

OpenLimit Holding AG

Switzerland / Software
 Primary exchange: Frankfurt
 Bloomberg: O5H GR
 ISIN: CH0022237009

H1 figures

RATING

PRICE TARGET

Return Potential
 Risk Rating

BUY

€ 0.56

51.4%
 High

SMART METER GATEWAY MAJOR GROWTH DRIVER IN 2018

On 26 September, OpenLimit reported H1 figures which were slightly ahead of our forecasts and the previous year's figures. The capital increase in April (€2m) improved the company's debt and liquidity situation. In H1, the operating business was dominated by the Konnektor project which the company has been developing together with T-Systems. The development of the second large project, the smart meter gateway (SMG), was on schedule, but additional regulatory requirements resulted in another delay in the certification process. We believe that the roll-out will start in Q1/18. Given the current high level of capacity utilisation at OpenLimit which limits growth potential, we have slightly reduced our forecast for 2017E. For 2018E, we still assume strong top line growth (+23.5%) due to the SMG roll-out, but now project a slower market development and have thus lowered our estimates. An updated DCF model yields a new price target of €0.56 (previously: €0.62). We reiterate our Buy rating.

Sales growth and slightly improved earnings in H1 Sales increased 10% y/y to €3.6m (FBe: €3.4m). The main sales driver was the Konnektor project. Lower personnel expenses (€2.1m vs. €2.5m) compensated higher other operating expenses (€1.3m vs. €0.8m in H1/16). OpenLimit reduced its staff from 63 at the end of H1/16 to 54 at end June 2017. Given the company's high resource utilisation we believe that personnel are a limiting factor for growth. To ease this constraint the company plans to increase staff by the end of this year. EBITDA improved slightly y/y from €0.4m to €0.5m. As depreciation & amortisation did not change materially (€1.36m vs. €1.44m in H1/16), the operating loss was slightly reduced by €0.1m to €0.9m. Although interest expenses were €31k higher, the net result improved marginally to €-1.15m from €-1.26m in H1/16. Due to the higher share count (27.4m shares since April due to the additional 5.5m shares from the capital increase) EPS improved to €-0.04 from €-0.07 in H1/16 (see figure 1 overleaf).

(p.t.o.)

FINANCIAL HISTORY & PROJECTIONS

	2014	2015	2016	2017E	2018E	2019E
Revenue (€m)	8.07	8.69	-0.40	8.50	10.50	12.60
Y-o-y growth	16.0%	7.7%	n.a.	n.a.	23.5%	20.0%
EBIT (€m)	0.63	0.97	-7.85	-0.63	0.58	1.56
EBIT margin	7.8%	11.1%	n.a.	-7.5%	5.5%	12.4%
Net income (€m)	0.14	0.33	-8.57	-1.23	0.10	1.05
EPS (diluted) (€)	0.01	0.02	-0.39	-0.05	0.00	0.04
DPS (€)	0.00	0.00	0.00	0.00	0.00	0.00
FCF (€m)	-0.61	-0.61	-2.86	-1.49	0.70	0.89
Net gearing	34.9%	38.3%	278.3%	165.7%	117.3%	62.1%
Liquid assets (€m)	0.97	0.30	0.02	0.14	0.12	0.11

RISKS

Risks include, but are not limited to: financing, project delays, regulatory delays, erosion of the company's competitive lead, and the failure of the company's products to achieve broad market acceptance.

COMPANY PROFILE

OpenLimit stands for the secure electronic handshake. Its technologies enable people and machines worldwide to communicate in secure, verifiable and identifiable ways. The company develops base technologies and products in the areas secure data transfer between machines, secure authentication, electronic signatures, and evidentiary value-preserving long-term storage of data and documents.

