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Vantage Towers: Infrastructure behind the digitalization - equity valuation in a transaction-driven market

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Abstract

This report values the business of Vantage Towers, an infrastructure/tower company, yielding to a price of €29.18 based on a market-driven business plan. This is lower than the trading price (€36.92) and the delisting price (€32.00) offered to the shareholders in March 23. The current trading price may be influenced by remaining shareholders being squeezed-out. Certain factors like transaction multiples point towards an overheated market, influenced by (so far) unforeseeable growth expectations, new revenue streams beyond the existing market size and institutional investors stepping into the market seeking for other value creation. A sales recommendation is given to the shareholders.

Keywords: Valuation, Infrastructure, Tower Market, Telecommunication

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This report is part of the Vantage Towers AG valuation report (annexed), developed by Georg Röper (54074) and Yannick Kaiser-Sichau (53828) and should be read as an integral part of it.

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Introduction

This report shall give an investment recommendation for Vantage Tower – one of the largest European tower companies. In 2019, Vodafone announced that it would carve out its European tower infrastructure to create Vantage Towers. After the IPO in 2021, Vodafone and a consortium led by KKR again took the company private. The investment recommendation shall analyse if the shareholders should have accepted the delisting offer price in March 2023 and if the remaining shareholder should now sell their shares before being squeezed out by the consortium.

This master thesis will build on the paper “Vantage Towers: Infrastructure behind the digitalization. Can investors benefit from a private equity-driven market?” by Georg Röper. The report outlined that the tower business has seen a rising number of transactions in recent years. Long-term contracts and high margins mark the industry, but at the same time, they require significant CAPEX investments, attracting especially institutional investors. Governmental obligations and capacity needs are leading to substantial growth opportunities, as they determine the required number of towers. A market model was developed to forecast the tower demand. Following that, a driver-based business model has been derived based on the forecasted tower demand, as Opex, CAPEX, and most other items within the business plan are linked to the number of locations and revenues per site as the primary financial drivers.

Using these findings as a basis, the following chapters will first explain how the income statement, the balance sheet and the free cash flow (FCF) are derived and forecasted. They are required as a basis to apply different valuation methods. The discounted cashflow method will play a pivotal role within the valuation process of VT, as it allows for a detailed valuation based on the specific market model developed by Mr. Röper and enables to model different scenarios. Several other valuation techniques and sensitivities will be applied to derive a valuation range and check the driver-based business model for plausibility.

However, to discount the FCFs and derive a company value, VT's company-specific cost of capital will be calculated based on standard market practices. In addition, VT holds two substantial equity investments, which need to be valued separately to determine a fair market value. While one is listed, a different valuation technique must be applied for the private company.

Finally, a sales recommendation is issued for the investors, as the derived stock price of €29.18 is below the current trading price of €36.92 and the delisting price of €32. The current share price is likely driven by the aim to squeeze out minority shareholders. It is acknowledged that recent transaction multiples are leading to a valuation range close to €40. However, applying different scenario and sensitivity analyses, no balanced combination of risks & opportunities could be determined to justify such prices. Certain factors point towards an overheated market caused by institutional investors believing in (so far) unforeseeable additional revenue streams and upsides or seeking for additional value creation through size advantages and speculative multiple arbitrages. Smaller investors should be cautious to follow such trends and realize profits now.

Overall, the following chapters will contribute to deriving an equity value of VT. Different valuation methods, cases and sensitivities have been applied to generate a balanced valuation recommendation for the investors, considering the business's risks and opportunities. This will be necessary to put both the delisting price and the current trading price into context and assess if a sale would be profitable for the investors, based on the information available today in the public market.

Financials and business plan forecast

Free cash flow

As the basis for the valuation, VTs' core free cash flow (FCF) has been derived. In addition to the cash flow, fully integrated future income statements (IS) and balance sheets (BS) have been forecasted. The financial statements can be found in the appendix. While all forecasts are in line with the company's reporting, the business has been split into core and non-core areas. The non-core areas comprise VTs' equity-accounted investments in INWIT and Cornerstone (and non-substantial post-employment benefits). While these companies follow the same business model as VT, they are fully independent and do not affect VT's core business. They have, therefore, been classified as non-core and are valued separately as they comprise a significant part of VTs' value.

The revenue, Opex, capitalized lease costs, and Capex items described in the business plan section comprise all market-related and company-specific drivers that are relevant to forecast the core business of VT. Naturally, additional assumptions are required to derive a full future IS and BS and to determine FCFs. In the following, only items relevant to determine the core FCF will be discussed, as this is the basis for the valuation of VT. All additional assumptions required to derive the future financial statements can be found in the Excel model. The FCF of VT has been derived following the standard procedure by computing the EBIT based on EBITDA and D&A, determining and subtracting taxes related to core activities, adding back D&A, subtracting Capex and reflecting any changes in BS positions related to the core business (changes in net working capital, receivables, payables, deferred taxes, and various asset categories). The resulting core FCF has been used as the basis for the valuation and is forecast to increase from €146m in 2024 to €397m in 2030 and €641m in 2040, driven by growing profits and a decrease in Capex over the long run. The key assumptions are described below:

1. Depreciation & amortization has been determined for lease-related right-of-use assets, other PP&E and intangible assets. Lease-related right-of-use assets (€2.1bn) are an asset category under IFRS 16 that reflects the right of VT to use leased properties over the contracted period and is directly linked to the lease liabilities reported by VT in the BS. It is assumed that 13% of the asset base is depreciated every year, in line with FY22-23 and driven by average contract duration – while depreciation decreases the asset base, additional leases increase it. PP&E assets (€1.5bn) include the physical sites. The annual depreciation of the asset base is forecast to grow from 10% in 2024 to 15% in 2029 and thereafter, reflecting a relatively low depreciation in 2023 (8%) and the expectation that depreciation is expected to grow due to the significant PP&E investments over the medium term. This assumption is conservative to avoid inflating the asset base and overestimating free cash flows in the short term. Intangible assets (€282m) are forecasted to remain constant; however, a 4% depreciation is assumed, which is compensated for by newly acquired goodwill in the same periods.

