EDISON Scale research report - Initiation

Exasol

Software

25 May 2020

Price	€9.5
Market cap	€205m

Analyse this

Exasol's analytics database software provides industry leading processing speeds and low cost of ownership. After successful adoption of its technology by blue-chip customers in the DACH region and growing levels of business in the UK and the US, the company is planning to use IPO proceeds to accelerate growth in these regions and to support the future product roadmap. High levels of recurring revenues with low churn provide good visibility.

Supporting data-driven decision making

Exasol has developed database software designed for use by data analytics applications. Customer use cases include financial reporting, data visualisation and predictive analytics. As the volume of data generated by companies grows ever larger, the ability to access and analyse this data is crucial to monitor and optimise business performance. Exasol's software has been designed to take advantage of the commoditisation of hardware such as processors and servers, with massively parallel in-memory processing delivering industry leading processing speeds at a lower cost than traditional database technologies.

Targeting a step change in sales and marketing

Exasol has generated an adjusted revenue CAGR of 24% for FY15–FY19, with recurring revenues making up 70% of FY19 revenues and low levels of customer churn. In FY17 and FY18, the company was profitable at the EBITDA level. A 40% increase in headcount in FY19 resulted in a small adjusted EBITDA loss but drove a 50% increase in annualised recurring revenue over the year. As well as paying down remaining bank and shareholder debt, the company plans to use the majority of the IPO proceeds to invest in sales and marketing, with growth in the UK and the US a particular target. The FY19 CLTV/CAC (customer lifetime value/customer acquisition cost) ratio of 21x implies that money spent in this area should generate strong revenue growth. We note that the company has already taken action to manage its cost base through COVID-19 disruption.

Valuation: Reflects growth prospects

Consensus forecasts are not yet available. On FY19 sales, Exasol is trading at an EV multiple of 7x, in line with higher-growth software peers. The high level of recurring revenue provides good visibility and should grow as the business shifts to selling more licences on a subscription basis.

Historic financials

Year end	Revenue (€m)	PBT (€m)	EPS (€)	DPS (€)	P/E (x)	Yield (%)
12/16	13.4	N/A	N/A	0.0	N/A	N/A
12/17	17.0	1.3	N/A	0.0	N/A	N/A
12/18	17.7	(0.6)	N/A	0.0	N/A	N/A
12/19	21.6	(13.9)	N/A	0.0	N/A	N/A

Source: Exasol

Share details

Code	EXL
Listing	Deutsche Börse Scale
Shares in issue	21.6m
Last reported net debt* at end FY19 *Excludes shareholder loans totalling €3.1m	€1.6m

Business description

Exasol is an analytics database software developer with more than 175 customers in 30 countries. Its headquarters are in Nuremberg, Germany, and it has offices in the UK and the US.

Bull

- Industry-leading product.
- High customer retention.
- Large and growing addressable market.

Bear

- Small compared to competitors.
- Loss-making.
- Share overhang.

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Edison profile page

Company description: Analytics database software

Exasol was founded in 2000 in Nuremberg, Germany, and has developed a high-performance, in-memory database designed specifically for analytics. This software enables companies to access and analyse data at high speed and scale. Exasol serves a broad range of market sectors and has customers ranging from small and mid-market businesses to large enterprises. Applications for the software include financial reporting, data visualisation and predictive analytics. The company has 156 employees in Germany, the UK and the US. Exasol listed on the Scale segment of the Deutsche Börse on 25 May 2020, raising €48m (net) from the issue of 5.1m new shares and the sale of 285k treasury shares at €9.5 per share and placing a further 3.8m existing shares.

