1&1 Drillisch

(MDAX, Telecom/Internet)

WARBURG RESEARCH

Buy	
EUR 64.00	
Price	EUR 38.00
Upside	**68.4 %**

Value Indicators:	EUR
DCF:	64.00
FCF-Value Potential:	55.00

Share data:	
Bloomberg:	DRI GR
Reuters:	DRIG
ISIN:	DE0005545503

Description:

Drillisch distributes fixed-line and mobile services to residental customers in Germany

Market Snapshot:	EUR m
Market cap:	6,717
No. of shares (m):	177
EV:	6,612
Freefloat MC:	1,793
Ø Trad. Vol. (30d):	12.36 m

Shareholders:	
Freefloat	26.7 %
United Internet	73.3 %

Risk Profile (WRe):	2018e
Beta:	1.1
Price / Book:	1.6 x
Equity Ratio:	83 %
Net Fin. Debt / EBITDA:	0.1 x
Net Debt / EBITDA:	0.1 x

Infrastructure case well reflected in current share price

The 1&1 Drillisch (DRI) share price declined by almost 40% in 2018 and is trading at a significant discount of 69% to our fair value.

Based on many conversations with United Internet (UTDI) and Drillisch (DRI), industry peers and the German networks regulatory authority (Bundesnetzagentur), this report takes a deeper look at two major factors weighing on the share price:

1) Uncertainty as to whether the company will decide to participate in the **upcoming spectrum auction** in spring 2019 and, if so, the associated investment required to establish a mobile network infrastructure

2) Fear of **increasing competition** within the German telecommunications market.

Upcoming spectrum auction: We conclude that the business model is more likely to be kept capex-lean than be transformed into an MNO-model with its own infrastructure. This conviction is based on the MBA-MVNO contract with Telefónica D (O2D) which includes access to all future technologies at least until 2030 and a national roaming option. Furthermore, plans by Vodafone to shut down its 3G network could pave the way for additional 4G access.

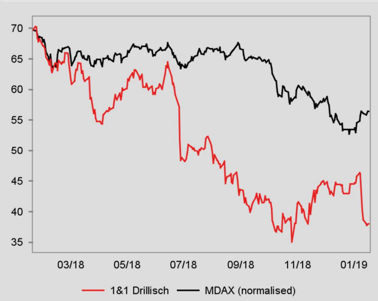
However, a decision in favour of participation in the upcoming spectrum auction and a subsequent transformation of the business model towards a mobile network operator (MNO) with its own infrastructure could be justified by the operating leverage that comes with ownership of a network combined with greater entrepreneurial freedom and the rather low requirements for new entrants such as a household coverage of only 25% until end 2025 for the 3.6 GHz spectrum.

A scenario calculation assuming a transformation towards an MNO business model would result in a fair share price of EUR 46, which indicates no value creation and little upside (5%) to the current share price. Therefore, the rollout of own infrastructure is less favourable from an economic point of view.

Increasing competition: A study of the German mobile postpaid market reveals homogenous pricing for DRI's brand smartmobil and O2D's Blau.de in the no-frills segment while O2D's market position in the premium postpaid segment still seems to be hampered by negative customer perception of its network quality, which puts its pricing significantly below peers.

We therefore conclude that there is little fear of increased price competition, especially in the no-frills segment, considering the competitive situation of 1&1 Drillisch and that no provider is prepared to become aggressive on pricing.

Conclusion: We regard our investment case for a capex-lean business model with continuous customer growth of 3m gross adds per year and a stable combined monthly churn rate of 1.4% (weighted average) for both mobile and fixed-line to be intact. Consequently, we expect DRI to generate significant FCF growth (WRe: 2020 FCF of EUR 668m, implied FCF yield of 10.0%) driven by the company's operational leverage and an EBITDA CAGR of 25.7% until FY 2020 (WRe: FY 2020 EBITDA of EUR 1,003m).



Rel. Performance vs MDAX:	
1 month:	-18.0 %
6 months:	-9.0 %
Year to date:	-20.1 %
Trailing 12 months:	-26.9 %

Company events:	
28.03.19	FY 2018
15.05.19	Q1
21.05.19	AGM
15.08.19	Q2

FY End: 31.12. in EUR m	CAGR (17-20e)	2014	2015	2016	2017	2018e	2019e	2020e
Sales	14.2 %	290	630	710	2,812	3,642	3,951	4,186
Change Sales yoy		-0.3 %	117.3 %	12.8 %	296.1 %	29.5 %	8.5 %	5.9 %
Gross profit margin		*n.a.*	*n.a.*	*n.a.*	*32.9 %*	*29.7 %*	*31.0 %*	*32.6 %*
EBITDA	25.7 %	85	105	120	505	728	868	1,003
Margin		*29.4 %*	*16.7 %*	*16.9 %*	*18.0 %*	*20.0 %*	*22.0 %*	*24.0 %*
EBIT	24.2 %	75	69	59	440	577	711	843
Margin		*26.0 %*	*11.0 %*	*8.3 %*	*15.6 %*	*15.9 %*	*18.0 %*	*20.2 %*
Net income	7.2 %	50	46	26	465	386	476	573
EPS	7.2 %	0.91	0.84	0.48	2.63	2.18	2.69	3.24
EPS adj.	7.2 %	0.91	0.84	0.48	2.63	2.18	2.69	3.24
DPS	4.0 %	1.70	1.70	1.70	1.60	1.60	1.70	1.80
Dividend Yield		6.4 %	4.2 %	4.5 %	3.0 %	4.2 %	4.5 %	4.7 %
FCFPS		1.21	-1.58	1.36	n.a.	0.41	2.40	3.78
FCF / Market cap		4.1 %	-4.0 %	3.2 %	2.8 %	1.1 %	6.3 %	9.9 %
EV / Sales		3.3 x	3.1 x	2.7 x	3.3 x	1.9 x	1.7 x	1.5 x
EV / EBITDA		11.3 x	18.6 x	15.7 x	18.5 x	9.3 x	7.6 x	6.2 x
EV / EBIT		12.8 x	28.3 x	32.2 x	21.2 x	11.7 x	9.3 x	7.4 x
P / E		29.4 x	47.7 x	79.3 x	20.4 x	17.4 x	14.1 x	11.7 x
P / E adj.		29.4 x	47.7 x	79.3 x	20.4 x	17.4 x	14.1 x	11.7 x
FCF Potential Yield		5.4 %	3.8 %	4.1 %	5.8 %	7.4 %	9.0 %	11.1 %
Net Debt		-225	45	86	124	37	-105	-472
ROCE (NOPAT)		46.1 %	19.1 %	7.3 %	14.7 %	9.4 %	11.0 %	13.3 %
Guidance:	Revenues of EUR 3.7bn, EBITDA of EUR 750m, 1m net adds							

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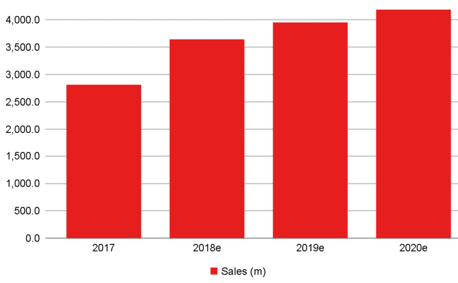
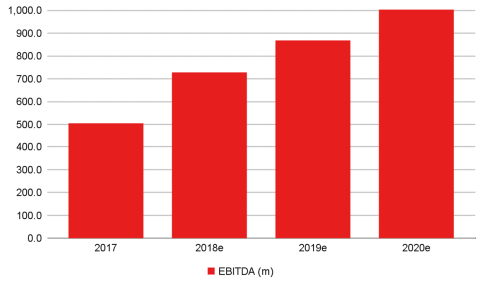
Sales development
in EUR m



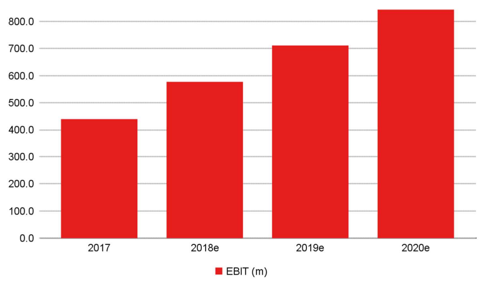
Source: Warburg Research

EBITDA development
in EUR m



Source: Warburg Research

EBIT development
in EUR m



Source: Warburg Research

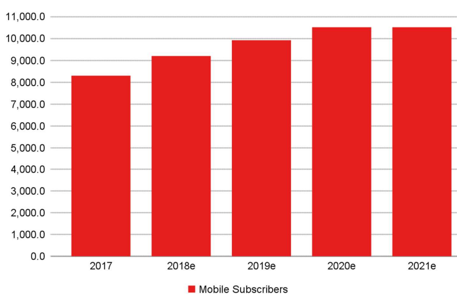
Company Background

- Drillisch sells mobile, fixed-line and value-added services to residential customers in Germany. Its core brands are 1&1 and Smartmobil. Drillisch has more than 12m subscribers.
- Drillisch has a broad network operator contract portfolio: Deutsche Telekom, Versatel, Telefonica Deutschland, Vodafone, among others.
- The MBA-MVNO contract with Telefonica Deutschland is based on monthly fixed-mobile data volumes which Drillisch must purchase. Hence, Drillisch bears a so-called inventory risk.
- The volume of monthly mobile data that Drillisch is obliged to acquire is increasing over time and depends on the monthly mobile data capacity used.

Competitive Quality

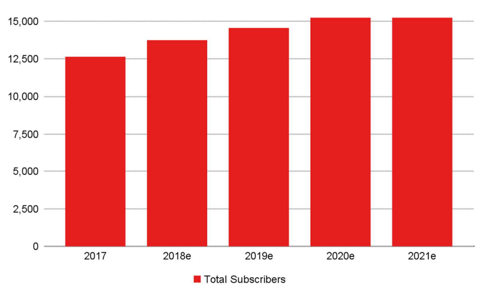
- Drillisch's MBA-MVNO contract with Telefonica Deutschland secures access to sufficient mobile data capacities until 2030 and to all future technologies at attractive network costs.
- Strategic flexibility: huge customer base in mobile and fixed-line in combination with favourable network operator contracts gives Drillisch the flexibility to react to changing market conditions.
- Strong brand portfolio includes well-known German telecommunication services brands such as smartmobil, yourfone and especially 1&1
- Capex-lean business model with almost no technology risks: Drillisch acquires all network capacities and does not cover investment in infrastructure.