2. Changes in NWC, receivables and payables have been forecasted as part of the BS construction. To determine changes in NWC, operating cash, provisions, and accounts receivable have been forecasted to remain stable as a share of revenues, while accounts payable have been forecasted in detail and are driven by accruals and trade payables (both as a stable share of growth Capex), deferred income (linked to recharge Capex) and taxation and social security payables, other payables and payables due to related parties (all assumed to remain constant). Trade and other receivables are estimated as a share of revenue, trade and other payables are estimated as a share of deferred income as they "arise from the recharge of Capex costs to

Vodafone under the MSA".

3. Taxes have been estimated based on the core result before taxes (EBITDA less D&A) and an average core effective tax rate in line with the historical rate of 27%. The deferred tax assets of €74m are expected to be used as a credit in 2024, and no further deferral of taxes is assumed.

4. The core free cash flow further reflects changes in various asset categories. As described in D&A, intangible assets are expected to be purchased at the value of depreciation to retain a stable asset base. Similarly, no change in goodwill is expected. Cash flows related to the acquisition of lease-related assets are driven by the number of leased properties (increases slightly with sites), and depreciation is offset by newly acquired assets as new lease contracts are signed while older ones decrease in maturity (and asset value). Cash flows related to the acquisition of PP&E are equivalent to the maintenance, recharge and growth Capex spend described in the Capex section. Provisions are forecast to remain stable as a share of total PP&E based on historical values, implying that cash flows from making such provisions are driven by the change in required provisions in the BS. These provisions are driven by PP&E as they are related to potential future obligations to dismantle existing infrastructure.

Income statement and balance sheet forecast

The future consolidated IS has been broken down into the core result, the non-core result and the financing result. The core result has been derived as per the FCF computations by determining the core result before taxes (EBITDA less D&A and losses/ gains on disposal) and subtracting taxes. The non-core result solely includes the equity-accounted investments in INWIT and Cornerstone and related taxes that are valued separately (and other comprehensive income that is forecasted at zero). After 2023, no further results of equity accounted investments (INWIT and Cornerstone) have been forecasted as it is expected that all dividends net of any financial impact on the core business will be paid out to VTs shareholders, implying that the participations do not have an impact on comprehensive income and therefore debt or equity. Interest on lease liabilities have been estimated based on a stable interest rate (2.7%) as they are not related to actual financing activities. Net finance costs have been derived from corporate bonds of peer companies with the same rating and are forecast at 5.6% until FY26 and expected to decrease towards the 20 years interest rate average of 3% thereafter (reached by 2032). In line with historical data, a tax rate of 30.92% is applied to the financing result. From 2023-30, the core result is forecast to develop from €503m to €463m (driven by a drop to €402m in 2024 as FY23 values included a €142m tax adjustment), the non-core result is forecast at zero as per above, and the financing result is expected to decrease from -€59m to -€135m, driven by higher liabilities.

The future balance sheets have been derived in line with the companies' reporting along non-current and current assets, non-current and current liabilities and equity. Additionally, the BS has been broken down into core and non-core invested capital, as well as net debt and common equity. In 2023, the core invested capital comprised NWC (-€147m), goodwill (€3.3bn), intangible assets (€282m), lease-related right-of-use assets (€2.1bn), PP&E (€1.5bn) deferred tax assets (€75m), trade and other receivables (€23m) and payables (-€92m) and provisions (€-476m). These items have been forecasted as per the FCF section. The negative NWC is common in the industry (ATC with –3% of revenues, Cellnex with –20%) and is not a concern as there is high visibility on income streams due to the MSAs and payments to landlords are predetermined. As described, the non-core invested capital solely comprised the book value of the investments in JVs and associates, which is forecast to remain stable at €3.2bn.

Figure 18 – Leverage Ratio & FCF

Net debt, including lease liabilities (FY23 values), is forecasted based on long-term borrowings (replaced by short-term borrowings of €2.2bn in FY23 due to refinancing), lease liabilities

(€2.0bn), current income tax liabilities (€24m), deferred tax liabilities (€73m) and excess cash (€134m). While lease liabilities have been forecasted as a multiple of lease costs, current income and deferred tax liabilities have been derived based on a share of estimated income and further taxes, and excess cash is estimated to remain stable at €150m, required long-term borrowings have been estimated based on total invested capital less equity and less all remaining liabilities net of excess cash. Based on the methodology used by VT, net financial debt has been computed based on long-term borrowings less all cash positions to determine a leverage ratio. This leverage ratio was 3.6x adjusted EBITDAaL in FY23 and is forecast to decrease to 2.9x based on the assumed dividend payout ratio (see equity below), while VT stated that a maximum ratio of 5.5x adjusted EBITDAaL could be leveraged, which is in line with peer group ratios (five peer group companies show an average net debt of 5.7x EBITDAaL).

Graph 19 – Forecast Key Finanical Figures

The required long-term borrowings have been computed based on a forecast of common equity as higher dividends or, respectively, higher earnings would require higher long-term borrowings. Common equity was valued at €5.5bn in 2023 and is driven up by comprehensive income and reduced if dividends are paid out to shareholders. In line with VTs' guidance, dividends are determined as a payout share of recurring free cash flows that have been estimated as recurring operating FCF (adjusted EBITDA less maintenance and recharge Capex and cash costs of leases) multiplied by a historic share of 78% recurring FCF/ recurring OpFCF. The dividend payout ratio is estimated at 60%, in line with VTs' guidance until 2036 and forecast to increase slowly up to 70% thereafter to reach stable common equity and long-term borrowing levels as comprehensive income increases due to strong cash flows at more limited investments. This appears likely due to the institutional shareholders that are likely to aim for significant debt to have a tax shield advantage and demand returns as the business matures.

