this sector, it is necessary to invest in a high CAPEX and deal with several regulations. Only prospective entrants with resources will attempt to enter the sector and face the exit barriers risks. The main firms take advantage of the sunk costs since they already have captured the primary market and recovered the installation expenses. Because of that, these established firms create a hostile environment that does not allure new entrants.

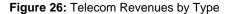
**Bargaining power of buyers – MODERATE (3)** | Considering the homogeneity of the products, the bargaining power of buyers is moderate. Hence, the users seek lower prices from the firms that offer a more valuable and reliable service. Nonetheless, it is important to enhance that, frequently, the clients establish a long-term contract with their operator, and the switching costs associated are considerably high, so the firms do have some pricing power.

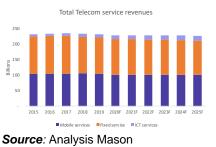
**Bargaining Power of Suppliers – LOW TO MODERATE (2)** | Even though the telecommunications firms are very dependent on telecom equipment suppliers, the fact that there are several local and international manufacturers and suppliers in the market

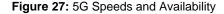
Figure 25: Top 10 Fastest Growing and Declining E-Commerce Product Categories

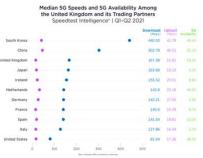


Source: Visual Capitalist











#### Figure 28: Porter's Five Forces



Source: Team estimates

limits their bargaining power. Moreover, the switching costs of the companies with other suppliers are deemed as below, which dilutes the bargaining power.

### 5. Investment Summary

Our recommendation for BT Group stands for BUY, with a price target of £1.58/sh in 2023YE, implying a 29.7% upside potential from the closing price of £1.203/sh on November 29<sup>th</sup>, 2022, with medium risk. The main reason for BT to be traded at a discount is the interplay of competitive marketing conditions, economic uncertainty, and legacy systems management. BT should benefit from proceeding with price increases caught by unprecedented inflation next year. Meanwhile, the interaction among BT's dominance of over 45% market share, the transformation of legacy platforms, and the cost saving plan mitigating effects from rising inflation should drive BT's price up during the year.

#### **Key-Value Drivers**

**Market leader** | BT maintains its market dominance through different segments targeting broad customers, including Openreach's FTTP broadband network which has reached 7.957 million premises, and EE's (one of the BT Group's brands) 5G coverage of 55% of the UK population. BT maintains a 33.6% market share in retail fixed broadband, followed by Sky (22.54%), Virgin Media (20.18%), TalkTalk (9.53%) and other providers (14.15%) (Figure 29). In the fixed telecom industry's wholesale markets, BT acts as a supplier to provide the infrastructure network to its competitors, like Sky and Talktalk. Additionally, promises from BT to almost completely blanket the UK with 5G mobile services, will further strengthen BT's dominance in the market.

**Strategic management of synergies among segments** | Openreach, as one of the most significant network providers in the wholesale market, will undoubtedly lay the foundation for the expansion of BT, which together with EE's leadership in 5G rollout and implementation, will be a powerful engine for the future growth of the BT Group. Openreach's contribution to the Group's EBITDA will also remain close to half (Figure 30). In the meanwhile, Global's alliance with MTN, the biggest African telecom company, will leverage the strengths of the other divisions of BT to provide network solutions to MTN, which is expected to reverse the decline in revenue in the Global division based on MTN's market share and 3Y CAGR of 4.1% over the last several years.

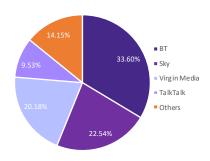
**Growing sustainability from operations** | BT has always been at the forefront of its industry in terms of sustainability. It has already reduced carbon emissions by 55% in scope 1 and scope 2 compared to the baseline year in 2017 which aims to achieve an 87% reduction in carbon emission by 2031 and target net zero. From 2020 to 2022, BT cut carbon emissions on scope 1 and scope 2 by 25 percentage points (Figure 31). BT is using renewable electricity supply worldwide, which gives BT more power to alleviate volatility in the traditional energy market. At the same time, one of BT's goals to reduce 87% carbon emission intensity is to switch the fleet to electric vehicles to reach zero emissions by 2030. On top of this, BT is achieving decarbonisation of the buildings and taking responsibility for the supply chain, human rights, diversity, and inclusion.

**Strong financial position for new network era** | The robust cash generation from operation leaves the company enough buffer to invest in new projects, especially infrastructure for 5G. BT's CF to Capex is telling us the same story. The CF/ Capex ratio will remain above 115%, implying it will have sufficient capital generating from operation to finance investments in new projects for the period forecast (Figure 32& Appendix 4).

#### **Valuation Methods**

We achieved a target price of £1.58/sh for BT for 2023YE based on the SoP FCFF by segments. We arrived at £1.71/sh using the APV model and DDM approach with a target price of £1.41/sh, given that BT has a stable dividend policy. On top of that, the relative valuation method, which used price multiples (P/E and P/B) and enterprise multiples (EV/S and EV/EBITDA), enhanced our understanding of the company's

Figure 29: Market Share of the Retail Fixed Broadband Market



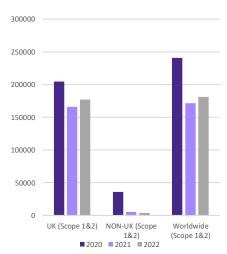
Source: The author

**Figure 30:** Mobile Performance among Airtel, MTN, Orange, and Vodacom across Africa



Source: SPEEDTEST

Figure 31: Overview of Scope 1, Scope2 Greenhouse Emissions



Source: The author

valuation by the market, yielding a price of £1.8/sh and £2.35/sh respectively. All methods above are combined and delivered at £2.08/sh by weighing every method (Appendix 14).

#### **Risks to Achieve the Price Target**

Investors should consider the impact of inflation on costs as inflation increases supply chain and staff costs while reducing people's disposable income to some extent. If a cost-saving plan is implemented successfully, this will go a long way to mitigating the influence of inflation. Meanwhile, the heavy debt carried by BT keeps investors questioning if BT can manage its debt more efficiently and keep it controllable. The disruption in the semiconductor is also a factor that investors should give significant importance to as it is critical for 5G handsets, along with routers and IoT devices. It also remains to be seen whether the cooperation of the biggest African telecom (MTN) can reverse the year-on-year revenue decline in the global segment. However, in the new era of 5G, we believe BT is resilient enough to achieve its target price.

### 6. Valuation

#### Different Approach Arrived Deliver Similar Target Price

We employed the Discounted Cash Flow (DCF) as the primary method to analyze the company's fair value. This method estimates the company's intrinsic value regarding the fundamental factors, such as business model, operational strategy, and leverage level, which arrives at a share price discounted by the weighted average cost of capital with a target price of £1.58/sh. In addition, APV, DDM, and multiples are complementary analyses of our DCF base model, which enables us to arrive at a valuation price using weighted prices from each model (Table 6).

#### Revenues

We forecast the revenues for BT Group Plc from 2023 to 2027 to grow at a CAGR of 0.68% via the revenues from each sector first in which the consumer sector is projected by the main drivers ARPU, coupled with other sectors are estimated based on the historical growth and add up to arrive at the total revenues. The growth rate for consumer sector can be estimated as follows:

#### **Consumer Sector**

The consumer sector contributes close to half of its revenue, and the ARPU is the primary driver of the growth of the consumer sector. Although the pandemic has caused a drop in the company's performance, the ARPU is experiencing an upward movement from £35.42/month/user in 2022F to £36.19/month/user in 2027F, representing growth at a CAGR of 43% (Figure 33). Based on the historical development, we expect the ARPU to have relatively stable growth in the long run, especially with the widespread implementation of 5G digital technology and networks. Meanwhile, the customer base will remain flat, which is in line with the global population growth trend.

#### **Enterprise Sector and Global Sector**

BT Group made an announcement to combine the enterprise sector and the global sector to create a single B2B unit named BT business. This consolidation will support the company to save the annualised cost of at least £100m in addition to the target delivering £3bn by FY2025. While enhancing its position as the industry leader, the merger would enable it to devise and provide goods and services to a higher standard for its commercial clients. BT Group has solidified the alliance with Nokia by reaching a five-year deal which will permit BT to use its AVA analytics software and enable BT to boost its network monitoring via AI and machine learning. Thereby strengthening BT's position while assisting with a smooth digital transition.

#### **Openreach Sector**

BT disclosed the plan to offer lower prices to its wholesale clients in order to attract more users and shift people's behaviour moving from copper to full fibre. This move will help BT to expand its market share by pricing out smaller companies with an aim to reach 25million households by spending £15bn in FY2026.

Table 6: Valuation Price

	Valuation Output		Weighting
FCFF	£	1.58	30%
APV	£	1.71	10%
DDM	£	1.41	30%
Relative			
Valuation	£	2.08	30%
Valuation	£	1.69	
Current			
Price	£	1.20	
Margin of Safety		10%	
Salety	4	1070	

Source: The author

#### Figure 32: Customer Base and ARPU



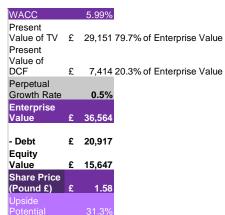
#### Source: The author

#### Table 7: WACC Assumption

Cost of Debt (Kd)	3.93%
Taxes	21.00%
Kd (net of Taxes)	3.10%
Ke-CAPM	
Risk-Free Rate	3.83%
Telecom Avg Levered Beta	1.18
ERP	5.42%
Ke	10.23%
E/EV	41%
D/EV	59%
WACC	5.99%
Unlevered Cost of Capital - M	odigliani& Miller
Ru	6.8%
Source: The author	

Source: The author

#### Table 8: Enterprise Value



Source: The author

#### **WACC** Assumptions

We use the CAPM model to calculate the cost of equity at 10.23%, in which the UK 10year gilt with a 3.83% yield is my benchmark for the risk-free rate. The beta of 1.18 referred to the telecom industry average beta from the Damodaran database between 2017 to 2021. The market risk premium is delivered at 5.42% based on the revenues from the operations in different regions, which 5.44% represents 88.61% of revenues from operations in the UK, 5.79% risk premium for 6.31% of revenues from Europe, and figures 4.24% and 5.26% respectively for America and Asia & Pacific (Appendix10).

#### **Discounted Cash Flow**

Discounted cash flow used a WACC of 5.99% to compute the FCFF from 2022F and 2027F based on the assumptions in Table 7. Calculate the company's intrinsic value from the enterprise market value that arrived from the current market price and share outstanding. As BT is listed in the London stock market, we assume that the cost of debt, beta, and cost of equity from the investors' interest in the UK, and weighted average debt and equity based on market value, 58% and 42% respectively, which implies the substantial amount of debt in the company that is one of the industrial characteristics (Appendix 11).

Given the GDP growth rate and inflation rate in the UK and globally, the perpetual growth rate of 0.5% is a reasonable consideration. Given the perpetual growth rate and WACC, the terminal value accounts for 79.7% of enterprise value. This model is significantly sensitive to the changes in WACC and perpetual growth rate g. A robust sensitivity analysis is conducted to simulate the target price achievable according to the combination of WACC and g. (Table 8)

#### **Adjusted Present Value (APV)**

Adjusted Present Value considered the unlevered cost of equity, 4.2% delivered by Unlevered beta 6.8% according to industry levered beta, which is different from the WACC used in the FCFF model and take into account the effect of the interest tax shield, contributing 11.1% of adjusted present value. In this model, we adjusted the present value by unlevered enterprise value to obtain an interest tax shield through interest expenses multiply tax rate, which contributed £4212.18million to the value. In this model, the unlevered cost of equity gave the company a price of £1.71/share, slightly higher than the target price in the FCFF model. (Table 9& Appendix 12)

#### **Dividend Policy**

BT is considering a variety of variables to maintain its progressive dividend policy, aiming to preserve or increase the dividend every year, such as investment opportunities and interim revenues expectations. The company is expected to pay the dividends twice annually, with the interim dividend fixed at 30% of the full-year payout of the preceding year. Figure 35 showed the company's payout ratio will increase in the future sharply. The firm expects to produce a sizable amount of cash each year for the period forecast (Figure 34). The payout ratio will grow aggressively during the predicted years, and the dividend yield will remain above 3%.

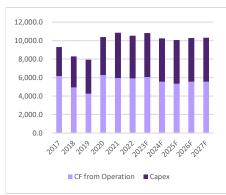
#### **Discounted Dividend Model (DDM)**

This model used the rate of return as the WACC employed in the DCF model. Also, we estimated the growth rate of 0.5% based on the expected growth rate and the dividend policy. In this case, we evaluated the present value of the dividend from the forecast period between 2022F and 2027F, and the rate of return and growth rate decides the terminal value of the dividend. Summing up, the present value terminal value reflects a target price of £1.41/sh for the company (Appendix 13).

#### **Relative Valuation**

Relative valuation is a complementary analysis to test how reliable the target price from the DCF model is compared to its competitors in the market. First, we identified the comparable peers based on the company size, business model, and market value, followed by obtaining the mean and median multiples to apply the one with the small deviation. A median with a small deviation contributes a reliable multiple to arrive at the enterprise value. In this model, we have an average £2.35 target price from an

Figure 33: Cash Flow from Operation vs Capex



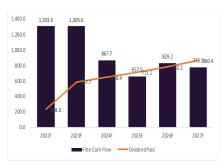
Source: The author

#### Table 9: APV Model

Unlevered Beta		0.068	
Cost of Equity		0.042	
Present Value of TV	£	28,065.21	
Present Value of DCF	£	5,569.43	
Unlevered Enterprise Value	£	33,634.64	
Present Value of ITS	£	586.37	
Present Value of TV	£	3,625.81	
Total Side Effect of ITS (VCD)	£	4,212.18	
Adjusted Present Value (APV)	£	37,846.82	11.1%
-Debt	£	20,917.00	
Share Price	£	1.71	
Potential		42.045%	

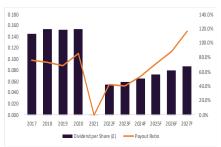
Source: The author

#### Figure 34: FCF & Dividend (in millions)



Source: The author

#### Figure 35: DPS & Payout Ratio



Source: The author

enterprise perspective along with an average £1.8 target price computed by market price (Appendix 14). **Table 10:** Multiples Valuation

## 7. Financial Analysis

#### Revenues

BT Group, impacted by challenging market conditions and the pandemic, has a CAGR of -2.85% of sales between 2017-2022, which will be improved by the digital transition from 2023 to 2027, resulting in an estimated CAGR of 0.68% for the revenues in the forecast period. The two divisions, including the enterprise sector and the global sector, contributed most to the revenue growth and will be replaced by two other divisions, the consumer sector and the enterprise sector. Especially the consumer sector will increase its contribution to the group to around half of the total revenues in 2027. On top of that, BT group's productivity measured by revenues per employee experienced a surge from 0.23 in 2017 to 1.27 in 2022, representing over £1 million in annual revenue per employee, which depicts a positive outlook for the future revenue increase in the company.

#### Profitability

BT saw upward profitability during the historical period and forecast years from 2017 to 2027. Revenues have a CAGR of -2.85% in the period from 2017-2022, which was outperformed by a CAGR of 1.78% in EBITDA (Figure 36), implying a +396bps increase in gross profit margin to 61.9% in 2022 from 57.89%, and the corresponding figure of +763 bps in EBITDA margin. The cost saving policy contributed to the increase in EBITDA margin in 2018, especially in the consumer, enterprise sectors. Although ROE will witness a slight drop from 2023 to 2027 with a rate of around 3.78%, a favourable prognosis for dividend payments will be maintained due to the company's ability to generate profits with net profit margin remaining above 3% for the forecast period.

#### **Mature Company**

Purchasing materials for building the infrastructure, semiconductors, and telecom equipment, such as public switching equipment, transmission equipment, and customer premises equipment, inevitably affects the company's performance. The rising costs offset by the cost-saving policy since the pandemic will remain relatively stable, resulting in a gross profit margin reaching 62% from 2022 upwards. The shortage of semiconductors and microchips slightly deteriorated inventory turnover during the pandemic and the near future, causing the DIO to increase to more than 12 days in 2019, and inventory turnover dropped to around 27 days from 45days in 2017. BT Group has a negative cash cycle that even arrived at -110 days in 2022 due to the long DPO, which will stabilize within -100 days afterward (Table 11). As a mature company, its asset turnover nests at between 0.4-0.5, marginally higher than the industry level of 0.35, implying it is efficient to generate more sales by its assets.

#### **Cash Generation**

As a mature company in the telecom industry, BT Group invests primarily in capital expenditure tied with much cash. It has normally used more than £1000M for net working capital (NWC) each year since 2017 and remains at a comparatively stable level up to 2027FY. The ease from the pressure of the pandemic and shortage of microchips shaped the cash ratio to drop to 0.38 in 2022 from 0.6 in 2020 and climb above 0.51 in 2023FY onwards, indicating this substantial debt company is constrained by the rising interest rates adopted to solve inflation. Two other liquidity indicators provide similar information. The current ratio remains at a relatively stable level between 0.98-1.15 from 2020 to 2027FY as the inventory fluctuates slightly in the same time frame (Appendix 4). The current ratio is driven up by rising cash due to the decrease in the current portion of long-term debt, which will surge from 0.98 in 2022 to 1.15 in 2027FY (Table 11).

#### **Debt Management**

Telecom is a highly indebted industry, and BT group is no exception. Net debt over EBITDA could help size up BT's debt relative to its earnings. BT Group's net debt is



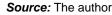
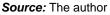


Figure 36: P&L Breakdown in 2022F





#### Table 11: BT's Liquidity Ratios

Liquidity	2022	2027F
Current Ratio	.98x	1.15x
Quick Ratio	.80x	.94x
Cash Ratio	.38x	.51x
Operating Cycle	80.57	74.49
Cash Cycle	-109.62	-100.04

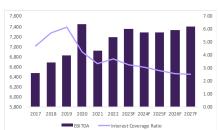
Source: The author

#### Figure 37: EBITDA vs Net Debt



Source: The author





Source: The author

resting at an acceptable 2.43 times its EBITDA, lower than its peers when its interest coverage ratio arrived at 3.69x in 2022 (Figure 38). Book D/E of 1.43x in 2022 dropped from 1.96x in the previous year, which is much higher than peers with figures of around 1x (Appendix 4). Given the higher deficit between its total liabilities and cash along with near-term receivables compared to the market capitalization of £ 18bn, its future revenues will decide that the company continues to have a robust and healthy balance sheet, especially free cash flow, to pay off its debt.

#### Parts Acting on the Whole

Interacting components work together to form the foundation for BT Group's future growth, with the consumer segment, in particular, being the backbone of the revenues. In the context of the pandemic and the reverse globalisation trend, the global segment will decline from 20% in 2019 to 14% after 2022 compared to the consumer segment, contributing almost half of the total revenues. Even if the global division sets a strategic alliance with the biggest African telecom, it is unlikely to become a growth engine for BT Group. Revenues in the Enterprise and Openreach are expected to stabilize for the years to come. On top of that, the Openreach segment, as the leading implementer of the cost-saving plan, helped the company save costs by more than -20% since the pandemic in 2019, which will benefit the company to achieve the cost-saving goal of £2.5bn in 2025 (Appendix 6).

### 8. Investment Risks

**Operational Risk | Failure to enhance network coverage and performance (OR1)** To gain a competitive advantage in the trend of 5G, BT must make allowance for the needs of their customers, which have risen in tandem with demand. However, the traffic of networks substantially increased during the Covid-19 pandemic. As a result, BT Group is under pressure to advance network coverage and performance. The emerging market, where reachability and adoption are influenced by low affordability and digital literacy, shows the rising disparity between internet reach and service uptake. The network does not cover many customers in rural areas, or customers feel frustrated in accessing the latest speeds promised by the market, which is more pressing than ever, mainly as governments focus more on the digital society.

In line with future network development of 5G and the Internet of Things (IoT) being the centre, BT needs to explore the total addressable market by creating innovative business models and also lock in the serviceable available market. Doing so will benefit from seizing opportunities for organic growth in rural and urban areas with the latest speed access.

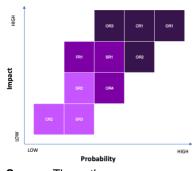
## Operational Risk | Failure to advance workforce skills and strengthen workforce structure (OR2)

Since COVID-19, diversity and inclusion have taken on more significance. To strengthen the cooperation across multiple industries, in addition to putting a strong emphasis on variety and integration, BT must optimise its internal ecosystems and structures. BT still face challenges in recruiting talent (Figure 39), and awareness of this industry among university graduates is still low. At the same time, the diverse skill set of employees is a pain point for the telecoms industry. The growth of network technology is now accelerating the shortage of qualified engineers. As software skills become a core competency, retraining programmes must be reviewed regularly to align with new technology cycles.

#### Operational Risk | Inability to respond to supply chain crisis (OR3)

The Covid-19 pandemic's effects on the number of individuals working from home have increased demand for electronics while decreasing the number of engineers available, leading to the chipset crisis. As a result, the supply chains for networks and customer premises equipment (CPE) are severely hampered by chip shortages. To help them diversify their supplier networks and reduce the risks connected with a single supply chain, BT is looking at "open radio access network (RAN) solutions." That is because new technology cycles have disrupted the existing operator-supplier supply chains.

Figure 39: Risk Matrix



Source: The author

Figure 40: Risk Radar



Source: The author

**Table 12:** Sensitivity Analysis for thePerpetual Growth Rate

			ice rget
		£	1.58
	-1.0%	£ 1	.566
	-0.5%	£ 1	.571
Perpetual	0.0%	£ 1	.576
Growth Rate	0.5%	£ 1	.581
	1.0%	£ 1	.586
	1.5%	£ 1	.591
	2.0%	£ 1	.596

Table 13: Sensitivity Analysis for ARPU

		Pric	e Target
		£	1.58
	£34.02	£	0.18
	£34.37	£	0.53
	£34.72	£	0.88
ARPU	£35.07	£	1.23
Growth	£35.42	£	1.58
C. C. C. C.	£35.77	£	1.93
	£36.12	£	2.28
	£36.47	£	2.63
	£36.82	£	2.98

Source: The author

#### Strategic Risk | Inadequate implementation to the sustainability agenda (SR1)

BT is in a fantastic position to respond to this trend as global climate change concerns increase. Climate assessment can become more complex as authorities demand accurate and comprehensive data. Investors are pressuring businesses to disclose climate change's material economic and physical risks while creating measures to safeguard their assets throughout the energy transition. The business strategy of telecoms is centred on sustainability due to rules and expectations from stakeholders. Because of this, BT must address energy inefficiencies of scope 3 in their value chains and incorporate the ideas of the circular economy into their business models and services, which may be both a danger and an opportunity for them.

## Compliance Risk | Inability to evaluate evolving imperatives in information security and privacy (CR1)

Rich data, critical infrastructure, and a large customer base are critical assets for Telcos. Those assets make them valuable targets for cybercriminals, and BT is inevitable. On the one hand, government agencies often attack infrastructure and applications to build covert surveillance. On the other hand, the work feature entitles telcos to store a substantial amount of customer data.

With the rising time spent on the phone, customers have been increasingly concerned about the privacy and security of personal data since the pandemic began. Customers are willing to shift to tailor services to avoid the violation of data security, which poses a challenge for BT to tackle the cyberattack and data violations and breaches.

#### Detailed in Appendix 15 are other minor risks.

#### **Risks to Price Target**

**ARPU** | The growth rate of BT Group PLC is mainly attributed to the changes in the average revenue per user. In a pessimistic scenario in which the growth decreases by £0.35, the TP offers room for more than 2.5% appreciation until 2023YE (Table 13).

**Terminal growth rate** | The fluctuation of terminal growth rate, acting as a critical variable in the DCF model, would impact our recommendation. We assumed a perpetual growth rate of 0.5% based on the historical inflation rate and UK GDP growth. A drop-in perpetual growth rate by 50 pbs still offers upward potential for buy recommendation (Table 12). However, given this crucial global player's recent and past growth patterns, we foresee such a decrease as unlikely. The economy's fundamentals will tend to improve, although there is still uncertainty ahead.

**Monte Carlo simulation** | We performed a Monte Carlo Simulation with 15000 trials as a supplementary analysis of the valuation to measure effect of variables, which in turn act on the target price. The mean of the target price arrived by Monte Carlo Simulation is £1.45 with a standard deviation of £0.39 compared to £1.58 from DCF valuation method. This method supports our BUY recommendation with 71.58% certainty (Table 14).