Mobile Subscribers
in m



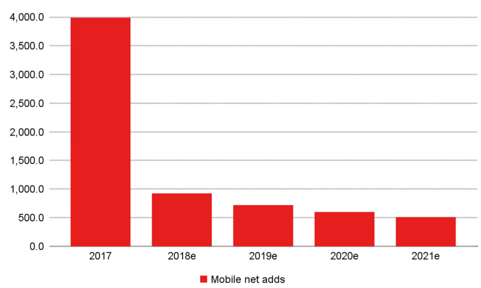
Source: Warburg Research

Total Subscribers
in m



Source: Warburg Research

Mobile net adds
in k



Source: Warburg Research

Summary of Investment Case	4
Company Overview	5
Infrastructure Option	6
Initial situation	**6**
Rollout assumptions	**7**
Cost calculation	**8**
Coverage milestones	**9**
Investment timeline	**10**
Utilisation of the newly-built infrastructure	**11**
Valuation impact	**12**
Scenario 1 – MVNO facing rational competition	12
Scenario 2 – MVNO facing increased competition	13
Scenario 3 – MNO facing rational competition	13
Scenario 4 – MNO facing increased competition	13
Conclusion	**14**
Competitive Landscape	15
Premium postpaid segment	15
No-frills segment	16

Summary of Investment Case

Investment triggers

- **Non-participation in spectrum auction:** A final decision not to participate in the spectrum auction and consequently to remain capex-lean would be a catalyst for the share price as DRI would not have to shoulder capex and opex burdens related to an infrastructure rollout in the short term.
- **Growth remains attractive.** Superior customer management and marketing qualities lead to a growing customer base on the back of a of a net debt-free and asset-light business model. Operational leverage will be a logical consequence and boost EBITDA and FCF growth significantly.
- **No irrational market behaviour.** The German mobile telecommunication market environment is currently not showing the kind of irrational competitive behaviour that would cause concern for DRI's stable revenue stream. Additionally, the company is perfectly positioned to respond to a potential change in customer demand towards convergence products with DRI's ability to offer DSL/VDSL, mobile, and web hosting.

Valuation

- **DCF model suggests a fair value per share of EUR 64.00** – taken as our initial price target.
- Capex-lean and asset-light business model with estimated **FCF generation of EUR 668m (FY 2020 FCF yield of 10.0%)** shows attractive valuation on an **EV/FCF level of 10.7x in FY 2020.**
- The current P/E ratio of 18.4x compares to estimated earnings growth of 23.3% in FY 2019 and results in a **PEG ratio of 0.79**.

Growth

- **FCF to rise from EUR 72.6m in FY 2018 to EUR 668.2m in FY 2020** if the company's final decision is to remain capex-lean and operational leverage kicks in.
- Expected **stable customer growth of 3m gross adds** per year and a stable monthly churn rate of 1.45% for mobile and ca. 1.2% for fixed-line translates into combined **net adds of 810k for FY 2019 and 680k for FY 2020**.
- **Blended ARPU expected to increase from EUR 23.0 in FY 2018 to EUR 23.43 in FY 2020** solely as a result of customers opting for higher tariffs in mobile and fixed-line.

Competitive quality

- DRI's **MBA-MVNO contract with O2D** puts the company in an exceptional position to profit from all future technologies while remaining capex-lean and asset-light and therefore offering a favourable risk-return profile compared to mobile network operators.
- **Superior customer management** and **"1&1" brand distribution power** secure stable churn rates (1.45% for mobile and ca. 1.2% for fixed-line) and generate visible cash flows based on an average customer lifetime value of 5-6 years.
- **Strong cash-generating, non-cyclical, and net debt-free business model** enables growing dividend payments (WRe: 4.7% dividend yield in FY 2020)

Warburg versus consensus

- **On sales, we are slightly below consensus (-1%) for FY 2018**. However, our estimates for FY 2019 and 2020 are 1-2% ahead of consensus.
- Our estimates for **operating margins** in FY 2019 and 2020 are **about 60 to 130bps more optimistic** than consensus.
- In addition, we are more optimistic about DRI's **FCF** development with **FY 2020 estimates 5% above consensus**.

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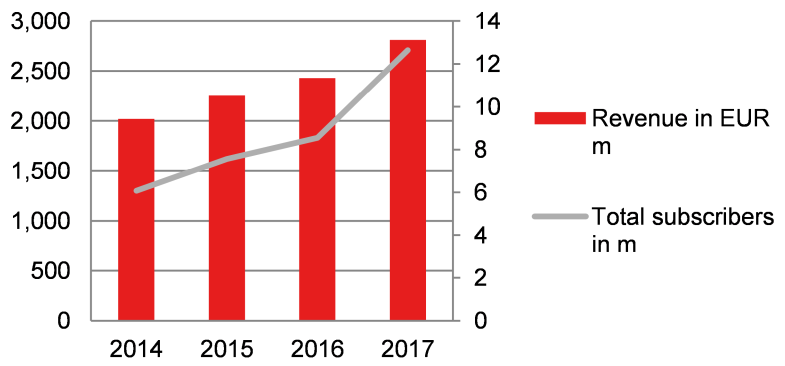
Company Overview

1&1 DRILLISCH

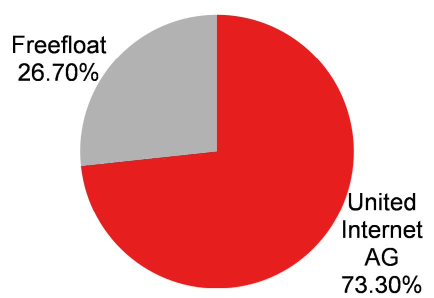
Segments	Access	Group	Customer base
2017 Revenues in EUR m	2,812.37	2812.31	Mobile: 8.3m
2017 EBITDA in EUR m	510.96	504.00	DSL/VDSL: 4.34m
EBITDA-margin	18.17%	17.92%	-

	Access		Other
	Mobile	Fixed-Line	
Operations	Distribution of mobile telecommunication services, end devices, bundled products, value-added services	Distribution of fixed-line/ broadband telecommunication services, end devices, bundled products, value-added services (such as IP-TV)	VC investments in complementary businesses, software solutions
Brands	Drillisch Online, 1&1, Drillisch Logistik	1&1	MobileVentures, IQ Optimize
Sub-brands	smartmobil.de, sim.de, M2M, yourfone, eteleon, DeutschlandSIM, simply, maxxim, PremiumSIM, winSIM, Discotel	-	-
Suppliers	Vodafone (3G/3.5G pay-as-you-go contract), Telefónica Deutschland (MBA-MVNO agreement/4G pay-as-you-go contract); Hardware manufacturer	Versatel, Dt. Telekom, various local pre-service providers	-
Competitors	**MNO´s:** Dt.Telekom, Vodafone, Telefónica Deutschland, **MSP:** Freenet, **Resellers:** Aldi Talk, Tchibo	Dt. Telekom, Vodafone, Telefónica Deutschland, Unitymedia, Tele Columbus, City Carriers (Netcologne)	VC funds

Revenues and subscriber development



Ownership



Source: Company data, Warburg Research

Infrastructure Option

- National roaming at least until 2025 and 1&1 Versatel's fibre network provide a foundation for a potential business model transformation
- Transformation estimated to require capex of EUR 2,645m and annual opex of EUR 759m for both spectrum and infrastructure
- MNO option results in a fair value of EUR 46 per share which compares to a PT of EUR 64 for a capex-lean business model

Upcoming capacity spectrum auction not suitable for full coverage

Initial situation

Undisputedly, the question as to whether or not DRI will participate in the upcoming spectrum auction in Germany has been a drag on share price development. An application for approval for the spectrum auction has to be submitted by Friday, January 25, and we believe DRI will be among the companies submitting an application to participate. Such a move would give the company a strong negotiating position with MNOs in the short term.

We remain confident that the company's final decision will be non-participation in the auction in favour of maintaining its capex-lean business model with attractive free cash flow growth (WRe: 2020 FCF of EUR 668m, implied FCF yield of 10.0%) driven by the company's operational leverage and an EBITDA CAGR of 25.7% until FY 2020 (WRe: FY 2020 EBITDA of EUR 1,003m).

Nevertheless, there is logical reasoning in favour of the infrastructure option such as lower fixed costs with an increasing customer base and the entrepreneurial freedom that comes with ownership of the infrastructure.

In the following pages, we summarise the parameters of such a business model transformation and derive the implied costs related the rollout of the company's own mobile infrastructure in Germany.

The upcoming spectrum auction in spring 2019 offers the following capacity spectrum which can also be used for 5G technology:

- 8 blocks à 2x5MHz (paired) in the frequency band 1,920-1,980 MHz, available from 2021 onwards
- 4 blocks à 2x5MHz (paired) in the frequency band 2,110-2,170 MHz from 2026 onwards
- 1 concrete 20 MHz block in the frequency band 3,400-3,420 MHz
- 27 abstract blocks à 1x10MHz (unpaired) in the frequency band 3,420-3,690 MHz
- 1 concrete block à 1x10MHz (unpaired) in the frequency band 3,690-3,700 MHz

Compared to the current frequency distribution among German MNOs, additional spectrum of a mere 1.2 Hz will become available on the 2 GHz band and more than 170 MHz will be auctioned on the 3.6 GHz band.

While this situation might seem to imply a shortage in the 2GHz band spectrum, this should be seen in the context of DRI's current use of the O2D and Vodafone spectrum. If DRI enters the market as an MNO, less spectrum will be needed by the other MNOs.