Risks and Opportunities

The business model of TowerCos is comparably stable and not strongly impacted by economic cycles (VT has a levered beta of 0.61). Digitalization, technology, and increasing wealth drive data traffic and the need for mobile networks independent of macroeconomic factors - nevertheless, some external risks persist.

Risks

A key risk is that VT cannot scale up its deployment capacity in line with market demand. The timely execution of all deployments depends, for example on available land, necessary permissions, the supply chain or the availability of suppliers and contractors. As one of the market leaders in each country, VT appears well positioned, and deployments have been phased over a longer period than initially planned. Another key risk is a sharp increase in deployment cost, driven by inflation, strong demand for contractors and increasing land lease costs. These risks are partly mitigated through MSAs that link costs per PoP to the deployment of Capex.

The second key risk is that demand does not develop as expected as data growth is slower or regulation is relaxed. This appears very unlikely as laws have been passed, and most sites are already contracted. The risk of active sharing (loss of PoPs as active equipment is shared between MNOs) is limited due to regulatory constraints (antitrust regulation on active sharing between only 2 MNOs). Additionally, there is a risk of the 1&1 deal failing or being delayed; however, 1&1 has to rely on VT, putting the TowerCo in a comfortable situation.

Financially, the business model requires upfront investments and significant growth is expected. Higher interests rates drive financing costs and may make new investments less attractive. As the leverage ratio of VT is rather low, with the operating risks being limited due to the long-term

contracts and because VT has two very liquid shareholders, the risk is moderate.

VTs' investments in INWIT (33%) and Cornerstone (50%) pose a risk if shareholders' interests cannot be aligned, causing material disruptions and dividends not being paid as expected. Further risks include extreme weather events that may cause damage to the infrastructure, political risks such as wars and regulatory and technological risks such as GDPR or cyber security breaches and problems.

Opportunities

Within the current scope of the business model, the largest opportunity is that demand exceeds expectations. Governments may intensify coverage obligations, and capacity demand may grow faster. Both would require more PoPs, resulting in additional sites and/ or higher tenancy ratios. Also, the market share of Vodafone as the largest client and shareholder could increase, driving demand. Another upside is VT's deployment capacity and capabilities, which could enable it to deploy sites for MNOs other than Vodafone if other TowerCos struggle to ramp up capacity, which appears likely for Telefonica and 1&1. Additionally, VT may benefit from the European recovery fund that declared substantial subsidies for telco companies[1], which may yield additional opportunities to build subsidized sites. It is projected that €750bn will be placed in the Next Generation EU fund, and a substantial amount could be used for digital transformation, including mobile networks. A further opportunity is stronger efficiencies and synergies, realized as VT gains scale. These might be realized across maintenance, FTEs, and deployments (lowering prices due to high order volumes). Besides the growth opportunities related to the current focus areas driven by data usage and densification, 5G roll-outs, regulatory requirements and demand from non-MNO customers (generally stable and the upside is limited), VT may be able to benefit from strong growth beyond the core business by engaging in the deployment of distributed antenna systems (DAS), small cells and edge data centres, and by fiberizing sites and offering IoT services. The most promising opportunities over the medium term appear to be the deployment of small cells and DAS, as VT is already generating limited revenues in these areas and could benefit from strong growth. However, as small cells and DAS generally do not require a physical infrastructure, it appears likely that MNOs will deploy these sites independently of TowerCos.

Valuation

The forecasted financial statements described in the chapter "Financials and business plan forecast" have been used as a basis for the valuation of VT. The discounted cash flow and dividend discount models have been applied to derive the company value and a price target. In addition, the company has been valued based on transaction and trading multiples. Finally, the equity investments in INWIT and Cornerstone have been derived to obtain a combined equity value of VT.

Cost of Capital

To discount the future cash flows, the cost of VT's capital has been derived based on standard market practices and methods used in the literature. As a basis, the CAPM[2] has been used to calculate the company-specific cost of capital.

1. Base interest rate

German government state bonds have been used to derive the base interest rate, as 50% of VT revenues are generated in Germany, and these bonds are assessed with the highest A-rating. In literature and practice, such A-rated bonds are considered "risk-free", reflecting the base interest

[1] Source: https://www.vantagetowers.com/sites/tower-co-v2/files/investor/cmd/5-market-backdrop-and-commercial-focus-v3.pdf - (accessed: 15.11.2023)

rate.

$$Spot\ Rate_t = \beta_0 + \beta_1\left(\frac{1-e^{-T/\tau_1}}{T/\tau_1}\right) + \beta_2\left(\frac{1-e^{-T/\tau_1}}{T/\tau_1} - e^{-T/\tau_1}\right) + \beta_3\left(\frac{1-e^{-T/\tau_2}}{T/\tau_2} - e^{-T/\tau_2}\right)$$

Figure 20 – Svensson formual

A model developed by Nelson-Siegel-Svensson (figure 20) has been used to derive an average zero-coupon interest rate based on parameters published by the German Federal Reserve Bank[2]. The advantage of the model is that it can derive yield curves for zero-coupon bonds by using extra- and interpolation. This is useful because the common government state bond has a maximum duration of 30 years with annual coupons. The model results in a base interest rate of 2.50%, which is only slightly below the estimations published by Bloomberg (2.65%) and the Institute of Public Auditors (IDW) in Germany (2.75%)[3].

2. Cost of Debt

Bond Yields Peers	Avg
Coupon	3,40%
Yield	**5,58%**
No. of Bonds	330
Avg. Time to Maturity	9,07
Highest Rating	BBB+
Lowest Rating	BB+

Figure 21 – Peer group analysis of corporate bonds in the telco business

Corporate Bond Spread / Adjustment Factor	
Base Interest Rate	2,50%
Corporate Bond Spread Moodys	4,02%
Cost of debt	**6,52%**
Prob. Of default (Bloomberg)	2,61%
Recovery Rate (Bloomberg)	60%
Company Adj cost of Debt	**4,96%**

Figure 22 – Cost of debt, based on corporate bond spread and adjustment for prob. of default.