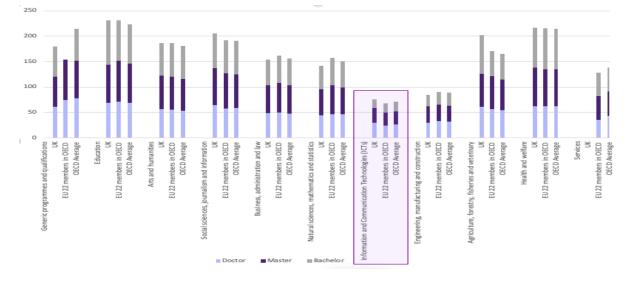
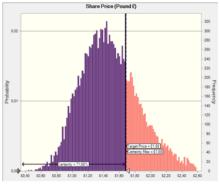


Figure 42: Distribution of Graduates and New Entrants by Field

#### Figure 41: Monte Carlo Simulation



Source: The author

#### Table 14: Monte Carlo Statistics

tatistics:	Forecast values
Trials	15,000
Base Case	£1.45
Mean	£1.49
Median	£1.45
Mode	
Standard Deviation	£0.39
Variance	£0.15
Skewness	0.6581
Kurtosis	3.93
Coeff. of Variation	0.2618
Minimum	£0.30
Maximum	£4.40
Range Width	£4.11
Mean Std. Error	£0.00

Source: The author

#### Figure 43: Sensitivity Analysis

		BI	Group F	PLC - Net I	Present Va	alue Sen	sitivity - Te	erminal Gr	owth Rate			
						W	VACC					
	£ 1.58	3.5%	4.0%	4.5%	5.0%	5.5%	5.99%	6.5%	7.0%	7.5%	8.0%	8.5%
	-2.00% £	2.00 £	1.62 £	1.31 £	1.04 £	0.81 £	£ 0.61 £	0.43 £	0.28 £	0.14 £	0.01 -£	0.10
	-1.50% £	2.35 £	1.91 £	1.55 £	1.24 £	0.98 £	£ 0.75 £	0.56 £	0.38 £	0.23 £	0.10 -£	0.03
	-1.00% £	2.78 £	2.25 £	1.82 £	1.47 £	1.17 £	£ 0.92 £	0.70 £	0.50 £	0.34 £	0.19 £	0.05
Terminal	-0.50% £	3.31 £	2.67 £	2.16 £	1.74 £	1.40 £	£ 1.10 £	0.85 £	0.64 £	0.45 £	0.29 £	0.14
Growth	0.00% £	4.00 £	3.19 £	2.57 £	2.07 £	1.66 <b>£</b>	<b>1.32</b> £	1.04 £	0.80 £	0.59 £	0.40 £	0.24
	0.50% £	4.92 £	3.87 £	3.08 £	2.47 £	1.98 💈	£ 1.58 £	1.25 £	0.97 £	0.74 £	0.53 £	0.35
Rate	1.00% £	6.22 £	4.77 £	3.74 £	2.97 £	2.37 £	£ 1.89 £	1.51 £	1.18 £	0.91 £	0.68 £	0.48
	1.50% £	8.15 £	6.03 £	4.61 £	3.61 £	2.86 £	£ 2.27 £	1.81 £	1.43 £	1.12 £	0.85 £	0.63
	2.00% £	11.40 £	7.92 £	5.84 £	4.47 £	3.48 £	2.75 £	2.18 £	1.73 £	1.36 £	1.05 £	0.79
	2.50% £	17.91 £	11.08 £	7.69 £	5.67 £	4.32 £	2 3.36 £	2.65 £	2.09 £	1.65 £	1.29 £	0.99
	3.00% £	37.72 £	17.44 £	10.78 £	7.47 £	5.49 £	£ 4.18 £	3.24 £	2.55 £	2.00 £	1.57 £	1.22