Furthermore, DRI would probably acquire spectrum in the 3.6 GHz frequency band only as this comes with fewer rollout conditions (household coverage of only 25% until end 2025) while its higher capacity enables the future technology 5G.

New market entrants at the upcoming spectrum auction may state their essential minimum configurations but their offers are only binding if they acquire the spectrum necessary for their prospective business models.

If Drillisch wishes to roll out its own infrastructure, it needs to reach a national roaming agreement with one of the established MNOs in order to continue providing customers with services.

While not stipulated in the current tender requirements, the Bundesnetzagentur requires network operators to negotiate with new entrants to provide them with a national roaming service.

In this context, the Bundesnetzagentur plays the role of arbitrator and has, if necessary, the authority to apply antitrust law if an MNO fails to comply with general market terms.

In any case, DRI already has a national roaming starter kit on the O2D network which grants it access to all technologies at least until 2025.

Besides the auction in spring 2019, the upcoming longwave 800 MHz spectrum auction in 2025 would be crucial for full coverage by a new entrant in order to serve its own customers with satisfactory 4G network coverage.

Full 5G network coverage is not assumed as the shortwave physics of the capacity spectrum auctioned in spring 2019 does not allow for a profitable rollout of 5G in rural areas.

In the context of this auction, we deem it more likely that a national roaming obligation will be attached to spectrum, which could be based on the recently published European Electronic Communication Code (11 December 2018). The Code especially stresses the importance of network access to facilitate the investment phase for new market entrants and therefore, if adopted by the national regulator, provides a legal basis for such an obligation in Germany.

As a consequence for DRI, the national roaming phase could be stretched beyond 2025, which would ease the ramp-up phase for its own infrastructure.

Currently, 4G coverage is based on approx. 50,000 LTE-towers in Germany. The three Mobile Network Operators (MNOs) differentiate in coverage with Deutsche Telekom boasting 97.8% coverage of all households in Germany, slightly ahead of Vodafone's 92% coverage and Telefónica Deutschland's less dense coverage of only 82%, which nevertheless, has been improving steadily in urban areas.

98% coverage requires approx. 37,849 stations in Germany

Rollout assumptions

We estimate potential rollout costs for DRI by dividing demographic data for Germany into seven geotypes with regards to the population density. Logically, a potential rollout would start by covering the highly populated cities in Germany as approx. 30% of the total population is living in the bigger cities. Further, we assume two sites per km^2 in urban areas, while the number decreases as the population density decreases. The rather low requirements for new entrants of a total household coverage of only 25% until end 2025 bound to the 3.6 GHz spectrum requires sites of 14,707 (WRe). A subsequent coverage of 50% requires 26,821 (WRe) and is assumed to be achieved in 2025 (WRe). It has to be noted that these coverage thresholds should only be seen as intermediate steps while the logical coverage goal should be 98% coverage as agreed by all current MNOs during the last 4G spectrum auction in 2015. Only this threshold will secure the ability to compete with existing MNOs without additional national roaming support in the medium term. Such a scenario would require approx. 37,849 sites (WRe), which we assume will be achieved by 2030, exceeding Deutsche Telekom's target of 36,000 base stations, which is to be reached four years earlier in 2021, as announced at its capital markets day in May 2018. The logic behind our assumption is:

a) to provide customers with a superior network quality than O2D in order to gain a sharper competitive edge than under the current MBA-MVNO contract with O2D,

b) to meet the ongoing need for additional towers to accommodate the shortwaved 5G spectrum in densely populated areas,

c) to enter agreements with other MNOs to provide coverage in economically less attractive areas.

Clustering of demographic data and assumptions for a potential rollout in Germany

Geotype	Area (km^2)	Percentage of total are (%)	Population	Percentage of total population (%)	4G/5G Population coverage assumption (%)	Minimum population density (persons per km^2)	Site count	Average site density (sites per km^2)
Urban	5,196.39	1.5%	15,063,325.00	18.2%	100%	2,659	10,393	2
Suburban 1	2,517.33	0.7%	4,436,211.00	5.4%	100%	1,755	3,524	1.4
Suburban 2	4,940.24	1.4%	5,929,647.00	7.2%	100%	1,219	3,952	0.8
Rural 1	15,342.50	4.3%	10,661,533.00	12.9%	100%	705	6,137	0.4
Rural 2	21,648.30	6.1%	8,206,586.00	9.9%	100%	394	4,330	0.2
Rural 3	93,363.13	26.4%	33,164,096.00	40.1%	97%	209	5,434	0.06
Rural 4	210,696.18	59.6%	5,330,953.00	6.4%	88%	94	4,079	0.02
1st step					25%		14,707	
2nd step					50%		26,821	
3rd step					98%		37,849	

Source: DESTATIS, Warburg Research

Vendor financing assumed to be the most appropriate solution

Cost calculation

For further calculations, we solely focus on the costs of spectrum auctions (capex) and vendor financing-related leasing costs (opex) as we are assuming that DRI will outsource the tasks of building the infrastructure and administration of the network.

We further assume capex related to spectrum auctions of EUR 1,000m in 2019 (3.6 GHz frequency band) and EUR 1,000m in 2025 (800 MHz frequency band). The figures roughly compare to the proceeds of EUR 4,380m from the spectrum auction in 2010 with four participants and of EUR 5,080m from the auction in 2015 with three participants.

Costs can be broken down further into lease costs of sites/base stations (EUR 6,000 p.a.) and small cells (EUR 6,000 p.a.) as well as additional fibre backhaul which is needed to connect those antenna sites to the existing 1&1 Versatel fibre network.

The additional small cells only provide coverage for a smaller range of 10 meters to a few kilometers while base stations provide coverage for a range of up to 10km and hence are utilised to narrow down existing mobile cells in densely populated areas.

Note that this scenario does not differentiate between 4G and 5G technology costs since network infrastructure of more advanced generations of technology tends to be similar in price to older technology generations. Nevertheless, as a new entrant, the costs of a potential rollout of 4G and 5G networks will be higher for DRI than an existing MNO as DRI does not have an existing infrastructure that it can simply update with new hardware.

Related costs for a full rollout via vendor financing in Germany

Strategy	Cost type	Capex (EURm)	Opex (EURm)	Comment
Spectrum acquisition	2.0 GHz/3.6GHz spectrum auction	1,000	-	Assumption, auction in spring 2019
	800 MHz spectrum auction	1,000	-	Assumption, auction in 2025
Spectrum integration on a macrocellular network	Site lease	-	0.006	
	Fibre backhaul (per km)	0.013	-	1&1 Versatel provides excellent starting position with 45,000 km of fibre in Germany
Network densification through small cells	Small cell site rental	-	0.006	
	Small cell backhaul	0.01	-	

Source: Ofcom (2015), 5G NORMA (2016), Oughton/Frias (2018), Warburg Research

1&1 Versatel fibre network as a foundation for a potential rollout

Coverage milestones

The following cost table is divided into the steps of increasing household coverage of 25%, 50%, and 98%.

In the first step, 25%-rollout in the areas with the highest population density is calculated with 14,707, base stations and four small cells per base station to consider the higher data traffic needed for such areas. We assume that 1&1 Versatel's fibre backbone network is sufficient to connect those antenna sites.

The second step considers similar assumptions with 50% coverage, requiring a total of 26,821 base stations and two small cells per additional base station while the 1&1 Versatel fibre network is assumed to be still sufficient to connect the additional nodes.

The third step comes with additional capex requirements of EUR 645m (WRe) for a required expansion of the Versatel fibre network. We assume 5km of fibre per additional base station (11,028 additional base stations needed) and 1km of fibre per additional small cell (1 small cell needed per newly-added base station). We further estimate 25% sharing activity among those newly-added base stations and small cells to account for the less populated areas where it is economically less attractive to provide a telecommunication network.

A cherry-picking scenario, such as 5G coverage solely for highly populated areas, is not considered as a long-term national roaming cooperation with one of the MNOs, which would be crucial for such a scenario, would be expected to result in an unattractive cost base for DRI in the long term.

Scenario calculations divided into capital and operational expenditure

Strategy	Cost type	Capex (EURm)	Opex (EURm)	Comment
Spectrum acquisition	2.0 GHz/3.6GHz spectrum auction	1,000	-	Assumption, becomes mostly available in 2019
	800 MHz spectrum auction	1,000	-	Assumption, becomes available in 2025
1st step (25% coverage):				
Spectrum integration on a macrocellular network	Site lease	-	88	14,707 base stations, no sharing
	Fibre backhaul (per km)	-	-	1&1 Versatel fibre network sufficient
Network densification through small cells	Small cell site rental	-	353	4 small cells per base station
	Small cell backhaul	-	-	1&1 Versatel fibre network sufficient
Sum:		**2,000**	**441**	
2nd step (50% coverage):				
Spectrum integration on a macrocellular network	Site lease	-	161	26,821 base stations, no sharing
	Fibre backhaul (per km)	-	-	1&1 Versatel fibre network sufficient
Network densification through small cells	Small cell site rental	-	498	2 small cells per base station
	Small cell backhaul	-	-	1&1 Versatel fibre network sufficient
Sum:		**2,000**	**659**	
3rd step (99% coverage):				
Spectrum integration on a macrocellular network	Site lease	-	211	Site share agreements/multicarrier base stations reduce costs by 25% for additional base stations (11,028) for less populated areas
	Fibre backhaul (per km)	538	-	1&1 Versatel fibre network not sufficient, 5 km needed for each additional base station, sharing agreements assumed to reduce costs by 25%
Network densification through small cells	Small cell site rental	-	548	1 small cell per base station, 25% reduced costs for newly added small cells due to sharing agreements
	Small cell backhaul	108	-	1&1 Versatel fibre network not sufficient, 1 km needed for each additional small cell, sharing agreements assumed to reduce costs by 25%
Sum:		**2,645**	**759**	

Source: Warburg Research

MNO case: Opex payments estimated to reach EUR 859m in 2030

Investment timeline

The investment timeline for DRI's potential rollout shown below assumes a transition period until 2030 during which the company either maintains a modified version of its current partnerships with Telefónica Deutschland (O2D) and Vodafone or enters a national roaming contract with one of the three MNOs (Deutsche Telekom, O2D or Vodafone). The first option would require the transformation of the current MBA-MVNO contract with Telefónica Deutschland into the shorter national roaming agreement until at least 2025. Either way, we expect continuous opex payments until 2021 of EUR 550m, which have to be added to the additional capex and opex burdens from the vendor financing of own infrastructure. From 2021, we assume declining opex payments as the newly-built infrastructure slowly replaces third-party services.