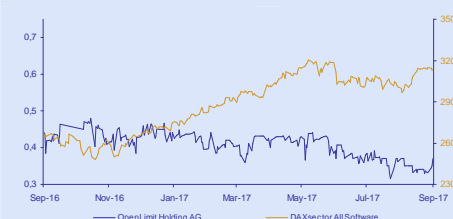
MARKET DATA

As of 27 Sep 2017

Closing Price	€ 0.37
Shares outstanding	27.37m
Market Capitalisation	€ 10.13m
52-week Range	€ 0.32 / 0.48
Avg. Volume (12 Months)	15,244

Multiples	2016	2017E	2018E
P/E	n.a.	n.a.	100.5
EV/Sales	n.a.	1.6	1.3
EV/EBIT	n.a.	n.a.	24.0
Div. Yield	0.0%	0.0%	0.0%

STOCK OVERVIEW



COMPANY DATA

As of 30 Jun 2017

Liquid Assets	€ 0.27m
Current Assets	€ 5.12m
Intangible Assets	€ 5.09m
Total Assets	€ 11.10m
Current Liabilities	€ 7.86m
Shareholders' Equity	€ 2.65m

SHAREHOLDERS

Robert E. Züllig	9.9%
WiseKey	8.0%
René C. Jäggi	7.2%
Other investors	12.6%
Free Float	62.3%

**Figure 1: Reported figures versus forecasts**

All figures in €m	H1-17A	H1-17E	Delta	H1-16	Delta
Sales	3.64	3.40	7.1%	3.30	10.3%
EBIT	-0.86	-1.00	-	-1.01	-
margin	-23.7%	-29.4%		-30.6%	
Net income	-1.15	-1.27	-	-1.26	-
margin	-31.5%	-37.4%		-38.2%	
EPS in € (diluted)	-0.04	-0.05	-	-0.07	-

Source: First Berlin Equity Research, OpenLimit Holding AG

More cautious guidance In May, OpenLimit guided towards moderate growth and results exceeding recent years' figures. The company now expects H2 sales to be similar to the H1 number. Given sales of €3.64m in H1, this would suggest an annual sales figure of €7.3m. However, project opportunities may generate additional revenues. We trace the more cautious guidance back to the mentioned further delays in the SMG certification process and financial and personnel constraints.

Capital increase improved balance sheet metrics The €2m capital increase in April bolstered equity which now amounts to €2.6m vs. €17m at the end of 2016. The equity ratio is now 24%. This is much better than the meagre 16% at end 2016, but remains low. Whereas long-term debt was only slightly (€0.1m) below the end 2016 level and amounted to €0.3m, short-term debt could be reduced by €0.4m to €3.7m. Financial debt thus fell by €0.5m to below €4.0m. As the cash position improved from almost €0 to ca. €0.3m net debt fell €0.7m to €4.0m. Although the debt and liquidity situation improved thanks to the capital increase, the liquidity risk remains high. We thus believe that OpenLimit is considering measures to create a solid financial basis for the expected acceleration in growth in 2018E.

Free cash flow remains negative The operating cash outflow amounted to €0.1m. Free cash flow was €-1.3m due to CAPEX of €1.2m. The capital increase (€2m) was used to finance the cash outflow and the redemption of loans (€0.5m).

Small convertible loan improves financial leeway In July, OpenLimit made a convertible loan with a volume of €180k, which matures on 10 July 2018. The lender can convert the loan into 472,440 shares (conversion price: €0.381 per share) during the term of the loan. In May, OpenLimit replaced a €1m convertible loan by a payment-in-kind loan, which is due on 28 February 2018. A €0.5m convertible loan, which was due in January, was converted into a normal loan with a term running until the end of October 2017. Partial redemption reduced the amount outstanding to €450k. The term of another €0.5m convertible loan (conversion price: €0.80 per share) was extended from 31/10/2017 to 31/03/2018. A loan, which originally amounted to €0.75m, has been partly redeemed and now amounts to €0.24m. This sum is due by the end of 2017 (see figure 2).

Figure 2: Loans – overview

Loans	Amount (€)	Maturity
Loan	450.000	31/10/2017
Loan	240.000	31/12/2017
PIK loan	1.000.000	28/02/2018
Convertible loan	500.000	31/03/2018
Convertible loan	180.000	10/07/2018

Source: First Berlin Equity Research, OpenLimit Holding AG



Konnektor currently the largest project Since 2014, OpenLimit has been developing the Konnektor which will guarantee secure communication between the stakeholders (practices, hospitals, patients) of the German healthcare system. T-Systems awarded OpenLimit the development project in 2014 and has expanded the contract several times. The total order value (2014-17) amounts to a lower double-digit million Euro sum. Furthermore, OpenLimit receives a mid single-digit million Euro sum from T-Systems for IP developed for the Konnektor, payable in tranches on the achievement of predefined milestones. A first tranche (€2m) was paid out in 2016.