Source: The author

## Appendices

#### Appendix 1: Statement of Financial Position

BALANCE SHEET (£ Millions)	2017	2018	2019	2020	2021	2022	2023F	2024F	2025F	2026F 2		CAGR 23F-27F
Total Assets	42,372	42,842	46,287	53,067	50,877	49,774	51,709 5	2,589 5	53,210 €	53,845 5	_	1.14%
Cash and Short Term Investments	2,048	3,550	4,880	6,641	4,652	3,456				,	4,489	5.37%
Total Receivables, Net	3,175	2,988	3,570	3,184	3,348	3,815			3,622		3,718	-0.51%
Account Receivables	2,729	2,518	3,119	2,874	2,854	3,043			2,836		2,920	-0.82%
Other receiveables	446	470	451	310	494	772	796	785	786		799	0.68%
Total Inventory Prepaid Expenses	227 733	239 1,103	369 698	300 607	297 1,357	300 523	261 823	320 776	257 807	329 861		-2.67% 8.02%
Other Current Assets, Total	692	469	927	1,260	746	814	814	814	814	814	814	0.00%
Current Assets	6,875	8,349	10,444		10,400	8,908						2.45%
Gross PP&E	54,083	55,121	55,978	62,905	63,031	64,200	68,950	73,633	78,325	83,048 8	37,814	6.46%
Property/Plant/Equipment, Total - Net	16,498	17,000	17,835	23,865	24,260	25,028			27,496		27,969	2.25%
Goodwill, Net	8,034	7,945	8,006	7,945	7,838	7,917	7,917	7,917	7,917		7,917	
Intangibles, Net	6,995	6,502	6,379	5,944	5,519	5,892	6,121 39	6,225	6,299		6,383	1.61%
Long Term Investments Note Receivable - Long Term	75 0	91 0	101 249	32 279	48 344	39 361	361	39 361	39 361	39 361	39 361	
Other Long Term Assets, Total	3,895	2,955	3,273	3,010	2,468	1,629	1,193	1,177	1,179		1,197	-5.97%
NON- Current Assets	35,497	34,493				40,866	41,771 4		43,291		3,865	1.43%
Total Liabilities & Shareholders' Equity	42,372	42,842	46,287	53,067	50,877	49,774	51,709 5	2,589 5	53,210 \$	53,845 5	3,918	1.61%
Accounts Payable	4,205	3,991	4,141	3,889	4,024	4,143	3,767	3,769	3,848		3,960	-0.90%
Accrued Expenses	1,086	1,196	1,194	1,107	1,125	1,122	1,122	1,122	1,122		1,122	0.00%
Notes Payable/Short Term Debt	17	29	72	183	692	640	660	651	652	657	663	0.70%
Current Port. of LT Debt/Capital Leases	2,615 3,002	2,252 2,717	2,028 2,167	3,471 2,336	949 2,216	1,028 2,113	788 2,485	784 2,365	729 2,374	626 2,409		-10.54% 2.79%
Other Current liabilities, Total Current Liabilities	10,925	10,185	9,602	2,336 10,986	9,006	9,046						-0.64%
Total Long Term Debt	10,925	11,994	14,776	22,240	21,196	20,277						0.06%
Deferred Income Tax	1,240	1,340	1,407	1,608	1,429	1,960	1,960	1,960	1,960		1,960	0.00%
Other Liabilities, Total	11,791	9,412	10,335	3,470	7,567	3,195	4,578	4,705	6,324			24.26%
Non-Current Liabilities	23,112	22,746	26,518	27,318	30,192	25,432	27,317 2	28,414	29,426	30,723 3	1,761	4.54%
Common Stock, Total	499	499	499	499	499	499	499	499	499	499	499	0.00%
Additional Paid-In Capital	1,051	1,051	1,051	1,051	1,051	1,051	1,051	1,051	1,051		1,051	0.00%
Retained Earnings (Accumulated Deficit)	6,024	8,040	8,093	12,358	9,863	13,428			13,191		11,531	-3.00%
Treasury Stock - Common Unrealized Gain (Loss)	(96) 13	(186) 24	(167) 27	(237) 0	(143) 0	(274) 0	(274) 0	(274) 0	(274) 0	(274) 0	(274) 0	0.00%
Other Equity, Total	844	483	664	1,092	409	592	592	592	592	592	592	0.00%
Total Equity	8,335	9,911				15,296						-2.61%
Common Size	· · ·											
Balance Sheet (£ Millions)	2017	2018	2019	2020	2021	2022F		2024F	2025F	2026F		027F
Total Assets	100.00%			100.00%					6 100.00%			0.00%
Cash and Short Term Investments	4.83%	8.29%	10.54%	12.51%	9.14%	6.94%		8.39%	8.31%	8.26%		33%
Total Receivables, Net	7.49%	6.97%	7.71%	6.00%	6.58%	7.66%	6.90%	6.87%	6.81%	6.83%	, 6.º	90%
Account Receivables	6.44%	5.88%	6.74%	5.42%	5.61%	6.11%	6 5.36%	5.38%	5.33%	5.36%	, 5.4	42%
Other receiveables	1.05%	1.10%	0.97%	0.58%	0.97%	1.55%	6 1.54%	1.49%	1.48%	1.47%	، 1. <i>4</i>	48%
Total Inventory	0.54%	0.56%	0.80%	0.57%	0.58%	0.60%	6 0.51%	0.61%	0.48%	0.61%	» 0.4	49%
Prepaid Expenses	1.73%	2.57%	1.51%	1.14%	2.67%	1.05%	6 1.59%	1.48%	1.52%	1.60%	» 1.4	43%
Other Current Assets, Total	1.63%	1.09%	2.00%	2.37%	1.47%	1.64%	6 1.57%	1.55%	1.53%	1.51%	<u>،</u> 1.	51%
Current Assets	16.23%	19.49%	22.56%	22.60%	20.44%	17.90%	<b>6 19.22%</b>	18.89%	18.64%	18.82%	18	.64%
Gross PP&E	127.64%	128.66%	120.94%	118.54%	123.89%	128.98	% 133.34%	140.02%	6 147.20%	6 154.23	% 162	2.87%
Property/Plant/Equipment, Total - Net	38.94%	39.68%	38.53%	44.97%	47.68%	50.289	% 50.55%	51.22%	51.67%	51.70%	6 51	.87%
Goodwill, Net	18.96%	18.54%	17.30%	14.97%	15.41%	45 040				5 51.707	~ JI.	
Intangibles, Net					10.4170	15.91	% 15.31%	15.05%	14.88%			
	10.51%	15,18%	13,78%	11,20%		15.91° 11.84°				14.70%	6 14.	.68%
Long Term Investments	16.51% 0.18%	15.18% 0.21%	13.78% 0.22%	11.20% 0.06%	10.85%	11.849	% 11.84%	11.84%	11.84%	5 14.70% 5 11.84%	% 14. % 11.	.68% .84%
Long Term Investments	0.18%	0.21%	0.22%	0.06%	10.85% 0.09%	11.84° 0.08%	% 11.84% 6 0.08%	11.84% 0.07%	0.07%	5 14.70% 5 11.84% 0.07%	% 14. % 11. 5 0.0	.68% .84% 07%
Note Receivable - Long Term	0.18% 0.00%	0.21% 0.00%	0.22% 0.54%	0.06% 0.53%	10.85% 0.09% 0.68%	11.84 0.08% 0.73%	% 11.84% % 0.08% % 0.70%	11.84% 0.07% 0.69%	0.07% 0.68%	5 14.70% 5 11.84% 0.07% 0.67%	6 14. 6 11. 6 0.0	.68% .84% 07% 67%
Note Receivable - Long Term Other Long Term Assets, Total	0.18% 0.00% 9.19%	0.21% 0.00% 6.90%	0.22% 0.54% 7.07%	0.06% 0.53% 5.67%	10.85% 0.09% 0.68% 4.85%	11.849 0.08% 0.73% 3.27%	% 11.84% 6 0.08% 6 0.70% 6 2.31%	11.84% 0.07% 0.69% 2.24%	0.07% 0.07% 0.68% 2.22%	5 14.70% 5 11.84% 0.07% 0.67% 2.20%	%         14.           %         11.           %         0.0           %         0.0           %         0.0           %         2.2	.68% .84% 07% 67% 22%
Note Receivable - Long Term Other Long Term Assets, Total NON- Current Assets	0.18% 0.00% 9.19% <b>83.77%</b>	0.21% 0.00% 6.90% 80.51%	0.22% 0.54% 7.07% <b>77.44%</b>	0.06% 0.53% 5.67% <b>77.40%</b>	10.85% 0.09% 0.68% 4.85% <b>79.56%</b>	11.849 0.089 0.739 3.279 <b>82.10</b> 9	% 11.84% 6 0.08% 6 0.70% 6 2.31% % 80.78%	11.84% 0.07% 0.69% 2.24% <b>81.11%</b>	<ul> <li>11.84%</li> <li>0.07%</li> <li>0.68%</li> <li>2.22%</li> <li>81.36%</li> </ul>	<ul> <li>14.70%</li> <li>11.84%</li> <li>0.07%</li> <li>0.67%</li> <li>2.20%</li> <li>81.18%</li> </ul>	%     14.       %     11.       %     0.0       %     0.0       %     0.1       %     0.1       %     0.1	.68% .84% 07% 67% 22% . <b>36%</b>
Note Receivable - Long Term Other Long Term Assets, Total NON- Current Assets Total Liabilities & Shareholders' Equity	0.18% 0.00% 9.19% 83.77% 100.00%	0.21% 0.00% 6.90% 80.51% 100.00%	0.22% 0.54% 7.07% 77.44% 100.00%	0.06% 0.53% 5.67% 77.40% 100.00%	10.85% 0.09% 0.68% 4.85% <b>79.56%</b> 100.00%	11.849 0.08% 0.73% 3.27% 82.109 100.00	%       11.84%         %       0.08%         %       0.70%         %       2.31%         %       80.78%         %       100.00%	11.84% 0.07% 0.69% 2.24% 81.11% 100.00%	0.07% 0.07% 0.68% 2.22% 81.36% 6 100.00%	<ul> <li>14.70%</li> <li>11.84%</li> <li>0.07%</li> <li>0.67%</li> <li>2.20%</li> <li>81.18%</li> <li>6 100.00%</li> </ul>	%         14.           %         11.           %         0.0           %         0.0           %         0.0           %         0.0           %         0.0           %         0.0           %         0.0           %         0.0           %         0.0           %         100	.68% .84% 07% 67% 22% .36%
Note Receivable - Long Term Other Long Term Assets, Total NON- Current Assets Total Liabilities & Shareholders' Equity Accounts Payable	0.18% 0.00% 9.19% 83.77% 100.00% 9.92%	0.21% 0.00% 6.90% 80.51% 100.00% 9.32%	0.22% 0.54% 7.07% 77.44% 100.00% 8.95%	0.06% 0.53% 5.67% 77.40% 100.00% 7.33%	10.85% 0.09% 0.68% 4.85% 79.56% 100.00% 7.91%	11.849 0.08% 0.73% 3.27% 82.10% 100.00 8.32%	%       11.84%         %       0.08%         %       0.70%         %       2.31%         %       80.78%         %       100.00%         %       7.28%	11.84% 0.07% 0.69% 2.24% 81.11% 100.00% 7.17%	<ul> <li>11.84%</li> <li>0.07%</li> <li>0.68%</li> <li>2.22%</li> <li>81.36%</li> <li>100.00%</li> <li>7.23%</li> </ul>	<ul> <li>14.70%</li> <li>11.84%</li> <li>0.07%</li> <li>0.67%</li> <li>2.20%</li> <li>81.18%</li> <li>100.00%</li> <li>7.30%</li> </ul>	%     14.       %     11.       %     0.0       %     0.0       %     2.1       %     81.       %     100.       %     7.5	.68% .84% 07% 67% 22% .36% 0.00% 34%
Note Receivable - Long Term Other Long Term Assets, Total NON- Current Assets Total Liabilities & Shareholders' Equity Accounts Payable Accrued Expenses	0.18% 0.00% 9.19% 83.77% 100.00% 9.92% 2.56%	0.21% 0.00% 6.90% 80.51% 100.00% 9.32% 2.79%	0.22% 0.54% 7.07% 77.44% 100.00% 8.95% 2.58%	0.06% 0.53% 5.67% 77.40% 100.00% 7.33% 2.09%	10.85% 0.09% 0.68% 4.85% <b>79.56%</b> <b>100.00%</b> 7.91% 2.21%	11.849 0.08% 0.73% 3.27% 82.109 100.00 8.32% 2.25%	%       11.84%         %       0.08%         %       0.70%         %       2.31%         %       80.78%         %       100.00%         %       7.28%         %       2.17%	11.84% 0.07% 0.69% 2.24% 81.11% 100.00% 7.17% 2.13%	<ul> <li>11.84%</li> <li>0.07%</li> <li>0.68%</li> <li>2.22%</li> <li>81.36%</li> <li>100.00%</li> <li>7.23%</li> <li>2.11%</li> </ul>	<ul> <li>14.70%</li> <li>11.84%</li> <li>0.07%</li> <li>0.67%</li> <li>2.20%</li> <li>81.18%</li> <li>100.00%</li> <li>7.30%</li> <li>2.08%</li> </ul>	%     14.       %     11.       %     0.0       %     0.0       %     0.0       %     100       %     100       %     2.0	.68% .84% 07% 67% 22% .36% 0.00% 34% 08%
Note Receivable - Long Term Other Long Term Assets, Total NON- Current Assets Total Liabilities & Shareholders' Equity Accounts Payable Accrued Expenses Notes Payable/Short Term Debt	0.18% 0.00% 9.19% 83.77% 100.00% 9.92% 2.56% 0.04%	0.21% 0.00% 6.90% 80.51% 100.00% 9.32% 2.79% 0.07%	0.22% 0.54% 7.07% 77.44% 100.00% 8.95% 2.58% 0.16%	0.06% 0.53% 5.67% 77.40% 100.00% 7.33% 2.09% 0.34%	10.85% 0.09% 0.68% 4.85% 79.56% 100.00% 7.91% 2.21% 1.36%	11.849 0.08% 0.73% 3.27% 82.109 100.00 8.32% 2.25% 1.29%	%       11.84%         %       0.08%         %       0.70%         %       2.31%         %       80.78%         %       100.00%         %       7.28%         %       2.17%         %       1.28%	11.84% 0.07% 0.69% 2.24% 81.11% 100.00% 7.17% 2.13% 1.24%	<ul> <li>11.84%</li> <li>0.07%</li> <li>0.68%</li> <li>2.22%</li> <li>81.36%</li> <li>100.00%</li> <li>7.23%</li> <li>2.11%</li> <li>1.23%</li> </ul>	<ul> <li>14.70%</li> <li>11.84%</li> <li>0.07%</li> <li>0.67%</li> <li>2.20%</li> <li>81.18%</li> <li>100.00°</li> <li>7.30%</li> <li>2.08%</li> <li>1.22%</li> </ul>	%       14.         %       11.         %       0.0         %       0.0         %       0.0         %       0.0         %       0.0         %       100         %       100         %       2.0         %       2.0         %       100         %       100         %       100         %       100         %       1.1	.68% .84% 07% 67% 22% .36% 0.00% 34% 0.8% 23%
Note Receivable - Long Term Other Long Term Assets, Total NON- Current Assets Total Liabilities & Shareholders' Equity Accounts Payable Accrued Expenses Notes Payable/Short Term Debt Current Port. of LT Debt/Capital Leases	0.18% 0.00% 9.19% 83.77% 100.00% 9.92% 2.56% 0.04% 6.17%	0.21% 0.00% 6.90% 80.51% 9.32% 2.79% 0.07% 5.26%	0.22% 0.54% 7.07% 77.44% 100.00% 8.95% 2.58% 0.16% 4.38%	0.06% 0.53% 5.67% 77.40% 100.00% 7.33% 2.09% 0.34% 6.54%	10.85% 0.09% 0.68% 4.85% <b>79.56%</b> <b>100.00%</b> 7.91% 2.21% 1.36% 1.87%	11.849 0.08% 0.73% 3.27% 82.10% 100.00 8.32% 2.25% 1.29% 2.07%	%         11.84%           %         0.08%           %         0.70%           %         2.31%           %         80.78%           %         100.00%           %         2.17%           %         2.17%           %         1.28%           %         1.52%	11.84% 0.07% 0.69% 2.24% 100.00% 7.17% 2.13% 1.24% 1.49%	<ul> <li>11.84%</li> <li>0.07%</li> <li>0.68%</li> <li>2.22%</li> <li>81.36%</li> <li>100.00%</li> <li>7.23%</li> <li>2.11%</li> <li>1.23%</li> <li>1.37%</li> </ul>	<ul> <li>14.70%</li> <li>11.84%</li> <li>0.07%</li> <li>0.67%</li> <li>2.20%</li> <li>81.18%</li> <li>4 100.00°</li> <li>7.30%</li> <li>2.08%</li> <li>1.22%</li> <li>1.16%</li> </ul>	%         14.           %         11.           %         0.0           %         0.2           %         2.1           %         81.           %         100           %         1.4	.68% .84% 07% 67% 22% .36% 0.00% 34% 08% 23% 09%
Note Receivable - Long Term Other Long Term Assets, Total NON- Current Assets Total Liabilities & Shareholders' Equity Accounts Payable Accrued Expenses Notes Payable/Short Term Debt Current Port. of LT Debt/Capital Leases Other Current liabilities, Total	0.18% 0.00% 9.19% 83.77% 100.00% 9.92% 2.56% 0.04% 6.17% 7.08%	0.21% 0.00% 6.90% 80.51% 9.32% 2.79% 0.07% 5.26% 6.34%	0.22% 0.54% 7.07% <b>77.44%</b> <b>100.00%</b> 8.95% 2.58% 0.16% 4.38% 4.68%	0.06% 0.53% 5.67% 77.40% 100.00% 7.33% 2.09% 0.34% 6.54% 4.40%	10.85% 0.09% 0.68% 4.85% <b>79.56%</b> <b>100.00%</b> 7.91% 2.21% 1.36% 1.87% 4.36%	11.849 0.089 0.739 3.279 82.100 100.00 8.329 2.259 1.299 2.079 4.259	%         11.84%           %         0.08%           %         0.70%           %         2.31%           %         80.78%           %         100.00%           %         2.17%           %         2.17%           %         1.28%           %         1.52%           %         4.81%	11.84% 0.07% 0.69% 2.24% 100.00% 7.17% 2.13% 1.24% 1.49% 4.50%	<ul> <li>11.84%</li> <li>0.07%</li> <li>0.68%</li> <li>2.22%</li> <li>81.36%</li> <li>100.00%</li> <li>7.23%</li> <li>2.11%</li> <li>1.23%</li> <li>1.37%</li> <li>4.46%</li> </ul>	<ul> <li>14.709</li> <li>11.849</li> <li>0.07%</li> <li>0.67%</li> <li>2.20%</li> <li>81.189</li> <li>100.000</li> <li>7.30%</li> <li>2.08%</li> <li>1.22%</li> <li>1.16%</li> <li>4.47%</li> </ul>	%       14.         %       11.         %       0.0         %       0.0         %       0.0         %       0.0         %       100         %       100         %       100         %       100         %       100         %       100         %       100         %       100         %       100         %       100         %       100         %       100         %       1.2         %       1.2	.68% .84% 07% 67% 22% .36% 0.00% 34% 08% 23% 09% 50%
Note Receivable - Long Term Other Long Term Assets, Total NON- Current Assets Total Liabilities & Shareholders' Equity Accounts Payable Accrued Expenses Notes Payable/Short Term Debt Current Port. of LT Debt/Capital Leases	0.18% 0.00% 9.19% 83.77% 100.00% 9.92% 2.56% 0.04% 6.17%	0.21% 0.00% 6.90% 80.51% 100.00% 9.32% 2.79% 0.07% 5.26% 6.34% 23.77%	0.22% 0.54% 7.07% 77.44% 100.00% 8.95% 2.58% 0.16% 4.38%	0.06% 0.53% 5.67% 77.40% 100.00% 7.33% 2.09% 0.34% 6.54%	10.85% 0.09% 0.68% 4.85% <b>79.56%</b> <b>100.00%</b> 7.91% 2.21% 1.36% 1.87%	11.849 0.089 0.739 3.279 82.100 100.00 8.329 2.259 1.299 2.079 4.259	%         11.84%           %         0.08%           %         0.70%           %         2.31%           %         80.78%           %         100.00%           %         2.17%           %         2.17%           %         1.28%           %         1.52%           %         4.81%	11.84% 0.07% 0.69% 2.24% 100.00% 7.17% 2.13% 1.24% 1.49%	<ul> <li>11.84%</li> <li>0.07%</li> <li>0.68%</li> <li>2.22%</li> <li>81.36%</li> <li>100.00%</li> <li>7.23%</li> <li>2.11%</li> <li>1.23%</li> <li>1.37%</li> <li>4.46%</li> </ul>	<ul> <li>14.70%</li> <li>11.84%</li> <li>0.07%</li> <li>0.67%</li> <li>2.20%</li> <li>81.18%</li> <li>100.00</li> <li>7.30%</li> <li>2.08%</li> <li>1.22%</li> <li>1.16%</li> <li>4.47%</li> </ul>	%       14.         %       11.         %       0.0         %       0.0         %       0.0         %       0.0         %       100         %       100         %       100         %       100         %       100         %       100         %       100         %       100         %       100         %       100         %       100         %       100         %       1.2         %       1.2	.68% .84% 07% 67% 22% .36% 0.00% 34% 08% 23% 09%
Note Receivable - Long Term Other Long Term Assets, Total NON- Current Assets Total Liabilities & Shareholders' Equity Accounts Payable Accrued Expenses Notes Payable/Short Term Debt Current Port. of LT Debt/Capital Leases Other Current liabilities, Total	0.18% 0.00% 9.19% 83.77% 100.00% 9.92% 2.56% 0.04% 6.17% 7.08%	0.21% 0.00% 6.90% 80.51% 9.32% 2.79% 0.07% 5.26% 6.34%	0.22% 0.54% 7.07% <b>77.44%</b> <b>100.00%</b> 8.95% 2.58% 0.16% 4.38% 4.68%	0.06% 0.53% 5.67% 77.40% 100.00% 7.33% 2.09% 0.34% 6.54% 4.40%	10.85% 0.09% 0.68% 4.85% <b>79.56%</b> <b>100.00%</b> 7.91% 2.21% 1.36% 1.87% 4.36%	11.849 0.089 0.739 3.279 82.100 100.00 8.329 2.259 1.299 2.079 4.259	%         11.84%           %         0.08%           %         0.70%           %         2.31%           %         80.78%           %         100.00%           %         2.17%           %         2.17%           %         1.28%           %         1.52%           %         4.81%           %         17.06%	11.84% 0.07% 0.69% 2.24% 100.00% 7.17% 2.13% 1.24% 1.49% 4.50%	<ul> <li>11.84%</li> <li>0.07%</li> <li>0.68%</li> <li>2.22%</li> <li>81.36%</li> <li>100.00%</li> <li>7.23%</li> <li>2.11%</li> <li>1.23%</li> <li>1.37%</li> <li>4.46%</li> <li>16.40%</li> </ul>	<ul> <li>14.70%</li> <li>11.84%</li> <li>0.07%</li> <li>0.67%</li> <li>2.20%</li> <li>81.18%</li> <li>100.00</li> <li>7.30%</li> <li>2.08%</li> <li>1.22%</li> <li>1.16%</li> <li>4.47%</li> <li>16.24%</li> </ul>	%       14.         %       11.         %       0.0         %       0.0         %       0.0         %       100         %       100         %       100         %       1.0         %       1.1         %       1.1         %       1.2         %       1.2         %       1.2         %       1.2	.68% .84% 07% 67% 22% .36% 0.00% 34% 08% 23% 09% 50%
Note Receivable - Long Term Other Long Term Assets, Total NON- Current Assets Total Liabilities & Shareholders' Equity Accounts Payable Accrued Expenses Notes Payable/Short Term Debt Current Port. of LT Debt/Capital Leases Other Current liabilities, Total Current Liabilities	0.18% 0.00% 9.19% 83.77% 100.00% 9.92% 2.56% 0.04% 6.17% 7.08% 25.78%	0.21% 0.00% 6.90% 80.51% 100.00% 9.32% 2.79% 0.07% 5.26% 6.34% 23.77%	0.22% 0.54% 7.07% 77.44% 100.00% 8.95% 2.58% 0.16% 4.38% 4.68% 20.74%	0.06% 0.53% 5.67% 77.40% 100.00% 7.33% 2.09% 0.34% 6.54% 4.40% 20.70%	10.85% 0.09% 0.68% 4.85% <b>79.56%</b> <b>100.00%</b> 7.91% 2.21% 1.36% 1.87% 4.36% 17.70%	11.84 0.08% 0.73% 3.27% 82.10% 100.00 8.32% 2.25% 1.29% 2.07% 4.25% 18.17%	%         11.84%           %         0.08%           %         0.70%           %         2.31%           %         80.78%           %         100.00%           %         2.17%           %         2.17%           %         1.28%           %         1.52%           %         4.81%           %         17.06%           %         40.18%	11.84% 0.07% 0.69% 2.24% <b>81.11%</b> <b>100.00%</b> 7.17% 2.13% 1.24% 1.49% 4.50% 16.53%	<ul> <li>11.84%</li> <li>0.07%</li> <li>0.68%</li> <li>2.22%</li> <li>81.36%</li> <li>100.00%</li> <li>7.23%</li> <li>2.11%</li> <li>1.23%</li> <li>1.37%</li> <li>4.46%</li> <li>16.40%</li> </ul>	<ul> <li>14.70%</li> <li>11.84%</li> <li>0.07%</li> <li>0.67%</li> <li>2.20%</li> <li>81.18%</li> <li>100.00</li> <li>7.30%</li> <li>2.08%</li> <li>1.22%</li> <li>1.16%</li> <li>4.47%</li> <li>16.24%</li> </ul>	%         14.           %         11.           %         0.0           %         0.0           %         0.0           %         100           %         100           %         100           %         1.1.           %         1.2.           %         1.4.           %         1.4.           %         1.4.           %         1.4.           %         1.4.           %         1.6.           %         3.7.	.68% .84% 07% 67% 22% .36% 0.00% 34% 08% 23% 09% 50% .24%
Note Receivable - Long Term Other Long Term Assets, Total NON- Current Assets Total Liabilities & Shareholders' Equity Accounts Payable Accrued Expenses Notes Payable/Short Term Debt Current Port. of LT Debt/Capital Leases Other Current liabilities, Total Current Liabilities Total Long Term Debt	0.18% 0.00% 9.19% 83.77% 100.00% 9.92% 2.56% 0.04% 6.17% 7.08% 25.78% 23.79%	0.21% 0.00% 6.90% 80.51% 100.00% 9.32% 2.79% 0.07% 5.26% 6.34% 23.77% 28.00%	0.22% 0.54% 7.07% 77.44% 100.00% 8.95% 2.58% 0.16% 4.38% 4.68% 20.74% 31.92%	0.06% 0.53% 5.67% 77.40% 100.00% 7.33% 2.09% 0.34% 6.54% 4.40% 20.70% 41.91%	10.85% 0.09% 0.68% 4.85% 79.56% 100.00% 7.91% 2.21% 1.36% 1.87% 4.36% 17.70% 41.66%	11.844 0.089 0.739 3.279 82.100 100.00 8.329 2.259 1.299 2.079 4.259 18.170 40.745	%         11.84%           %         0.08%           %         0.70%           %         2.31%           %         80.78%           %         100.00%           %         2.17%           %         2.17%           %         1.28%           %         1.52%           %         4.81%           %         17.06%           %         3.79%	11.84% 0.07% 0.69% 2.24% 100.00% 7.17% 2.13% 1.24% 1.49% 4.50% 16.53% 41.36%	<ul> <li>11.84%</li> <li>0.07%</li> <li>0.68%</li> <li>2.22%</li> <li>81.36%</li> <li>100.00%</li> <li>7.23%</li> <li>2.11%</li> <li>1.23%</li> <li>1.37%</li> <li>4.46%</li> <li>16.40%</li> <li>39.73%</li> </ul>	<ul> <li>14.70%</li> <li>11.84%</li> <li>0.07%</li> <li>0.67%</li> <li>2.20%</li> <li>81.18%</li> <li>100.00</li> <li>7.30%</li> <li>2.08%</li> <li>1.22%</li> <li>1.16%</li> <li>4.47%</li> <li>16.24%</li> <li>36.63%</li> <li>3.64%</li> </ul>	%         14.           %         11.           %         0.0           %         0.0           %         2.2           %         81.           %         100           %         100           %         100           %         10.           %         10.           %         1.2           %         1.2           %         1.2           %         1.2           %         3.4	.68% .84% 07% 67% 22% .36% 0.00% 34% 08% 23% 09% 50% .24% .71%
Note Receivable - Long Term Other Long Term Assets, Total NON- Current Assets Total Liabilities & Shareholders' Equity Accounts Payable Accrued Expenses Notes Payable/Short Term Debt Current Port. of LT Debt/Capital Leases Other Current liabilities, Total Current Liabilities Total Long Term Debt Deferred Income Tax	0.18% 0.00% 9.19% 83.77% 100.00% 9.92% 2.56% 0.04% 6.17% 7.08% 25.78% 23.79% 2.93%	0.21% 0.00% 6.90% 80.51% 100.00% 9.32% 2.79% 0.07% 5.26% 6.34% 23.77% 28.00% 3.13%	0.22% 0.54% 7.07% 77.44% 100.00% 8.95% 2.58% 0.16% 4.38% 4.68% 20.74% 31.92% 3.04%	0.06% 0.53% 5.67% 77.40% 100.00% 7.33% 2.09% 0.34% 6.54% 4.40% 20.70% 41.91% 3.03%	10.85% 0.09% 0.68% 4.85% 79.56% 100.00% 7.91% 2.21% 1.36% 1.87% 4.36% 17.70% 41.66% 2.81%	11.844 0.089 0.739 3.279 82.100 100.00 8.329 2.259 1.299 2.079 4.259 18.170 40.740 3.949	%         11.84%           %         0.08%           %         0.70%           %         2.31%           %         80.78%           %         100.00%           %         2.17%           %         2.17%           %         1.28%           %         1.52%           %         4.81%           %         17.06%           %         3.79%           %         8.85%	11.84% 0.07% 0.69% 2.24% 100.00% 7.17% 2.13% 1.24% 1.49% 4.50% 16.53% 41.36% 3.73%	<ul> <li>11.84%</li> <li>0.07%</li> <li>0.68%</li> <li>2.22%</li> <li>81.36%</li> <li>100.00%</li> <li>7.23%</li> <li>2.11%</li> <li>1.23%</li> <li>1.37%</li> <li>4.46%</li> <li>16.40%</li> <li>39.73%</li> <li>3.68%</li> <li>11.88%</li> </ul>	<ul> <li>14.70%</li> <li>11.84%</li> <li>0.07%</li> <li>0.67%</li> <li>2.20%</li> <li>81.18%</li> <li>100.00</li> <li>7.30%</li> <li>2.08%</li> <li>1.22%</li> <li>1.16%</li> <li>4.47%</li> <li>16.24%</li> <li>3.64%</li> <li>16.78%</li> </ul>	%       14.         %       11.         %       0.0         %       0.0         %       2.2         %       100         %       100         %       100         %       100         %       1.2         %       1.2         %       1.2         %       1.6         %       3.6         %       3.6         %       17.	.68% .84% 07% 67% 22% .36% 0.00% 34% 08% 23% 09% 50% 50% .24% .71% 64%
Note Receivable - Long Term Other Long Term Assets, Total NON- Current Assets Total Liabilities & Shareholders' Equity Accounts Payable Accrued Expenses Notes Payable/Short Term Debt Current Port. of LT Debt/Capital Leases Other Current liabilities, Total Current Liabilities Total Long Term Debt Deferred Income Tax Other Liabilities, Total	0.18% 0.00% 9.19% 83.77% 100.00% 9.92% 2.56% 0.04% 6.17% 7.08% 25.78% 23.79% 2.93% 2.7.83%	0.21% 0.00% 6.90% 80.51% 100.00% 9.32% 2.79% 0.07% 5.26% 6.34% 23.77% 28.00% 3.13% 21.97% 53.09%	0.22% 0.54% 7.07% 77.44% 100.00% 8.95% 2.58% 0.16% 4.38% 4.68% 20.74% 31.92% 3.04% 22.33% 57.29%	0.06% 0.53% 5.67% 77.40% 100.00% 7.33% 2.09% 0.34% 6.54% 4.40% 20.70% 41.91% 3.03% 6.54% 51.48%	10.85% 0.09% 0.68% 4.85% 79.56% 100.00% 7.91% 2.21% 1.36% 1.87% 4.36% 17.70% 41.66% 2.81% 14.87% 59.34%	11.844 0.089 0.739 3.279 82.100 100.00 8.329 2.259 1.299 2.079 4.259 18.170 4.0740 3.949 6.429 51.090	%         11.84%           %         0.08%           %         0.70%           %         2.31%           %         80.78%           %         100.00%           %         12.8%           %         2.17%           %         2.17%           %         1.28%           %         1.28%           %         1.26%           %         4.81%           %         17.06%           %         3.79%           %         8.85%           %         52.83%	11.84% 0.07% 0.69% 2.24% 100.00% 7.17% 2.13% 1.24% 1.49% 4.50% 16.53% 41.36% 3.73% 8.95% 54.03%	<ul> <li>11.84%</li> <li>0.07%</li> <li>0.68%</li> <li>2.22%</li> <li>81.36%</li> <li>400.00%</li> <li>7.23%</li> <li>2.11%</li> <li>1.37%</li> <li>4.46%</li> <li>16.40%</li> <li>39.73%</li> <li>3.68%</li> <li>11.88%</li> <li>55.30%</li> </ul>	<ul> <li>14.70%</li> <li>11.84%</li> <li>0.07%</li> <li>0.67%</li> <li>2.20%</li> <li>81.18%</li> <li>400.00</li> <li>7.30%</li> <li>2.08%</li> <li>1.22%</li> <li>1.26%</li> <li>4.47%</li> <li>16.24%</li> <li>36.63%</li> <li>3.64%</li> <li>16.78%</li> <li>57.06%</li> </ul>	%         14.           %         11.           %         0.0           %         0.0           %         2.1           %         100           %         100           %         100           %         100           %         100           %         100           %         100           %         100           %         100           %         1.1           %         1.2           %         16           %         37.           %         36.           %         37.           %         36.           %         16.           %         37.           %         36.           %         37.           %         38.           %         17.           %         58.	.68% .84% 07% 67% 22% .36% 34% 00% 23% 08% 23% 09% 50% .24% .71% 64% .56% .56%
Note Receivable - Long Term Other Long Term Assets, Total NON- Current Assets Total Liabilities & Shareholders' Equity Accounts Payable Accrued Expenses Notes Payable/Short Term Debt Current Port. of LT Debt/Capital Leases Other Current liabilities, Total Current Liabilities Total Long Term Debt Deferred Income Tax Other Liabilities, Total Non-Current Liabilities Common Stock, Total	0.18% 0.00% 9.19% 83.77% 100.00% 9.92% 2.56% 0.04% 6.17% 7.08% 25.78% 23.79% 2.93% 27.83% 54.55% 1.18%	0.21% 0.00% 6.90% <b>80.51%</b> <b>100.00%</b> 9.32% 2.79% 0.07% 5.26% 6.34% 23.77% 28.00% 3.13% 21.97% <b>53.09%</b> 1.16%	0.22% 0.54% 7.07% 77.44% 100.00% 8.95% 2.58% 0.16% 4.38% 4.68% 20.74% 31.92% 3.04% 22.33% 57.29% 1.08%	0.06% 0.53% 5.67% 77.40% 100.00% 7.33% 2.09% 0.34% 6.54% 4.40% 20.70% 41.91% 3.03% 6.54% 51.48% 0.94%	10.85% 0.09% 0.68% 4.85% 79.56% 100.00% 7.91% 2.21% 1.36% 1.87% 4.36% 17.70% 41.66% 2.81% 14.87% 59.34% 0.98%	11.84 <sup>4</sup> 0.089 0.739 3.279 <b>82.10</b> <b>100.00</b> 8.329 2.259 1.299 2.079 4.259 18.17 <sup>4</sup> 40.74 <sup>4</sup> 3.949 6.429 <b>51.09</b>	%         11.84%           %         0.08%           %         0.70%           %         2.31%           %         80.78%           %         100.00%           %         2.17%           %         2.17%           %         2.17%           %         1.28%           %         1.28%           %         4.81%           %         17.06%           %         3.79%           %         8.85%           %         52.83%           %         0.97%	11.84% 0.07% 0.69% 2.24% 81.11% 100.009 7.17% 2.13% 1.24% 1.49% 4.50% 16.53% 41.36% 3.73% 8.95% 54.03% 0.95%	<ul> <li>11.84%</li> <li>0.07%</li> <li>0.68%</li> <li>2.22%</li> <li>81.36%</li> <li>400.009</li> <li>7.23%</li> <li>2.11%</li> <li>1.23%</li> <li>4.46%</li> <li>39.73%</li> <li>3.68%</li> <li>11.88%</li> <li>55.30%</li> <li>0.94%</li> </ul>	<ul> <li>14.70%</li> <li>11.84%</li> <li>0.07%</li> <li>0.67%</li> <li>2.20%</li> <li>81.18%</li> <li>100.00</li> <li>7.30%</li> <li>2.08%</li> <li>1.22%</li> <li>1.67%</li> <li>4.47%</li> <li>16.24%</li> <li>36.63%</li> <li>3.64%</li> <li>16.78%</li> <li>0.93%</li> </ul>	%         14.           %         11.           %         0.0           %         0.0           %         2.2           %         81.           %         100           %         100           %         100           %         100           %         1.2           %         1.2           %         1.4           %         1.4           %         1.4           %         1.4           %         1.4           %         1.5           %         1.6           %         1.6           %         1.6           %         1.6           %         1.7           %         1.6           %         3.6           %         1.7           %         1.6           %         3.6           %         1.7	.68% .84% 07% 67% 22% .36% 34% 08% 23% 09% 50% .24% .71% 64% .56% .56% .91% 93%
Note Receivable - Long Term Other Long Term Assets, Total NON- Current Assets Total Liabilities & Shareholders' Equity Accounts Payable Accrued Expenses Notes Payable/Short Term Debt Current Port. of LT Debt/Capital Leases Other Current Liabilities, Total Current Liabilities, Total Deferred Income Tax Other Liabilities, Total Non-Current Liabilities Common Stock, Total Additional Paid-In Capital	0.18% 0.00% 9.19% 83.77% 100.00% 9.92% 2.56% 0.04% 6.17% 7.08% 2.578% 2.578% 2.37% 2.93% 27.83% 54.55% 1.18% 2.48%	0.21% 0.00% 6.90% 9.32% 2.79% 0.07% 5.26% 6.34% 23.77% 28.00% 3.13% 21.97% 53.09% 1.16% 2.45%	0.22% 0.54% 7.07% 77.44% 100.00% 8.95% 2.58% 0.16% 4.38% 4.68% 20.74% 3.04% 22.33% 57.29% 1.08% 2.27%	0.06% 0.53% 5.67% 77.40% 100.00% 7.33% 2.09% 0.34% 6.54% 4.40% 20.70% 41.91% 3.03% 6.54% 51.48% 0.94% 1.98%	10.85% 0.09% 0.68% 4.85% 79.56% 100.00% 7.91% 2.21% 1.36% 1.36% 1.36% 17.70% 4.36% 17.70% 41.66% 2.81% 14.87% 59.34% 0.98% 2.07%	11.84 <sup>4</sup> 0.089 0.739 3.279 <b>82.10<sup>4</sup></b> <b>100.00</b> 8.329 2.259 1.299 2.079 4.259 18.17 <sup>4</sup> 4.259 18.174 <sup>4</sup> 3.949 6.429 <b>51.09</b> <sup>4</sup>	%         11.84%           %         0.08%           %         0.70%           %         2.31%           %         80.78%           %         100.00%           %         2.17%           %         2.17%           %         2.17%           %         2.17%           %         1.28%           %         1.52%           %         4.81%           %         17.06%           %         3.79%           %         8.85%           %         52.83%           %         0.97%           %         2.03%	11.84% 0.07% 0.69% 2.24% 81.11% 100.009 7.17% 2.13% 1.24% 1.49% 4.50% 16.53% 41.36% 3.73% 8.95% 54.03% 0.95% 2.00%	<ul> <li>11.84%</li> <li>0.07%</li> <li>0.68%</li> <li>2.22%</li> <li>81.36%</li> <li>100.009</li> <li>7.23%</li> <li>2.11%</li> <li>1.23%</li> <li>2.11%</li> <li>1.37%</li> <li>4.46%</li> <li>16.40%</li> <li>39.73%</li> <li>3.68%</li> <li>11.88%</li> <li>55.30%</li> <li>0.94%</li> <li>1.98%</li> </ul>	<ul> <li>14.70%</li> <li>14.84%</li> <li>0.07%</li> <li>0.67%</li> <li>2.20%</li> <li>81.18%</li> <li>100.00</li> <li>7.30%</li> <li>2.08%</li> <li>1.22%</li> <li>1.67%</li> <li>4.47%</li> <li>16.24%</li> <li>3.64%</li> <li>16.78%</li> <li>57.06%</li> <li>0.93%</li> <li>1.95%</li> </ul>	%     14.       %     11.       %     0.0       %     0.0       %     2.2       %     100       %     100       %     100       %     100       %     100       %     100       %     16       %     37.       %     16       %     36.       %     17.       %     58.       %     1.3	.68% .84% 07% 67% 22% .36% 34% 08% 23% 09% 50% 50% 50% 50% 50% 50% 50% 50% 50%
Note Receivable - Long Term Other Long Term Assets, Total NON- Current Assets Total Liabilities & Shareholders' Equity Accounts Payable Accrued Expenses Notes Payable/Short Term Debt Current Port. of LT Debt/Capital Leases Other Current liabilities, Total Current Liabilities Total Long Term Debt Deferred Income Tax Other Liabilities, Total Non-Current Liabilities Common Stock, Total Additional Paid-In Capital Retained Earnings (Accumulated Deficit)	0.18% 0.00% 9.19% 83.77% 100.00% 9.92% 2.56% 0.04% 6.17% 7.08% 25.78% 25.78% 2.33% 27.83% 54.55% 1.18% 2.48% 14.22%	0.21% 0.00% 6.90% 9.32% 2.79% 0.07% 5.26% 6.34% 23.77% 23.77% 23.09% 1.16% 2.45% 18.77%	0.22% 0.54% 7.07% 77.44% 100.00% 8.95% 2.58% 0.16% 4.38% 4.38% 4.68% 20.74% 3.04% 22.33% 57.29% 1.08% 2.27% 1.08%	0.06% 0.53% 5.67% 77.40% 100.00% 7.33% 2.09% 0.34% 6.54% 4.40% 20.70% 41.91% 3.03% 6.54% 51.48% 0.94% 1.98% 23.29%	10.85% 0.09% 0.68% 4.85% 79.56% 100.00% 7.91% 2.21% 1.36% 1.36% 17.70% 4.36% 17.70% 4.36% 17.70% 4.36% 17.70% 59.34% 0.98% 2.07% 19.39%	11.844 0.089 0.739 3.279 82.100 100.00 8.329 2.259 1.299 2.079 4.259 18.170 4.259 18.174 4.259 18.174 4.299 51.099 1.009 2.119 26.985	%         11.84%           %         0.08%           %         0.70%           %         2.31%           %         80.78%           %         100.00%           %         2.17%           %         2.17%           %         2.17%           %         2.17%           %         1.28%           %         1.52%           %         4.81%           %         17.06%           %         3.79%           %         8.85%           %         52.83%           %         0.97%           %         2.03%           %         26.50%	11.84% 0.07% 0.69% 2.24% 81.11% 100.00% 7.17% 2.13% 1.24% 1.49% 4.50% 16.53% 41.36% 3.73% 8.95% 54.03% 0.95% 2.00% 25.89%	<ul> <li>11.84%</li> <li>0.07%</li> <li>0.68%</li> <li>2.22%</li> <li>81.36%</li> <li>400.009</li> <li>7.23%</li> <li>2.11%</li> <li>1.23%</li> <li>4.46%</li> <li>39.73%</li> <li>3.68%</li> <li>11.88%</li> <li>55.30%</li> <li>0.94%</li> <li>1.98%</li> <li>24.79%</li> </ul>	<ul> <li>14.70%</li> <li>14.84%</li> <li>0.07%</li> <li>0.67%</li> <li>2.20%</li> <li>81.18%</li> <li>100.00</li> <li>7.30%</li> <li>2.08%</li> <li>1.22%</li> <li>1.62%</li> <li>1.624%</li> <li>3.64%</li> <li>16.78%</li> <li>57.06%</li> <li>0.93%</li> <li>1.95%</li> <li>23.24%</li> </ul>	%       14.         %       11.         %       0.0         %       0.0         %       2.2         %       81.         %       100         %       2.0         %       100         %       100         %       100         %       100         %       100         %       100         %       100         %       100         %       30.         %       31.         %       36.         %       17.         %       58.         %       1.5         %       1.5         %       21.	.68% .84% 07% 67% 22% .36% 34% 08% 23% 09% 50% .24% .56% .56% .56% .56% .39%
Note Receivable - Long Term Other Long Term Assets, Total NON- Current Assets Total Liabilities & Shareholders' Equity Accounts Payable Accrued Expenses Notes Payable/Short Term Debt Current Port. of LT Debt/Capital Leases Other Current liabilities, Total Current Liabilities, Total Current Liabilities Total Long Term Debt Deferred Income Tax Other Liabilities, Total Non-Current Liabilities Common Stock, Total Additional Paid-In Capital Retained Earnings (Accumulated Deficit) Treasury Stock - Common	0.18% 0.00% 9.19% 83.77% 100.00% 9.92% 2.56% 0.04% 6.17% 7.08% 25.78% 25.78% 2.33% 27.83% 54.55% 1.18% 2.48% 14.22% -0.23%	0.21% 0.00% 6.90% 9.32% 2.79% 0.07% 5.26% 6.34% 23.77% 28.00% 3.13% 21.97% 53.09% 1.16% 2.45% 18.77% -0.43%	0.22% 0.54% 7.07% 77.44% 100.00% 8.95% 2.58% 0.16% 4.38% 4.38% 20.74% 3.04% 22.33% 57.29% 1.08% 2.27% 1.08% 2.27% 1.08% 2.27%	0.06% 0.53% 5.67% 77.40% 100.00% 7.33% 2.09% 0.34% 6.54% 4.40% 20.70% 41.91% 3.03% 6.54% 51.48% 0.94% 1.98% 23.29% -0.45%	10.85% 0.09% 0.68% 4.85% 79.56% 100.00% 7.91% 2.21% 1.36% 1.87% 4.36% 17.70% 41.66% 2.81% 14.87% 59.34% 0.98% 2.07% 19.39% -0.28%	11.844 0.089 0.739 3.279 82.100 8.329 2.259 1.299 2.079 4.259 18.174 3.949 6.429 51.099 1.009 2.119 26.986 -0.559	%         11.84%           %         0.08%           %         0.70%           %         2.31%           %         80.78%           %         100.00%           %         2.17%           %         2.17%           %         2.17%           %         2.17%           %         1.28%           %         1.28%           %         4.18%           %         40.18%           %         40.18%           %         52.83%           %         52.83%           %         20.50%           %         20.50%	11.84% 0.07% 0.69% 2.24% 81.11% 100.00% 7.17% 2.13% 1.24% 1.49% 4.50% 16.53% 41.36% 3.73% 8.95% 54.03% 0.95% 2.00% 25.89% -0.52%	<ul> <li>11.84%</li> <li>0.07%</li> <li>0.68%</li> <li>2.22%</li> <li>81.36%</li> <li>400.009</li> <li>7.23%</li> <li>2.11%</li> <li>1.23%</li> <li>4.46%</li> <li>39.73%</li> <li>3.68%</li> <li>11.88%</li> <li>55.30%</li> <li>0.94%</li> <li>1.98%</li> <li>24.79%</li> <li>-0.51%</li> </ul>	<ul> <li>14.70%</li> <li>14.84%</li> <li>0.07%</li> <li>0.67%</li> <li>2.20%</li> <li>81.18%</li> <li>100.00</li> <li>7.30%</li> <li>2.08%</li> <li>1.22%</li> <li>1.64%</li> <li>4.47%</li> <li>16.24%</li> <li>36.64%</li> <li>16.76%</li> <li>0.93%</li> <li>1.95%</li> <li>23.24%</li> <li>-0.51%</li> </ul>	%         14.           %         11.           %         0.0           %         0.0           %         0.0           %         2.2           %         100           % <t< td=""><td>.68% .84% 07% 67% 22% .36% .34% 08% 23% 09% .23% 09% .24% .56% .93% .91% .39% .51%</td></t<>	.68% .84% 07% 67% 22% .36% .34% 08% 23% 09% .23% 09% .24% .56% .93% .91% .39% .51%
Note Receivable - Long Term Other Long Term Assets, Total NON- Current Assets Total Liabilities & Shareholders' Equity Accounts Payable Accrued Expenses Notes Payable/Short Term Debt Current Port. of LT Debt/Capital Leases Other Current liabilities, Total Current Liabilities, Total Current Liabilities Total Long Term Debt Deferred Income Tax Other Liabilities, Total Non-Current Liabilities Common Stock, Total Additional Paid-In Capital Retained Earnings (Accumulated Deficit) Treasury Stock - Common Unrealized Gain (Loss)	0.18% 0.00% 9.19% 83.77% 100.00% 9.92% 2.56% 0.04% 6.17% 7.08% 25.78% 25.78% 2.93% 27.83% 54.55% 1.18% 2.48% 14.22% -0.23% 0.03%	0.21% 0.00% 6.90% 9.32% 2.79% 0.07% 5.26% 6.34% 23.77% 28.00% 3.13% 21.97% 53.09% 1.16% 2.45% 18.77% -0.43% 0.06%	0.22% 0.54% 7.07% 77.44% 100.00% 8.95% 2.58% 0.16% 4.38% 4.68% 20.74% 31.92% 31	0.06% 0.53% 5.67% 77.40% 100.00% 7.33% 2.09% 0.34% 6.54% 20.70% 41.91% 3.03% 6.54% 51.48% 0.94% 1.98% 23.29% -0.45% 0.00%	10.85% 0.09% 0.68% 4.85% 79.56% 100.00% 7.91% 2.21% 1.36% 1.87% 4.36% 17.70% 41.66% 2.81% 14.87% 59.34% 0.98% 2.07% 19.39% -0.28% 0.00%	11.844 0.089 0.739 3.279 82.100 8.329 2.259 1.299 2.079 4.259 18.170 40.740 3.949 6.429 51.090 2.119 2.6.980 -0.559 0.009	%         11.84%           %         0.08%           %         0.70%           %         2.31%           %         80.78%           %         100.00%           %         2.17%           %         100.00%           %         2.17%           %         1.28%           %         1.28%           %         1.52%           %         4.81%           %         17.06%           %         40.18%           %         52.83%           %         52.83%           %         52.63%           %         20.3%           %         20.50%           %         -0.53%           %         0.00%	11.84% 0.07% 0.69% 2.24% 81.11% 100.00% 7.17% 2.13% 1.24% 1.49% 4.50% 16.53% 41.36% 3.73% 8.95% 54.03% 0.95% 2.00% 25.89% -0.52% 0.00%	<ul> <li>11.84%</li> <li>0.07%</li> <li>0.68%</li> <li>2.22%</li> <li>81.36%</li> <li>100.009</li> <li>7.23%</li> <li>2.11%</li> <li>1.23%</li> <li>1.37%</li> <li>4.46%</li> <li>39.73%</li> <li>3.68%</li> <li>11.88%</li> <li>55.30%</li> <li>0.94%</li> <li>1.98%</li> <li>24.79%</li> <li>-0.51%</li> <li>0.00%</li> </ul>	<ul> <li>14.70%</li> <li>11.84%</li> <li>0.07%</li> <li>0.67%</li> <li>2.20%</li> <li>81.18%</li> <li>100.00</li> <li>7.30%</li> <li>2.08%</li> <li>1.22%</li> <li>1.64%</li> <li>4.47%</li> <li>16.24%</li> <li>16.24%</li> <li>16.78%</li> <li>0.93%</li> <li>1.95%</li> <li>23.24%</li> <li>-0.51%</li> <li>0.00%</li> </ul>		.68% .84% 07% 67% 22% .36% 0.00% 34% 08% 23% 09% 50% 64% .56% .93% 93% 93% .39% .51% 00%
Note Receivable - Long Term Other Long Term Assets, Total NON- Current Assets Total Liabilities & Shareholders' Equity Accounts Payable Accrued Expenses Notes Payable/Short Term Debt Current Port. of LT Debt/Capital Leases Other Current liabilities, Total Current Liabilities, Total Current Liabilities Total Long Term Debt Deferred Income Tax Other Liabilities, Total Non-Current Liabilities Common Stock, Total Additional Paid-In Capital Retained Earnings (Accumulated Deficit) Treasury Stock - Common	0.18% 0.00% 9.19% 83.77% 100.00% 9.92% 2.56% 0.04% 6.17% 7.08% 25.78% 25.78% 2.33% 27.83% 54.55% 1.18% 2.48% 14.22% -0.23%	0.21% 0.00% 6.90% 9.32% 2.79% 0.07% 5.26% 6.34% 23.77% 28.00% 3.13% 21.97% 53.09% 1.16% 2.45% 18.77% -0.43%	0.22% 0.54% 7.07% 77.44% 100.00% 8.95% 2.58% 0.16% 4.38% 4.38% 20.74% 3.04% 22.33% 57.29% 1.08% 2.27% 1.08% 2.27% 1.08% 2.27%	0.06% 0.53% 5.67% 77.40% 100.00% 7.33% 2.09% 0.34% 6.54% 4.40% 20.70% 41.91% 3.03% 6.54% 51.48% 0.94% 1.98% 23.29% -0.45%	10.85% 0.09% 0.68% 4.85% 79.56% 100.00% 7.91% 2.21% 1.36% 1.87% 4.36% 17.70% 41.66% 2.81% 14.87% 59.34% 0.98% 2.07% 19.39% -0.28%	11.844 0.089 0.739 3.279 82.100 8.329 2.259 1.299 2.079 4.259 18.174 3.949 6.429 51.099 1.009 2.119 26.986 -0.559	%         11.84%           %         0.08%           %         0.70%           %         2.31%           %         80.78%           %         100.00%           %         2.17%           %         100.00%           %         2.17%           %         1.28%           %         1.28%           %         1.52%           %         4.81%           %         40.18%           %         3.79%           %         52.83%           %         52.83%           %         20.37%           %         20.50%           %         -0.53%           %         0.00%           %         1.14%	11.84% 0.07% 0.69% 2.24% 81.11% 100.00% 7.17% 2.13% 1.24% 1.49% 4.50% 16.53% 41.36% 3.73% 8.95% 54.03% 0.95% 2.00% 25.89% -0.52%	<ul> <li>11.84%</li> <li>0.07%</li> <li>0.68%</li> <li>2.22%</li> <li>81.36%</li> <li>400.009</li> <li>7.23%</li> <li>2.11%</li> <li>1.23%</li> <li>4.46%</li> <li>39.73%</li> <li>3.68%</li> <li>11.88%</li> <li>55.30%</li> <li>0.94%</li> <li>1.98%</li> <li>24.79%</li> <li>-0.51%</li> </ul>	<ul> <li>14.70%</li> <li>14.84%</li> <li>0.07%</li> <li>0.67%</li> <li>2.20%</li> <li>81.18%</li> <li>100.00</li> <li>7.30%</li> <li>2.08%</li> <li>1.22%</li> <li>1.64%</li> <li>4.47%</li> <li>16.24%</li> <li>36.64%</li> <li>16.76%</li> <li>0.93%</li> <li>1.95%</li> <li>23.24%</li> <li>-0.51%</li> </ul>		.68% .84% 07% 67% 22% .36% .34% 08% 23% 09% .23% 09% .24% .56% .93% .91% .39% .51%