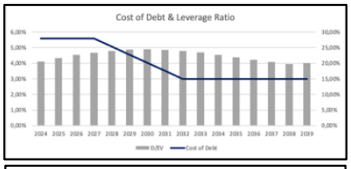

Figure 23 - Cost of Debt and Leverage Ratio

As VT has repaid all outstanding bonds, a fair value measurement of the company's debt is not possible. However, the company has announced that it has secured new bank financing in summer 2023. Therefore, it has been assumed that the refinancing was done at fair market value – meaning that book value equals fair market value. The company did not release any further information on the interest rate of the new bank loan. Therefore, the company's cost of debt has been derived based on publicly traded bonds of peer companies. The latest official rating of VT was published by Standard & Poor's in Q2 2022 and was a BBB- rating. No fundamentals have changed since it has been assumed that this rating remains valid. In addition, peers like ATC or Cellnex had similar BBB ratings. Therefore, the yields of 330 bonds with a similar B-rating and different maturities in the telco industry have been analyzed (figure 21). The average current yield was 5.58% with an average coupon of 3.40%, and the average time to maturity was 9.07 years.

To re-confirm the cost of debt, the seasoned corporate bond spread for B-rated companies published by Moodys[4] has been used to derive the cost of debt for standard B-rated corporations adjusted with the firm-specific default risk based on the following formula: Yield – Prob (Default) x Expected Loss. This method leads to a company-specific interest rate of 4.96% (figure 22), slightly below the derived yield on the infrastructure bond market of 5.58%. It has been decided to use 5.58% for the valuation as this methodology leverages a lot of industry-specific data by analyzing peer bonds with similar business models – e.g., with the probability of default or recovery rate being equal.

The interest rates currently observed are at a very high level; it has been assumed that in the long-term, the yields will return to the historical average of 3.00% (rounded average of the last 20 years published by the German Federal Bank). The yields will gradually decrease from 5.58% in 2028 to 3% in 2032 (figure 23).

3. Market Risk Premium

Market Risk Premium	
Extended Study Mr. Stehle	6,10%
Damodaran	5,94%
Bloomberg	6,50%
German IDW	6%-8%

Figure 24 – Comparison of MRP's

Year	ReturnCDAX	Base Interest rate	MRP
2023	15,530%	3,12%	12,410%
2022	-15,596%	1,62%	-17,216%
2021	13,854%	-0,880%	14,734%
2020	8,624%	-0,880%	9,504%
2019	24,158%	-0,880%	25,038%
2018	-18,246%	-0,880%	-17,366%
2017	14,008%	-0,880%	14,888%
2016	13,229%	-0,835%	14,064%
2015	9,708%	-0,835%	10,543%
2014	5,373%	-0,630%	6,003%
2013	21,158%	-0,130%	21,288%
2012	26,605%	0,120%	26,485%

Figure 25 – Calculation of annual MRP

The market risk premium has been derived from the German "C-Dax" returns, which consists of 110 German companies and is seen as the largest and most diversified German index. In line with the base interest rate, a German index has been chosen as Germany is VTs largest market, and a study published by Richard Stehle called "Returns on German Stocks 1954 to 2013" [5] was used as a basis to derive the MRP. Mr. Stehle has developed a method to calculate the returns of the C-Dax back to 1955. As the study ended in 2011, the values were extended accordingly from 2011 to 2023 to derive the current MRP. The C-Dax daily returns have been extracted for this period to calculate the annual average return. Afterwards, these average returns have been subtracted from the annual base interest rate published by the German federal bank (Return – Base interest rate = MRP; see figure 25). Overall, this results in a period of 69 years (2011 to

[2] Source: https://www.bundesbank.de/en/statistics/money-and-capital-markets/interest-rates-and-yields/daily-term-structure-on-listed-federal-securities-651570 - (accessed: 06.12.2023)
[3] Source: https://www.kleeberg.de/2023/06/01/basiszinssatz-nach-idw-s-1-steigt-zum-01-06-2023-gerundet-auf-250/ - (accessed: 06.12.2023)
[4] Source: https://fred.stlouisfed.org/series/BAA - (accessed: 06.12.2023)
[5] Source: https://www.econbiz.de/Record/returns-on- german-stocks-1954-to-2013-stehle-richard/10011428284 - (accessed: 06.12.2023)

2023 based on an own calculation - before 1955 to 2010 taken from the study of Mr. Stehle), which is seen as a sufficient period in literature to derive a robust MRP[6]. The resulting MRP is 6.10%, which is close to Damodaran's estimated MRP of 5.94%[7], a bit below the Bloomberg MRP guidance of 6.5% but in line with the recommendation of the German IDW[8] (see figure 24). Therefore, the derived MRP of 6,10% is assumed to be reasonable.

4. Equity Beta

Peers	Ticker	Unlevered Beta
American Tower Corp.	NYSE:AMT	0,60
Cellnex Telecom SA	BME: CLNX	0,56
Crown Castle Inc	NYSE: CCI	0,59
Infrastrutture Wireless Italia	BIT: INW	0,41
SBA Communications Corp	NASDAQ: SBAC	0,50
Avg.		**0,53**

Figure 26 – Peer group unlevered beta

The company beta of VT has been calculated based on a peer group of 6 tower companies (see figure 26). The stock return of every company has been used in a regression analysis against the Eurostoxx index to derive a company-specific beta and to unlever it accordingly. For the regression analysis, a time horizon of 2 years with weekly returns was used[9]. The average unlevered beta of these six peer companies was 0.53. Relevering this beta to VT's forecasted specific capital structure (20-24% D/EV) leads to annual specific levered beta values for VT. On average, this leads to a company-specific beta of 0.61, which aligns with the guidance from Bloomberg.