In H1/17, the Konnektor, currently OpenLimit's largest project, was the focus of the company's operating activities. It absorbed/will absorb most of the company's resources in H1/H2. After the reporting period, T-Systems has again expanded the contract by a low single-digit million Euro amount. We expect OpenLimit to reach another project milestone in Q4. Even after the roll-out in 2018 we believe that the project offers further revenue potential through service & maintenance.

Smart Meter Gateway main future sales & earnings driver The Smart Meter Gateway (SMG) guarantees secure communication between end consumers' meters and utilities and is a decisive element in the digitalisation of the German energy sector. In July 2016, the German Bundestag passed the "Law to digitalise the energy transition", which entails a step-by-step roll-out over eight years. The SMG market potential is 12 – 15 million devices.

The SMG development was on schedule in H1. OpenLimit's/PPC's SMG is fully operational and ready to be installed. OpenLimit is prepared to start the production process quickly. The only remaining hurdle is certification. Here, all producers face a further delay due to new requirements laid down by the BSI, Germany's Federal Office for Information Security. We now expect the start of the roll-out in Q1/2018. Nevertheless, OpenLimit & PPC are still in a very good position to present the first certified SMG. As we expect only two other players to pass the certification process in the near term, we believe OpenLimit/PPC to be excellently positioned to gain a ca. 30% share of the SMG market. At the eWorld trade fair in February 2017, OpenLimit and PPC presented the SMG together with 35 partners – among them well-known companies such as Bosch, Elster, E.ON Metering, Robotron, Siemens, and Thüga. OpenLimit/PPC are well positioned at ca. two thirds of the top 50 utilities in Germany. In Q1/17, OpenLimit's partner PPC concluded a framework agreement for the SMG with EnBW, one of the four large German utilities.

As we expect installations of almost 2 million SMG devices per annum, the SMG roll-out looks set to be a major revenue driver for OpenLimit in coming years. However, given the latest delays in the certification process, we now assume a slower market development in 2018E. The SMG revenue contribution next year could still be in the low single digit million Euro range.

truidentity looks set to benefit from Fujitsu's expanded distribution activities Fujitsu has been marketing OpenLimit's software for secure online authentication – truidentity – together with its hand vein scanner PalmSecure since April 2016. The two factor authentication offers excellent protection against identity misuse. Since the beginning of 2017, Fujitsu has expanded its distribution activities and we thus expect further orders. OpenLimit receives a share in the licence fees and can generate further revenues from adaption, integration, and education projects. In addition, OpenLimit has developed its own project pipeline for truidentity and hopes to receive a larger order soon.

New Board of Directors Since 28 June, OpenLimit has had a new Board of Directors. The company was able to attract managers with long-standing industry expertise and vast networks as new Board members. The new President is Gerhard Schempp. The mathematician held management positions at different IT companies (CSC Ploenzke AG, ESF Elektroniksystem- und Logistik GmbH) and at various industry associations. The new Vice President is Dr. Rainer Reichert, who was a manager at Daimler Benz and Partner at F. Tacke KG /KTR GmbH, an international manufacturer of drive systems. He was also a board



member of VDMA, the German Mechanical Engineering Industry Association. The third new member is Klaus O. Schmidt, who held management positions at various IT companies (Apple, HP, e-Plus Mobilfunk). We believe that the newly formed Board will have a positive impact on company development and appreciate the recovery of stability following the difficulties caused by the injury of the former President. Marc Gurov is now also a Board member and its delegate.

Forecasts lowered Given the delays in the SMG certification process and the constraints in financial and personnel resources, we have lowered our forecasts. We still believe that OpenLimit is on the verge of a growth phase, assume a 2017-20 CAGR of almost 21% and continue to expect break-even in 2018E (see figure 3).