#### Appendix 2: Income Statement

INCOME STATEMTNE (£ Millions)	2017	2018	2019	2020	2021	2022	2023F	2024F	2025F	2026F	2027F	CAGR 23F-27F
Revenue	24,082.00	23,746.00	23,459.00	22,824.00	21,370.00	20,845.00	21,492.30	21,187.79	21,231.77	21,370.42	21,563.91	0.68%
Cost of Revenue, Total	10,140.00	9,746.00	9,715.00	8,961.00	8,314.00	7,951.00	8,279.74	8,122.09	8,159.16	8,202.27	8,281.67	0.82%
Gross Profit	13,942.00	14,000.00	13,744.00	13,863.00	13,056.00	12,894.00	13,212.56	13,065.70	13,072.61	13,168.15	13,282.24	0.60%
Selling/General/Admin. Expenses, Total	5,140.00	5,232.00	5,137.00	5,081.00	4,966.00	4,624.00	4,767.59	4,700.04	4,709.80	4,740.55	4,783.48	0.68%
Depreciation	2,392.00	2,391.00	2,392.00	3,123.00	3,150.00	3,357.00	3,638.51	3,885.62	4,133.24	4,382.48	4,633.98	6.66%
Amortization of Intangibles	1,118.00	1,123.00	1,154.00	1,173.00	1,197.00	1,048.00	1,085.27	1,085.27	1,085.27	1,085.27	1,085.27	0.70%
Unusual Expense (Income)	1,178.00	828.00	564.00	468.00	499.00	388.00	400.05	394.38	395.20	397.78	401.38	0.68%
Other Operating Expenses, Total	1,157.00	1,263.00	1,215.00	875.00	675.00	693.00	696.69	695.61	692.65	699.39	704.60	0.33%
EBITDA	6,467.00	6,677.00	6,828.00	7,439.00	6,916.00	7,189.00	7,348.23	7,275.67	7,274.96	7,330.43	7,392.78	0.56%
Depreciation/Amortization	3,510.00	3,514.00	3,546.00	4,296.00	4,347.00	4,405.00	4,723.78	4,970.89	5,218.51	5,467.75	5,719.25	5.36%
Operating Income (EBIT)	2,957.00	3,163.00	3,282.00	3,143.00	2,569.00	2,784.00	2,624.45	2,304.78	2,056.45	1,862.68	1,673.54	-9.68%
Interest Inc.(Exp.),Net-Non-Op., Total	(587.00)	(532.00)	(602.00)	(788.00)	(765.00)	(821.00)	(780.30)	(773.88)	(781.85)	(746.61)	(733.99)	-2.22%
Other Non-Operating Income (Expense)	(16.00)	(15.00)	(14.00)	(2.00)			-	-	-	-	-	
Net Income Before Taxes (EBT)	2,354.00	2,616.00	2,666.00	2,353.00	1,804.00	1,963.00	1,844.15	1,530.91	1,274.60	1,116.07	939.55	-13.70%
Provision for Income Taxes	446.00	584.00	507.00	619.00	332.00	689.00	394.84	324.97	276.20	231.50	199.28	-21.97%
Net Income	1,908.00	2,032.00	2,159.00	1,734.00	1,472.00	1,274.00	1,449.31	1,205.93	998.40	884.57	740.27	-10.29%
NOPAT	2,396.75	2,456.89	2,657.85	2,316.18	2,096.21	2,199.37	2,062.55	1,815.53	1,610.83	1,476.32	1,318.58	-9.73%
EPS - Basic-Diluted (Sterling per share)	0.19	0.21	0.22	0.18	0.15	0.13	0.15	0.12	0.10	0.09	0.07	-10.30%

#### Common Size

INCOME STATEMTNE (Common Size)	2017	2018	2019	2020	2021	2022	2023F	2024F	2025F	2026F	2027F
Revenue	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Cost of sales	42.1%	41.0%	41.4%	39.3%	38.9%	38.1%	38.5%	38.3%	38.4%	38.4%	38.4%
Gross Profit Margin	57.9%	59.0%	58.6%	60.7%	61.1%	61.9%	61.5%	61.7%	61.6%	61.6%	61.6%
Selling/General/Admin. Expenses, Total	21.3%	22.0%	21.9%	22.3%	23.2%	22.2%	22.2%	22.2%	22.2%	22.2%	22.2%
Unusual Expense (Income)	4.89%	3.49%	2.40%	2.05%	2.34%	1.86%	1.86%	1.86%	1.86%	1.86%	1.86%
Other Operating Expenses, Total	4.80%	5.32%	5.18%	3.83%	3.16%	3.32%	3.24%	3.28%	3.26%	3.27%	3.27%
EBITDA Margin	26.85%	28.12%	29.11%	32.59%	32.36%	34.49%	34.19%	34.34%	34.26%	34.30%	34.28%
Depreciation/Amortization	14.6%	14.8%	15.1%	18.8%	20.3%	21.1%	22.0%	23.5%	24.6%	25.6%	26.5%
Operating Profit Margin (EBIT Margin)	12.3%	13.3%	14.0%	13.8%	12.0%	13.4%	12.2%	10.9%	9.7%	8.7%	7.8%
Interest Inc.(Exp.),Net-Non-Op., Total	2.44%	2.24%	2.57%	3.45%	3.58%	3.94%	3.63%	3.65%	3.68%	3.49%	3.40%
Other Non-Operating Income (Expense)	0.07%	0.06%	0.06%	0.01%	0.00%	0.000%	0.033%	0.033%	0.033%	0.033%	0.033%
EBT Margin	9.77%	11.02%	11.36%	10.31%	8.44%	9.42%	8.58%	7.23%	6.00%	5.22%	4.36%
Provision for Income Taxes	1.85%	2.46%	2.16%	2.71%	1.55%	3.31%	2.3%	2.3%	2.3%	2.3%	2.3%
Net income Margin	7.92%	8.56%	9.20%	7.60%	6.89%	6.11%	6.74%	5.69%	4.70%	4.14%	3.43%
Effective Tax Rates	18.9%	22.3%	19.0%	26.3%	18.4%	21.0%	21.4%	21.2%	21.7%	20.7%	21.2%

#### Appendix 3: Cash Flow Statement

CASH FLOW STATEMENT (£ Millions)	2017	2018	2019	2020	2021	2022	2023F	2024F	2025F	2026F	2027F	CAGR
· · · · · ·	2017	2018	2015	2020	2021	2022	20235	20246	20255	20205	2027F	23F-27F
Cash Flow-Operating Activities (£ Millions)												
Net Income/Starting Line	2,354.0	2,616.0	2,666.0	2,353.0	1,804.0	1,963.0	1,844.2	1,530.9	1,274.6	1,116.1	939.5	-13.70%
Depreciation/Depletion	3,572.0	3,514.0	3,546.0	4,274.0	4,347.0	4,405.0	4,723.8	4,970.9	5,218.5	5,467.8	5,719.2	5.36%
Non-Cash Items	817.0	797.0	648.0	1,060.0	919.0	961.0	895.3	105.0	(51.2)	10.1	2730%	-50.95%
Changes in Working Capital	(569.0)	(2,000.0)	(2,604.0)	(1,416.0)	(1,107.0)	(1,419.0)	(1,407.6)	(1,056.2)	(1,091.9)	(1,041.6)	(1,146.6)	-4%
Accounts Receivable	168.0	(156.0)	(43.0)	44.0	186.0	(104)	273	(58)	(8)	(51)	(33)	-21%
Inventories	(33.0)	(14.0)	(138.0)	69.0	2.0	(3)	(39)	59	(63)	72	(67)	86%
Other Assets	(95.0)	(34.0)	49.0	33.0	13.0	(17)	0	0	0	0	0	
Payable/Accrued	(152.0)	(345.0)	57.0	144.0	(43.0)	99.0	(355.6)	(7.2)	80.2	86.3	35.9	-18%
Other Liabilities	94.0	(978.0)	(2,098.0)	(1,496.0)	(977.0)	(1,342.0)	(1,234.0)	(998.0)	(1,049.0)	(1,097.0)	(1,031.0)	-5%
Other Operating Cash Flow	(551.0)	(473.0)	(431.0)	(210.0)	(288.0)	(52.0)	(52.0)	(52.0)	(52.0)	(52.0)	(52.0)	0%
Cash from Operating Activities	6,174.0	4,927.0	4,256.0	6,271.0	5,963.0	5,910.0	6,055.7	5,550.5	5,349.9	5,552.3	5,539.5	-1.29%
Cash Flow-Investing Activities (£ Millions)												
Capital Expenditures	(3,145.0)	(3,362.0)	(3,678.0)	(4,105.0)	(4,903.0)	(4,607.0)	(4,750.1)	(4,682.8)	(4,692.5)	(4,723.1)	(4,765.9)	0.68%
Other Investing Cash Flow Items, Total	1,487.0	(1,471.0)	(122.0)	(1,545.0)	1,663.0	1,047.0	1,200.3	700.6	697.1	748.0	949.7	-1.93%
Other Investing Cash Flow	9.0	7.0	23.0	31.0	11.0	7.0	0.0	0.0	0.0	0.0	0.0	n.a.
Cash from Investing Activities	(1,658.0)	(4,833.0)	(3,800.0)	(5,650.0)	(3,240.0)	(3,560.0)	(3,549.7)	(3,982.2)	(3,995.3)	(3,975.1)	(3,816.2)	1%
	3,330.0											
Cash Flow-Financing Activities (£ Millions)												
Financing Cash Flow Items	(510.0)	(743.0)	(407.0)	(284.0)	(1,260.0)	(870.0)	(655.4)	(646.1)	(647.4)	(651.6)	(657.5)	-5%
Total Cash Dividends Paid	(1,435.0)	(1,523.0)	(1,504.0)	(1,520.0)	(2.0)	(228)	(588)	(646)	(711)	(782)	(860)	30%
Issuance (Retirement) of Stock, Net	(136.0)	(168.0)	(4.0)	(84.0)	(13.0)	(171.0)	(180.0)	(180.0)	(180.0)	(180.0)	(180.0)	n.a.
Sale/Issuance of Common	70.0	53.0	5.0	2.0	1.0			-	-		-	
Repurchase/Retirement of Common	(206.0)	(221.0)	(9.0)	(86.0)	(14.0)							
Common Stock, Net	(136.0)	(168.0)	(4.0)	(84.0)	(13.0)		-					
Issuance (Retirement) of Debt, Net	(2,421.0)	2,359.0	2,549.0	1,081.0	(1,944.0)	(1,289.0)	524.0	1,932.0	(1,324.0)	(3,038.0)	1,142.0	-198%
Long Term Debt Reduction	(2,421.0)			(651.0)	(782.0)	(659.0)	262.0	966.0	(662.0)	(1,519.0)	571.0	-197%
Long Term Debt, Net				(651.0)	(782.0)	(000.0)	-	-	(002.0)	(1,010.0)	-	-137 /0
5	3.0	3,760.0	3,972.0	2,843.0	0.0	744.0	1,314.0	(974.0)	552.0	1,313.0	(645.0)	-197%
Total Debt Issued Total Debt Reduction	(2,424.0)	(1,401.0)	(1,423.0)	(1,111.0)	(1,162.0)	(840.0)	262.0	966.0	(662.0)	(1,519.0)	571.0	-197%
			634.0					459.5	(002.0)			-193% -26%
Cash from Financing Activities	(4,502.0) 38.0	(75.0) (31.0)	5.0	(807.0) 1.0	(3,219.0)	(2,558.0) 4.0	(899.0)	459.5	(2,862.5)	(4,651.8)	(555.9)	-20%
Foreign Exchange Effects		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			(17.0)		24.1		1.6	5.2	7.2	45400
Net Change in Cash	52.0	(12.0)	1,095.0	(185.0)	(513.0)	(204.0)		(11.4)				-151%
Net Cash - Beginning Balance	459.0	511.0	499.0	1,594.0	1,409.0	896.0	692.0	716.1	704.8	706.4	711.6	-5%
Net Cash - Ending Balance	511.0	499.0	1,594.0	1,409.0	896.0	692.0	716.1	704.8	706.4	711.6	718.8	1%
Cash Interest Paid	629.0	555.0	531.0	736.0	770.0	755.0	821.0	780.3	773.9	781.8	746.6	0%
Cash Taxes Paid	551.0	473.0	431.0	210.0	288.0	52.0	(294.2)	(69.9)	(48.8)	(44.7)	(32.2)	-191%
Net Changes in Working Capital	(18.0)	(1,527.0)	(2,173.0)	(1,206.0)	(819.0)	(1,367.0)	(1,253.8)	(125.8)	47.2	(193.5)	93.6	-158%
Free Cash Flow	3,029.0	1,565.0	578.0	2,166.0	1,060.0	1,303.0	1,305.6	867.7	657.5	829.2	773.7	-10%

#### Common Size

CASH FLOW STATEMENT (£ Millions)	2017	2018	2019	2020	2021	2022	2023F	2024F	2025F	2026F	2027F
Cash Flow-Operating Activities (£ Millions)											
Net Income/Starting Line	38%	53%	63%	38%	30%	33%	30%	28%	24%	20%	17%
Depreciation/Depletion	58%	71%	83%	68%	73%	75%	78%	90%	98%	98%	103%
Non-Cash Items	13%	16%	15%	17%	15%	16%	15%	2%	-1%	0%	0%
Changes in Working Capital	-9%	-41%	-61%	-23%	-19%	-24%	-23%	-19%	-20%	-19%	-21%
Accounts Receivable	3%	-3%	-1%	1%	3%	-2%	5%	-1%	0%	-1%	-1%
Inventories	-1%	0%	-3%	1%	0%	0%	-1%	1%	-1%	1%	-1%
Other Assets	-2%	-1%	1%	1%	0%	0%	0%	0%	0%	0%	0%
Payable/Accrued	-2%	-7%	1%	2%	-1%	2%	-6%	0%	1%	2%	1%
Other Liabilities	2%	-20%	-49%	-24%	-16%	-23%	-20%	-18%	-20%	-20%	-19%
Other Operating Cash Flow	-9%	-10%	-10%	-3%	-5%	-1%	-1%	-1%	-1%	-1%	-1%
Cash from Operating Activities	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Cash Flow-Investing Activities (£ Millions)											
Capital Expenditures	-51%	-68%	-86%	-65%	-82%	-78%	-78%	-84%	-88%	-85%	-86%
Other Investing Cash Flow Items, Total	24%	-30%	-3%	-25%	28%	18%	20%	13%	13%	13%	17%
Cash from Investing Activities	-27%	-98%	-89%	-90%	-54%	-60%	-59%	-72%	-75%	-72%	-69%
Cash Flow-Financing Activities (£ Millions)											
Financing Cash Flow Items	-8%	-15%	-10%	-5%	-21%	-15%	-11%	-12%	-12%	-12%	-12%
Total Cash Dividends Paid	-23%	-31%	-35%	-24%	0%	-4%	-10%	-12%	-13%	-14%	-16%
Issuance (Retirement) of Stock, Net	-2%	-3%	0%	-1%	0%	-3%	-3%	-3%	-3%	-3%	-3%
Issuance (Retirement) of Debt, Net	-39%	48%	60%	17%	-33%	-22%	9%	35%	-25%	-55%	
Cash from Financing Activities	-39%	-28%	-33%	-18%	-19%	-14%	4%	17%	-12%	-27%	10%
Foreign Exchange Effects	1%	-1%	0.12%	0.02%	-0.29%	0.07%					
Net Change in Cash	1%	0%	26%	-3%	-9%	-3%	0%	-0.2%	0.0%	0.1%	0.1%
Net Cash - Beginning Balance	7%	10%	12%	25%	24%	15%	11%	13%	13%	13%	13%
Net Cash - Ending Balance	8%	10%	37%	22%	15%	12%	12%	13%	13%	13%	13%
Cash Interest Paid	10%	11%	12%	12%	13%	13%	14%	14%	14%	14%	13%
Cash Taxes Paid	9%	10%	10%	3%	5%	1%	-5%	-1.3%	-0.9%	-0.8%	-0.6%
Net Changes in Working Capital	0%	-31%	-51%	-19%	-14%	-23%	-21%	-2%	1%	-3%	2%
Free Cash Flow	49%	32%	14%	35%	18%	22%	22%	16%	12%	15%	14%