Capex needs for spectrum are estimated at EUR 1000m in both years 2019 and 2025. The additional rollout of fibre for the less populated areas will take place from 2025 to 2030 and is assumed as a linear cost of EUR 81m (capex) per year.

The timeline also considers the average duration of two years to construct a new tower in Germany based on a lengthy application process, potential legal action and civil protests. Consequently, a first impact of additional opex will be effective in 2020 and will gradually increase until 98%-coverage is reached in 2030.

Infrastructure capex / opex timeline

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Capex	**1000**	**0**	**0**	**0**	**81**	**81**	**1081**	**81**	**81**	**81**	**81**	**81**
of total	*37.8%*	*0.0%*	*0.0%*	*0.0%*	*3.0%*	*3.0%*	*40.9%*	*3.0%*	*3.0%*	*3.0%*	*3.0%*	*3.0%*
Opex	**550**	**626**	**590**	**608**	**627**	**646**	**665**	**683**	**702**	**742**	**800**	**859**
infrastructure related	*0*	*76*	*144*	*212*	*281*	*349*	*417*	*485*	*554*	*622*	*690*	*759*
network access related	*550*	*550*	*445.5*	*396*	*346.5*	*297*	*247.5*	*198*	*148.5*	*120*	*110*	*100*
ramp-up	42.0%	47.8%	49.0%	52.7%	56.8%	61.2%	66.1%	71.5%	77.4%	84.5%	92.1%	100.0%

Source: Warburg Research

Margin expansion and top-line growth not expected before 2025

Utilisation of the newly-built infrastructure

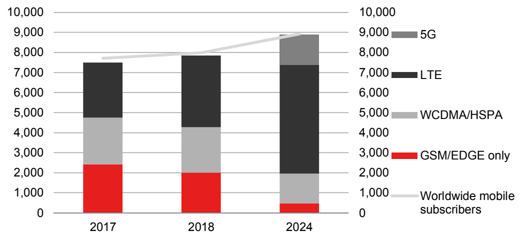
How would this benefit DRI?

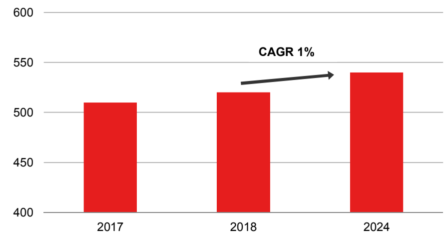
The ownership of infrastructure certainly comes with advantages such as greater entrepreneurial freedom and higher EBITDA margins (German MNOs generate EBITDA margins of ca. 30%). Further, the ownership of such a network provides a second revenue stream from the sale of excess capacity to mobile service providers, which utilises operating leverage to reduce unit costs.

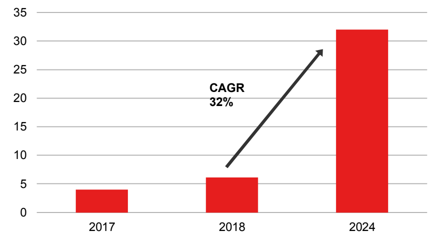
In addition, DRI would boast greater competitive strength with a stable and more dense telecommunication network (compared to the currently weakest MNO player O2D, which is also DRI's main supplier of network services under the existing MBA MVNO contract). It could offer the latest technology such as 5G which would allow for additional customer acquisitions and internal up-selling and consequently result in stronger top-line growth after the ramp-up phase (estimated to gain traction from 2024 onwards). Our improved top-line assumption of 4.1% CAGR in 2024-2030 is based on the forecasts of the Ericsson Mobility Report suggesting growth in both mobile data consumption and mobile subscriptions driven by new technologies such as the Internet of the Things.

This effect, however, is likely to be partly offset by the increase in competition if a fourth MNO player enters the market. This situation is expected to reduce the total sales volume, making the market less attractive in the short term and to trigger higher marketing costs to increase gross adds.

Worldwide mobile subscriptions	Western Europe: Mobile subscriptions	Mobile data traffic GB/month







Source: Ericsson Mobility Report 2018, Warburg Research

To evaluate such an MNO case for DRI, we assume reduced top-line growth as a result of increased competition as a fourth MNO enters the German market. O2D in particular should find itself in a weak position with the lowest network quality and decreasing revenues resulting from the loss of DRI traffic on O2D's infrastructure.

We simulate an ARPU erosion in DRI's mobile segment of 4% p.a., which translates into 2% less top-line growth p.a. compared to our base case fading out in FY 2025. From 2025 onwards, margin relief is expected with higher top-line prospects based on the above-mentioned MNO advantages and the cessation of opex for network access. Finally, terminal sales growth of 2% compared to the 1.5% in an MVNO case is assumed in order to account for the better growth prospects linked to network ownership.

Interestingly, the projected top-line result in FY 2027 in an MNO case of EUR 4.927bn falls short of our estimated base-case top-line result of EUR 4.998bn in FY 2027 while DRI's MNO EBITDA would stand at EUR 1.399bn (WRe: MNO EBITDA of 28.4%) compared to the capex-lean EBITDA projection of EUR 1.374bn (WRe: MVNO EBITDA margin of 27.5%) in FY 2027 indicating no top-line improvement linked to the infrastructure investments in the medium-term as a result of increased competition.

Applying the changed top-line assumptions and the additional capex and opex charges to our current DCF valuation model for DRI, we derive a **fair share price of EUR 46**. Please refer to the section **Valuation impact (p. 10)** for the detailed valuation scenario.

P&L impact of expected capex / opex related to an infrastructure rollout (identical to Valuation Scenario 4)

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Sales	**3,840.4**	**3,990.2**	**4,070.0**	**4,151.4**	**4,192.9**	**4,276.7**	**4,426.4**	**4,692.0**	**4,926.6**	**5,123.7**	**5,303.0**	**5,435.6**
change yoy	*6.5%*	*3.9%*	*2.0%*	*2.0%*	*1.0%*	*2.0%*	*3.5%*	*6.0%*	*5.0%*	*4.0%*	*3.5%*	*2.5%*
Opex	550	626	590	608	627	646	665	683	702	742	800	859
EBITDA	**852.8**	**899.5**	**941.8**	**988.1**	**1,029.4**	**1,080.1**	**1,226.7**	**1,312.1**	**1,399.4**	**1,462.9**	**1,542.4**	**1,609.8**
EBITDA margin	***22.2%***	***22.5%***	***23.1%***	***23.8%***	***24.6%***	***25.3%***	***27.7%***	***28.0%***	***28.4%***	***28.6%***	***29.1%***	***29.6%***
FCF	**- 475.1**	**720.9**	**669.9**	**690.4**	**637.8**	**667.2**	**- 223.6**	**867.1**	**925.7**	**968.5**	**1,021.7**	**1,088.2**
change yoy		-	*-7.1%*	*3.1%*	*-7.6%*	*4.6%*	*-133.5%*	-	*6.8%*	*4.6%*	*5.5%*	*6.5%*

Source: Warburg Research

Valuation impact

To derive a fair valuation for the DRI share, we assume four different scenarios with the variables:

- business model (either capex-lean MVNO or capex-heavy MNO) and
- the competitive environment.

MVNO proves to be the most valuable business case

Scenario 1 – MVNO facing rational competition

In this scenario, the company remains capex-lean while market competition stays at a modest level. Continuous customer growth of 3m gross adds per year and a stable combined monthly churn rate of 1.4% (weighted average) for both mobile and fixed-line is expected to result in significant FCF growth (WRe: 2020 FCF of EUR 668m, implied FCF yield of 10.0%) driven by the company's operational leverage and an EBITDA CAGR of 25.7% until FY 2020 (WRe: FY 2020 EBITDA of EUR 1,003m).

Consequently, a DCF valuation yields a fair share price of **EUR 64**.

Scenario 2 – MVNO facing increased competition

While we stick to our capex-lean assumption in this scenario, we simulate an ARPU erosion in the mobile segment of 4% p.a., which fades out in FY 2025. A terminal top-line growth rate similar to the rational competition scenario of 1.5% p.a. is assumed.

A subsequent DCF valuation indicates a fair share price of **EUR 59**.

Neither MNO scenario is value-creative

Scenario 3 – MNO facing rational competition

By applying the assumptions above to DRI's capex and opex in a DCF model, we show the incremental impact of such an infrastructure option without a competitive response to the entry of a fourth network operator with more aggressive pricing. Therefore, DRI shows similar top-line growth to our base case (Scenario 1) until the advantages of the ownership of a network kick in.

To reflect the switch to an MNO business model, we additionally change our target debt rate to approx. 15% from 0% assuming a 50% debt and 50% equity financing of capex needs and adjust our beta from 1.1 to 1.2 to account for the incorporated investment risk and the change in the capital structure.

We assume a further capex burden of approx. EUR 1,100m in FY 2030 (despite an unclear date for further spectrum auctions) to account for the ongoing commitment as an MNO before our valuation switches to a steady state with historical capex and depreciation assumptions suitable for an MNO business model.

A fair share price of **EUR 51** is derived from this scenario.

Scenario 4 – MNO facing increased competition

We reduce our sales expectations as in Scenario 2 in our MNO case to account for the likely change in the competitive landscape in response to a new entrant. Relief is assumed in 2026 as ownership of infrastructure and the associated entrepreneurial independence generates an edge over the established players. Further, terminal sales growth of 2% compared to the 1.5% in an MVNO case is assumed to account for better growth prospects linked to an own network.