Figure 3: Revisions to forecasts

All figures in €m	2017E			2018E			2019E		
	Old	New	Delta	Old	New	Delta	Old	New	Delta
Sales	9.00	8.50	-5.6%	12.10	10.50	-13.2%	14.52	12.60	-13.2%
EBIT	-0.09	-0.63	-	1.41	0.58	-58.6%	2.52	1.56	-38.0%
margin	-1.0%	-7.5%		11.6%	5.5%		17.3%	12.4%	
Net income	-0.64	-1.23	-	0.90	0.10	-88.8%	1.91	1.05	-45.0%
margin	-7.1%	-14.5%		7.4%	1.0%		13.2%	8.3%	
EPS in € (diluted)	-0.02	-0.05	-	0.03	0.00	-88.8%	0.07	0.04	-45.1%

Source: First Berlin Equity Research

Buy rating reiterated at lower price target An updated DCF model yields a new price target of €0.56 (previously: €0.62). We reiterate our Buy rating.



VALUATION MODEL

DCF valuation model

All figures in EUR '000	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E
Net sales	8,500	10,500	12,600	14,918	17,441	20,130	22,934	25,786
NOPLAT	-704	539	1,359	2,104	2,795	3,386	3,930	4,448
+ depreciation & amortisation	2,651	2,628	2,662	2,690	2,659	2,808	3,037	3,295
Net operating cash flow	1,948	3,167	4,021	4,794	5,454	6,194	6,967	7,743
- total investments (CAPEX and WC)	-2,909	-2,024	-2,827	-3,008	-3,281	-3,637	-3,975	-4,282
Capital expenditures	-2,618	-2,699	-2,722	-2,775	-3,130	-3,481	-3,815	-4,121
Working capital	-291	674	-106	-233	-151	-157	-160	-161
Free cash flows (FCF)	-961	1,142	1,193	1,787	2,173	2,557	2,992	3,461
PV of FCF's	-925	947	853	1,100	1,153	1,170	1,180	1,176

All figures in thousands

PV of FCFs in explicit period (2017E-2031E)	13,585
PV of FCFs in terminal period	5,928
Enterprise value (EV)	19,513
+ Net cash / - net debt (pro forma)	-3,813
+ Investments / minority interests	0
Shareholder value	15,699

Fair value per share in EUR 0.56

WACC	16.0%
Cost of equity	17.0%
Pre-tax cost of debt	8.5%
Tax rate	16.0%
After-tax cost of debt	7.1%
Share of equity capital	90.0%
Share of debt capital	10.0%
Fair value per share in EUR	0.56

	Terminal growth rate						
	0.5%	1.0%	1.5%	2.0%	2.5%	3.0%	3.5%
12.0%	0.94	0.96	0.98	1.00	1.03	1.05	1.09
13.0%	0.81	0.82	0.84	0.86	0.87	0.90	0.92
14.0%	0.70	0.72	0.73	0.74	0.75	0.77	0.78
15.0%	0.61	0.62	0.63	0.64	0.65	0.66	0.67
16.0%	0.54	0.55	0.55	0.56	0.57	0.58	0.59
17.0%	0.48	0.48	0.49	0.49	0.50	0.50	0.51
18.0%	0.42	0.42	0.43	0.43	0.44	0.44	0.45
19.0%	0.37	0.37	0.38	0.38	0.39	0.39	0.39

* For layout reasons, the figure only displays figures until 2024, but the model runs until 2031.



INCOME STATEMENT

All figures in EUR '000	2014A	2015A	2016A	2017E	2018E	2019E
Revenues	8,066	8,689	-398	8,500	10,500	12,600
Own work	2,971	3,251	2,426	2,423	2,520	2,583
Cost of goods sold	263	211	462	1,105	1,260	1,512
Gross profit	7,803	8,479	-860	7,395	9,240	11,088
Personnel costs	6,018	6,529	6,147	5,300	5,850	6,552
Other operating income	0	0	1,465	0	0	0
Other operating expenses	1,486	1,480	2,131	2,500	2,700	2,898
EBITDA	3,270	3,722	-5,247	2,018	3,210	4,221
Depreciation and amortisation	2,641	2,755	2,607	2,651	2,628	2,662
Operating income (EBIT)	630	966	-7,854	-634	582	1,559
Net financial result	-369	-458	-508	-530	-438	-308
Non-operating expenses	0	0	0	0	0	0
Pre-tax income (EBT)	261	508	-8,362	-1,164	144	1,251
Income taxes	121	182	207	70	43	200
Minority interests	0	0	0	0	0	0
Net income / loss	139	327	-8,569	-1,234	101	1,051
Diluted EPS (in €)	0.01	0.02	-0.39	-0.05	0.00	0.04
Ratios						
Gross margin	96.7%	97.6%	n.m.	87.0%	88.0%	88.0%
EBIT margin on revenues	7.8%	11.1%	n.m.	-7.5%	5.5%	12.4%
EBITDA margin on revenues	40.5%	42.8%	n.m.	23.7%	30.6%	33.5%
Net margin on revenues	1.7%	3.8%	n.m.	-14.5%	1.0%	8.3%
Tax rate	46.5%	35.8%	n.m.	-6.0%	30.0%	16.0%
Expenses as % of revenues						
Personnel costs	74.6%	75.1%	n.m.	62.4%	55.7%	52.0%
Depreciation and amortisation	32.7%	31.7%	n.m.	31.2%	25.0%	21.1%
Other operating expenses	18.4%	17.0%	n.m.	29.4%	25.7%	23.0%
Y-Y Growth						
Revenues	16.0%	7.7%	n.m.	n.m.	23.5%	20.0%
Operating income	n.m.	53.5%	n.m.	n.m.	n.m.	167.9%
Net income/ loss	n.m.	134.1%	n.m.	n.m.	n.m.	943.3%