#### Appendix 4: Key Financial Ratios

Profitability Ratios	Unit	2017	2018	2019	2020	2021	2022	2023F	2024F	2025F	2026F	2027F
Gross Profit margin	%	57.89%	58.96%	58.59%	60.74%	61.09%	61.86%	61.48%	61.67%	61.57%	61.62%	61.59
EBITDA Margin	%	26.85%	28.12%	29.11%	32.59%	32.36%	34.49%	34.19%	34.34%	34.26%	34.30%	34.28
Operating Profit Margin (EBIT Margin)	%	12.28%	13.32%	13.99%	13.77%	12.02%	13.36%	12.21%	10.88%	9.69%	8.72%	7.76
EBT Margin	%	9.77%	11.02%	11.36%	10.31%	8.44%	9.42%	8.58%	7.23%	6.00%	5.22%	4.30
Net income Margin	%	7.92%	8.56%	9.20%	7.60%	6.89%	6.11%	6.74%	5.69%	4.70%	4.14%	3.43
ROCE	%	9.40%	9.69%	8.95%	7.47%	6.14%	6.84%	6.12%	5.25%	4.62%	4.13%	3.7:
ROE	%	22.89%	20.50%	21.24%	11.75%	12.60%	8.33%	9.31%	7.79%	6.63%	6.15%	5.52
ROI	%			19.26%		9.98%			7.64%	6.64%	5.96%	5.3
	%	23.05%	21.15%		12.71%		10.26%	9.05%				
SG&A/Sales	ر £/unit	21.34%	22.03%	21.90%	22.26%	23.24%	22.18%	22.18%	22.18%	22.18%	22.18%	22.18
EPS		0.19	0.21	0.22	0.18	0.15	0.13	0.15	0.12	0.10	0.09	0.0
Capital Turnover	Times	2.89x	2.40x	2.31x	1.55x	1.83x	1.36x	1.38x	1.37x	1.41x	1.49x	1.6
Liquidity		2017	2018	2019	2020	2021	2022	2023F	2024F	2025F	2026F	2027F
Current Ratio	Times	.63x	.82x	1.09x	1.09x	1.15x	.98x	1.13x	1.14x	1.14x	1.16x	1.1
Quick Ratio	Times	.48x	.64x	.88x	.89x	.89x	.80x	.91x	.92x	.92x	.93x	.9
Cash Ratio	Times	.19x	.35x	.51x	.60x	.52x	.38x	.51x	.51x	.51x	.51x	.5
Solvency Ratios		2017	2018	2019	2020	2021	2022	2023F	2024F	2025F	2026F	2027F
Debt to Assets	%	54.5%	53.1%	57.3%	51.5%	59.3%	51.1%	52.8%	54.0%	55.3%	57.1%	58.9
Equity to Assets	%	19.7%	23.1%	22.0%	27.8%	23.0%	30.7%	30.1%	29.4%	28.3%	26.7%	24.9
Debt to Capital Ratio	%	95.3%	96.0%	96.7%	97.8%	97.8%	97.7%	97.7%	97.8%	97.8%	97.6%	97.
Long-Term Debt Ratio	%	30.0%	33.3%	36.3%	48.5%	43.5%	42.8%	41.7%	42.8%	41.1%	37.8%	38.8
_ong-Term Debt to Equity	%	120.9%	121.0%	145.3%	150.6%	181.5%	132.6%	133.5%	140.5%	140.4%	137.2%	151.5
nterest Coverage Ratio	Times	4.70	5.70	6.18	4.27	3.34	3.69	3.20	2.95	2.66	2.38	2.
Equity Multiplier	Times	5.08	4.32	4.55	3.59	4.36	3.25	3.32	3.40	3.53	3.74	4.
Debt to EBITDA	Times	1.65	1.61	4.55	2.59	2.63	2.43	2.42	2.58	2.49	2.26	4.
	Times											
Debt to Equity Efficiency Ratios	Times	1.53 2017	1.44 2018	1.66 2019	1.75 2020	1.96 2021	1.43 2022	1.43 2023F	1.50 2024F	1.50 2025F	1.46 2026F	1. 2027F
Asset Turnover	Times	0.57	0.55	0.51	0.43	0.42	0.42	0.42	0.40	0.40	0.40	0.
nventory Turnover						27.99			25.40			
	Times	44.67	40.78	26.33	29.87		26.50	31.70		31.80	24.95	31.
Receivables Turnover	Times	0.60	0.68	0.60	0.54	0.44	0.33	0.41	0.33	0.28	0.24	0.
Payables Turnover	Times	2.41	2.44	2.35	2.30	2.07	1.92	2.20	2.15	2.12	2.09	2.0
Norking Capital Turnover	Times	-5.95	-12.93	27.86	22.69	15.33	-151.05	19.26	17.06	17.78	15.40	16.
Days Sales in Inventory (DIO)	Days	8.17	8.95	13.86	12.22	13.04	13.77	11.51	14.37	11.48	14.63	11.
Days Sales Outstanding (DSO)	Days	48.12	45.93	55.55	50.92	57.18	66.80	60.56	62.23	62.27	62.83	62.
Days Payable Outstanding (DPO)	Days	151.36	149.47	155.58	158.41	176.66	190.19	166.06	169.38	172.14	174.89	174.
Operating Cycle	Days	56.29	54.88	69.41	63.14	70.22	80.57	72.08	76.60	73.74	77.46	74.
Cash Cycle	Days	-95.07	-94.59	-86.17	-95.27	-106.44	-109.62	-93.99	-92.78	-98.39	-97.43	-100.
CF/Capex	%	1.96	1.47	1.16	1.53	1.22	1.28	1.27	1.19	1.14	1.18	1.
Capex/Depreciation	%	0.88	0.96	1.04	0.96	1.13	1.05	1.01	0.94	0.90	0.86	0.
Capex/Sales	%	0.13	0.14	0.16	0.18	0.23	0.22	0.22	0.22	0.22	0.22	0.
PP&E/Sales	%	0.15	0.15	0.15	0.19	0.20	0.21	0.22	0.23	0.25	0.26	0.
Operating Costs/Sales	%	0.05	0.05	0.05	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.
NWC/Sales	%	(0.17)	(0.08)	0.04	0.04	0.07	(0.01)	0.05	0.06	0.06	0.06	0.0
Dupond Analysis		2017	2018	2019	2020	2021	2022	2023F	2024F	2025F	2026F	2027F
Tax Impact	%	0.81	0.78	0.81	0.74	0.82	0.65	0.79	0.79	0.78	0.79	0.
nterest Impact	%	0.81	0.78	0.81	0.74	0.82	0.03	0.79	0.79	0.78	0.79	0.
Operating Margin	%	0.12	0.13	0.14	0.14	0.12	0.13	0.12	0.11	0.10	0.09	0.
Asset Turnover (ROA)	Times	0.57	0.55	0.51	0.43	0.42	0.42	0.42	0.40	0.40	0.40	0.
_everage	%	13.78	16.73	20.93	24.03	20.84	17.85	19.92	19.91	19.88	20.30	20.
ROE	%	0.62	0.79	0.98	0.79	0.60	0.46	0.56	0.46	0.37	0.33	0.
Valuation		2017	2018	2019	2020	2021	2022	2023F	2024F	2025F	2026F	2027F
Share Price	£	1.294										
EPS(diluted)		0.33	0.30	0.29	0.21	0.21	0.21	1.21	2.21	3.21	4.21	5.
-1 0(anatoa)		964	782	772	530	745	745	129	71	49	37	
Price to Earnings												
		9,960	9,922	9,923	9,882	9,917	9,927	9,928	9,929	9,930	9,931	9,9
Price to Earnings	£	9,960										
Price to Earnings Shares Outstanding	£	9,960										

Value Creation and Cash Flow Ratios	2017	2018	2019	2020	2021	2022	2023F	2024F	2025F	2026F	2027F
Nopat	2,396.75	2,456.89	2,657.85	2,316.18	2,096.21	2,199.37	2,062.55	1,815.53	1,610.83	1,476.32	1,318.58
Economic Value Added (EVA) (M£)	473.07	459.19	413.75	(258.01)	(465.13)	(292.05)	(560.93)	(869.74)	(1,110.42)	(1,282.68)	(1,443.94)
Debt Coverage (%)	48.62%	45.09%	39.07%	27.88%	29.30%	31.58%	31.94%	30.37%	31.22%	33.69%	33.12%
Cash to Income	2.09	1.56	1.30	2.00	2.32	2.12	2.31	2.41	2.60	2.98	3.31
Earnings Quality	3.24	2.42	1.97	3.62	4.05	4.64	4.18	4.60	5.36	6.28	7.48

#### Appendix 5: Forecasting Assumptions

				Fore	ecastin	g Assi	umpti	ons	
		00005		00045	00055				
General Assumptions	unit	2022F	2023F	2024F	2025F	2026F	2027F		Assumptio
Global Inflation rate	YoY	7.40%	2.50%	2.50%	2.50%	2.50%	1.90%		Projected by international monetary fund
Global GDP Growth	YoY	3.60% 7.40%	3.60%	3.40% 1.50%	3.4%% 1.90%	3.30% 2.00%	3.30%		
	YoY		4.00%				2.00%		Government report: Forecasts for the UK economy by HM Treasury
GDP Growth in the UK Sales	YoY	3.80%	1.80%	2.10%	1.80%	1.70%	1.70%		
Jales									Based on the market share, taking at least 50% of the market share and population of the
Consumer base	Population	23	23.41	23.80	24.18	24.53	24.88		generation between 2012-2017 from a British government report, arrived the consumer base at 20-21millions for the forecast period.
ARPU	YoY	35.42	35.35	35.52	35.57	35.68	35.76	0.19%	It is estimated as a VaV growth rate based on a FV moving events
Growth	%	1.2%	-0.2%	0.5%	0.1%	0.3%	0.2%		It is estimated as a YoY growth rate based on a 5Y moving average.
Revenue for Consumer	YoY	9,775	10,522	10,328	10,426	10,597	10,806	2.03%	It is associated with a slight increase trend up to 2027FY due to the growth in ARPU and
Consumer and EE growth			8%	-2%	1%	2%	2%		consumer base.
Revnue for Enterprise	YoY	5052.00	4790.16	4490.36	4238.38	3997.45	3763.54	-5.72%	It is estimated as a 3Y moving average growth rate over the Business and Public Sector, and it has a decrease trend for the forecast period due to the challenging market conditions and
Growth	%	-5.39%	-5.18%	-6.26%	-5.61%	-5.68%	-5.85%		declines in legacy products.
Global	YoY	3,362	3,396	3,430	3,464	3,499	3,533	1.00%	Despite the decline in revenues over the past 5 years, this sector established a " strategic
0 1									alliance" with MTN, the biggest telecom company in Africa, with revenue growth of 3% CAGR,
Growth	%	-9.89%	1.00%	1.00%	1.00%	1.00%	1.00%		which will drive revenue growth in the future.
Dpenreach	YoY	2629.00	2775.38	2931.28	3095.22	3268.71	3451.72	5.60%	It is predicted to grow based on the 3Y moving average, which remains a trend of around 5,6% caused by the cost advantage from the scale operation.
Growth	%	5.67%	5.57%	5.62%	5.59%	5.61%	5.60%		caused by the cost advantage from the scale operation.
<b>Others</b> Growth	YoY %	8.75 -61.96%	8.75 -61.96%	8.75 -61.96%	8.75 -61.96%	8.75 -61.96%	8.75 -61.96%	0.00%	It is estimate to grow as 5Y moving average, and remaining constant for the period forecasted
Cloud	,,,	01.50%	01.5070	01.50%	01.50%	01.50%	01.50%		Sum the different sectors up to estimate the revenue for each year. Growth in the Consumer
Total Revenue	YoY	20,827	21,492	21,188	21,232	21,370	21,564	0.70%	sector and Openreach sector will be offset by the decrease of revenue in the Business and Pub sector along with the Global sector, which contributes to total revenue growth at a CAGR of -
Growth	%	-2.54%	3.20%	-1.42%	0.21%	0.65%	0.91%		0.53% during 2023FY -2027FY.
COGS									
Cost of sales	% sales	38.14%	38.52%	38.33%	38.43%	38.38%	38.41%		It keeps the cost of sales constant for the forecast period based on the cost-saving target of £2 billion by the end of 2024FY and £2.5 bn by the end of 2025FY.
Selling/General/Admin. Expenses, Total	% sales	22.18%	22.18%	22.18%	22.18%	22.18%	22.18%		It keeps constant SG&A expenses based on its cost-saving policy for three years.
Jnusual Expense (Income)	% sales	1.86%	1.86%	1.86%	1.86%	1.86%	1.86%		5Y moving average growth rate over unusual expenses.
Other Operating Expenses, Total	% sales	3.32%	3.24%	3.28%	3.26%	3.27%	3.27%		It keeps constant over other operating expenses based on its cost-saving policy in 3 years.
Dividend	%	5.00%	10.00%	10.00%	10.00%	10.00%	10.00%		According to the dividend policy in the annual report.
Capex									
Сарех	% sales	22.10%	22.10%	22.10%	22.10%	22.10%	22.10%		Total Capex is estimated as % Revenue, assuming a constant growth rate of 22.1% is in line wir current Net Capex/ Revenue ratio in 2022
D&A									
Depreciation		3357.00	3638.51	3885.62	4133.24	4382.48	4633.98		Depreciation forecast is based on the depreciation schedule.
Amortization		1048.00	1085.27	1085.27	1085.27	1085.27	1085.27		Amortization forecast is based on the amortization schedule.
Financial Result		10-10.00	1005.27	1005.27	1003.27	1005.27	1003.27		
nterest Inc.(Exp.),Net-Non-Op., Total	Cost of debt	3.94%	3.63%	3.65%	3.68%	3.49%	3.40%		See the debt schedule for a detailed forecast, remaining a constant interest rate of 3.2% in 202 and 2022FY.
Taxes									
Provisions for income taxes	Effective tax rate	21.00%	21.41%	21.23%	21.67%	20.74%	21.21%		Effective tax rate considering the British legal tax rate and deferred income tax.
Assumption for Financial Posistion	1 unit	2022F	2023F	2024F	2025F	2026F	2027F		Assumption
Total Assets									
Account receivables	days	53.28	47.04	48.71	48.75	49.31	49.42		It uses 5Y moving average of historical data based on days receivables outstanding.

Assumption for Financial Posistion	unit	2022F	2023F	2024F	2025F	2026F	2027F	Assumption
Total Assets								
Account receivables	days	53.28	47.04	48.71	48.75	49.31	49.42	It uses 5Y moving average of historical data based on days receivables outstanding.
Other receivables	% sales	3.70%	3.70%	3.70%	3.70%	3.70%	3.70%	It keeps constant and remains the same rate as the growth rate in 2022 for the forecast period up to 2027FY.
Total Inventory	days	13.77	12.37	13.05	12.89	13.02	13.02	5Y moving average of historical data based on days inventory outstanding.
Prepaid Expenses	% sales	2.51%	3.83%	3.66%	3.80%	4.03%	3.57%	It grows with revenues at 5Y moving average.
Other Current Assets, Total	% assets	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	Equal to the 2022FY nominal value.
Gross PP&E		64200	68950	73633	78325	83048	87814	See Capex forecast schedule for the details.
Property/Plant/Equipment, Total - Net		25028	26140	26937	27496	27837	27969	See Capex forecast schedule for the details
Goodwill, Net		7917	7917	7917	7917	7917	7917	It keeps constant and remains the same rate as the growth rate in 2022 for the forecast period up to 2027FY.
Intangibles, Net		5892	6121	6225	6299	6374	6383	Intangible forecast is based on the intangible schedule.
Long Term Investments		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	Equal to the 2022FY nominal value.
Note Receivable - Long Term		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	Equal to the 2022FY nominal value.
Other Long Term Assets, Total	% assets	3.27%	5.55%	5.55%	5.55%	5.55%	5.55%	Its growth is based on a 5Y average of long-term assets over the total asset, remaining at a constant growth rate of 5.55% for the forecast period.
Total Liabilities & Shareholders' Equity								
Accounts Payable	days	190	166	169	172	175	175	Based on the 5Y moving average of days payable outstanding.
Accrued Expenses		1122	1122	1122	1122	1122	1122	It keeps constant and equals the value in 2022FY.
Notes Payable/Short Term Debt	YoY	-2.54%	3.20%	-1.42%	0.21%	0.65%	0.91%	It grows in response to sales growth YoY. Notes Payable in t= Note Payables in t-1*(1+ ▲% Sales in t).
Current Port. of LT Debt/Capital Leases		788	788	784	729	626	589	According to the company's debt schedule.
Other Current liabilities, Total	% assets	4.2%	4.8%	4.5%	4.5%	4.5%	4.5%	It is estimated as% assets to arrive at 4.5%, based on 5Y moving average.
Total Long Term Debt		20277	20779	21749	21142	19726	20334	According to company's debt schedule
Deferred Income Tax		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	Equal to the 2022FY nominal value.
Common Stock, Total	YoY	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	It remains the same as previous years based on the historical data.
Additional Paid-In Capital	YoY	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	It remains the same as previous years based on the historical data.
Retained Earnings (Accumulated Deficit)		13428	13702	13615	13191	12512	11531	Based on the equation: beginning Retained Earning - Net Income - Dividend - Cash Dividend Paid, the retained earnings in to retained earnings in t-1 + Net Income in t - Dividends in t - Cash Dividend Paid In t.
Treasury Stock - Common	% assets	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	It is estimated to keep constant as in 2022FY.
Unrealized Gain (Loss)		0.00	0.00	0.00	0.00	0.00	0.00	No historical data.
Other Equity, Total	YoY	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	Equal to the 2022FY nominal value.