A DCF valuation considering those assumptions yields a fair value of **EUR 46**.

DCF model – MNO facing increased competition (Scenario 4)

	Detailed forecast period			Transitional period										Term. Value
Figures in EUR m	2018e	2019e	2020e	2021e	2022e	2023e	2024e	2025e	2026e	2027e	2028e	2029e	2030e	
Sales	3,606	3,840	3,990	4,070	4,151	4,193	4,277	4,426	4,692	4,927	5,124	5,303	5,436	
Sales change	*29.5 %*	*6.5 %*	*3.9 %*	*2.0 %*	*2.0 %*	*1.0 %*	*2.0 %*	*3.5 %*	*6.0 %*	*5.0 %*	*4.0 %*	*3.5 %*	*2.5 %*	*1.5 %*
EBIT	577	711	767	673	710	740	781	793	852	917	961	1,023	941	
EBIT-margin	*16.0 %*	*18.5 %*	*19.2 %*	*16.5 %*	*17.1 %*	*17.7 %*	*18.3 %*	*17.9 %*	*18.2 %*	*18.6 %*	*18.8 %*	*19.3 %*	*17.3 %*	
Tax rate (EBT)	*33.0 %*	*33.0 %*	*32.0 %*	*33.0 %*	*33.0 %*	*33.0 %*	*33.0 %*	*33.0 %*	*33.0 %*	*33.0 %*	*33.0 %*	*33.0 %*	*33.0 %*	
NOPAT	387	476	522	451	476	496	523	531	571	614	644	685	631	
Depreciation	151	257	264	269	278	289	299	434	460	483	502	520	669	
in % of Sales	*4.2 %*	*6.7 %*	*6.6 %*	*6.6 %*	*6.7 %*	*6.9 %*	*7.0 %*	*9.8 %*	*9.8 %*	*9.8 %*	*9.8 %*	*9.8 %*	*12.3 %*	
Change in provisions	0	0	0	4	-4	0	0	0	0	0	0	0	0	
Change in liquidity from														
- Working Capital	39	13	18	1	1	1	1	2	4	4	3	3	2	
- Capex	45	1,045	47	53	58	147	154	1,186	160	168	174	180	1,359	
Capex in % of Sales	*1.2 %*	*27.2 %*	*1.2 %*	*1.3 %*	*1.4 %*	*3.5 %*	*3.6 %*	*26.8 %*	*3.4 %*	*3.4 %*	*3.4 %*	*3.4 %*	*25.0 %*	
Other	300	150	0	0	0	0	0	0	0	0	0	0	0	
Free Cash Flow (WACC-model)	153	-475	721	670	690	638	667	-224	867	926	969	1,022	-62	
PV of FCF	144	-415	587	509	489	421	410	-128	463	461	450	442	-25	4,393
share of PVs	3.9 %			42.6 %										53.6 %

Model parameter

Derivation of WACC:		Derivation of Beta:	
Debt ratio	30.0 %	Financial Strength	1.30
Cost of debt	2.0 %	Liquidity	1.00
Market return	0.0 %	Cyclicality	1.00
Risk free rate	1.5 %	Transparency	1.70
Risk premium	5.5 %	Others	1.20
Cost of equity	8.3 %		
WACC	**7.28 %**	**Beta**	**1.24**

Valuation (m)

Present values until 2030e	3,807
Terminal Value	4,393
Financial liabilities	0
Pension liabilities	2
Hybrid capital	0
Minority interest	0
Market val. of investments	0
Liquidity	0
Equity Value	**8,198**
No. of shares (m)	176.8
Value per share (EUR)	**46.38**

Sensitivity Value per share (EUR)

		Terminal Growth						
Beta	(WACC)	0.75 %	1.00 %	1.25 %	**1.50 %**	1.75 %	2.00 %	2.25 %
1.45	(8.3 %)	37.02	37.60	38.23	38.90	39.61	40.39	41.23
1.35	(7.8 %)	40.04	40.75	41.52	42.34	43.23	44.20	45.26
1.29	(7.5 %)	41.72	42.51	43.36	44.28	45.28	46.37	47.56
1.24	(7.3 %)	43.53	44.40	45.35	**46.38**	47.51	48.73	50.09
1.19	(7.0 %)	45.48	46.46	47.52	48.68	49.94	51.34	52.88
1.13	(6.8 %)	47.60	48.69	49.88	51.19	52.63	54.21	55.97
1.03	(6.3 %)	52.41	53.80	55.32	57.01	58.88	60.97	63.31

Delta EBIT-margin						
-1.50 pp	-1.00 pp	-0.50 pp	**0.0**	0.50 pp	1.00 pp	1.50 pp
35.31	36.51	37.70	38.90	40.09	41.28	42.48
38.46	39.75	41.05	42.34	43.63	44.93	46.22
40.22	41.58	42.93	44.28	45.63	46.98	48.33
42.15	43.56	44.97	**46.38**	47.79	49.21	50.62
44.24	45.72	47.20	48.68	50.16	51.64	53.11
46.53	48.09	49.64	51.19	52.74	54.29	55.85
51.84	53.56	55.28	57.01	58.73	60.45	62.17

Source: Warburg Research

Sensitivity analysis of different scenarios

Valuation scenarios (EUR per share)	MVNO	MNO
Stable competition	**64**	**51**
Increasing competition	**59**	**46**

Source: Warburg Research

Conclusion

In conclusion, the sensitivity analysis above indicates that an MNO scenario would not create any value while competition would probably increase in the short term. The company should therefore refrain from embarking on such a transformation process.

As DRI would be building its own network from scratch while competing with existing MNOs, which can provide the latest technology with lower incremental capex and opex based on their existing network infrastructure, we derive a lower fair value for the infrastructure case than that of a capex-lean business case.

The benefits of owning telecommunication infrastructure, such as a margin expansion and greater entrepreneurial freedom, are not sufficient to compensate for the initial burden caused by such a rollout.

Analysis of the MNO-case makes the excellence of DRI's current risk-return profile even more apparent, especially considering its access to all future technologies under the MBA-MVNO contract with O2D at least until 2030 without infrastructure-related investment risks.

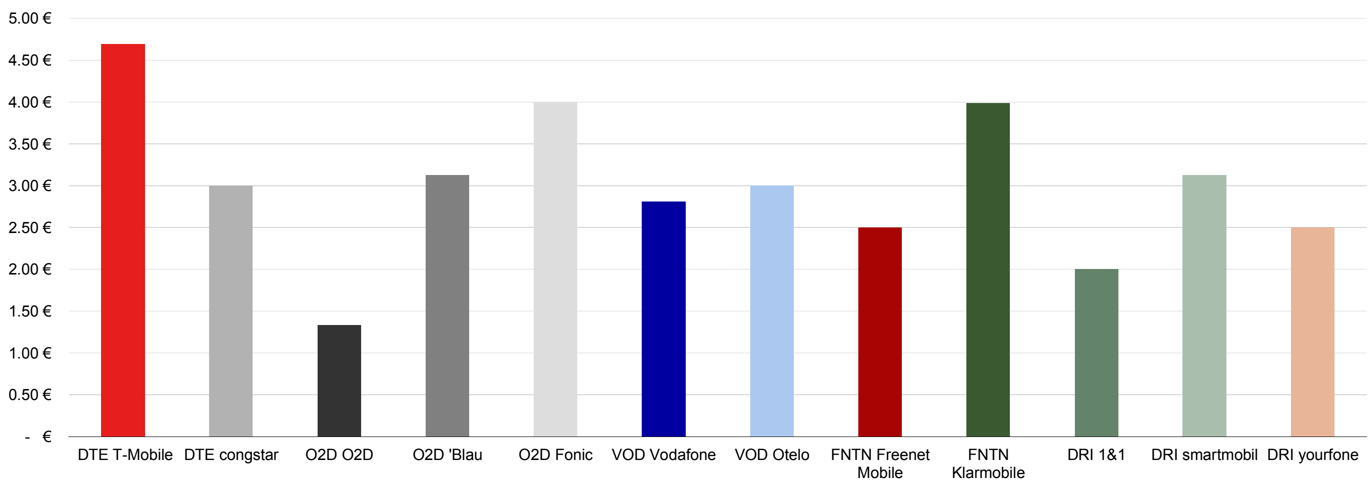
We consequently remain confident in our investment case, which is based on the continued operation of a capex-lean and asset-light business model. The fair value of the stock should therefore be seen at EUR 64.

Competitive Landscape

- Overall competition appears to be rational
- DRI's smartmobil shows competitive pricing compared to O2D's Blau.de
- Premium postpaid dominated by Vodafone and Deutsche Telekom

We analysed the German telecommunications market by comparing the price per gigabyte for the cheapest no-frills offer as well as for the most exclusive premium offer of each MNO. One-time fees or hardware costs were consequently not taken into account. The data was gathered on December 14, 2018.