BALANCE SHEET

All figures in EUR '000	2014A	2015A	2016A	2017E	2018E	2019E
Assets						
Current assets, total	7,292	8,437	4,595	5,170	4,796	5,025
Cash and cash equivalents	969	303	17	140	124	109
Short-term investments	0	0	0	0	0	0
Receivables & other	6,323	8,134	4,577	4,425	4,603	4,833
Inventories	0	0	0	605	69	83
Other current assets	0	0	0	0	0	0
Non-current assets, total	6,232	6,703	6,113	6,079	6,150	6,210
Property, plant & equipment	110	110	82	103	125	139
Goodwill & other intangibles	5,272	5,842	5,207	5,154	5,202	5,247
Other assets	850	750	823	823	823	823
Total assets	13,524	15,139	10,708	11,249	10,945	11,234
Shareholders' equity & debt						
Current liabilities, total	4,063	5,689	8,257	7,984	7,400	6,638
Short-term debt	2,457	2,901	4,035	3,600	2,700	1,800
Accounts payable & other	1,606	2,775	3,320	3,482	3,797	3,935
Current provisions	0	0	900	900	900	900
Other current liabilities	0	13	2	2	2	2
Long-term liabilities, total	1,352	757	757	757	757	757
Long-term debt	1,000	500	382	382	382	382
Deferred revenue	0	0	0	0	0	0
Other liabilities	352	257	375	375	375	375
Minority interests	0	0	0	0	0	0
Shareholders' equity	8,109	8,694	1,693	2,508	2,788	3,839
Share capital	4,605	4,605	5,354	6,999	7,141	7,141
Capital reserve	9,882	9,882	10,498	10,902	10,940	10,940
Other reserves	1,994	2,070	2,288	2,288	2,288	2,288
Treasury stock	0	0	0	0	0	0
Loss carryforward / retained earnings	-8,372	-7,863	-16,448	-17,682	-17,581	-16,530
Total consolidated equity and debt	13,524	15,139	10,708	11,249	10,945	11,234
Ratios						
Current ratio (x)	1.79	1.48	0.56	0.65	0.65	0.76
Quick ratio (x)	1.79	1.48	0.56	0.57	0.64	0.74
Book value per share (€)	0.35	0.38	0.08	0.10	0.10	0.14
Net cash	-2,827	-3,333	-4,712	-4,155	-3,270	-2,385
Net gearing	34.9%	38.3%	278.3%	165.7%	117.3%	62.1%
Return on equity (ROE)	1.7%	3.8%	-506.2%	-49.2%	3.6%	27.4%
Days of sales outstanding (DSO)	286.1	341.7	-4,193.3	190.0	160.0	140.0
Days of inventory turnover	0.0	0.0	0.0	200.0	20.0	20.0
Days in payables (DIP)	2,230.6	4,810.9	2,623.9	1,150.0	1,100.0	950.0