5. CAPM

	2024	2039
Statutory tax rate	30,92%	30,92%
Risk free rate	2,50%	2,50%
Unlevered Beta	0,53	0,53
Beta levered	0,61	0,60
MRP	6,10%	6,10%
Cost of Equity unlevered	**5,74%**	**5,74%**
Rating	BBB-	BBB-
Cost of Debt	**5,58%**	**3,00%**

Figure 27 – Cost of Capital VT

Using the CAPM formula, an unlevered cost of equity of 5.74% has been derived for VT and a cost of debt of 5.58%. Going forward, the tax rate has been assumed to align with the historical statutory rate of 30.92% (figure 27 -29).

6. Other Assumptions for the valuation

	Source
Risk Free Rate	German State Bonds
unlevered Beta	Peer Companies
MRP	Based on historical C-Dax returns
Cost of Debt	Based on traded peer bonds with B-rating

Figure 28 – Cost of Capital Derivation

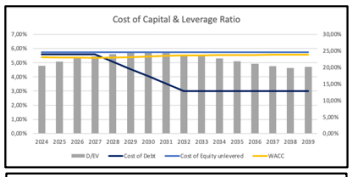

Figure 29 - Cost of Capital Forecast

Net debt (€2,491.32m) has been derived from VT's BS, including long-term borrowings, tax liabilities and excess cash but excluding lease liabilities because:

1. Lease liabilities are accumulated in the BS as per the new IFRS 16 standard. However, the future cash lease payments are directly deducted to forecast the FCF and therefore, deducting accumulated lease liabilities would lead to double counting.
2. As VT does not report any lease schemes, it is not possible to value them.

The value of the non-core business (excl. JV equity investments) is assessed at book value (€-0.60m) as it only includes post-employment benefits.

As described in the chapter "IS & BS Forecast", although the investments in Cornerstone and INWIT are not classified as core business, they are still substantial and must be valued at fair market value. The value of these investments has been assessed to be €5,472m – details on the valuation can be found in the chapter "Valuation of equity investments". In the following, this value will be used to derive the equity share price of the entire company across all valuation methods that have been used to enhance comparability.

The number of outstanding shares used for the valuation is 505.8m.

Discounted Cashflow

The DCF method leverages the detailed business plan forecast and allows for scenario analysis to derive the company value. Based on the core free cash flow derived in the forecasting section, the value of VT's core business has been derived using the WACC and the APV method.

To apply the APV method, the enterprise value of VT has been computed by calculating the value of the unlevered core business and adding the value of the tax shield. As described in the chapter "Profit & loss statement and balance sheet forecast", a complete set of financial statements has been derived from the BP (IS, BS & CF). The financial statements provide valuation inputs on the debt scheme, changing capital ratios, expected dividends and a forecasted FCF.

[6] Source: https://www.econbiz.de/Record/unternehmensbewertung-prozess-methoden-und-probleme-ballwieser-wolfgang/10010198749 - (accessed: 06.12.2023)
[7] Source: https://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/ctryprem.html - (accessed: 06.12.2023)
[8] Source: https://www.kleeberg.de/2023/06/01/basiszinssatz-nach-idw-s-1-steigt-zum-01-06-2023-gerundet-auf-250/ - (accessed: 06.12.2023)
[9] Source: https://www.econbiz.de/Record/unternehmensbewertung-prozess-methoden-und-probleme-ballwieser-wolfgang/10010198749 - (accessed: 06.12.2023)

Interest rates and the subsequent value of the tax shield have been calculated based on the assumptions derived in the previous cost of capital chapter. To calculate the enterprise value, the roll-back method has been used, meaning the terminal value (TV) has been calculated first, and was then discounted year by year, adding the PV of the respective FCFs and tax shields.

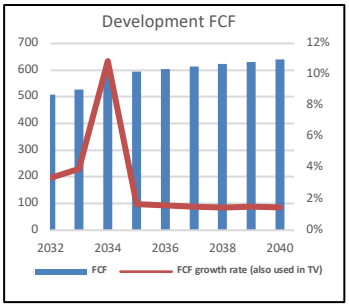

Figure 30 – FCF Development

Based on the explicit BP forecast, the growth of the FCFs stabilized at around 1.5% between 2037 and 2039 (figure 30). It is assumed that this growth can be sustained after the explicit forecast period. A long-term growth of 1.5% is within the average guidance in literature to use a growth rate between 1-2%[10]. It has been decided to use this stable growth rate to compute the TV and not use other proxies like the RONIC, as the business model of VT relies on driving up tenancy ratios on existing and new sites (partly without Capex investments) and improving operational performance, meaning that growth is not strictly a function of new capital investments. Furthermore, all new capital investments and growth drivers have been modelled in a very detailed way in the market model, implying that a stable long-run growth of 1.5% already incorporate all factors included in KPIs such as the RONIC.

The FCFs and the TV of the tax shield have been discounted with the unlevered cost of equity, while the value of the annual tax shield has been discounted with the cost of debt. This is in line with the literature, which recommends discounting the TV of the TS with the more uncertain cost of capital[11]. The PV of the unlevered core business and the tax shield has been derived at €11,781m.

To reconfirm this value, the WACC method has been applied by calculating the levered cost of equity based on the forecasted leverage ratios year by year. These levered costs of equity have been used to derive WACC. As the leverage ratio is projected to change in the forecast period, the WACC fluctuates between 5.5% and 5.4%. This WACC is in line with the estimations VT gave in their investor presentations. Discounting the FCF with the annual WACC, the present value of VT has been computed at €11,745m, which is a variance of less than 0.3% compared to the APV method. By subtracting the net debt and the value of the non-core business and adding the value of the equity investments, a share price of €29.18 using the APV method and €29.11 using the WACC method have been derived.