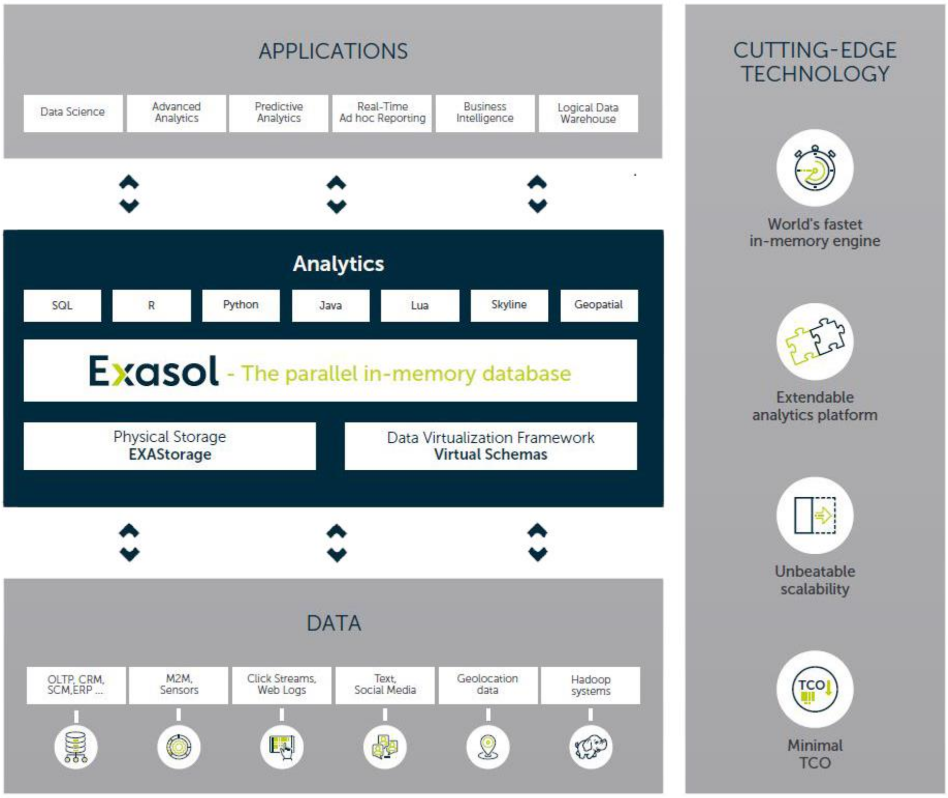
Strategy: Replicate success beyond the DACH region

Prior to the IPO, Exasol was self-financed through a combination of shareholder loans and bank debt. The company is keen to accelerate investment in sales and marketing in order to drive the growth of the business and has earmarked c 70% of the IPO proceeds to do this. The intention is to focus initially on developing the business in the UK and the US, where it has already had some success. In the longer term, further geographic expansion is desirable. The company is also considering M&A, and could use c 10% of proceeds for bolt-on acquisitions that support its market positioning and broaden and accelerate adoption of its software in specific verticals or analytical use cases.

Product introduction

Exasol's analytics database software provides a data warehouse for structured data. The diagram below shows how Exasol's software interacts with other applications and sources of data.

Exhibit 1: Product architecture



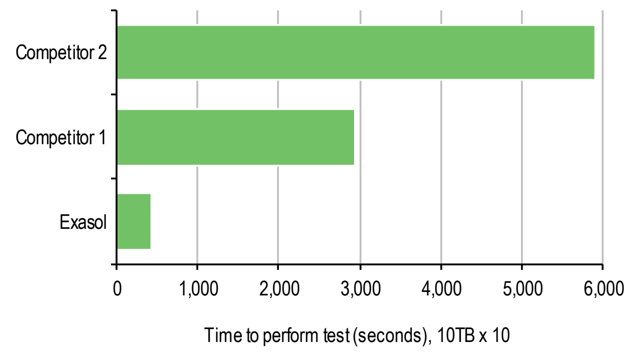
Source: Exasol

The main features of Exasol's technology are:

- **In-memory analytics:** the technology uses RAM (random access memory) for data processing and is able to use the RAM not only as a cache but also as a smart accelerator.
- **Massively parallel processing:** the architecture is designed to scale across CPU (central processing unit) cores and multiple cluster servers.
- **Columnar storage and processing:** this reduces the number of input/output (I/O) operations and the amount of data needed for processing in main memory and accelerated performance.
- **Advanced data science:** provides open source support for current data science languages (Python, R, Lua) and plans to provide support for future languages.
- **Data virtualisation framework:** an abstraction layer makes external data sources accessible in the database through regular SQL commands.