CASH FLOW STATEMENT

All figures in EUR '000	2014A	2015A	2016A	2017E	2018E	2019E
EBIT	630	966	-7,854	-634	582	1,559
Depreciation and amortisation	2,641	2,755	2,607	2,651	2,628	2,662
EBITDA	3,271	3,721	-5,247	2,018	3,210	4,221
Changes in working capital	-494	-730	-2,840	-291	674	-106
Other adjustments	-354	-280	7,679	-600	-481	-508
Operating cash flow	2,422	2,712	-407	1,127	3,403	3,607
Investments in PP&E	-65	-75	-26	-68	-74	-76
Investments in intangibles	-2,971	-3,251	-2,426	-2,550	-2,625	-2,646
Free cash flow	-613	-614	-2,859	-1,491	704	885
Acquisitions & disposals, net	0	0	1,465	0	0	0
Other investments	0	0	0	0	0	0
Cash flow from investing	-3,035	-3,326	-987	-2,618	-2,699	-2,722
Debt financing, net	957	-78	550	-435	-900	-900
Equity financing, net	0	0	584	2,049	180	0
Dividends paid	0	0	0	0	0	0
Other financing	0	0	0	0	0	0
Cash flow from financing	957	-78	1,134	1,614	-720	-900
FOREX & other effects	0	0	-26	0	0	0
Net cash flows	344	-692	-286	122	-16	-15
Cash, start of the year	625	969	303	17	140	124
Cash, end of the year	969	277	17	140	124	109
EBITDA/share (in €)	0.14	0.16	-0.24	0.08	0.12	0.15
Y-Y Growth						
Operating cash flow	1068.9%	12.0%	n.m.	n.m.	202.1%	6.0%
Free cash flow	n.m.	n.m.	n.m.	n.m.	n.m.	25.7%
EBITDA/share	31.6%	13.8%	n.m.	n.m.	46.0%	31.5%

FIRST BERLIN RECOMMENDATION & PRICE TARGET HISTORY

Report No.:	Date of publication	Previous day closing price	Recommendation	Price target
Initial Report	10 October 2005	€4.20	Buy	€5.20
2...49	↓	↓	↓	↓
50	4 May 2016	€0.55	Buy	€1.20
51	16 November 2016	€0.43	Buy	€1.00
52	22 May 2017	€0.41	Buy	€0.62
53	Today	€0.37	Buy	€0.56

Authored by: Dr. Karsten von Blumenthal, Analyst

Company responsible for preparation:

First Berlin Equity Research GmbH
 Mohrenstraße 34
 10117 Berlin

Tel. +49 (0)30 - 80 93 96 85 Fax +49 (0)30 - 80 93 96 87

info@firstberlin.com
 www.firstberlin.com

Person responsible for forwarding or distributing this financial analysis: Martin Bailey

Copyright© 2017 First Berlin Equity Research GmbH No part of this financial analysis may be copied, photocopied, duplicated or distributed in any form or media whatsoever without prior written permission from First Berlin Equity Research GmbH. First Berlin Equity Research GmbH shall be identified as the source in the case of quotations. Further information is available on request.

INFORMATION PURSUANT TO SECTION 34B OF THE GERMAN SECURITIES TRADING ACT [WPHG], TO REGULATION (EU) NO 596/2014 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL OF APRIL 16, 2014, ON MARKET ABUSE (MARKET ABUSE REGULATION) AND TO THE GERMAN ORDINANCE ON THE ANALYSIS OF FINANCIAL INSTRUMENTS [FINANV]

First Berlin Equity Research GmbH (hereinafter referred to as: "First Berlin") prepares financial analyses while taking the relevant regulatory provisions, in particular the German Securities Trading Act [WpHG], Regulation (EU) No 596/2014 of the European Parliament and of the Council of April 16, 2014, on market abuse (market abuse regulation) and the German Ordinance on the Analysis of Financial Instruments [FinAnV] into consideration. In the following First Berlin provides investors with information about the statutory provisions that are to be observed in the preparation of financial analyses.

CONFLICTS OF INTEREST

In accordance with Section 34b Paragraph 1 of the German Securities Trading Act [WpHG] and Regulation (EU) No 596/2014 of the European Parliament and of the Council of April 16, 2014, on market abuse (market abuse regulation) financial analyses may only be passed on or publicly distributed if circumstances or relations which may cause conflicts of interest among the authors, the legal entities responsible for such preparation or companies associated with them are disclosed along with the financial analysis.