Dividend Discount Model

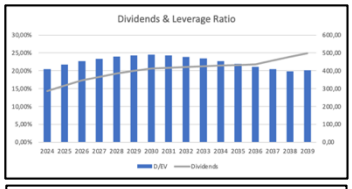

Figure 31 – Dividends & Leverage Ratio Forecast

In line with VT's guidance, dividends have been forecasted based on recurring free cash flows (RFCF) and the dividend payout ratio (explained in the BS section). RFCF has been determined based on recurring OpFCF (Adjusted EBITDA less maintenance and recharge Capex and cash costs of leases) less taxes and interest paid. Dividends have been cross checked with the other BS positions to ensure a suitable dividend payout ratio. These dividends have been used to apply the DDM valuation. The levered cost of equity is based on the WACC calculated in the previous chapter, which was on average, at around 5.56%. The growth of the dividends in the terminal value is assumed at 1.50%, in line with the free cash flow growth estimation described in the APV section. Dividend growth is expected to be closely connected to free cash flows in the long run. Based on the DDM model, the equity value of VT has been calculated to be €8,158.23. By adding the equity investments' value and subtracting the non-core business's value, a share price of €26.95 is derived.

Peers	Ticker	Sector
American Tower Corp.	NYSE:AMT	TowCo - Infrastructure
Cellnex Telecom SA	BME: CLNX	TowCo - Infrastructure
Crown Castle Inc	NYSE: CCI	TowCo - Infrastructure
Infrastrutture Wireless Italia	BIT: INW	TowCo - Infrastructure
SBA Communications Corp	NASDAQ: SBAC	TowCo - Infrastructure

Figure 32 – VT Peer Group Multiples

Multiples

Additionally, multiples have been used to derive the value of VT based on comparable companies and previous transactions. Even though multiples do not reflect a detailed driver-based forecast,

[10] Source: https://www.econbiz.de/Record/unternehmensbewertung-prozess-methoden-und-probleme-ballwieser-wolfgang/10010198749 - (accessed: 15.11.2023)
[11] Source: https://www.econbiz.de/Record/unternehmensbewertung-prozess-methoden-und-probleme-ballwieser-wolfgang/10010198749 - (accessed: 15.11.2023)

they have been used to contextualize the values derived using DCF methods. The focus has been put on revenue and EBITDA multiples as they are most commonly used in the industry and because other multiples such as P/E multiples, are less common due to the high Capex intensity of the business that leads to low earnings following strong investments.

1. Trading multiples

A peer group of five other TowerCos has been analyzed to derive multiples to estimate the company value of VT. The peers (figure 32) have been selected based on industry, size and operating regions. Based on the peer group, an average EV/EBITDAaL multiple of 19.58x was derived, and an average EV/Revenue multiple of 13.24x was found. This aligns with the multiples reported by Bloomberg for the same group. Based on these multiples, the enterprise value of VT was calculated, and afterwards, the equity value was computed by subtracting net debt and adding the value of the equity investments. The EV/Revenue multiple resulted in a share price of €38.59, while the EV/EBITDAaL multiple resulted in a share price of €31.90.

2. Transaction Multiples

Target / Buyer	EV/EBITDA	EV/EBITDAaL
Telia Towers / Brookfield, Alecta		28,2
Telefonica/Telxius		25,40
Hivory / Cellnex	16,30	
Ck Hutchison / Cellnex	15,60	
Play Towers / Cellnex	11,20	
Eir / Phoenix Tower International		28,00
Iliad / Cellnex	11,20	
GD Towers/Brookfield		27,00
Vantage Towers/KKR		26,00
Vodafone New Zealand/Aotearа Twoers		33,80
Bersama/Macquarie	16,00	
Axicom/AustralianSuper		27,00
Avg	**14,06**	**27,91**

Figure 33 – Transaction Multiples

Twelve transactions in the tower industry have been analyzed to derive average comparables (figure 33). At least one private equity fund has been involved on the buy side across all examined transactions. The average EV/EBITDA multiple was 14.06x while the average EV/EBITDAaL multiple was 27.91x. These multiples led to share prices of €37.82 using the EV/EBITDA multiple and €41.74 using the EV/EBITDAaL multiple.

The delisting offer by Vodafone and the consortium of €32.00 per share implies an EV/Revenue multiple of 16.75x and an EV/EBITDAaL multiple of 32.52x.

Scenario Analysis & Sensitivities

Based on the risks and opportunities explained in the previous chapter, an upside and a downside scenario have been developed to estimate the valuation impact. In addition, sensitivity analyses on the most critical inputs have been conducted to examine the effects of variations in cost of capital, growth rates and multiples.

1. Scenario Analysis

Using the base case explained in the forecasting section as a basis; two cases have been derived to assess the risks and opportunities explained in the risk and opportunities chapter and analyze their impact on the valuation.

Upside Case	
Capacity Sites	2k additonal capacity sites by 2030
Small Cell & DAS revenues	100m revenues by 2030 (vs 65m in base case)
Total OPEX	Decrease of 10% vs base case achieved until 2030
Tenancy Ratio new Capacity Sites	10% higher than in Base Case

Figure 34 – Upside Case Assumptions

The upside case (figure 34) assumes that the demand for PoPs is growing stronger than expected, and VT can deploy 2.0k additional sites by 2030. Besides, it is assumed that VT can benefit from small cell and DAS deployments and grow the segment revenues from €44m in 2023 to €100m by 2030 (vs. €65m in the base case). Additionally, it is assumed that VT can achieve stronger efficiencies and reduce all of its Opex categories by 10% vis-a-vis the base case assumption, reflecting a slower growth of FTEs, maintenance and other Opex. Finally, it is assumed that the tenancy ratio on new capacity sites will be 10% higher than in the base case (1.64x vs 1.49x) due to an increase in sharing agreements with other MNOs. These adjustments imply a share price of €33.7.

Downside Case	
Coverage Obligations	Only fulfilled by 2035 (vs 2030 in base case)
Total CAPEX	Increased by 33% vs base case
1&1 Sites	Delayed by 3 years
Tenancy ratio existing sites	25% slower vs base case

Figure 35 – Downside Case

The downside case (figure 35) assumes that VT will not be able to realize all constructions as planned and that deployments will be delayed, so all coverage obligations will only be fulfilled in 2035. 1&1 deployments are expected to be realized but similarly, with a delay of 3 years. Additionally, the case assumes that capital expenditures per site increase by 33% due to supply chain and contracting issues, as it is likely that construction constraints apply to the entire market. Lastly, it is assumed that colocation rates of other MNOs on existing sites are lower, leading to a 25% lower tenancy ratio growth. Overall, the tenancy ratio is forecast to stabilize at 1.58x (vs.