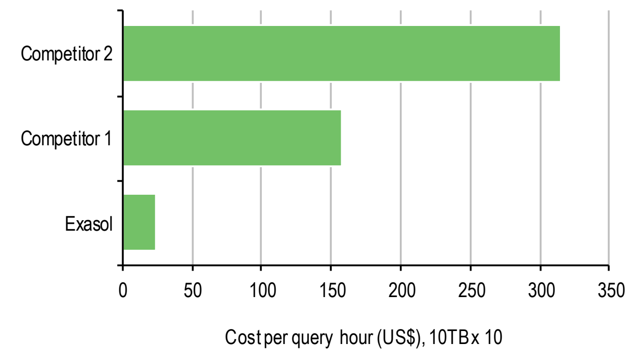
The combination of these features results in the fastest analytics processing in the industry. This has been confirmed in tests against the industry benchmark TPC-H. TPC-H is a decision support benchmark that consists of a suite of business-oriented ad hoc queries and concurrent data modifications. The performance metric reported is the TPC-H Composite Query per Hour (QphH) for a given database size. The price/performance metric is expressed as $/QphH for a given database size. All TPC benchmarks are transaction processing tests undertaken by the Transaction Processing Performance Council (TPC), an industry body mainly made up of computer system vendors but also including some database software vendors. The chart below shows Exasol's performance against two unnamed peers. Exasol clearly leads in terms of the volume of queries handled and the cost per query handled.

Exhibit 2: Performance on speed basis



Source: Exasol (independent analyst TPC benchmark test)

Exhibit 3: Performance on cost basis



Source: Exasol (independent analyst TPC benchmark test)

The company also reports that it earned best in class scores for customer service according to the Dresner Analytical Data Infrastructure Market Study 2020,[1] and was a leader for both Customer Experience and Vendor Credibility for 2020.

The product is offered as one of three versions as per Exhibit 4. The Community Edition is often the starting point for organisations to trial the software for a minor data analysis problem before expanding usage to more critical use cases, when a paid licence would become necessary. Exasol One tends to serve SMEs or individual departments within organisations, and can be the seeding ground for larger businesses that may go on to upgrade to an Enterprise Cluster.

[1] www.exasol.com/en/blog/dresners-2020-analytical-data-infrastructure-market-study-what-you-need-to-know/

Exhibit 4: Product range

Exasol Community Edition	Exasol One	Exasol Enterprise Cluster
Free single node edition for commercial and private/academic use	Single node solution with support	Unlimited scalability with enterprise support
Up to 200GB raw data	Up to 1TB data	Cluster for unlimited scale and high availability
All features	All features	Efficient and fast scale out on hardware or in the cloud
Community support	Standard support	Enterprise-grade support
	€1,999/month, no minimum period	Powerful in database analytics
		Advanced data integration and data virtualisation framework

Source: Exasol

Product development

Exasol's R&D department is based in Nuremburg and at the end of April totalled 38 employees. Five teams are working on the core database engine, each with a broad specialisation in several of the modules within the database and the ability to develop features autonomously. A separate integration development team integrates BI tools and big data systems and enables advanced analytics and data science in the database. Nearly all integration projects built around the proprietary database kernel are developed as open-source code to benefit from the contributions of the growing Exasol user community.

Sales strategy

Increasing investment in direct sales and partner network

Exasol makes the majority of sales via its direct sales team (81% in FY19). It also has a partner network consisting of system integrators, business intelligence and analytics consultants, technology partners (eg Alteryx, Tableau, Yellowfin) and value-added resellers (VARs), which contributed 19% of FY19 revenues.

In recent years, the company has been relatively hamstrung in terms of increasing investment in sales and marketing. It is planning to use c 70% of the IPO proceeds to invest in additional sales and marketing headcount and to raise brand awareness. As part of this, the company wants to invest in channel managers to develop this route to market.

The company has sales teams in the DACH region, UK and US. At the end of April, the company had 52 employees working in sales and marketing and is planning to increase this substantially, particularly in the UK and the US.

High LTV/CAC ratio supports increased investment

The company estimates that it had a customer lifetime value (LTV) to customer acquisition cost (CAC) ratio of c 21x in FY19. This is calculated by dividing the estimated lifetime value of customers signed up in FY19 by the sales and marketing cost incurred over the same period (ie €3.7m LTV per customer/€173k cost to acquire each customer). As a rule of thumb, for a SaaS company an LTV/CAC of 3x is deemed to be the ideal ratio. Exasol's high LTV/CAC ratio implies that increased investment in sales and marketing would have a significant impact on revenue growth.