First Berlin offers a range of services that go beyond the preparation of financial analyses. Although First Berlin strives to avoid conflicts of interest wherever possible, First Berlin may maintain the following relations with the analysed company, which in particular may constitute a potential conflict of interest (further information and data may be provided on request):

- The author, First Berlin, or a company associated with First Berlin holds an interest of more than five percent in the share capital of the analysed company;
- The author, First Berlin, or a company associated with First Berlin provided investment banking or consulting services for the analysed company within the past twelve months for which remuneration was or was to be paid;
- The author, First Berlin, or a company associated with First Berlin reached an agreement with the analysed company for preparation of a financial analysis for which remuneration is owed;
- The author, First Berlin, or a company associated with First Berlin has other significant financial interests in the analysed company;

In order to avoid and, if necessary, manage possible conflicts of interest both the author of the financial analysis and First Berlin shall be obliged to neither hold nor in any way trade the securities of the company analyzed. The remuneration of the author of the financial analysis stands in no direct or indirect connection with the recommendations or opinions represented in the financial analysis. Furthermore, the remuneration of the author of the financial analysis is neither coupled directly to financial transactions nor to stock exchange trading volume or asset management fees.

If despite these measures one or more of the aforementioned conflicts of interest cannot be avoided on the part of the author or First Berlin, then reference shall be made to such conflict of interest.

PRICE TARGET DATES

Unless otherwise indicated, current prices refer to the closing prices of the previous trading day.

AGREEMENT WITH THE ANALYSED COMPANY AND MAINTENANCE OF OBJECTIVITY

The present financial analysis is based on the author's own knowledge and research. The author prepared this study without any direct or indirect influence exerted on the part of the analysed company. Parts of the financial analysis were possibly provided to the analysed company prior to publication in order to avoid inaccuracies in the representation of facts. However, no substantial changes were made at the request of the analysed company following any such provision.

ASSET VALUATION SYSTEM

First Berlin's system for asset valuation is divided into an asset recommendation and a risk assessment.

ASSET RECOMMENDATION

The recommendations determined in accordance with the share price trend anticipated by First Berlin in the respectively indicated investment period are as follows:

STRONG BUY: An expected favourable price trend of more than 50% combined with sizeable confidence in the quality and forecast security of management.

BUY: An expected favourable price trend of more than 25% percent.

ADD: An expected favourable price trend of between 0% and 25%.

REDUCE: An expected negative price trend of between 0% and -15%.

SELL: An expected negative price trend of more than -15%.

RISK ASSESSMENT

The First Berlin categories for risk assessment are low, average, high and speculative. They are determined by ten factors: Corporate governance, quality of earnings, management strength, balance sheet and financial risk, competitive position, standard of financial disclosure, regulatory and political uncertainty, strength of brandname, market capitalisation and free float. These risk factors are incorporated into the First Berlin valuation models and are thus included in the target prices. First Berlin customers may request the models.

INVESTMENT HORIZON

Unless otherwise stated in the financial analysis, the ratings refer to an investment period of twelve months.

UPDATES

At the time of publication of this financial analysis it is not certain whether, when and on what occasion an update will be provided. In general First Berlin strives to review the financial analysis for its topicality and, if required, to update it in a very timely manner in connection with the reporting obligations of the analysed company or on the occasion of ad hoc notifications.

SUBJECT TO CHANGE

The opinions contained in the financial analysis reflect the assessment of the author on the day of publication of the financial analysis. The author of the financial analysis reserves the right to change such opinion without prior notification.

Legally required information regarding

- key sources of information in the preparation of this research report
- valuation methods and principles
- sensitivity of valuation parameters

can be accessed through the following internet link: <http://firstberlin.com/disclaimer-english-link/>

SUPERVISORY AUTHORITY: Bundesanstalt für Finanzdienstleistungsaufsicht (German Federal Financial Supervisory Authority) [BaFin], Graurheindorferstraße 108, 53117 Bonn and Lurgiallee 12, 60439 Frankfurt

EXCLUSION OF LIABILITY (DISCLAIMER)

RELIABILITY OF INFORMATION AND SOURCES OF INFORMATION

The information contained in this study is based on sources considered by the author to be reliable. Comprehensive verification of the accuracy and completeness of information and the reliability of sources of information has neither been carried out by the author nor by First Berlin. As a result no warranty of any kind whatsoever shall be assumed for the accuracy and completeness of information and the reliability of sources of information, and neither the author nor First Berlin, nor the person responsible for passing on or distributing the financial analysis shall be liable for any direct or indirect damage incurred through reliance on the accuracy and completeness of information and the reliability of sources of information.