#### Appendix 6: Sales, EBITDA, and Cost breakdown

Consumer	2017	2018	2019	2020	2021	2022	2023F	2024F	2025F	2026F	2027F
Revenue	4,871.00	4,934.00	10,588.00	10,286.00	9,788.00	9,775.00	10,522.39	10,327.82	10,425.55	10,597.00	10,806.41
Revenue contribution	20%	20%	44%	43%	41%	41%	44%	43%	43%	44%	45%
EBITDA	2,168.00	2,205.00	2,331.00	2,426.00	2,128.00	2,262.00	2,394.70	2,371.05	2,370.82	2,388.90	2,409.22
EBITDA contribution	34%	33%	34%	33%	31%	31%	33%	33%	33%	33%	33%
D & A	989.00	1,013.00	1,030.00	1,278.00	1,281.00	1,421.00	1,421.00	1,495.34	1,569.82	1,644.80	1,720.46
D&A contribution	28%	29%	24%	29%	29%	30%	30%	30%	30%	30%	30%
Cost	1,714.00	1,716.00	7,227.00	6,582.00	6,379.00	6,092.00	6,706.69	6,461.43	6,484.90	6,563.30	6,676.74
Cost contribution	17%	18%	74%	73%	77%	77%	81%	80%	79%	80%	81%
Enterprisec	2017	2018	2019	2020	2021	2022	2023F	2024F	2025F	2026F	2027F
Revenue	6,495.00	4,563.00	5,933.00	5,817.00	5,340.00	5,052.00	4,790.16	4,490.36	4,238.38	3,997.45	3,763.54
Revenue contribution	27%	19%	25%	24%	22%	21%	20%	19%	18%	17%	16%
EBITDA	2,261.00	1,995.00	1,910.00	1,935.00	1,704.00	1636	2035.72	2015.61	2015.42	2030.78	2048.06
EBITDA contribution	35%	30%	28%	26%	25%	23%	28%	28%	28%	28%	28%
D&A	613.00	676.00	690.00	712.00	740.00	724	836.05	879.79	923.62	967.73	1012.24
D & A contribution	17%	19%	19%	17%	17%	16%	18%	18%	18%	18%	18%
Cost	3,621.00	1,892.00	3,333.00	3,170.00	2,896.00	2,692.00	1,918.39	1,594.96	1,299.34	998.94	703.24
Cost contribution	36%	19%	34%	35%	35%	34%	23%	20%	16%	12%	8%
Global	2017	2018	2019	2020	2021	2022	2023F	2024F	00055	00005	00075
Giobai	2017	2010	2019	2020	2021	2022	20235	20246	2025F	2026F	2027F
Revenue	5,479.00	5,013.00	4,735.00	4,361.00	3,731.00	3,362.00	3,395.62	3,429.58	3,463.87	3,498.51	3,533.50
Revenue	5,479.00	5,013.00	4,735.00	4,361.00	3,731.00	3,362.00	3,395.62	3,429.58	3,463.87	3,498.51	3,533.50
Revenue Revenue contribution	5,479.00 23%	5,013.00 21%	4,735.00 20%	4,361.00 18%	3,731.00 15%	3,362.00 14%	3,395.62 14%	3,429.58 14%	3,463.87 14%	3,498.51 15%	3,533.50 15%
Revenue Revenue contribution EBITDA	5,479.00 23% 495.00	5,013.00 21% 374.00	4,735.00 20% 444.00	4,361.00 18% 634.00	3,731.00 15% 596.00	3,362.00 14% 456	3,395.62 14% 529.58	3,429.58 14% 518.93	3,463.87 14% 537.44	3,498.51 15% 552.35	3,533.50 15% 544.88
Revenue Revenue contribution EBITDA EBITDA contribution	5,479.00 23% 495.00 8%	5,013.00 21% 374.00 6%	4,735.00 20% 444.00 7%	4,361.00 18% 634.00 9%	3,731.00 15% 596.00 9%	3,362.00 14% 456 6%	3,395.62 14% 529.58 7%	3,429.58 14% 518.93 7%	3,463.87 14% 537.44 7%	3,498.51 15% 552.35 8%	3,533.50 15% 544.88 7%
Revenue Revenue contribution EBITDA EBITDA contribution D&A D&A contribution Cost	5,479.00 23% 495.00 8% 439.00 12% 4,545.00	5,013.00 21% 374.00 6% 432.00 12% 4,207.00	4,735.00 20% 444.00 7% 378.00 9% 3,913.00	4,361.00 18% 634.00 9% 479.00 11% 3,248.00	3,731.00 15% 596.00 9% 405.00 9% 2,730.00	3,362.00 14% 456 6% 355 8% 2,551.00	3,395.62 14% 529.58 7% 481.85 10% 2,384.19	3,429.58 14% 518.93 7% 488.06 10% 2,422.59	3,463.87 14% 537.44 7% 491.81 9% 2,434.62	3,498.51 15% 552.35 8% 521.00 10% 2,425.16	3,533.50 15% 544.88 7% 530.76 9% 2,457.86
Revenue Revenue contribution EBITDA EBITDA contribution D&A D&A contribution Cost Cost contribution	5,479.00 23% 495.00 8% 439.00 12% 4,545.00 45%	5,013.00 21% 374.00 6% 432.00 12% 4,207.00 43%	4,735.00 20% 444.00 7% 378.00 9% 3,913.00 40%	4,361.00 18% 634.00 9% 479.00 11% 3,248.00 36%	3,731.00 15% 596.00 9% 405.00 9% 2,730.00 33%	3,362.00 14% 456 6% 355 8% 2,551.00 32%	3,395.62 14% 529.58 7% 481.85 10% 2,384.19 29%	3,429.58 14% 518.93 7% 488.06 10% 2,422.59 30%	3,463.87 14% 537.44 7% 491.81 9% 2,434.62 30%	3,498.51 15% 552.35 8% 521.00 10% 2,425.16 30%	3,533.50 15% 544.88 7% 530.76 9% 2,457.86 30%
Revenue Revenue contribution EBITDA EBITDA contribution D&A D&A contribution Cost	5,479.00 23% 495.00 8% 439.00 12% 4,545.00 45% 2017	5,013.00 21% 374.00 6% 432.00 12% 4,207.00 43% <b>2018</b>	4,735.00 20% 444.00 7% 378.00 9% 3,913.00 40% <b>2019</b>	4,361.00 18% 634.00 9% 479.00 11% 3,248.00 36% <b>2020</b>	3,731.00 15% 596.00 9% 405.00 9% 2,730.00 33% <b>2021</b>	3,362.00 14% 456 6% 355 8% 2,551.00 32% <b>2022</b>	3,395.62 14% 529.58 7% 481.85 10% 2,384.19 29% <b>2023F</b>	3,429.58 14% 518.93 7% 488.06 10% 2,422.59 30% <b>2024F</b>	3,463.87 14% 537.44 7% 491.81 9% 2,434.62 30% <b>2025F</b>	3,498.51 15% 552.35 8% 521.00 10% 2,425.16 30% <b>2026F</b>	3,533.50 15% 544.88 7% 530.76 9% 2,457.86 30% <b>2027F</b>
Revenue Revenue contribution EBITDA EBITDA contribution D&A D&A contribution Cost Cost contribution	5,479.00 23% 495.00 8% 439.00 12% 4,545.00 45% <b>2017</b> 2,174.00	5,013.00 21% 374.00 6% 432.00 12% 4,207.00 43% <b>2018</b> 5,123.00	4,735.00 20% 444.00 7% 378.00 9% 3,913.00 40% <b>2019</b> 2,200.00	4,361.00 18% 634.00 9% 479.00 11% 3,248.00 36% <b>2020</b> 2,359.00	3,731.00 15% 596.00 9% 405.00 9% 2,730.00 33% <b>2021</b> 2,488.00	3,362.00 14% 456 6% 355 8% 2,551.00 32% <b>2022</b> 2,629.00	3,395.62 14% 529.58 7% 481.85 10% 2,384.19 29% <b>2023F</b> 2,775.38	3,429.58 14% 518.93 7% 488.06 10% 2,422.59 30% <b>2024F</b> 2,931.28	3,463.87 14% 537.44 7% 491.81 9% 2,434.62 30% <b>2025F</b> 3,095.22	3,498.51 15% 552.35 8% 521.00 10% 2,425.16 30% <b>2026F</b> 3,268.71	3,533.50 15% 544.88 7% 530.76 9% 2,457.86 30% <b>2027F</b> 3,451.72
Revenue Revenue contribution EBITDA EBITDA contribution D&A D&A contribution Cost Cost contribution Openreach Revenue Revenue contribution	5,479.00 23% 495.00 8% 439.00 12% 4,545.00 45% <b>2017</b> 2,174.00 9%	5,013.00 21% 374.00 6% 432.00 12% 4,207.00 43% <b>2018</b> 5,123.00 21%	4,735.00 20% 444.00 7% 378.00 9% 3,913.00 40% <b>2019</b> 2,200.00 9%	4,361.00 18% 634.00 9% 479.00 11% 3,248.00 36% <b>2020</b> 2,359.00 10%	3,731.00 15% 596.00 9% 405.00 9% 2,730.00 33% <b>2021</b> 2,488.00 10%	3,362.00 14% 456 6% 355 8% 2,551.00 32% <b>2022</b> 2,629.00 11%	3,395.62 14% 529.58 7% 481.85 10% 2,384.19 29% <b>2023F</b> 2,775.38 12%	3,429.58 14% 518.93 7% 488.06 10% 2,422.59 30% <b>2024F</b> 2,931.28 12%	3,463.87 14% 537.44 7% 491.81 9% 2,434.62 30% <b>2025F</b> 3,095.22 13%	3,498.51 15% 552.35 8% 521.00 10% 2,425.16 30% <b>2026F</b> 3,268.71 14%	3,533.50 15% 544.88 7% 530.76 9% 2,457.86 30% <b>2027F</b> 3,451.72 14%
Revenue Revenue contribution EBITDA EBITDA contribution D&A D&A contribution Cost Cost contribution Openreach Revenue Revenue Revenue contribution EBITDA	5,479.00 23% 495.00 8% 439.00 12% 4,545.00 45% <b>2017</b> 2,174.00 9% 2,734.00	5,013.00 21% 374.00 6% 432.00 12% 4,207.00 43% <b>2018</b> 5,123.00 21% 2,933.00	4,735.00 20% 444.00 7% 378.00 9% 3,913.00 40% 2019 2,200.00 9% 2,744.00	4,361.00 18% 634.00 9% 479.00 11% 3,248.00 36% <b>2020</b> 2,359.00 10% 2,858.00	3,731.00 15% 596.00 9% 405.00 9% 2,730.00 33% <b>2021</b> 2,488.00 10% 2,937.00	3,362.00 14% 456 6% 355 8% 2,551.00 32% 2022 2,629.00 11% 3179	3,395.62 14% 529.58 7% 481.85 10% 2,384.19 29% <b>2023F</b> 2,775.38 12% 3080	3,429.58 14% 518.93 7% 488.06 10% 2,422.59 30% <b>2024F</b> 2,931.28 12% 3050	3,463.87 14% 537.44 7% 491.81 9% 2,434.62 30% <b>2025F</b> 3,095.22 13% 3049	3,498.51 15% 552.35 8% 521.00 10% 2,425.16 30% <b>2026F</b> 3,268.71 14% 3073	3,533.50 15% 544.88 7% 530.76 9% 2,457.86 30% <b>2027F</b> 3,451.72 14% 3099
Revenue Revenue contribution EBITDA EBITDA contribution D&A D&A contribution Cost Cost contribution Openreach Revenue Revenue contribution EBITDA EBITDA contribution	5,479.00 23% 495.00 8% 439.00 12% 4,545.00 45% <b>2017</b> 2,174.00 9% 2,734.00 42%	5,013.00 21% 374.00 6% 432.00 12% 4,207.00 43% <b>2018</b> 5,123.00 21% 2,933.00 44%	4,735.00 20% 444.00 7% 378.00 9% 3,913.00 40% 2,200.00 9% 2,744.00 40%	4,361.00 18% 634.00 9% 479.00 11% 3,248.00 36% 2020 2,359.00 10% 2,858.00 38%	3,731.00 15% 596.00 9% 405.00 9% 2,730.00 33% <b>2021</b> 2,488.00 10% 2,937.00 42%	3,362.00 14% 456 6% 355 8% 2,551.00 32% <b>2022</b> 2,629.00 11%	3,395.62 14% 529.58 7% 481.85 10% 2,384.19 29% <b>2023F</b> 2,775.38 12% 3080 42%	3,429.58 14% 518.93 7% 488.06 10% 2,422.59 30% <b>2024F</b> 2,931.28 12% 3050 42%	3,463.87 14% 537.44 7% 491.81 9% 2,434.62 30% <b>2025F</b> 3,095.22 13% 3049 42%	3,498.51 15% 552.35 8% 521.00 10% 2,425.16 30% <b>2026F</b> 3,268.71 14% 3073 42%	3,533.50 15% 544.88 7% 530.76 9% 2,457.86 30% <b>2027F</b> 3,451.72 14% 3099 42%
Revenue Revenue contribution EBITDA EBITDA contribution D&A D&A contribution Cost Cost contribution Openreach Revenue Revenue contribution EBITDA EBITDA contribution D&A	5,479.00 23% 495.00 8% 439.00 12% 4,545.00 45% <b>2017</b> 2,174.00 9% 2,734.00 42% 1,414.00	5,013.00 21% 374.00 6% 432.00 12% 4,207.00 43% <b>2018</b> 5,123.00 21% 2,933.00 44% 1,330.00	4,735.00 20% 444.00 7% 378.00 9% 3,913.00 40% 2,200.00 9% 2,744.00 40% 1,398.00	4,361.00 18% 634.00 9% 479.00 11% 3,248.00 36% 2020 2,359.00 10% 2,858.00 38% 1,712.00	3,731.00 15% 596.00 9% 405.00 9% 2,730.00 33% 2021 2,488.00 10% 2,937.00 42% 1,707.00	3,362.00 14% 456 6% 355 8% 2,551.00 32% 2,629.00 11% 3179 44% 1876	3,395.62 14% 529.58 7% 481.85 10% 2,384.19 29% <b>2023F</b> 2,775.38 12% 3080 42% 1884	3,429.58 14% 518.93 7% 488.06 10% 2,422.59 30% <b>2024F</b> 2,931.28 12% 3050 42% 1982	3,463.87 14% 537.44 7% 491.81 9% 2,434.62 30% <b>2025F</b> 3,095.22 13% 3049 42% 2081	3,498.51 15% 552.35 8% 521.00 10% 2,425.16 30% <b>2026F</b> 3,268.71 14% 3073 42% 2180	3,533.50 15% 544.88 7% 530.76 9% 2,457.86 30% <b>2027F</b> 3,451.72 14% 3099 42% 2281
Revenue Revenue contribution EBITDA EBITDA contribution D&A D&A contribution Cost Cost contribution Openreach Revenue Revenue contribution EBITDA EBITDA contribution D&A D&A contribution	5,479.00 23% 495.00 8% 439.00 12% 4,545.00 45% 2017 2,174.00 9% 2,734.00 42% 1,414.00 40%	5,013.00 21% 374.00 6% 432.00 12% 4,207.00 43% <b>2018</b> 5,123.00 21% 2,933.00 44% 1,330.00 38%	4,735.00 20% 444.00 7% 378.00 9% 3,913.00 40% 2,200.00 9% 2,744.00 40% 1,398.00 39%	4,361.00 18% 634.00 9% 479.00 11% 3,248.00 36% 2,359.00 10% 2,858.00 38% 1,712.00 40%	3,731.00 15% 596.00 9% 405.00 9% 2,730.00 33% 2021 2,488.00 10% 2,937.00 42% 1,707.00 39%	3,362.00 14% 456 6% 355 8% 2,551.00 32% 2,629.00 11% 3179 44% 1876 43%	3,395.62 14% 529.58 7% 481.85 10% 2,384.19 29% <b>2023F</b> 2,775.38 12% 3080 42% 1884 40%	3,429.58 14% 518.93 7% 488.06 10% 2,422.59 30% 2024F 2,931.28 12% 3050 42% 1982 40%	3,463.87 14% 537.44 7% 491.81 9% 2,434.62 30% <b>2025F</b> 3,095.22 13% 3049 42% 2081 40%	3,498.51 15% 552.35 8% 521.00 10% 2,425.16 30% <b>2026F</b> 3,268.71 14% 3073 42% 2180 40%	3,533.50 15% 544.88 7% 530.76 9% 2,457.86 30% <b>2027F</b> 3,451.72 14% 3099 42% 2281 40%
Revenue Revenue contribution EBITDA EBITDA contribution D&A D&A contribution Cost Cost contribution Openreach Revenue Revenue contribution EBITDA EBITDA contribution D&A D&A contribution Cost	5,479.00 23% 495.00 8% 439.00 12% 4,545.00 45% 2017 2,174.00 9% 2,734.00 42% 1,414.00 40% (1,974.00)	5,013.00 21% 374.00 6% 432.00 12% 4,207.00 43% 2018 5,123.00 21% 2,933.00 44% 1,330.00 38% 860.00	4,735.00 20% 444.00 7% 378.00 9% 3,913.00 40% 2,200.00 9% 2,744.00 40% 1,398.00 39% (1,942.00)	4,361.00 18% 634.00 9% 479.00 11% 3,248.00 36% 2,359.00 10% 2,858.00 38% 1,712.00 40% (2,211.00)	3,731.00 15% 596.00 9% 405.00 9% 2,730.00 33% 2021 2,488.00 10% 2,937.00 42% 1,707.00 39% (2,156.00)	3,362.00 14% 456 6% 355 8% 2,551.00 32% 2,629.00 11% 3179 44% 1876 43% (2,426.00)	3,395.62 14% 529.58 7% 481.85 10% 2,384.19 29% <b>2023F</b> 2,775.38 12% 3080 42% 1884 40% ( <b>2,188.45</b> )	3,429.58 14% 518.93 7% 488.06 10% 2,422.59 30% 2024F 2,931.28 12% 3050 42% 1982 40% (2,100.67)	3,463.87 14% 537.44 7% 491.81 9% 2,434.62 30% <b>2025F</b> 3,095.22 13% 3049 42% 2081 40% (2,035.18)	3,498.51 15% 552.35 8% 521.00 10% 2,425.16 30% <b>2026F</b> 3,268.71 14% 3073 42% 2180 40% (1,984.33)	3,533.50 15% 544.88 7% 530.76 9% 2,457.86 30% <b>2027F</b> 3,451.72 14% 3099 42% 2281 40% (1,927.75)
Revenue Revenue contribution EBITDA EBITDA contribution D&A D&A contribution Cost Cost contribution Openreach Revenue Revenue contribution EBITDA EBITDA contribution D&A D&A contribution	5,479.00 23% 495.00 8% 439.00 12% 4,545.00 45% 2017 2,174.00 9% 2,734.00 42% 1,414.00 40%	5,013.00 21% 374.00 6% 432.00 12% 4,207.00 43% <b>2018</b> 5,123.00 21% 2,933.00 44% 1,330.00 38%	4,735.00 20% 444.00 7% 378.00 9% 3,913.00 40% 2,200.00 9% 2,744.00 40% 1,398.00 39%	4,361.00 18% 634.00 9% 479.00 11% 3,248.00 36% 2,359.00 10% 2,858.00 38% 1,712.00 40%	3,731.00 15% 596.00 9% 405.00 9% 2,730.00 33% 2021 2,488.00 10% 2,937.00 42% 1,707.00 39%	3,362.00 14% 456 6% 355 8% 2,551.00 32% 2,629.00 11% 3179 44% 1876 43%	3,395.62 14% 529.58 7% 481.85 10% 2,384.19 29% <b>2023F</b> 2,775.38 12% 3080 42% 1884 40%	3,429.58 14% 518.93 7% 488.06 10% 2,422.59 30% 2024F 2,931.28 12% 3050 42% 1982 40%	3,463.87 14% 537.44 7% 491.81 9% 2,434.62 30% <b>2025F</b> 3,095.22 13% 3049 42% 2081 40%	3,498.51 15% 552.35 8% 521.00 10% 2,425.16 30% <b>2026F</b> 3,268.71 14% 3073 42% 2180 40%	3,533.50 15% 544.88 7% 530.76 9% 2,457.86 30% <b>2027F</b> 3,451.72 14% 3099 42% 2281 40%

#### Appendix 7: WCR

WORKING CAPITAL REQUIREMENT (£ Millions)	2017	2018	2019	2020	2021	2022F	2023F	2024F	2025F	2026F	2027F
Revenue	24,082	23,746	23,459	22,824	21,370	20,845	21,492	21,188	21,232	21,370	21,564
Growth		-1.40%	-1.21%	-2.71%	-6.37%	-2.46%	3.11%	-1.42%	0.21%	0.65%	0.91%
Cost of Sales	10,140	9,746	9,715	8,961	8,314	7,951	8,280	8,122	8,159	8,202	8,282
Working Capital Balance											
Inventory	227	239	369	300	297	245	255	250	251	253	255
Account Receivables	2,729	2,518	3,119	2,874	2,854	3,043	2,770	2,828	2,836	2,887	2,920
Prepaid Expenses	733	1,103	698	607	1,357	1,324	1,365	1,345	1,348	1,357	1,369
Operational Assets	3,689	3,860	4,186	3,781	4,508	4,612	4,390	4,423	4,435	4,497	4,544
Account Payables	4,205	3,991	4,141	3,889	4,024	3,448	3,591	3,522	3,539	3,557	3,592
Accrued Expenses	1,086	1,196	1,194	1,107	1,125	1,122	1,122	1,122	1,122	1,122	1,122
Operational Liabilities	5,291	5,187	5,335	4,996	5,149	4,570	4,713	4,644	4,661	4,679	4,714
WCR CORE	(1,602)	(1,327)	(1,149)	(1,215)	(641)	41	(323)	(221)	(225)	(183)	(169)
Net WCR		(275)	(178)	66	(574)	(682)	364	(102)	4	(43)	(13)
Purchase		9,758	9,845	8,892	8,311	7,899	8,290	8,117	8,160	8,204	8,284
Ratios & Assumptions	Days	365									
Days Sales in Inventory (DIO)	8.17	8.95	13.86	12.22	13.04	11.25	11.25	11.25	11.25	11.25	11.25
Collection Period	41.36	38.70	48.53	45.96	48.75	44.66	44.66	44.66	44.66	44.66	44.66
Prepaid Expenses Days of Sales Outstanding	11.11	16.95	10.86	9.71	23.18	23.18	23.18	23.18	23.18	23.18	23.18
Days Payable Outstanding (DPO)	151.36	149.47	155.58	158.41	176.66	158.30	158.30	158.30	158.30	158.30	158.30
Cash Conversion Cycle	-101.83	-101.81	-93.19	-100.23	-114.88	-102.39	-102.39	-102.39	-102.39	-102.39	-102.39