Premium Postpaid data tariffs in Germany, price per GB data in EUR



Source: Warburg Research

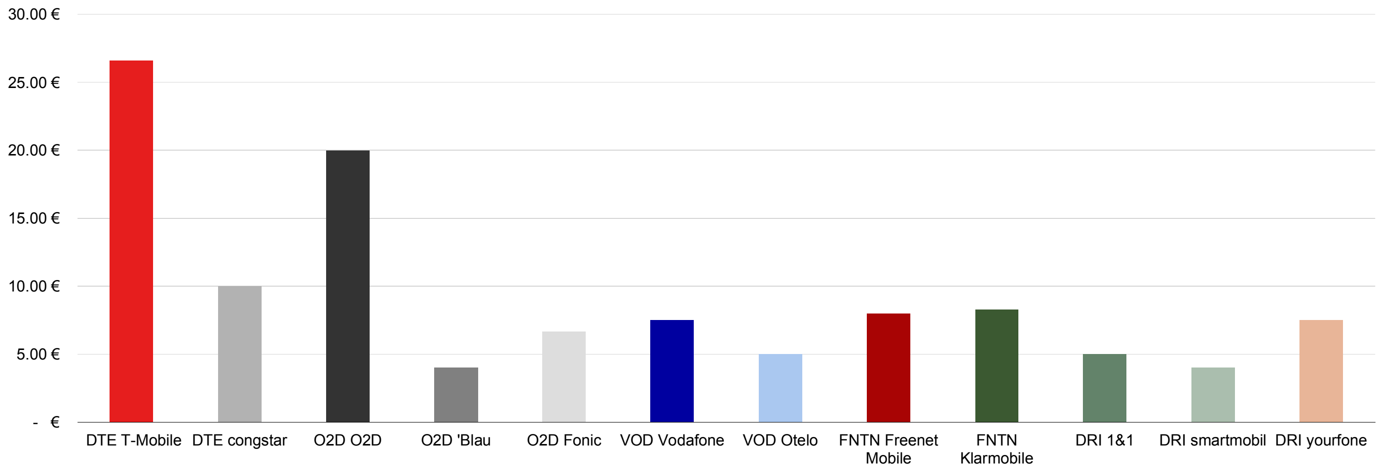
O2D still suffers from negative consumer perception

Premium postpaid segment

The premium postpaid segment is dominated by the brands T-Mobile and Vodafone based on their better network quality. O2 offers by far the lowest price per gigabyte among the premium offers in the German market, which suggests the still negative consumer perception of the operator's network quality and its premium services.

DRI's pricing strategy in this segment is to offer tariffs between the two premium MNOs and O2D suggesting no keen competition towards O2D.

No-frills data tariffs in Germany, price per GB data in EUR



Source: Warburg Research

Competition in the no-frills segment seems rational

No-frills segment

For no-frills brands, the German mobile market shows rather homogenous pricing among the providers without fierce competition which seems rational in terms of price stabilisation. DRI's tariffs are similar to O2D's Blau.de via the low-cost brand smartmobile highlighting the company's flexibility to satisfy both premium and no-frills customers.

We therefore conclude that there is little fear of increased price competition especially in the no-frills segment based on the absence of any further pricing aggression by any provider and the competitive situation of DRI.

DCF model

	Detailed forecast period			Transitional period										Term. Value
Figures in EUR m	2018e	2019e	2020e	2021e	2022e	2023e	2024e	2025e	2026e	2027e	2028e	2029e	2030e	
Sales	3,606	3,912	4,145	4,310	4,483	4,617	4,710	4,804	4,900	4,998	5,073	5,149	5,226	
Sales change	*29.5 %*	*8.5 %*	*5.9 %*	*4.0 %*	*4.0 %*	*3.0 %*	*2.0 %*	*2.0 %*	*2.0 %*	*2.0 %*	*1.5 %*	*1.5 %*	*1.5 %*	*1.5 %*
EBIT	577	711	843	905	986	1,062	1,130	1,201	1,225	1,249	1,268	1,287	1,307	
EBIT-margin	*16.0 %*	*18.2 %*	*20.4 %*	*21.0 %*	*22.0 %*	*23.0 %*	*24.0 %*	*25.0 %*	*25.0 %*	*25.0 %*	*25.0 %*	*25.0 %*	*25.0 %*	
Tax rate (EBT)	*33.0 %*	*33.0 %*	*32.0 %*	*33.0 %*	*33.0 %*	*33.0 %*	*33.0 %*	*33.0 %*	*33.0 %*	*33.0 %*	*33.0 %*	*33.0 %*	*33.0 %*	
NOPAT	387	476	574	606	661	712	757	805	821	837	850	862	875	
Depreciation	151	157	160	172	179	175	165	144	122	125	101	77	78	
in % of Sales	*4.2 %*	*4.0 %*	*3.9 %*	*4.0 %*	*4.0 %*	*3.8 %*	*3.5 %*	*3.0 %*	*2.5 %*	*2.5 %*	*2.0 %*	*1.5 %*	*1.5 %*	
Changes in provisions	0	0	0	4	-4	0	0	0	0	0	0	0	0	
Change in Liquidity from														
- Working Capital	39	13	18	5	3	2	1	2	2	2	1	1	1	
- Capex	45	45	47	43	45	46	47	48	59	65	71	77	78	
Capex in % of Sales	*1.2 %*	*1.2 %*	*1.1 %*	*1.0 %*	*1.0 %*	*1.0 %*	*1.0 %*	*1.0 %*	*1.2 %*	*1.3 %*	*1.4 %*	*1.5 %*	*1.5 %*	
Other	300	150	0	0	0	0	0	0	0	0	0	0	0	
Free Cash Flow (WACC Model)	153	425	669	735	788	839	874	899	883	896	879	861	874	887
PV of FCF	143	369	539	551	548	542	524	501	457	431	393	357	337	5,552
share of PVs	**9.35 %**			**41.28 %**										**49.37 %**

Model parameter

Derivation of WACC:		Derivation of Beta:	
Debt ratio	0.00 %	Financial Strength	1.00
Cost of debt (after tax)	1.4 %	Liquidity (share)	1.00
Market return	7.00 %	Cyclicality	1.00
Risk free rate	1.50 %	Transparency	1.40
		Others	1.20
WACC	**7.66 %**	**Beta**	**1.12**

Valuation (m)

Present values 2030e	5,693		
Terminal Value	5,552		
Financial liabilities	0		
Pension liabilities	2		
Hybrid capital	0		
Minority interest	0		
Market val. of investments	0		
Liquidity	0	No. of shares (m)	176.8
Equity Value	**11,243**	**Value per share (EUR)**	**63.61**

Sensitivity Value per Share (EUR)

		Terminal Growth						
Beta	WACC	0.75 %	1.00 %	1.25 %	**1.50 %**	1.75 %	2.00 %	2.25 %
1.30	8.7 %	51.93	52.63	53.39	54.20	55.07	56.00	57.01
1.21	8.2 %	55.78	56.64	57.56	58.55	59.62	60.77	62.02
1.17	7.9 %	57.91	58.86	59.88	60.98	62.17	63.46	64.86
1.12	7.7 %	60.20	61.25	62.38	**63.61**	64.93	66.38	67.96
1.07	7.4 %	62.66	63.82	65.09	66.45	67.94	69.57	71.36
1.03	7.2 %	65.31	66.61	68.02	69.55	71.23	73.07	75.10
0.94	6.7 %	71.29	72.92	74.70	76.66	78.81	81.20	83.85

		Delta EBIT-margin						
Beta	WACC	-1.5 pp	-1.0 pp	-0.5 pp	**+0.0 pp**	+0.5 pp	+1.0 pp	+1.5 pp
1.30	8.7 %	50.81	51.94	53.07	54.20	55.33	56.46	57.59
1.21	8.2 %	54.90	56.11	57.33	58.55	59.77	60.98	62.20
1.17	7.9 %	57.18	58.45	59.71	60.98	62.24	63.51	64.78
1.12	7.7 %	59.65	60.97	62.29	**63.61**	64.92	66.24	67.56
1.07	7.4 %	62.33	63.70	65.08	66.45	67.83	69.20	70.58
1.03	7.2 %	65.25	66.68	68.12	69.55	70.99	72.43	73.86
0.94	6.7 %	71.92	73.50	75.08	76.66	78.23	79.81	81.39

- Base case scenario: Drillisch remains positioned in its Capex-lean business model and does not invest in infrastructure
- Base case assumption: Absence of irrational movements from competitors by initiating price wars.

Free Cash Flow Value Potential

Warburg Research's valuation tool "FCF Value Potential" reflects the ability of the company to generate sustainable free cash flows. It is based on the "FCF potential" - a FCF "ex growth" figure - which assumes unchanged working capital and pure maintenance capex. A value indication is derived via the perpetuity of a given year's "FCF potential" with consideration of the weighted costs of capital. The fluctuating value indications over time add a timing element to the DCF model (our preferred valuation tool).

in EUR m	2014	2015	2016	2017	2018e	2019e	2020e
Net Income before minorities	50	46	26	481	386	476	573
+ Depreciation + Amortisation	10	36	61	65	151	157	160
- Net Interest Income	-3	-3	-3	-9	-1	-1	-1
- Maintenance Capex	10	12	14	18	40	40	40
+ Other	0	0	0	0	0	0	0
= Free Cash Flow Potential	**52**	**74**	**77**	**537**	**498**	**594**	**694**
FCF Potential Yield (on market EV)	5.4 %	3.8 %	4.1 %	5.8 %	7.4 %	9.0 %	11.1 %
WACC	7.66 %	7.66 %	7.66 %	7.66 %	7.66 %	7.66 %	7.66 %
= Enterprise Value (EV)	**961**	**1,961**	**1,891**	**9,337**	**6,754**	**6,612**	**6,245**
= Fair Enterprise Value	**683**	**962**	**1,006**	**7,009**	**6,503**	**7,752**	**9,059**
- Net Debt (Cash)	124	124	124	124	37	-105	-472
- Pension Liabilities	0	0	0	0	0	0	0
- Other	-280	-280	-280	-280	0	0	0
- Market value of minorities	0	0	0	0	0	0	0
+ Market value of investments	0	0	0	0	0	0	0
= Fair Market Capitalisation	**839**	**1,118**	**1,162**	**7,165**	**6,466**	**7,857**	**9,531**
Number of shares, average	55	55	55	177	177	177	177
= Fair value per share (EUR)	**15.32**	**20.41**	**21.22**	**40.53**	**36.58**	**44.45**	**53.92**
premium (-) / discount (+) in %					-3.7 %	17.0 %	41.9 %

Sensitivity Fair value per Share (EUR)

		2014	2015	2016	2017	2018e	2019e	2020e
	10.66 %	3.66	4.79	4.97	29.37	26.22	32.11	39.50
	9.66 %	3.95	5.20	5.40	32.32	28.96	35.37	43.31
	8.66 %	4.30	5.70	5.92	35.95	32.33	39.38	48.00
WACC	**7.66 %**	**4.75**	**6.32**	**6.57**	**40.53**	**36.58**	**44.45**	**53.92**
	6.66 %	5.33	7.14	7.43	46.49	42.10	51.03	61.61
	5.66 %	6.11	8.25	8.59	54.54	49.58	59.95	72.03
	4.66 %	7.23	9.83	10.24	66.06	60.26	72.68	86.91