Existing customers a vital source of new revenue

At the end of 2019, the company had 175 customers, with 36 new customers signed up in 2019. Customers are active across many end markets, including technology, finance and insurance and retail (see Exhibit 5 for examples).

Exhibit 5: Selected Exasol customers

Source: Exasol

During FY19, 85% of revenues came from the existing customer base and 15% from customers signed up during the period. The company is focused on upselling to existing customers via three routes (in FY19, 21% of revenues were from upselling):

- **Increasing data volumes**: customers sign up to use Exasol's software on a tiered basis. As they reach data caps within clusters, they automatically move up to the next tier.
- **Increasing user numbers**: as the customer reaches agreed user caps within clusters, this triggers a move up to the next user cap.
- **Increasing applications**: customers typically do not rip and replace database software, instead trialling new software on a limited basis for one application. As they get comfortable with using the software and see the benefits it brings, they often sign up to use the software for additional applications.

Analytics database market

Rapid growth in data drives need for database analytics

Data growth has exploded in recent years: IDC forecasts that data will grow from 33ZB in 2018 to 175ZB in 2025, a CAGR of 27%. The challenge for companies is to make use of the data they produce to gain useful insights into their business and to aid in decision making. With the ongoing trend for digital transformation, companies are increasingly becoming tech-enabled. Many companies now rely on technology to provide their services, for example online retailers, travel companies, comparison websites, sharing economy businesses such as Uber or Airbnb, and fintechs. These businesses produce vast quantities of data from diverse sources: customer transaction data, data from ERP systems such as inventory levels, social media, machine-generated data (IoT), emails, etc. In order to run their businesses efficiently and make the right decisions, the companies need to be able to manage the data they produce and analyse it in a number of different ways.

Databases: The basics

A database is a crucial partner to a software application. Each application, such as an ERP or CRM system, generates data that needs to be stored, updated, retrieved and deleted and it does this in a database. The software that controls the data in a database is called a database management system (DBMS) and it provides the ability to search, select and store data. This data can be structured (such as transaction data for a purchase) or unstructured (such as the contents of an email or a social media post). This results in databases being broadly grouped into two categories:

- **Relational databases (RDBMS):** these store data in a structured format, typically rows and columns, and use SQL (structured query language) or variants to interrogate the data.
- **Non-relational databases:** these can store unstructured and semi-structured data and are often called NoSQL (not only SQL or no SQL) databases.

Exasol has developed an analytics RDBMS. An analytics database is a database management system that is optimised for business analytics applications and services in contrast to operational database systems, which are designed to create and update records in real time. Customers can store hundreds of terabytes of data in the Exasol database (a type of data warehouse) and then provide data access and processing capabilities to multiple analytical applications across the business.

Large market, cloud driving growth

The database software market has a small number of incumbent players generating the majority of revenues, much of which is from maintenance of their large installed base. In 2018, the five largest players (Oracle, Microsoft, IBM, SAP and Teradata) made up close to 90% of DBMS revenues (source: Statista).

According to Gartner, the DBMS market was worth $46bn in 2018 (+18% y-o-y), with cloud-based revenues of $10bn making up about two-thirds of the growth.

There are numerous newer companies that are focused on non-relational database software and cloud-first deployment, as well as the large public cloud service providers (CSPs: Google, Amazon, Microsoft and Alibaba). The large CSPs have developed DBMS software in-house, making abundant use of open source software as well as acquiring interesting start-ups, and unsurprisingly they dominate the cloud-based market. Amazon publicised the fact that it transitioned all of its own applications from Oracle databases to its own. Microsoft has an advantage in that it was already a large DBMS player before it developed its Azure public cloud.

Exasol tends to compete most often with the cloud data warehouse players, with the main competitors being Amazon Redshift, Google BigQuery, and Snowflake. Snowflake is a US-based private company that offers a cloud-only solution. The company is very well funded ($1.4bn raised to date, with the most recent round in February raising $479m at a valuation of $12.4bn). Exasol's key competitive advantage is the speed of its software, which results in a very low total cost of ownership (TCO) compared to competitors.