RELIABILITY OF ESTIMATES AND FORECASTS

The author of the financial analysis made estimates and forecasts to the best of the author's knowledge. These estimates and forecasts reflect the author's personal opinion and judgement. The premises for estimates and forecasts as well as the author's perspective on such premises are subject to constant change. Expectations with regard to the future performance of a financial instrument are the result of a measurement at a single point in time and may change at any time. The result of a financial analysis always describes only one possible future development – the one that is most probable from the perspective of the author – of a number of possible future developments.

Any and all market values or target prices indicated for the company analysed in this financial analysis may not be achieved due to various risk factors, including but not limited to market volatility, sector volatility, the actions of the analysed company, economic climate, failure to achieve earnings and/or sales forecasts, unavailability of complete and precise information and/or a subsequently occurring event which affects the underlying assumptions of the author and/or other sources on which the author relies in this document. Past performance is not an indicator of future results; past values cannot be carried over into the future.

Consequently, no warranty of any kind whatsoever shall be assumed for the accuracy of estimates and forecasts, and neither the author nor First Berlin, nor the person responsible for passing on or distributing the financial analysis shall be liable for any direct or indirect damage incurred through reliance on the correctness of estimates and forecasts.

INFORMATION PURPOSES, NO RECOMMENDATION, SOLICITATION, NO OFFER FOR THE PURCHASE OF SECURITIES

The present financial analysis serves information purposes. It is intended to support institutional investors in making their own investment decisions; however in no way provide the investor with investment advice. Neither the author, nor First Berlin, nor the person responsible for passing on or distributing the financial analysis shall be considered to be acting as an investment advisor or portfolio manager vis-à-vis an investor. Each investor must form his own independent opinion with regard to the suitability of an investment in view of his own investment objectives, experience, tax situation, financial position and other circumstances.

The financial analysis does not represent a recommendation or solicitation and is not an offer for the purchase of the security specified in this financial analysis. Consequently, neither the author nor First Berlin, nor the person responsible for passing on or distributing the financial analysis shall as a result be liable for losses incurred through direct or indirect employment or use of any kind whatsoever of information or statements arising out of this financial analysis.

A decision concerning an investment in securities should take place on the basis of independent investment analyses and procedures as well as other studies including, but not limited to, information memoranda, sales or issuing prospectuses and not on the basis of this document.

NO ESTABLISHMENT OF CONTRACTUAL OBLIGATIONS

By taking note of this financial analysis the recipient neither becomes a customer of First Berlin, nor does First Berlin incur any contractual, quasi-contractual or pre-contractual obligations and/or responsibilities toward the recipient. In particular no information contract shall be established between First Berlin and the recipient of this information.

NO OBLIGATION TO UPDATE

First Berlin, the author and/or the person responsible for passing on or distributing the financial analysis shall not be obliged to update the financial analysis. Investors must keep themselves informed about the current course of business and any changes in the current course of business of the analysed company.

DUPLICATION

Dispatch or duplication of this document is not permitted without the prior written consent of First Berlin.

SEVERABILITY

Should any provision of this disclaimer prove to be illegal, invalid or unenforceable under the respectively applicable law, then such provision shall be treated as if it were not an integral component of this disclaimer; in no way shall it affect the legality, validity or enforceability of the remaining provisions.

APPLICABLE LAW, PLACE OF JURISDICTION

The preparation of this financial analysis shall be subject to the law obtaining in the Federal Republic of Germany. The place of jurisdiction for any disputes shall be Berlin (Germany).

NOTICE OF DISCLAIMER

By taking note of this financial analysis the recipient confirms the binding nature of the above explanations.

By using this document or relying on it in any manner whatsoever the recipient accepts the above restrictions as binding for the recipient.

QUALIFIED INSTITUTIONAL INVESTORS

First Berlin financial analyses are intended exclusively for qualified institutional investors.

This report is not intended for distribution in the USA, Canada and/or the United Kingdom (Great Britain).