#### Appendix 8: Capex, Debt, and D&A Schedule

Capex Forecast	2017	2018	2019	2020	2021	2022	2023F	2024F	2025F	2026F	2027F
Purchase of Fixed Assets	3,145.0	3,362.0	3,678.0	4,105.0	4,903.0	4,607.0	4,750.1	4,682.8	4,692.5	4,723.1	4,765.9
Sale of Fixed Assets	26.0	21.0	41.0	216.0	85.0	80.0					
Net Capex	3,119	3,341	3,637	3,889	4,818	4,527	4,750	4,683	4,692	4,723	4,766
Net Capex as % Revenue	13.1%	14.2%	15.7%	18.0%	22.9%	22.1%	22.1%	22.1%	22.1%	22.1%	22.1%
Net Capex as % Gross PPE	5.8%	6.1%	6.5%	6.2%	7.6%	7.1%	7.1%	7.1%	7.1%	7.1%	7.1%
Net PP&E											
Begin Balance at Cost							64,200	68,950	73,633	78,325	83,048
Add Capex Forecasts from Above							4,750	4,683	4,692	4,723	4,766
End Balance Net PP&E	54,083	55,121	55,978	62,905	63,031	64,200	68,950	73,633	78,325	83,048	87,814
	34,000	1.92%	1.55%	12.37%	0.20%	1.85%	7.40%	6.79%			
A second de la Demas sistis a		1.92%	1.55%	12.37%	0.20%	1.05%	7.40%	0.79%	6.37%	6.03%	5.74%
Accumulated Depreciation							00.470	10.011	10.000	50.000	55 040
Beg Balance							39,172	42,811	46,696	50,829	55,212
Substract Depreciation Expenses Forecasts from Below							3,639	3,886	4,133	4,382	4,634
End Balance	37,585	38,121	38,143	39,040	38,771	39,172	42,811	46,696	50,829	55,212	59,846
PPE Net	16,498	17,000	17,835	23,865	24,260	25,028	26,140	26,937	27,496	27,837	27,969
Depreciation Schedule	2017	2018	2019	2020	2021	2022		PE Purchase			_
PPE at Cost	54,083	55,121	55,978	62,905	63,031	64,200	(	Capex in 202	3	4,750	
Avg Depreciable PPE		54,602	55,550	59,442	62,968	63,616	(	Capex in 202	4	4,683	
Depreciation Expenses	2,392	2,391	2,392	3,123	3,150	3,357	(	Capex in 202	5	4,692	
Implied Avg useful life in years		22.836	23.223	19.033	19.990	18.950	(	Capex in 202	6	4,723	
								Capex in 202		4,766	
L							`				
Depreciation Expenses							2023F	2024F	2025F	2026F	2027F
Existing PPE at Cost	64,200						251	251	251	251	251
Net PPE	25,028							247	247	247	247
									248	248	248
									2.0	249	249
										245	
							0.000	0.000	0.000	0.000	251
Depreciation Expenses Forecast on Existing PPE							3,388	3,388	3,388	3,388	3,388
Total Depreciation Expenses							3638.51	3885.62	4133.24	4382.48	4633.98
Remaining Balance to be Depreciated							22,501	23,051	23,363	23,454	23,335
Depreciation % Capex	4.42%	4.34%	4.27%	4.96%	5.00%	5.23%	8.50%	8.32%	8.13%	7.94%	7.74%
							16%	17%	18%	19%	20%
Sales	24,082	23,746	23,459	22,824							
	2017			2020	2021	2022	2023F				
	2017	2018	2019	2020			20256	2024F	2025F	2026F	2027F
Intangible at Cost	12,583	2018 12,757	12,692	11,901	12,284	13,190	14,504	2024F 15,694	2025F 16,853	2026F 18,013	2027F 19,107
Intangible at Cost Amortization Expenses											
Amortization Expenses	12,583 1,118	12,757 1,123	12,692 1,154	11,901	12,284	13,190	14,504 1,085	15,694 1,085	16,853 1,085	18,013	19,107 1,085
Amortization Expenses Accumulated Amortizaion	12,583 1,118 5,588	12,757 1,123 6,255	12,692 1,154 6,313	11,901 1,173 5,957	12,284 1,197 6,765	13,190 1,048 7,298	14,504 1,085 8,383	15,694 1,085 9,469	16,853 1,085 10,554	18,013 1,085 11,639	19,107 1,085 12,724
Amortization Expenses	12,583 1,118	12,757 1,123	12,692 1,154	11,901 1,173	12,284 1,197	13,190 1,048	14,504 1,085	15,694 1,085	16,853 1,085	18,013 1,085	19,107 1,085
Amortization Expenses Accumulated Amortizaion Ending Net Intangibles	12,583 1,118 5,588 <b>6,995</b>	12,757 1,123 6,255 <b>6,502</b>	12,692 1,154 6,313 <b>6,379</b>	11,901 1,173 5,957 <b>5,944</b>	12,284 1,197 6,765 <b>5,519</b>	13,190 1,048 7,298 <b>5,892</b>	14,504 1,085 8,383	15,694 1,085 9,469	16,853 1,085 10,554	18,013 1,085 11,639	19,107 1,085 12,724
Amortization Expenses Accumulated Amortizaion Ending Net Intangibles Exsting Intangible at Cost	12,583 1,118 5,588	12,757 1,123 6,255 <b>6,502</b> 12,757	12,692 1,154 6,313 <b>6,379</b> 12,692	11,901 1,173 5,957 <b>5,944</b> 11,901	12,284 1,197 6,765 <b>5,519</b> 12,284	13,190 1,048 7,298 <b>5,892</b> 13,190	14,504 1,085 8,383	15,694 1,085 9,469	16,853 1,085 10,554	18,013 1,085 11,639	19,107 1,085 12,724
Amortization Expenses Accumulated Amortizaion Ending Net Intangibles	12,583 1,118 5,588 <b>6,995</b>	12,757 1,123 6,255 <b>6,502</b>	12,692 1,154 6,313 <b>6,379</b>	11,901 1,173 5,957 <b>5,944</b>	12,284 1,197 6,765 <b>5,519</b>	13,190 1,048 7,298 <b>5,892</b>	14,504 1,085 8,383	15,694 1,085 9,469	16,853 1,085 10,554	18,013 1,085 11,639	19,107 1,085 12,724
Amortization Expenses Accumulated Amortizaion Ending Net Intangibles Exsting Intangible at Cost	12,583 1,118 5,588 <b>6,995</b>	12,757 1,123 6,255 <b>6,502</b> 12,757	12,692 1,154 6,313 <b>6,379</b> 12,692	11,901 1,173 5,957 <b>5,944</b> 11,901	12,284 1,197 6,765 <b>5,519</b> 12,284	13,190 1,048 7,298 <b>5,892</b> 13,190	14,504 1,085 8,383	15,694 1,085 9,469	16,853 1,085 10,554	18,013 1,085 11,639	19,107 1,085 12,724
Amortization Expenses Accumulated Amortizaion Ending Net Intangibles Exsting Intangible at Cost Average Amorization Intangible	12,583 1,118 5,588 <b>6,995</b> 12,583	12,757 1,123 6,255 <b>6,502</b> 12,757 12,670	12,692 1,154 6,313 <b>6,379</b> 12,692 12,725	11,901 1,173 5,957 <b>5,944</b> 11,901 12,297	12,284 1,197 6,765 <b>5,519</b> 12,284 12,093	13,190 1,048 7,298 <b>5,892</b> 13,190 12,737	14,504 1,085 8,383	15,694 1,085 9,469	16,853 1,085 10,554	18,013 1,085 11,639	19,107 1,085 12,724
Amortization Expenses Accumulated Amortizaion Ending Net Intangibles Exsting Intangible at Cost Average Amorization Intangible Amortization Expnesse	12,583 1,118 5,588 <b>6,995</b> 12,583	12,757 1,123 6,255 <b>6,502</b> 12,757 12,670 1,123	12,692 1,154 6,313 <b>6,379</b> 12,692 12,725 1,154	11,901 1,173 5,957 <b>5,944</b> 11,901 12,297 1,173	12,284 1,197 6,765 <b>5,519</b> 12,284 12,093 1,197	13,190 1,048 7,298 <b>5,892</b> 13,190 12,737 1,048	14,504 1,085 8,383	15,694 1,085 9,469	16,853 1,085 10,554	18,013 1,085 11,639	19,107 1,085 12,724
Amortization Expenses Accumulated Amortizaion Ending Net Intangibles Exsting Intangible at Cost Average Amorization Intangible Amortization Expnesse	12,583 1,118 5,588 <b>6,995</b> 12,583	12,757 1,123 6,255 <b>6,502</b> 12,757 12,670 1,123	12,692 1,154 6,313 <b>6,379</b> 12,692 12,725 1,154	11,901 1,173 5,957 <b>5,944</b> 11,901 12,297 1,173	12,284 1,197 6,765 <b>5,519</b> 12,284 12,093 1,197	13,190 1,048 7,298 <b>5,892</b> 13,190 12,737 1,048	14,504 1,085 8,383	15,694 1,085 9,469	16,853 1,085 10,554	18,013 1,085 11,639	19,107 1,085 12,724
Amortization Expenses Accumulated Amortizaion Ending Net Intangibles Exsting Intangible at Cost Average Amorization Intangible Amortization Expnesse Implied Avg Userful Life in Years	12,583 1,118 5,588 <b>6,995</b> 12,583 1,118	12,757 1,123 6,255 <b>6,502</b> 12,757 12,670 1,123	12,692 1,154 6,313 <b>6,379</b> 12,692 12,725 1,154 11.03	11,901 1,173 5,957 <b>5,944</b> 11,901 12,297 1,173	12,284 1,197 6,765 <b>5,519</b> 12,284 12,093 1,197 10.10	13,190 1,048 7,298 <b>5,892</b> 13,190 12,737 1,048 <b>12.15</b>	14,504 1,085 8,383 <b>6,121</b>	15,694 1,085 9,469 <b>6,225</b>	16,853 1,085 10,554 <b>6,299</b>	18,013 1,085 11,639 <b>6,374</b>	19,107 1,085 12,724 <b>6,383</b>
Amortization Expenses Accumulated Amortization Ending Net Intangibles Exsting Intangible at Cost Average Amortization Intangible Amortization Expnesse Implied Avg Userful Life in Years Existing Intangible Assets	12,583 1,118 5,588 <b>6,995</b> 12,583 1,118 <b>13,190</b>	12,757 1,123 6,255 <b>6,502</b> 12,757 12,670 1,123	12,692 1,154 6,313 <b>6,379</b> 12,692 12,725 1,154 11.03	11,901 1,173 5,957 <b>5,944</b> 11,901 12,297 1,173 10.48	12,284 1,197 6,765 <b>5,519</b> 12,284 12,093 1,197 10.10	13,190 1,048 7,298 <b>5,892</b> 13,190 12,737 1,048 <b>12.15</b>	14,504 1,085 8,383 <b>6,121</b> 2023	15,694 1,085 9,469 <b>6,225</b> 2024	16,853 1,085 10,554 <b>6,299</b> 2025	18,013 1,085 11,639 <b>6,374</b> 2026	19,107 1,085 12,724 <b>6,383</b> 2027
Amortization Expenses Accumulated Amortization Ending Net Intangibles Exsting Intangible at Cost Average Amortization Intangible Amortization Expnesse Implied Avg Userful Life in Years Existing Intangible Assets	12,583 1,118 5,588 <b>6,995</b> 12,583 1,118 <b>13,190</b>	12,757 1,123 6,255 <b>6,502</b> 12,757 12,670 1,123	12,692 1,154 6,313 <b>6,379</b> 12,692 12,725 1,154 11.03	11,901 1,173 5,957 <b>5,944</b> 11,901 12,297 1,173 10.48 Amorization	12,284 1,197 6,765 <b>5,519</b> 12,284 12,093 1,197 10.10	13,190 1,048 7,298 <b>5,892</b> 13,190 12,737 1,048 <b>12,15</b> 2022	14,504 1,085 8,383 <b>6,121</b> 2023 <b>1,085</b>	15,694 1,085 9,469 <b>6,225</b> 2024 <b>1,085</b>	16,853 1,085 10,554 <b>6,299</b> 2025 <b>1,085</b>	18,013 1,085 11,639 <b>6,374</b> 2026 <b>1,085</b>	19,107 1,085 12,724 <b>6,383</b> 2027 <b>1,085</b>
Amortization Expenses Accumulated Amortization Ending Net Intangibles Exsting Intangible at Cost Average Amortization Intangible Amortization Expnesse Implied Avg Userful Life in Years Existing Intangible Assets	12,583 1,118 5,588 <b>6,995</b> 12,583 1,118 <b>13,190</b>	12,757 1,123 6,255 <b>6,502</b> 12,757 12,670 1,123	12,692 1,154 6,313 <b>6,379</b> 12,692 12,725 1,154 11.03	11,901 1,173 5,957 <b>5,944</b> 11,901 12,297 1,173 10.48 Amorization	12,284 1,197 6,765 <b>5,519</b> 12,284 12,093 1,197 10.10	13,190 1,048 7,298 <b>5,892</b> 13,190 12,737 1,048 <b>12.15</b> 2022 <b>5,892</b>	14,504 1,085 8,383 <b>6,121</b> 2023 1,085 <b>6,977</b>	15,694 1,085 9,469 <b>6,225</b> 2024 1,085 8,063	16,853 1,085 10,554 <b>6,299</b> 2025 <b>1,085</b> <b>9,148</b>	18,013 1,085 11,639 <b>6,374</b> 2026 1,085 10,233	19,107 1,085 12,724 <b>6,383</b> 2027 <b>1,085</b> <b>11,318</b>
Amortization Expenses Accumulated Amortization Ending Net Intangibles Exsting Intangible at Cost Average Amorization Intangible Amortization Expnesse Implied Avg Userful Life in Years Existing Intangible Assets Net Intangible Assets	12,583 1,118 5,588 <b>6,995</b> 12,583 1,118 <b>13,190</b>	12,757 1,123 6,255 <b>6,502</b> 12,757 12,670 1,123	12,692 1,154 6,313 <b>6,379</b> 12,692 12,725 1,154 11.03	11,901 1,173 5,957 <b>5,944</b> 11,901 12,297 1,173 10.48 Amorization	12,284 1,197 6,765 <b>5,519</b> 12,284 12,093 1,197 10.10 Expenses	13,190 1,048 7,298 <b>5,892</b> 13,190 12,737 1,048 <b>12.15</b> 2022 <b>5,892</b> 2022F	14,504 1,085 8,383 <b>6,121</b> 2023 1,085 <b>6,977</b> 2023F	15,694 1,085 9,469 <b>6,225</b> 2024 1,085 8,063	16,853 1,085 10,554 <b>6,299</b> 2025 1,085 9,148 2025F	18,013 1,085 11,639 <b>6,374</b> 2026 1,085 10,233	19,107 1,085 12,724 <b>6,383</b> 2027 1,085 11,318
Amortization Expenses Accumulated Amortization Ending Net Intangibles Exsting Intangible at Cost Average Amorization Intangible Amortization Expnesse Implied Avg Userful Life in Years Existing Intangible Assets Net Intangible Assets Net Intangible Assets	12,583 1,118 5,588 <b>6,995</b> 12,583 1,118 <b>13,190</b>	12,757 1,123 6,255 <b>6,502</b> 12,757 12,670 1,123	12,692 1,154 6,313 <b>6,379</b> 12,692 12,725 1,154 11.03	11,901 1,173 5,957 <b>5,944</b> 11,901 12,297 1,173 10.48 Amorization	12,284 1,197 6,765 <b>5,519</b> 12,284 12,093 1,197 10.10 Expenses 2021 21,370	13,190 1,048 7,298 <b>5,892</b> 13,190 12,737 1,048 <b>12.15</b> 2022 <b>5,892</b> <b>2022F</b> <b>20,845</b>	14,504 1,085 8,383 <b>6,121</b> 2023 1,085 <b>6,977</b> 2023F 21,492	15,694 1,085 9,469 <b>6,225</b> 2024 1,085 8,063 2024F 21,188	16,853 1,085 10,554 <b>6,299</b> 2025 <b>1,085</b> <b>9,148</b> 2025F 21,232	18,013 1,085 11,639 <b>6,374</b> 2026 1,085 10,233 2026F 21,370	19,107 1,085 12,724 <b>6,383</b> 2027 1,085 11,318 2027F 21,564
Amortization Expenses Accumulated Amortization Ending Net Intangibles Exsting Intangible at Cost Average Amorization Intangible Amortization Expnesse Implied Avg Userful Life in Years Existing Intangible Assets Net Intangible Assets Net Intangible Assets	12,583 1,118 5,588 <b>6,995</b> 12,583 1,118 <b>13,190</b> <b>5,892</b>	12,757 1,123 6,255 <b>6,502</b> 12,757 12,670 1,123 11.28	12,692 1,154 6,313 <b>6,379</b> 12,692 12,725 1,154 11.03 <b>Total Ar</b>	11,901 1,173 5,957 <b>5,944</b> 11,901 12,297 1,173 10.48 Amorization E	12,284 1,197 6,765 <b>5,519</b> 12,284 12,093 1,197 10.10 <b>Expenses</b>	13,190 1,048 7,298 5,892 13,190 12,737 1,048 12.15 2022 5,892 2022F 20,845 21,305	14,504 1,085 8,383 <b>6,121</b> 2023 1,085 <b>6,977</b> 2023F 21,492 19,991	15,694 1,085 9,469 <b>6,225</b> 2024 1,085 8,063 2024F 21,188 20,965	16,853 1,085 10,554 <b>6,299</b> 2025 1,085 9,148 2025F 21,232 20,413	18,013 1,085 11,639 <b>6,374</b> 2026 1,085 10,233 2026F 21,370 19,100	19,107 1,085 12,724 <b>6,383</b> 2027 <b>1,085</b> <b>11,318</b> <b>2027F</b> <b>21,564</b> 19,745
Amortization Expenses Accumulated Amortization Ending Net Intangibles Exsting Intangible at Cost Average Amorization Intangible Amortization Expnesse Implied Avg Userful Life in Years Existing Intangible Assets Net Intangible Assets Net Intangible Assets Net Intangible Assets Net Intangible Assets	12,583 1,118 5,588 <b>6,995</b> 12,583 1,118 <b>13,190</b>	12,757 1,123 6,255 <b>6,502</b> 12,757 12,670 1,123	12,692 1,154 6,313 <b>6,379</b> 12,692 12,725 1,154 11.03	11,901 1,173 5,957 <b>5,944</b> 11,901 12,297 1,173 10.48 Amorization	12,284 1,197 6,765 <b>5,519</b> 12,284 12,093 1,197 10.10 Expenses 2021 21,370	13,190 1,048 7,298 <b>5,892</b> 13,190 12,737 1,048 <b>12.15</b> 2022 <b>5,892</b> <b>2022F</b> <b>20,845</b>	14,504 1,085 8,383 <b>6,121</b> 2023 1,085 <b>6,977</b> 2023F 21,492 19,991 2023F	15,694 1,085 9,469 <b>6,225</b> 2024 1,085 8,063 2024F 21,188 20,965 2024F	16,853 1,085 10,554 6,299 2025 1,085 9,148 2025F 21,232 20,413 2025F	18,013 1,085 11,639 <b>6,374</b> 2026 1,085 10,233 2026F 21,370 19,100 2026F	19,107 1,085 12,724 <b>6,383</b> 2027 1,085 11,318 2027F 21,564 19,745 2027F
Amortization Expenses Accumulated Amortization Ending Net Intangibles Exsting Intangible at Cost Average Amorization Intangible Amortization Expnesse Implied Avg Userful Life in Years Existing Intangible Assets Net Intangible Assets Net Intangible Assets	12,583 1,118 5,588 <b>6,995</b> 12,583 1,118 <b>13,190</b> <b>5,892</b>	12,757 1,123 6,255 <b>6,502</b> 12,757 12,670 1,123 11.28	12,692 1,154 6,313 <b>6,379</b> 12,692 12,725 1,154 11.03 <b>Total Ar</b>	11,901 1,173 5,957 <b>5,944</b> 11,901 12,297 1,173 10.48 Amorization E	12,284 1,197 6,765 <b>5,519</b> 12,284 12,093 1,197 10.10 <b>Expenses</b>	13,190 1,048 7,298 5,892 13,190 12,737 1,048 12.15 2022 5,892 2022F 20,845 21,305	14,504 1,085 8,383 <b>6,121</b> 2023 1,085 6,977 2023F 21,492 19,991 2023F 20,277	15,694 1,085 9,469 <b>6,225</b> 2024 1,085 8,063 2024F 21,188 20,965	16,853 1,085 10,554 <b>6,299</b> 2025 <b>1,085</b> <b>9,148</b> 2025F 21,232 20,413 2025F 21,749	18,013 1,085 11,639 <b>6,374</b> 2026 1,085 10,233 2026F 21,370 19,100 2026F 21,142	19,107 1,085 12,724 <b>6,383</b> 2027 1,085 11,318 2027F 21,564 19,745 2027F 19,726
Amortization Expenses Accumulated Amortization Ending Net Intangibles Exsting Intangible at Cost Average Amorization Intangible Amortization Expnesse Implied Avg Userful Life in Years Existing Intangible Assets Net Intangible Assets Net Intangible Assets Net Intangible Assets Net Intangible Assets	12,583 1,118 5,588 <b>6,995</b> 12,583 1,118 <b>13,190</b> <b>5,892</b>	12,757 1,123 6,255 <b>6,502</b> 12,757 12,670 1,123 11.28	12,692 1,154 6,313 <b>6,379</b> 12,692 12,725 1,154 11.03 <b>Total Ar</b>	11,901 1,173 5,957 <b>5,944</b> 11,901 12,297 1,173 10.48 Amorization E	12,284 1,197 6,765 <b>5,519</b> 12,284 12,093 1,197 10.10 <b>Expenses</b>	13,190 1,048 7,298 5,892 13,190 12,737 1,048 12.15 2022 5,892 2022F 20,845 21,305	14,504 1,085 8,383 <b>6,121</b> 2023 1,085 <b>6,977</b> 2023F 21,492 19,991 2023F	15,694 1,085 9,469 <b>6,225</b> 2024 1,085 8,063 2024F 21,188 20,965 2024F	16,853 1,085 10,554 6,299 2025 1,085 9,148 2025F 21,232 20,413 2025F	18,013 1,085 11,639 <b>6,374</b> 2026 1,085 10,233 2026F 21,370 19,100 2026F	19,107 1,085 12,724 <b>6,383</b> 2027 <b>1,085</b> <b>11,318</b> <b>2027F</b> <b>21,564</b> 19,745 <b>2027F</b>
Amortization Expenses Accumulated Amortization Ending Net Intangibles Exsting Intangible at Cost Average Amorization Intangible Amortization Expnesse Implied Avg Userful Life in Years Existing Intangible Assets Net Intangible Assets Net Intangible Assets Net Intangible Assets Net Intangible Assets	12,583 1,118 5,588 <b>6,995</b> 12,583 1,118 <b>13,190</b> <b>5,892</b>	12,757 1,123 6,255 <b>6,502</b> 12,757 12,670 1,123 11.28	12,692 1,154 6,313 <b>6,379</b> 12,692 12,725 1,154 11.03 <b>Total Ar</b>	11,901 1,173 5,957 <b>5,944</b> 11,901 12,297 1,173 10.48 Amorization E	12,284 1,197 6,765 <b>5,519</b> 12,284 12,093 1,197 10.10 <b>Expenses</b>	13,190 1,048 7,298 5,892 13,190 12,737 1,048 12.15 2022 5,892 2022F 20,845 21,305	14,504 1,085 8,383 <b>6,121</b> 2023 1,085 6,977 2023F 21,492 19,991 2023F 20,277	15,694 1,085 9,469 <b>6,225</b> 2024 1,085 8,063 2024F 21,188 20,965 2024F 20,779	16,853 1,085 10,554 <b>6,299</b> 2025 <b>1,085</b> <b>9,148</b> 2025F 21,232 20,413 2025F 21,749	18,013 1,085 11,639 <b>6,374</b> 2026 1,085 10,233 2026F 21,370 19,100 2026F 21,142	19,107 1,085 12,724 <b>6,383</b> 2027 1,085 11,318 2027F 21,564 19,745 2027F 19,726
Amortization Expenses Accumulated Amortization Ending Net Intangibles Exsting Intangible at Cost Average Amorization Intangible Amortization Expnesse Implied Avg Userful Life in Years Existing Intangible Assets Net Intangible Assets Net Intangible Assets Net Intangible Assets Net Intangible Assets Existing Intangible Assets	12,583 1,118 5,588 <b>6,995</b> 12,583 1,118 <b>13,190</b> <b>5,892</b>	12,757 1,123 6,255 <b>6,502</b> 12,757 12,670 1,123 11.28	12,692 1,154 6,313 <b>6,379</b> 12,692 12,725 1,154 11.03 <b>Total Ar</b>	11,901 1,173 5,957 <b>5,944</b> 11,901 12,297 1,173 10.48 Amorization E	12,284 1,197 6,765 <b>5,519</b> 12,284 12,093 1,197 10.10 <b>Expenses</b>	13,190 1,048 7,298 5,892 13,190 12,737 1,048 12.15 2022 5,892 2022F 20,845 21,305	14,504 1,085 8,383 <b>6,121</b> 2023 1,085 <b>6,977</b> 2023F 21,492 19,991 2023F 20,277 970	15,694 1,085 9,469 <b>6,225</b> 2024 1,085 8,063 2024F 21,188 20,965 2024F 20,779 1,438	16,853 1,085 10,554 6,299 2025 1,085 9,148 2025F 21,232 20,413 2025F 21,749 808	18,013 1,085 11,639 <b>6,374</b> 2026 1,085 10,233 2026F 21,370 19,100 2026F 21,142 1,116	19,107 1,085 12,724 6,383 2027 1,085 11,318 2027F 21,564 19,745 2027F 19,725 987
Amortization Expenses Accumulated Amortization Ending Net Intangibles Exsting Intangible at Cost Average Amorization Intangible Amortization Expnesse Implied Avg Userful Life in Years Existing Intangible Assets Net Intangible Assets Net Intangible Assets Net Intangible Assets Existing Intangible Assets Net Intangible Assets Debt Long Term Debt Essurance Debt Repayment	12,583 1,118 5,588 6,995 12,583 1,118 13,190 5,892 2017 2017	12,757 1,123 6,255 <b>6,502</b> 12,757 12,670 1,123 11.28	12,692 1,154 6,313 <b>6,379</b> 12,692 12,725 1,154 11.03 <b>Total Ar</b> 2019	11,901 1,173 5,957 <b>5,944</b> 11,901 12,297 1,173 10.48 Amorization E	12,284 1,197 6,765 <b>5,519</b> 12,284 12,093 1,197 10.10 <b>Expenses</b> 2021 21,370 22,145 2021	13,190 1,048 7,298 5,892 13,190 12,737 1,048 12.15 2022 5,892 2022F 20,845 21,305 2022F	14,504 1,085 8,383 <b>6,121</b> 2023 1,085 <b>6,977</b> 2023F 21,492 19,991 2023F 20,277 970 468	15,694 1,085 9,469 <b>6,225</b> 2024 1,085 8,063 2024F 21,188 20,965 2024F 20,779 1,438 468	16,853 1,085 10,554 6,299 2025 1,085 9,148 2025F 21,232 20,413 2025F 21,749 808 1,415 21,142	18,013 1,085 11,639 <b>6,374</b> 2026 1,085 10,233 2026F 21,370 19,100 2026F 21,142 1,116 2,532	19,107 1,085 12,724 <b>6,383</b> 2027 <b>1,085</b> <b>11,318</b> <b>2027F</b> 19,745 <b>2027F</b> 19,745 <b>2027F</b> 19,745 <b>2027F</b> 19,745 <b>2027</b> 379 <b>20,334</b>
Amortization Expenses Accumulated Amortization Ending Net Intangibles Exsting Intangible at Cost Average Amorization Intangible Amortization Expnesse Implied Avg Userful Life in Years Existing Intangible Assets Net Intangible Assets Net Intangible Assets Net Intangible Assets Existing Intangible Assets Net Intangible Assets Debt Long Term Debt Essurance Debt Repayment	12,583 1,118 5,588 6,995 12,583 1,118 13,190 5,892 2017	12,757 1,123 6,255 <b>6,502</b> 12,757 12,670 1,123 11.28	12,692 1,154 6,313 <b>6,379</b> 12,692 12,725 1,154 11.03 <b>Total Ar</b> 2019	11,901 1,173 5,957 <b>5,944</b> 11,901 12,297 1,173 10.48 Amorization E	12,284 1,197 6,765 <b>5,519</b> 12,284 12,093 1,197 10.10 <b>Expenses</b> 2021 21,370 22,145 2021	13,190 1,048 7,298 5,892 13,190 12,737 1,048 12.15 2022 5,892 2022F 20,845 21,305 2022F	14,504 1,085 8,383 <b>6,121</b> 2023 1,085 <b>6,977</b> 2023F 21,492 19,991 2023F 20,277 970 468	15,694 1,085 9,469 <b>6,225</b> 2024 1,085 8,063 2024F 21,188 20,965 2024F 20,779 1,438 468	16,853 1,085 10,554 6,299 2025 1,085 9,148 2025F 21,232 20,413 2025F 21,749 808 1,415	18,013 1,085 11,639 <b>6,374</b> 2026 1,085 10,233 2026F 21,370 19,100 2026F 21,142 1,116 2,532	19,107 1,085 12,724 <b>6,383</b> 2027 <b>1,085</b> <b>11,318</b> <b>2027F</b> <b>21,564</b> 19,745 <b>2027F</b> 19,726 987 379
Amortization Expenses Accumulated Amortization Ending Net Intangibles Exsting Intangible at Cost Average Amorization Intangible Amortization Expnesse Implied Avg Userful Life in Years Existing Intangible Assets Net Intangible Assets Net Intangible Assets Net Intangible Assets Net Intangible Assets Net Intangible Assets Existing Balance Issurance Debt Repayment End Balance	12,583 1,118 5,588 6,995 12,583 1,118 13,190 5,892 2017 2017	12,757 1,123 6,255 <b>6,502</b> 12,757 12,670 1,123 11.28 <b>2018</b> 11,994	12,692 1,154 6,313 <b>6,379</b> 12,692 12,725 1,154 11.03 <b>Total Ar</b> 2019 14,776	11,901 1,173 5,957 <b>5,944</b> 11,901 12,297 1,173 10.48 Amorization E 2020 22,240	12,284 1,197 6,765 5,519 12,284 12,093 1,197 10.10 Expenses 2021 21,370 22,145 2021 21,196	13,190 1,048 7,298 5,892 13,190 12,737 1,048 12.15 2022 5,892 2022F 20,845 21,305 2022F 20,277	14,504 1,085 8,383 6,121 2023 1,085 6,977 2023F 21,492 19,991 2023F 20,277 970 468 20,779	15,694 1,085 9,469 <b>6,225</b> 2024 1,085 8,063 2024F 21,188 20,965 2024F 20,779 1,438 468 21,749	16,853 1,085 10,554 6,299 2025 1,085 9,148 2025F 21,232 20,413 2025F 21,749 808 1,415 21,142	18,013 1,085 11,639 <b>6,374</b> 2026 1,085 10,233 2026F 21,370 19,100 2026F 21,142 1,116 2,532 19,726	19,107 1,085 12,724 <b>6,383</b> 2027 <b>1,085</b> <b>11,318</b> <b>2027F</b> 19,745 <b>2027F</b> 19,745 <b>2027F</b> 19,745 <b>2027F</b> 19,745 <b>2027</b> 379 <b>20,334</b>
Amortization Expenses Accumulated Amortization Ending Net Intangibles Exsting Intangible at Cost Average Amorization Intangible Amortization Expnesse Implied Avg Userful Life in Years Existing Intangible Assets Net Intangible Assets Net Intangible Assets Net Intangible Assets Existing Intangible Assets Net Intangible Assets Net Intangible Assets Existing Intangible Assets Net Intangible Assets Net Intangible Assets Existing Intangible Assets Net Intangible Assets Existing Intangible Assets Net Intangible Assets End Balance End Balance Total Long Term Debt	12,583 1,118 5,588 6,995 12,583 1,118 13,190 5,892 2017 10,081 12,696	12,757 1,123 6,255 6,502 12,757 12,670 1,123 11.28 2018 2018 11,994 14,246	12,692 1,154 6,313 6,379 12,692 12,725 1,154 11.03 Total Ar 2019 14,776 16,804	11,901 1,173 5,957 <b>5,944</b> 11,901 12,297 1,173 10.48 Amorization E 2020 22,240 25,711	12,284 1,197 6,765 5,519 12,284 12,093 1,197 10.10 <b>Expenses</b> 2021 21,370 22,145 2021 21,196 22,145	13,190 1,048 7,298 5,892 13,190 12,737 1,048 12.15 2022 5,892 2022F 20,845 21,305 2022F 20,277 20,277 21,305	14,504 1,085 8,383 6,121 2023 1,085 6,977 2023F 21,492 19,991 2023F 20,277 970 468 20,779 19,991	15,694 1,085 9,469 <b>6,225</b> 2024 1,085 8,063 2024F 21,188 20,965 2024F 20,779 1,438 468 21,749 20,965	16,853 1,085 10,554 6,299 2025 1,085 9,148 2025F 21,232 20,413 2025F 21,749 808 1,415 21,142 20,413	18,013 1,085 11,639 <b>6,374</b> 2026 1,085 10,233 2026F 21,370 19,100 2026F 21,142 1,116 2,532 19,726 19,100	19,107 1,085 12,724 <b>6,383</b> 2027 1,085 11,318 2027F 21,564 19,745 2027F 19,726 987 379 20,334
Amortization Expenses Accumulated Amortization Ending Net Intangibles Exsting Intangible at Cost Average Amorization Intangible Amortization Expnesse Implied Avg Userful Life in Years Existing Intangible Assets Net Intangible Assets Net Intangible Assets Net Intangible Assets Net Intangible Assets Net Intangible Assets Existing Intangible Assets Net Intangible Assets Net Intangible Assets Net Intangible Assets Net Intangible Assets Debt Repayment End Balance Total Long Term Debt Current Port. of LT Debt/Capital Leases	12,583 1,118 5,588 6,995 12,583 1,118 13,190 5,892 2017 10,081 12,696 2,252	12,757 1,123 6,255 6,502 12,757 12,670 1,123 11.28 2018 11,994 14,246 2,028	12,692 1,154 6,313 6,379 12,692 12,725 1,154 11.03 Total Ar 2019 14,776 16,804 3,471	11,901 1,173 5,957 <b>5,944</b> 11,901 12,297 1,173 10.48 Amorization E 2020 22,240 22,240 25,711 949	12,284 1,197 6,765 5,519 12,284 12,093 1,197 10.10 <b>Expenses</b> 2021 21,370 22,145 2021 21,196 22,145 1,028	13,190 1,048 7,298 5,892 13,190 12,737 1,048 12.15 2022 5,892 2022F 20,845 21,305 2022F 20,277 20,277 21,305 788	14,504 1,085 8,383 6,121 2023 1,085 6,977 2023F 21,492 19,991 2023F 20,277 970 468 20,779 19,991 788	15,694 1,085 9,469 <b>6,225</b> 2024 1,085 8,063 2024F 21,188 20,965 2024F 20,779 1,438 468 21,749 20,965 784	16,853 1,085 10,554 6,299 2025 1,085 9,148 2025F 21,232 20,413 2025F 21,749 808 1,415 21,142 20,413 729	18,013 1,085 11,639 <b>6,374</b> 2026 1,085 10,233 2026F 21,370 19,100 2026F 21,142 1,116 2,532 19,726 19,100 626	19,107 1,085 12,724 <b>6,383</b> 2027 <b>1,085</b> <b>11,318</b> <b>2027F</b> <b>21,564</b> 19,745 <b>2027F</b> 19,726 987 379 <b>20,334</b> <b>19,745</b> <b>589</b>
Amortization Expenses Accumulated Amortization Ending Net Intangibles Exsting Intangible at Cost Average Amorization Intangible Amortization Expnesse Implied Avg Userful Life in Years Existing Intangible Assets Net Intangible Assets Net Intangible Assets Net Intangible Assets Existing Balance Issurance Debt Repayment End Balance Total Long Term Debt Current Port. of LT Debt/Capital Leases Net Debt Average Balance	12,583 1,118 5,588 6,995 12,583 1,118 13,190 5,892 2017 10,081 12,696 2,252	12,757 1,123 6,255 6,502 12,757 12,670 1,123 11.28 2018 11,994 14,946 2,028 32403	12,692 1,154 6,313 6,379 12,692 12,725 1,154 11.03 Total Ar 2019 14,776 16,804 3,471 34454	11,901 1,173 5,957 <b>5,944</b> 11,901 12,297 1,173 10.48 Amorization E 2020 22,240 22,240 25,711 949 36755	12,284 1,197 6,765 5,519 12,284 12,093 1,197 10.10 <b>Expenses</b> 2021 21,370 22,145 2021 21,196 22,145 2021 21,196	13,190 1,048 7,298 5,892 13,190 12,737 1,048 12.15 2022 5,892 2022F 20,845 21,305 2022F 20,277 21,305 788 33701	14,504 1,085 8,383 6,121 2023 1,085 6,977 2023F 21,492 19,991 2023F 20,277 970 468 20,779 19,991 788 35338	15,694 1,085 9,469 6,225 2024 1,085 8,063 2024F 21,188 20,965 2024F 20,779 1,438 468 21,749 20,965 784 36316	16,853 1,085 10,554 6,299 2025 1,085 9,148 2025F 21,232 20,413 2025F 21,749 808 1,415 21,749 808 1,415 21,142 20,413 729 37360	18,013 1,085 11,639 <b>6,374</b> 2026 1,085 10,233 2026F 21,370 19,100 2026F 21,142 1,116 2,532 19,726 19,100 626 38669	19,107 1,085 12,724 <b>6,383</b> 2027 <b>1,085</b> <b>11,318</b> <b>2027F</b> <b>21,564</b> 19,745 <b>2027F</b> 19,726 987 379 <b>20,334</b> <b>19,745</b> <b>589</b> 39715
Amortization Expenses Accumulated Amortization Ending Net Intangibles Exsting Intangible at Cost Average Amorization Intangible Amortization Expnesse Implied Avg Userful Life in Years Existing Intangible Assets Net Intangible Assets Net Intangible Assets Net Intangible Assets Net Intangible Assets Net Intangible Assets Debt Repayment End Balance Debt Repayment End Balance Total Long Term Debt Current Port. of LT Debt/Capital Leases Net Debt	12,583 1,118 5,588 6,995 12,583 1,118 13,190 5,892 2017 10,081 12,696 2,252	12,757 1,123 6,255 6,502 12,757 12,670 1,123 11.28 2018 2018 11,994 14,246 2,028 32403 13,471	12,692 1,154 6,313 6,379 12,692 12,725 1,154 11.03 Total Ar 2019 14,776 16,804 3,471 34454 15,525	11,901 1,173 5,957 <b>5,944</b> 11,901 12,297 1,173 10.48 Amorization E 2020 22,240 25,711 949 36755 21,258	12,284 1,197 6,765 5,519 12,284 12,093 1,197 10.10 <b>Expenses</b> 2021 21,370 22,145 2021 21,196 22,145 2021 21,196 22,145 1,028 38198 23,928	13,190 1,048 7,298 5,892 13,190 12,737 1,048 12,15 2022 5,892 2022F 20,845 21,305 2022F 20,277 21,305 788 33701 21,725	14,504 1,085 8,383 6,121 2023 1,085 6,977 2023F 21,492 19,991 2023F 20,277 970 468 20,779	15,694 1,085 9,469 6,225 2024 1,085 8,063 2024F 21,188 20,965 2024F 20,779 1,438 468 21,749 20,965 784 36316 20,478	16,853 1,085 10,554 6,299 2025 1,085 9,148 2025F 21,232 20,413 2025F 21,749 808 1,415 21,749 808 1,415 21,142 20,413 729 37360 20,689	18,013 1,085 11,639 <b>6,374</b> 2026 <b>1,085</b> <b>10,233</b> <b>2026F</b> <b>21,370</b> 19,100 <b>2026F</b> 21,142 1,116 2,532 <b>19,726</b> <b>19,100</b> <b>626</b> 38669 19,757	19,107 1,085 12,724 6,383 2027 1,085 11,318 2027F 21,564 19,745 2027F 19,726 987 379 20,334 19,745 589 39715 19,423