- …

Valuation

	2014	2015	2016	2017	2018e	2019e	2020e
Price / Book	4.4 x	6.2 x	7.4 x	2.5 x	1.6 x	1.5 x	1.4 x
Book value per share ex intangibles	4.25	-0.46	-1.29	-0.17	3.18	4.95	7.18
EV / Sales	3.3 x	3.1 x	2.7 x	3.3 x	1.9 x	1.7 x	1.5 x
EV / EBITDA	11.3 x	18.6 x	15.7 x	18.5 x	9.3 x	7.6 x	6.2 x
EV / EBIT	12.8 x	28.3 x	32.2 x	21.2 x	11.7 x	9.3 x	7.4 x
EV / EBIT adj.*	12.8 x	28.3 x	32.2 x	21.2 x	11.7 x	9.3 x	7.4 x
P / FCF	24.1 x	n.a.	31.3 x	35.4 x	92.6 x	15.8 x	10.1 x
P / E	29.4 x	47.7 x	79.3 x	20.4 x	17.4 x	14.1 x	11.7 x
P / E adj.*	29.4 x	47.7 x	79.3 x	20.4 x	17.4 x	14.1 x	11.7 x
Dividend Yield	6.4 %	4.2 %	4.5 %	3.0 %	4.2 %	4.5 %	4.7 %
FCF Potential Yield (on market EV)	5.4 %	3.8 %	4.1 %	5.8 %	7.4 %	9.0 %	11.1 %

*Adjustments made for: -

Company Specific Items

	2014	2015	2016	2017	2018e	2019e	2020e
Total Subscribers	2,678	3,430	8,540	12,640	13,740	14,550	15,230
Mobile Subscribers	1,211	1,923	4,310	8,300	9,200	9,920	10,515
Mobile net adds	608	712	2,387	3,990	925	720	600

Consolidated profit and loss

In EUR m	2014	2015	2016	2017	2018e	2019e	2020e
Sales	**290**	**630**	**710**	**2,812**	**3,642**	**3,951**	**4,186**
Change Sales yoy	-0.3 %	117.3 %	12.8 %	296.1 %	29.5 %	8.5 %	5.9 %
COGS	n.a.	n.a.	n.a.	1,888	2,562	2,726	2,823
Gross profit	**n.a.**	**n.a.**	**n.a.**	**925**	**1,080**	**1,225**	**1,363**
Gross margin	*n.a.*	*n.a.*	*n.a.*	*32.9 %*	*29.7 %*	*31.0 %*	*32.6 %*
Research and development	0	0	0	0	0	0	0
Sales and marketing	0	0	0	394	404	411	423
Administration expenses	0	0	0	74	87	91	92
Other operating expenses	0	0	0	45	36	40	42
Other operating income	0	0	0	28	25	28	38
Unfrequent items	0	0	0	0	0	0	0
EBITDA	**85**	**105**	**120**	**505**	**728**	**868**	**1,003**
Margin	*29.4 %*	*16.7 %*	*16.9 %*	*18.0 %*	*20.0 %*	*22.0 %*	*24.0 %*
Depreciation of fixed assets	1	5	4	15	16	17	17
EBITA	**84**	**101**	**117**	**490**	**712**	**851**	**986**
Amortisation of intangible assets	9	32	58	50	135	140	143
Goodwill amortisation	0	0	0	0	0	0	0
EBIT	**75**	**69**	**59**	**440**	**577**	**711**	**843**
Margin	*26.0 %*	*11.0 %*	*8.3 %*	*15.6 %*	*15.9 %*	*18.0 %*	*20.2 %*
EBIT adj.	**75**	**69**	**59**	**440**	**577**	**711**	**843**
Interest income	1	1	1	1	0	0	0
Interest expenses	4	4	4	10	1	1	1
Other financial income (loss)	0	0	0	0	0	0	0
EBT	**73**	**66**	**56**	**431**	**576**	**710**	**842**
Margin	*25.1 %*	*10.5 %*	*7.8 %*	*15.3 %*	*15.8 %*	*18.0 %*	*20.1 %*
Total taxes	23	20	29	121	190	234	270
Net income from continuing operations	**50**	**46**	**26**	**310**	**386**	**476**	**573**
Income from discontinued operations (net of tax)	0	0	0	171	0	0	0
Net income before minorities	**50**	**46**	**26**	**481**	**386**	**476**	**573**
Minority interest	0	0	0	17	0	0	0
Net income	**50**	**46**	**26**	**465**	**386**	**476**	**573**
Margin	*17.2 %*	*7.3 %*	*3.7 %*	*16.5 %*	*10.6 %*	*12.0 %*	*13.7 %*
Number of shares, average	55	55	55	177	177	177	177
EPS	**0.91**	**0.84**	**0.48**	**2.63**	**2.18**	**2.69**	**3.24**
EPS adj.	0.91	0.84	0.48	2.63	2.18	2.69	3.24

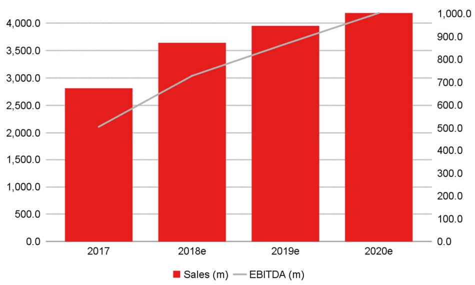
*Adjustments made for:

Guidance: Revenues of EUR 3.7bn, EBITDA of EUR 750m, 1m net adds

Financial Ratios

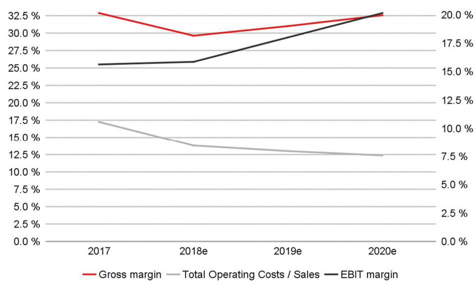
	2014	2015	2016	2017	2018e	2019e	2020e
Total Operating Costs / Sales	71.2 %	83.6 %	83.3 %	17.2 %	13.8 %	13.0 %	12.4 %
Operating Leverage	-81.7 x	-0.1 x	-1.2 x	2.2 x	1.1 x	2.7 x	3.1 x
EBITDA / Interest expenses	23.8 x	26.1 x	27.8 x	53.0 x	728.3 x	868.2 x	1003.5 x
Tax rate (EBT)	31.0 %	30.4 %	52.4 %	28.0 %	33.0 %	33.0 %	32.0 %
Dividend Payout Ratio	185.9 %	203.2 %	352.2 %	91.1 %	73.3 %	63.2 %	55.5 %
Sales per Employee	827,566	1,798,703	2,028,606	8,035,180	10,405,714	11,288,571	11,960,000

Sales, EBITDA
in EUR m



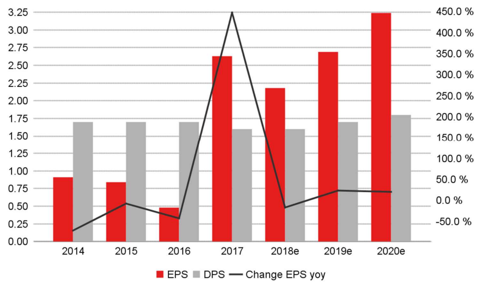
Source: Warburg Research

Operating Performance
in %



Source: Warburg Research

Performance per Share



Source: Warburg Research

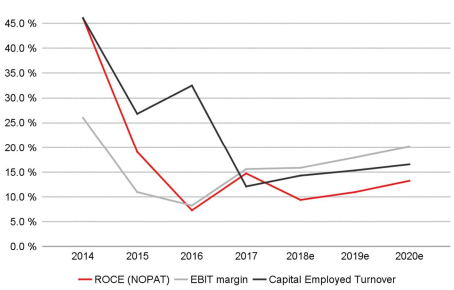
Consolidated balance sheet

In EUR m	2014	2015	2016	2017	2018e	2019e	2020e
Assets							
Goodwill and other intangible assets	99	378	354	3,834	3,719	3,599	3,478
thereof other intangible assets	31	271	255	901	786	666	545
thereof Goodwill	67	107	99	2,933	2,933	2,933	2,933
Property, plant and equipment	3	11	11	15	24	32	40
Financial assets	0	0	1	6	6	6	6
Other long-term assets	0	0	0	0	546	546	550
Fixed assets	**101**	**390**	**365**	**3,855**	**4,295**	**4,183**	**4,074**
Inventories	5	32	10	46	52	56	76
Accounts receivable	48	89	93	183	240	271	287
Liquid assets	317	123	93	150	138	280	647
Other short-term assets	4	55	35	502	462	585	624
Current assets	**374**	**299**	**230**	**881**	**892**	**1,192**	**1,634**
Total Assets	**476**	**689**	**595**	**4,736**	**5,187**	**5,375**	**5,708**
Liabilities and shareholders' equity							
Subscribed capital	59	60	60	194	194	194	194
Capital reserve	231	296	296	2,447	2,447	2,447	2,447
Retained earnings	31	31	31	1,164	1,433	1,357	1,532
Other equity components	10	-34	-104	0	207	476	573
Shareholders' equity	331	353	283	3,805	4,281	4,474	4,747
Minority interest	0	0	0	0	0	0	0
Total equity	**331**	**353**	**283**	**3,805**	**4,281**	**4,474**	**4,747**
Provisions	9	19	24	100	114	117	120
thereof provisions for pensions and similar obligations	2	1	2	0	0	0	0
Financial liabilities (total)	91	167	178	274	175	175	175
thereof short-term financial liabilities	0	0	50	0	0	0	0
Accounts payable	22	81	45	230	250	271	287
Other liabilities	23	69	66	327	367	338	380
Liabilities	**144**	**336**	**312**	**931**	**906**	**901**	**962**
Total liabilities and shareholders' equity	**476**	**689**	**595**	**4,736**	**5,187**	**5,375**	**5,708**