1.62x in the base case). This downside case implies a share price of €26.8.

2. Sensitivites

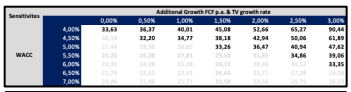

Figure 36 – Scenario Analysis DCF

For the WACC method a sensitivity analysis (figure 36) has been conducted to assess the influence of variation in the discount rate and future company growth. This company growth sensitivity is based on two effects: Firstly, it is constructed as further growth of the FCF beyond the base case, meaning a FCF increases of 0-3% each year. Secondly, the growth rate impacts the TV, which has the most significant valuation impact. To arrive at a share price above the offered delisting price of €32 per share, significant additional growth +2% (also in the TV) or a comparatively low WACC (<5%) would be necessary.

On the downside, an increase in cost of capital towards 6.5% would lead to a share price below €25. Keeping the WACC at 5.5% but changing the FCF and TV growth rate to 0% would also result in a share price of <€25.

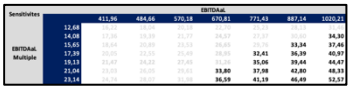

Figure 37 - Scenario Analysis - EBITDAaL Multiple

Looking at the sensitives of the multiples, a similar trend becomes apparent. Using the EBITDAaL of VT and different EBITDAaL multiples as variables, only the right-bottom corner of figure 37 implies a share price above €32 per share. This would require an EBITDAaL that is 15% higher than the current EBITDAaL of VT or an EBITDAaL multiple above 20.0x, with the current peer average at around 17.4x. However, as seen in the transaction's multiples, EBITDAaL multiples of 27x have been seen in the market, and with the market's growth expectations in mind, an EBITDAaL growth of >10% in the following years is not unrealistic.

Valuation of Equity Investments

As stated in the above valuation sections, the equity investments in INWIT and Cornerstone have been valued separately.

1. INWIT

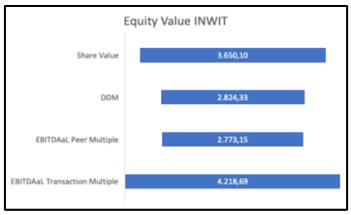

Figure 38 – INWIT Valuation Range

As INWIT is a listed company, the latest share price of €11.45 has been used to derive the equity value of VT's shares. As indicated, the value of the equity investment in INWIT based on this share price is €3,650.00m.

To verify this result, INWIT has also been valued using multiples and based on the forecasted dividends in VT's business plan (these dividends are not included in the FCF of VT). INWITs dividends have been predicted to grow in line with VT's recurring free cash flows as no significant difference in market trends and growth rates is expected across VTs markets and Italy. Both, Cornerstone and INWIT have the same business model as VT and dividend payments are expected to be closely linked to the development of free cash flows, and margins are forecast to remain constant. Hence, the assumption is that INWIT and Cornerstone will experience an overall growth rate similar to VT's.

Based on the DDM, the value of the VT shares in INWIT is €2,824.33m, while the valuation using multiples results in a range from €2,773.00m to €4,218.69m – with the latter being the transaction multiple (figure 38).

As the share price is closest to a fair value of the market, with all public information incorporated if markets are efficient, this value was used for INWIT.

2. Cornerstone

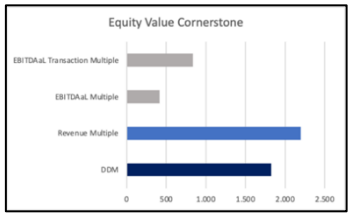

Figure 39 – Cornerstone Valuation Range

Contrary to INWIT, Cornerstone is not listed. Therefore, no share price or other public information is available. However, as VT holds 50%, they have reported some financials in their annual report. It was, therefore, possible to value the Cornerstone investments with the DDM based on the logic explained in the INWIT chapter, with the dividends payable to VT being forecasted with the same growth rate as the recurring FCF of VT. In addition, Cornerstone has been valued with the identical multiples used for VT and Cornerstone.

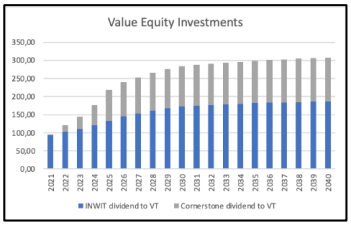

Figure 40 - Dividends forecasted from INWIT + Cornerstone

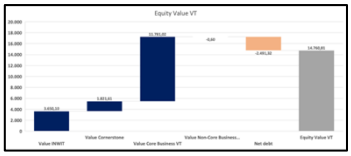

Figure 41 - Equity Value VT

Applying the DDM, the derived value is €1,821.61m. Comparing it to the multiple valuation, a range of €417.71m to €2,197.52m was computed. What stands out is that the two EBITDA multiples lead to a large difference in enterprise values. It seems that the lease costs of Cornerstone are higher relative to the ones of their peers, or anything extraordinary happened in the last fiscal year. As no further or previous public information is available, it was not possible to investigate this issue further. The EBITDAaL in 2020 - when Cornerstone was integrated into VT - was around 30% higher than the EBITDAaL used for this valuation[12]. This would have led to an equity value closer to the value derived with the DDM. Besides, other valuations stated in the trade press value the company at higher levels. It was, therefore decided to exclude the two EBITDA multiples from the valuation range, as the values derived are close to the book value, and there is no evidence that the fair market value of Cornerstone is indeed that low. Based on this valuation the derived enterprise value of Cornerstone is approx. 49% of the INWIT value seems reasonable based on their financials in relative size. As the DDM model valuation was quite accurate when valuing the core business of VT and INWIT, it was decided to rely on the DDM valuation, which led to a valuation of €1,821.61m (figure 39).