#### **Appendix 9: Remuneration Policy**

The remuneration policy in BT constitutes two parts, fixed payment and variable payment which includes annual bonus as well as retention and restricted shares plans (RSP). In this policy, the independent directors receive fixed payments listed on the table below, while non-independent directors are paid based on whether their performances are in line with company's expectations on seven measures from annual bonus perspective and three measures from incentive shares plans. 50% of the bonus will be paid after three years.

Director	Age	Independent	Position	In Position	Compensation (2022)
Mr. Adam Crozier	57	Yes	Independent Non-Executive Chairman of the Board	1 Year	293000
Mr. Philip Jansen	54	No	Chief Executive, Executive Director	3 Years	3,460,000
Mr. Simon Lowth	59	No	Chief Financial Officer, Executive Director	6 Years	2,235,000
Mr. Marc Allera	50	No	Chief Executive Officer, Consumer	5 Years	
Mr. Bas Burger	52	No	Chief Executive Officer, Global Services	5 Years	
Mr. Clive Selley	60	No	Chief Executive Officer, Openreach	6 Years	
Mr. Rob Shuter	53	No	Chief Executive Officer - Enterprise	2 Years	
Mr. Howard Watson	57	No	Chief Technology Officer	1 Year	
Ms. Rachel Canham		No	General Counsel, Governance and Company Secretary	4 Years	
Ms. Sabine Chalmers	57	No	General Counsel	4 Years	
Ms. Alison Wilcox		No	Human Resources Director	7 Years	
Ms. Harmeen Mehta	47	No	Chief Digital and Innovation officer	1 Year	
Mr. Ed Petter		No	Corporate Affairs Director	6 Years	
Mr. Adel Al-Saleh	59	No	Non-Independent Non-Executive Director	2 Years	
Sir Ian Cheshire	61	Yes	Independent Non-Executive Director	2 Years	144,000
Mr. Iain Conn	58	Yes	Senior Independent Non-Executive Director	2 Years	162,000
Mrs. Isabel Hudson	62	Yes	Independent Non-Executive Director	8 Years	146,000
Mr. Matthew Key	58	Yes	Independent Non-Executive Director	4 Years	137,000
Ms. Allison Kirkby	55	Yes	Independent Non-Executive Director	3 Years	124,000
Ms. Leena Nair	52	Yes	Independent Non-Executive Director	3 Years	116,000
Ms. Sara Weller	59	Yes	Independent Non-Executive Director	2 Years	131,000
Mr. Mark Lidiard		No	Group Director Investor Relations	5 Years	

Policy		FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30
Fixed Pay	Base salary								
	Pension allowance								
	Benefits								
Annual Bonus	50% cash								
	50% deferred shares	50% of t	he bonus de	ferred for thre	ee years				
RSP Awards	Tranche 1								
	Tranche 2						>	No shareds may be sold until year five	
	Tranche 3							John until year inte	

#### Appendix 10: WACC Assumption

**Cost of Equity** We used the CAPM model to calculate the cost of equity based on the formula  $Re = RFR + \beta*MRP$  in which MRP is estimated by country risk premium plus market risk premium based on operational regions in terms of revenues. According to BT's operation, three other regions, Europe, America, and Asia & Pacific also have an impact on market risk premium besides the UK accounts for 88.61% of its total revenues.

**Cost of Debt** We delivered the cost of debt of 3.93% by using the rate the bank charged the company for the recent year.

**Risk Free Rate** As the company operates mainly in the UK, its products are priced in Pound and the debt is also in this market, so we use 10-year UK gilt as risk free rate

Beta Industry average beta from Damodaran is the base to compute the beta.

Market Risk Premium It includes Mature market premium and region risk premium based on the markets the company operates with revenues percentage.

WACC is computed according the formular:  $WACC = \frac{E}{EV} \times K_e + \frac{D}{EV} \times K_d \times (1 - Tax_{effective})$ 

Market Appro	ach				
	2022				
Share price Shares outstanding	£ 1.204				
(Million) Equity Market Value	9,900				
(Million)	£ 11,919				
Debt	20,917				
Net Debt	17,461				
Enterprise Market Value	£ 29,380				
Cost of Debt (Kd)	3.93%				
Taxes	21.00%		_	_	_
Kd (net of Taxes) Ke-CAPM	3.10%	l			
Risk-Free Rate	3.83%		UK 10Y Bond	UK 10Y Bond Yield	UK 10Y Bond Yield
Telecom Avg Levered					
Beta	1.18		Industry avera	Industry average between 201	Industry average between 2017 and 2021 from
ERP <b>Ke</b>	5.42% <b>10.23%</b>				
re E/EV	41%				
D/EV	59%				
WACC	5.99%				
Unlevered Cost of Capita Miller	- Modigliani&				
Ru	6.8%				
Operations based ERP	UK		Europe	Europe America	Europe America Asia & Pacific
Mature Market Premium	4.84%		5.07%	5.07% 4.24%	
Region Risk Premium	0.60%		0.72%	0.72% 0.00%	0.72% 0.00% 0.52%
-	E 440/		F 700/	5 700/ 4 0 40/	
Equity Risk Premium	5.44%		5.79%	5.79% 4.24%	5.79% 4.24% 5.26%
BT Revenues (%)	88.61%		6.31%	6.31% 2.97%	6.31% 2.97% 2.11%

#### Appendix 11: DCF-FCFF Model

ENTERPRISE VALUE (£ Millions)	2022F	2023F	2024F	2025F	2026F	2027F
Sales	20,845	21,492	21,188	21,232	21,370	21,564
Growth Rate	-2.46%	3.11%	-1.42%	0.21%	0.65%	0.91%
EBITDA	7,189	7,348	7,276	7,275	7,330	7,393
EBITDA / Sales	34.49%	34.19%	34.34%	34.26%	34.30%	34.28%
D&A	4,405	4,724	4,971	5,219	5,468	5,719
D&A / Sales	21.13%	21.98%	23.46%	24.58%	25.59%	26.52%
EBIT	2,784	2,624	2,305	2,056	1,863	1,674
EBIT / Sales	13.36%	12.21%	10.88%	9.69%	8.72%	7.76%
Tax Expenses	689	395	325	276	231	199
Tax Rate	21.00%	21.41%	21.23%	21.67%	20.74%	21.21%
Net Operational Profit After Taxes (NOPAT)	2,199	2,063	1,816	1,611	1,476	1,319
Capex	4,607	4,750	4,683	4,692	4,723	4,766
Capex / Sales	22.10%	22.10%	22.10%	22.10%	22.10%	22.10%
Working Capital Requirements	41	-323	-221	-225	-183	-169
WCR / Sales	0.20%	-1.50%	-1.04%	-1.06%	-0.85%	-0.79%
Change in WCR	682	-364	102	-4	43	13
Free Cash Flow to Firm (FCFF)	1,315	2,400	2,002	2,141	2,178	2,259
				Terminal Val	ue	£ 41,33

WACC		5.99%
Present Value of TV	£	29,151
Present Value of DCF	£	7,414
Perpetual Growth Rate		0.5%
Enterprise Value	£	36,564
- Debt	£	20,917
Equity Value	£	15,647
Share Price (Pound £)	£	1.58
Upside Potential		31.3%

79.7%of Enterprise Value20.3%of Enterprise Value

#### Appendix 12: DCF-APV Model

ADJUSTED PRESENT VALUE (£ Millions)	2022F	2023F	2024F	2025F	2026F	2027F
Sales	20845.00	21492.30	21187.79	21231.77	21370.42	21563.91
EBITDA	7189.00	7348.23	7275.67	7274.96	7330.43	7392.78
D&A	4624.00	4767.59	4700.04	4709.80	4740.55	4783.48
EBIT	2784.00	2624.45	2304.78	2056.45	1862.68	1673.54
TAX RATE	21.00%	21.41%	21.23%	21.67%	20.74%	21.21%
NOPAT	2199.37	2062.55	1815.53	1610.83	1476.32	1318.58
CAPEX	4,607	4,750	4,683	4,692	4,723	4,766
WCR	41	-323	-221	-225	-183	-169
Variation of WCR	682	-364	102	-4	43	13
FCFF	1533.92	2444.28	1731.05	1632.27	1451.13	1323.10
Unlevered Beta	0.068			<b>Terminal Valu</b>	е	£ 35,925.8
Cost of Equity	0.042					
Present Value of TV	£ 28,065.21					
Present Value of DCF	£ 5,569.43					
Unlevered Enterprise Value	£ 33,634.64					
Present Value of ITS	£ 586.37			<b>Terminal Valu</b>	е	£ 4,568.00
Present Value of TV	£ 3,625.81					
Total Side Effect of ITS (VCD)	£ 4,212.18					
Adjusted Present Value (APV)	£ 37,846.82	11.1%				
-Debt	£ 20,917.00					
Share Price	£ 1.71					
Potential	42.045%					

#### Appendix 13: DDM Model

As BT group is a mature company with a relatively stable dividend policy and high dividend growth rate, we used Gordon Growth Method to compute the price target. The formula follows as below:

$$P = \frac{D}{r - g}$$

Assumption for DDM													
Rate of Return	<b>FReturn 5.99%</b> Same as used in the DCF method												
Growth Rate	<b>0.50%</b> Based on the global GDP growth and inflation in the UK, and												
		dividend policy											
Time	2	3	4	5	6								
Discounted Dividend Model	2023F	2024F	2025F	2026F	2027F	Terminal Value							
Dividends	0.059	0.065	0.072	0.079	0.087	1.591							
Presend Value	0.053	0.055	0.057	0.059	0.061	1.122							
Valuation	£ 1.41												

#### Appendix 14: Relative Valuation

We employed multiples selected from Reuters forecast Multiples in the telecom industry across the EU to compute the price target in 2023F. The comparable market cap size firms compare with BT in average level, arriving at mean, and median in terms of EV/Sales, EV/ EBITDA, P/E, and P/B.

ldentifier	Peers	Company Market Cap (Millions, USD) (Σ=Avg)	Net Debt Incl. Pref.Stock & Min.Interest (FI0, USD, Millions) (Σ=Avg)	Enterprise Value (Daily Time Series) (Millions, USD) (Σ=Avg)	Historic P/E (FY0) (Σ=Avg)	Price / EPS (SmartEsti mate ®) (FY1) (Σ=Avg)	Price / EPS (SmartEsti mate ®) (FY2) (Σ=Avg)	Average	Historic	Per Share	Price / Book Value Per Share (SmartEsti mate ®) (FY2) (Σ=Avg)		Historic EV/EBITDA , FY (FY0) (Σ=Avg)	EV / EBITDA (SmartEsti mate ®) (FY1) (Σ=Avg)	EV / EBITDA (SmartEsti mate ®) (FY2) (Σ=Avg)	Average	Historic EV/Revenu e, FY (FY0) (Σ=Avg)	EV / Revenue (SmartEsti mate ®) (FY1) (Σ=Avg)	EV / Revenue (SmartEsti mate ®) (FY2) (Σ=Avg)	Average
BT.L	BT Group PLC	21,070.08	21,826.64	43,248.12	10.59	9.01	8.53	9.38	1.31	1.42	1.32	1.35	4.52	4.86	4.68	4.69	1.57	1.72	1.70	1.66
DTEGn.DE	Deutsche Telekom AG	86,519.41	169,190.00	259,363.87	18.79	12.62	11.25	14.22	1.90	1.88	1.80	1.86	5.69	6.31	5.98	6.00	2.34	2.31	2.27	2.31
VOD.L	Vodafone Group PLC	41,081.45	58,074.00	99,011.32	410.99	15.00	12.34	146.11	0.78	0.77	0.74	0.76	4.95	6.48	6.39	5.94	2.25	2.18	2.15	2.19
SCMN.S	Swisscom AG	29,243.35	7,223.34	36,422.20	14.55	19.44	19.28	17.76	2.47	2.64	2.56	2.56	7.61	8.52	8.45	8.20	3.04	3.36	3.34	3.25
ORAN.PA	Orange SA	30,063.03	38,660.00	68,617.56	3,127.24	9.63	9.27	1,048.71	0.77	0.90	0.88	0.85	4.45	5.19	5.10	4.91	1.50	1.59	1.58	1.55
TEF.MC	Telefonica SA	26,659.82	44,427.00	71,193.82	2.80	14.34	12.98	10.04	0.98	1.24	1.21	1.14	5.23	6.00	5.88	5.70	1.69	1.90	1.88	1.82

Enterprise	EV/Sales	EV/ EBITDA	P/E	P/B
BT Group PLC	1.66	4.69	9.38	1.35
Deutsche Telekom AG	2.31	6.00	14.22	1.86
Vodafone Group PLC	2.19	5.94	146.11	0.76
Swisscom AG	3.25	8.20	17.76	2.56
Orange SA	1.55	4.91	1,048.71	0.85
Telefonica SA	1.82	5.70	10.04	1.14
Mean	2.22	6.15	247.37	1.43
Median	2.19	5.94	17.76	1.14
Dif. Using mean	0.34	0.31	25.38	0.06
Dif. Using median	0.32	0.27	0.89	-0.15
Average median	0.29		0.37	
BT Book Value per Share	1.18			
BT Earnings per Share	0.13			
BT Enterprise Value Based on median	45693	42694		
- Debt	20917			
Equity Value based on median	24775.77	21776.85	No. of Share Oustanding	9,900
Share Price	2.50	2.20	2.26	1.35
Average Target Price	2.35		1.80	
		2.08		

#### Appendix 15: Other Minor Risks

#### Operational Risk | Inability to expand internal digital initiatives (OR4)

Scaling up internal digital initiatives is critical for BT to increase profitability. Moreover, the current epidemic has contributed to accelerating internal digital innovation. As a result, telcos plan to invest more in data and technology. However, they risk low customer acceptance, which impedes the multiple digitalization initiatives from being profitable by scaling.

To improve customers' acceptance, BT should provide customers with holistic digital support tools and educate them on digital tools, ensuring people become confident in using digital tools. Furthermore, extend their clients' services through the digital tool in the business aspect, which is beneficial for making the digital transition.

#### Strategic Risk | Inability to establish extrinsic ecosystems (SR2)

Many large companies have already embarked on innovating through the collaboration ecosystem. In this 5G and IoT development, BT c needs to create an ecosystem of extrinsic integration to enable its growth and innovation. The rise of 5G and the IoT will see telcos. Many enterprise verticals are looking to collaborate across sectors in the face of the rise of 5G, IoT, and edge cloud. Telcos are at the centre of this experimentation and contestation. Without an outer ecosystem, BT finds itself standing in a drawback position.

#### Strategic Risk | Inability to develop new business models in the context of 5G (SR3)

Connectivity accounts for the declining rate of IoT sales. Average revenue per user (ARPU) for cellular IoT remains low. 5G creates an environment with more sophisticated IoT services where enterprises connect apps and services by new business models, I mplying that the external ecosystem will be beneficial for delivering Business-to Business-Anyone(B2B2X) solutions.

5G networks prepare the ground to innovate business models by customizing services, which aids enterprises and technology suppliers in deploying solutions. If telcos do not take action, it, in turn, becomes a disintermediation risk. Therefore, BT should develop retail and wholesale business models with their technical advantage and spectrum assets.

#### Compliance Risk | Failure to adjust to legislative changes (CR2)

The general framework for telecommunications, competition policy, interconnection and pricing control, licencing, and universal access and services are the five core areas that are heavily regulated in the telecom industry. The development and growth of BT in the long term will significantly be influenced by the modifications to these regulations and laws. Consumer protection, the digital divide, and the supply chain of networking equipment are receiving greater attention than previously due to pandemics and geopolitical events, which are shifting regulatory and political agendas. On top of that, the debate over net neutrality is resurfacing in the U.S. and EU. Many countries are enacting regulations or laws regarding privacy and data security. Based on that, BT must modify its plan to adhere to the law.

#### Financial Risk | Inability to add value via capital assets (FR1)

In order to transition from fixed to variable costs, telcos often use the "asset-light" strategy, which involves joint ventures, carve-outs, and divestments that solely concentrate on crucial competencies. In light of the current fast industry change, BT has to develop an "asset-right" strategy that involves re-assessing both core and non-core assets. Capital intensity is increasing as BT increases network expenditures in preparation for the introduction of 5G. However, the leverage becomes higher.

### Reference

Berk, J., & DeMarzo, P. (2014). Corporate Finance (Vol 3). Pearson Education

Duff & Phelps, Roger J. G., Carla N., James P. H. (2017). 2017 Valuation Handbook - U.S. Industry Cost of Capital. Appendix 3a-1

Koller, T.; Goedhart, M.; Wessels, D. (2020), Valuation: Measuring and Managing the Value of Companies. 7th edition, McKinsey & Company Inc. John Wiley & Sons, Inc. Pinto, J.; Henry, E.; Robinson, T.; Stowe, J.; Wilcox, S. (2020), *Equity Asset Valuation*. 29th edition, CFA

Investment Series. John Wiley & Sons, Inc.

Porter, Michael E. (2008), The Five Competitive Forces That Shape Strategy. Special Issue on HBS Centennial. Harvard Business Review 86 (1), 78–93.

### **Disclosures and Disclaimer**

This report is published for educational purposes by Master students and does not constitute an offer or a solicitation of an offer to buy or sell any security, nor is it an investment recommendation as defined by Article 12<sup>o</sup> A of the Código do Mercado de Valores Mobiliários (Portuguese Securities Market Code). The students are not registered with Comissão de Mercado de Valores Mobiliários (CMVM) as financial analysts, financial intermediaries or entities/persons offering any service of financial intermediation, to which Regulamento (Regulation) 3<sup>o</sup>/2010 of CMVM would be applicable.

This report was prepared by a Master's student in Finance at ISEG – Lisbon School of Economics and Management, exclusively for the Master's Final Work. The opinions expressed and estimates contained herein reflect the personal views of the author about the subject company, for which he/she is sole responsible. Neither ISEG, nor its faculty accepts responsibility whatsoever for the content of this report or any consequences of its use. The report was supervised by Prof. Florence Pinto Basto, who revised the valuation methodologies and the financial model.

The information set forth herein has been obtained or derived from sources generally available to the public and believed by the author to be reliable, but the author does not make any representation or warranty, express or implied, as to its accuracy or completeness. The information is not intended to be used as the basis of any investment decisions by any person or entity.

Level of Risk	SELL	REDUCE	HOLD/NEUTRAL	BUY	STRONG BUY
High Risk	0%≤	>0% & ≤10%	>10% &≤20%	>20% &≤45%	>45%
Medium Risk	-5%≤	>-5% & ≤5%	>5% &≤15%	>15% & ≤30%	>30%
Low Risk	-10%≤	>-10% & ≤0%	>0% &≤10%	>10% &≤20%	>20%

#### Recommendation System