Financial Ratios

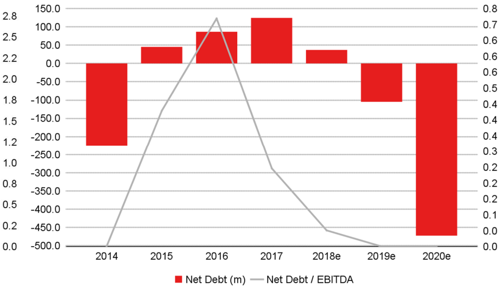
	2014	2015	2016	2017	2018e	2019e	2020e
Efficiency of Capital Employment							
Operating Assets Turnover	10.4 x	13.7 x	11.1 x	340.3 x	64.2 x	50.6 x	40.3 x
Capital Employed Turnover	2.7 x	1.6 x	1.9 x	0.7 x	0.8 x	0.9 x	1.0 x
ROA	49.1 %	11.9 %	7.2 %	12.1 %	9.0 %	11.4 %	14.1 %
Return on Capital							
ROCE (NOPAT)	46.1 %	19.1 %	7.3 %	14.7 %	9.4 %	11.0 %	13.3 %
ROE	18.1 %	13.5 %	8.3 %	22.7 %	9.5 %	10.9 %	12.4 %
Adj. ROE	18.1 %	13.5 %	8.3 %	22.7 %	9.5 %	10.9 %	12.4 %
Balance sheet quality							
Net Debt	-225	45	86	124	37	-105	-472
Net Financial Debt	-226	44	85	124	37	-105	-472
Net Gearing	-67.9 %	12.8 %	30.5 %	3.3 %	0.9 %	-2.3 %	-10.0 %
Net Fin. Debt / EBITDA	n.a.	41.6 %	70.5 %	24.6 %	5.1 %	n.a.	n.a.
Book Value / Share	6.0	6.4	5.2	21.5	24.2	25.3	26.9
Book value per share ex intangibles	4.2	-0.5	-1.3	-0.2	3.2	4.9	7.2

ROCE Development



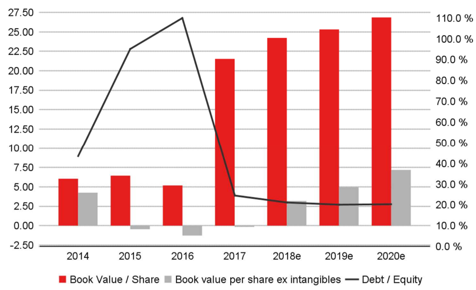
Source: Warburg Research

Net debt
in EUR m



Source: Warburg Research

Book Value per Share
in EUR



Source: Warburg Research

Consolidated cash flow statement

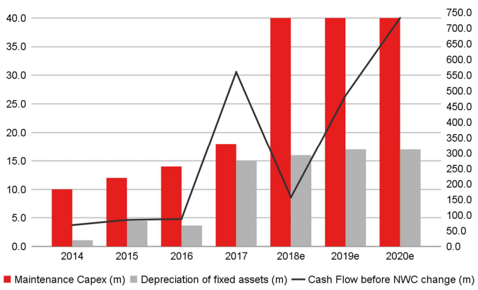
In EUR m	2014	2015	2016	2017	2018e	2019e	2020e
Net income	50	46	26	481	386	476	573
Depreciation of fixed assets	1	5	4	15	16	17	17
Amortisation of goodwill	0	0	0	0	0	0	0
Amortisation of intangible assets	9	32	58	64	135	140	143
Increase/decrease in long-term provisions	1	0	0	0	0	0	0
Other non-cash income and expenses	9	4	0	0	-380	-150	0
Cash Flow before NWC change	**69**	**86**	**88**	**560**	**157**	**483**	**733**
Increase / decrease in inventory	1	-27	22	0	-6	-4	-20
Increase / decrease in accounts receivable	-2	-41	-4	-71	-57	-31	-16
Increase / decrease in accounts payable	4	58	-37	-75	23	22	18
Increase / decrease in other working capital positions	0	0	11	0	0	0	0
Increase / decrease in working capital (total)	3	-9	-8	-146	-40	-13	-18
Net cash provided by operating activities [1]	**72**	**76**	**81**	**294**	**118**	**469**	**715**
Investments in intangible assets	-9	-160	-9	-10	-20	-20	-22
Investments in property, plant and equipment	-2	-4	-5	-16	-25	-25	-25
Payments for acquisitions	0	-7	-20	0	0	0	0
Financial investments	0	1	0	0	0	0	0
Income from asset disposals	1	0	1	0	0	0	0
Net cash provided by investing activities [2]	**-5**	**-169**	**-25**	**-49**	**-45**	**-45**	**-47**
Change in financial liabilities	0	0	10	96	-99	0	0
Dividends paid	-77	-90	-93	0	-283	-283	-300
Purchase of own shares	0	0	0	0	0	0	0
Capital measures	0	0	0	0	0	0	0
Other	140	-10	-4	0	298	0	0
Net cash provided by financing activities [3]	**63**	**-101**	**-86**	**-153**	**-84**	**-283**	**-300**
Change in liquid funds [1]+[2]+[3]	**130**	**-194**	**-30**	**92**	**-12**	**142**	**368**
Effects of exchange-rate changes on cash	0	0	0	0	0	0	0
Cash and cash equivalent at end of period	**317**	**123**	**93**	**184**	**138**	**280**	**647**

Financial Ratios

	2014	2015	2016	2017	2018e	2019e	2020e
Cash Flow							
FCF	66	-87	75	n.a.	73	424	668
Free Cash Flow / Sales	21.0 %	-13.9 %	9.4 %	9.5 %	2.0 %	10.7 %	16.0 %
Free Cash Flow Potential	52	74	77	537	498	594	694
Free Cash Flow / Net Profit	122.2 %	-189.9 %	251.7 %	57.7 %	18.8 %	89.2 %	116.6 %
Interest Received / Avg. Cash	0.4 %	0.3 %	1.1 %	0.8 %	0.0 %	0.0 %	0.0 %
Interest Paid / Avg. Debt	4.0 %	3.1 %	2.5 %	4.2 %	0.4 %	0.6 %	0.6 %
Management of Funds							
Investment ratio	3.8 %	26.1 %	2.0 %	0.9 %	1.2 %	1.1 %	1.1 %
Maint. Capex / Sales	3.5 %	1.9 %	2.0 %	0.6 %	1.1 %	1.0 %	1.0 %
Capex / Dep	110.9 %	454.7 %	22.8 %	40.0 %	29.8 %	28.7 %	29.4 %
Avg. Working Capital / Sales	9.2 %	4.8 %	6.2 %	0.8 %	0.4 %	1.0 %	1.3 %
Trade Debtors / Trade Creditors	218.1 %	109.4 %	206.2 %	79.6 %	96.0 %	100.0 %	100.0 %
Inventory Turnover	n.a.	n.a.	n.a.	40.6 x	49.3 x	48.3 x	37.1 x
Receivables collection period (days)	60	51	48	24	24	25	25
Payables payment period (days)	n.a.	n.a.	n.a.	44	36	36	37
Cash conversion cycle (Days)	n.a.	n.a.	n.a.	-13	-5	-5	-4

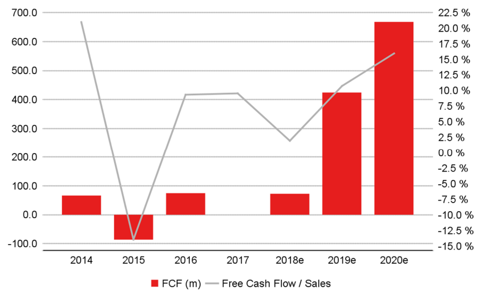
CAPEX and Cash Flow

in EUR m



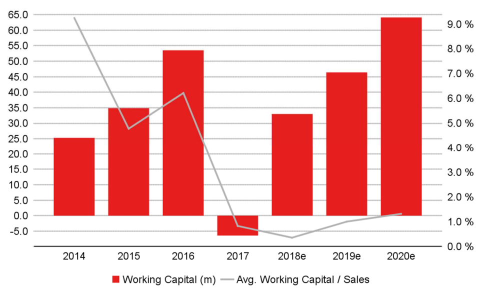
Source: Warburg Research

Free Cash Flow Generation



Source: Warburg Research

Working Capital



Source: Warburg Research

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Company	Disclosure	Link to the historical price targets and rating changes (last 12 months)
1&1 Drillisch	6	http://www.mmwarburg.com/disclaimer/disclaimer_en/DE0005545503.htm

INVESTMENT RECOMMENDATION

Investment recommendation: expected direction of the share price development of the financial instrument up to the given price target in the opinion of the analyst who covers this financial instrument.

-B-	**Buy:**	The price of the analysed financial instrument is expected to rise over the next 12 months.
-H-	**Hold:**	The price of the analysed financial instrument is expected to remain mostly flat over the next 12 months.
-S-	**Sell:**	The price of the analysed financial instrument is expected to fall over the next 12 months.
"-"	**Rating suspended:**	The available information currently does not permit an evaluation of the company.

WARBURG RESEARCH GMBH – ANALYSED RESEARCH UNIVERSE BY RATING

Rating	Number of stocks	% of Universe
Buy	134	66
Hold	59	29
Sell	4	2
Rating suspended	7	3
Total	**204**	**100**

WARBURG RESEARCH GMBH – ANALYSED RESEARCH UNIVERSE BY RATING …

… taking into account only those companies which were provided with major investment services in the last twelve months.

Rating	Number of stocks	% of Universe
Buy	31	74
Hold	9	21
Sell	0	0
Rating suspended	2	5
Total	**42**	**100**

PRICE AND RATING HISTORY 1&1 DRILLISCH AS OF 18.01.2019

Markings in the chart show rating changes by Warburg Research GmbH in the last 12 months. Every marking details the date and closing price on the day of the rating change.

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