The accumulated equity value of both investments is €5,421.71m (figure 40).

Valuation Summary

The base case valuation of VT has resulted in a share price of €29.18 (€26.86 downside case / €33.77 upside case) based on the DCF (APV) method and €29.11 using the WACC. The DDM method has led to a share price that is slightly lower, at €26.95. The results of the multiples valuation range from €31.90 (trading EV/EBITDAaL) to €41.74 (transaction EV/EBITDAaL). As a further guidance, in January 2023, Barclays targeted a price range of €26 to €32 and provided a Hold recommendation[13].

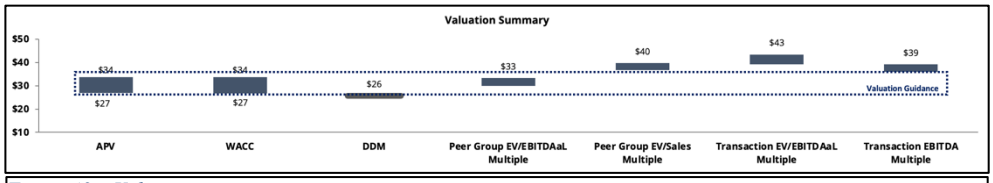

Figure 42 – Valuation summary

In summary, the base case DCF valuation results indicate that the intrinsic value of VT was slightly above the share price before the take private was announced (€27.33) but below the tender offer of €32. This appears sensible as investors tend to pay a premium – this is underlined by the fact that 90% of shareholders accepted the offer. **The DCF valuation results are considered the most accurate representation of the share price of VT** as they are based on a detailed market forecast that reflects a balance between risks and additional opportunities. It implies that VT will continue to focus on its traditional business and grow in line with the market. Further opportunities and risks have been incorporated in the up- and downside case. To justify prices exceeding the tender offer price of 32€, additional revenue or efficiency potentials would have to be unlocked as per the upside case (€33.77).

Latest transaction multiples point towards even higher prices, however, there is no evidence that these prices can be justified based on the developments in the underlying markets or guidance's given by experts. Based on these findings, the tender offer price of 32€ is assessed to be reasonable and shareholders that have not accepted the offer are advice to sell their shares at the current price of €36.92 as a negative shareholder return of -21% would be implied if the stock

[12] Source: https://investors.vodafone.com/sites/vodafone-ir/files/document_file/cornerstone-presentation.pdf - (accessed: 15.11.2023)

[13] source: https://www.marketbeat.com/stocks/OTCMKTS/VTWRF/price-target/) - (accessed: 15.11.2023)

price would re-adjust to the intrinsic value in one year (it has to be acknowledged that squeeze outs usually happen at a significant price premium to gain full control of the asset).

While the tender offer price appears feasible if investors believe in certain upsides, a share price beyond this value reflects a so far unexplained price premium paid by investors. Three hypotheses were developed that may justify this premium:

1. Investors may believe that stronger FCFs will be generated, either due to stronger market demand or additional revenues from adjacent business fields. While the former is assessed to be less likely (high visibility on demand) and have a smaller impact (higher revenues but Capex compromises cash flows), there is limited visibility on the latter. While these adjacent markets are expected to show strong growth (as per VT's prospectus), it is uncertain whether TowerCos will really be able to benefit from such opportunities.
2. There may be a size premium for TowerCo transactions – VT is one of the largest European infrastructure providers. The hypothesis appears plausible as most leading TowerCos aim to consolidate assets and VT can be seen an ideal starting point to build a large portfolio through M&A. A larger site portfolio is likely to unlock synergies (cost savings, deployment capacity and bargaining power)[14].
3. Private Equity and pension funds appear to drive up multiples. TowerCo investments are considered safe due to the tight regulatory framework, the high cash flow visibility and limited market risk (crises and economic cycles have limited impact on the industry). PEs likely have an appetite for such investments due to these characteristics and because the strong cash generation allows PEs to reduce debt financing throughout the holding period, increasing the equity value. More generally, the strong involvement of PE funds is likely to have boosted demand for TowerCo shares, leading to high prices. As multiples have recently increased, PE funds may also engage in multiple arbitrage speculation.

It is likely that all factors serve as an explanation for the high multiple valuation outcomes, that indicate that the market may be overheated. This hypothesis is supported by the fact that the stock price of ATC has decreased by 2.5% YTD, while the Eurostoxx has increased by 17.3%[15] - similar trends can be observed for other competitors like Cellnex.

Conclusion

Based on the thorough analysis of VT's markets and financials, it is recommended for investors sell their shares in Vantage Towers. In case the delisting offer of €32 has been declined, owners of the remaining free float are advised to sell at the current price of €36.92 as the intrinsic value of VT is estimated at €29.18.

The high multiples across recent transactions in the tower market appear to reflect expectations beyond a market growth driven by coverage obligations and urban traffic growth. This implies that upsides across adjacent business segments, such as small cells, DAS and smart city concepts, materialize. Currently, the visibility on these opportunities is low. While the upside case and scenario analyses show that price premia can be justified to a certain extent, it appears likely that private equities looking for safe returns and potentially high exit multiples drove prices across the market. Transaction multiples reaching >27x EBITDAaL (implying a VT price of €41.74) and recent stock price adjustments support the hypothesis that the market tends to be overheated. Private investors should exercise caution when investing in the current market environment, as they compete with large-scale investors.

[14] Source: https://www2.deloitte.com/content/dam/Deloitte/pt/Documents/technology-media-telecommunications/TEE/The-Rise-of-Netcos.pdf - (accessed: 19.12.2023)
[15] Source: https://finance.yahoo.com – (accessed: 15.11.2023)

It is worth mentioning that the business model of TowerCos is comparatively safe due to its high cash flow visibility and its independence from the overall economy. The expected market growth and potential future upsides make it worth considering the investment in other stocks within the industry and wait for the right moment to re-enter the market.