Management

Management board

The management board consists of three directors:

- **CEO Aaron Auld.** Mr Auld joined Exasol in 2006, was appointed to the board in 2009 and became CEO in 2013. He is responsible for the strategic direction and execution of the company, as well as growing the business internationally. Prior to Exasol, Mr Auld was general counsel for a number of technology companies.
- **CFO/COO Michael Konrad.** Mr Konrad joined the company and was appointed to the board in 2015, with responsibility for finance, HR, legal as well as administration at Exasol. He studied business economics in Karlsruhe and has held a number of management positions in various IT and e-commerce organisations.
- **CTO Mathias Golombek.** Mr Golombek joined Exasol in 2004 as a software developer, led the database optimisation team and became a member of the board in 2013.

Supervisory board

The supervisory board consists of four directors:

- Professor Jochen Tschunke (chairman),
- Gerhard Rumpff (vice chairman),
- Karl Hopfner, and
- Dr Knud Klingler.

Shareholders and free float

The company raised gross proceeds of €51.2m from the issue of 5.1m new shares and the sale of 285,000 treasury shares. Net proceeds totalled €48.1m. Of the pre-IPO issued shares, 24% were placed in the IPO (285k treasury shares plus 3.82m other shares from existing shareholders). The table below shows the shareholder structure pre-IPO and the expected shareholder structure post-IPO. Shareholders of 10.0m shares, including the Supervisory and Management Boards, are subject to a 12-month lock-up and shareholders of 2.2m shares are subject to a six-month lock-up. The free float is c 45%.

The company has outlined its planned use of proceeds, with the vast majority targeted at sales and marketing (70%/€33.7m), and 10%/€4.8m each for R&D, M&A and to pay for shareholder loans and the staff share scheme (this is the first priority).

Exhibit 6: Shareholder analysis

	Pre-IPO shareholding	% of o/s	Post-IPO holding	% of o/s
Supervisory board				
Dr Knud Klingler*	7,038,884	41.1%	5,917,725	26.6%
Prof. Tschunke*	1,230,604	7.2%	1,080,604	4.9%
Gerhard Rumpff	135,084	0.8%	115,084	0.5%
Management board				
Aaron Auld (CEO)	19,690	0.1%	19,690	0.1%
Mathias Golombek (CTO)*	23,143	0.1%	23,143	0.1%
Michael Konrad (CFO)*	10,000	0.1%	10,000	0.0%
KfW	2,059,091	12.0%	-	0.0%
Hesz'sche Privatstiftung	1,721,940	10.1%	1,721,940	7.8%
Mountain Partners*	1,011,992	5.9%	541,992	2.4%
Treasury**	881,794	5.2%	596,794	2.7%
Others	2,985,648	17.4%	12,190,898	54.9%
Total	17,117,870	100.0%	22,217,870	100.0%

Source: Exasol. Note: *Held directly or indirectly. **Treasury shares are reserved for management to fund their stock appreciation rights scheme in future years (see p9 for further detail)

Financials

Business model

Exasol offers its software via **three different delivery models**: on premise, hosted via the ExaCloud, or public cloud (including AWS, Azure and Google Cloud); and **two licensing models**: perpetual licence with maintenance contract or subscription licence. The company has increasingly shifted to a cloud-based, subscription model in recent years, but will still sell perpetual licences to companies that require one. The ExaCloud provides a managed service for customers who do not yet feel comfortable moving to the public cloud, or are not able to for regulatory reasons. Subscription licences are sold as a one- to three-year licence, with payment upfront. The company also generates revenues from services such as installation, updates, upgrades, administration, monitoring, incident management and training.

Managing through COVID-19 disruption

In March, the company undertook a global restructuring to prepare for the economic impact of COVID-19 disruption. It reduced headcount by 15% and introduced kurzarbeit (short-time working) from 8 April in its German subsidiaries, reducing working hours by 20% for the majority of the German workforce. The plan is to maintain those working hours for three months before reviewing. The company plans to partially compensate for the loss of remuneration by granting stock appreciation rights (SARs).

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Income statement

We note that Exasol reports under German GAAP rather than IFRS. See Exhibit 7 for the Income Statement.

Adjusted revenue CAGR 24% FY15–FY19

We show in Exhibit 8 the revenue progression of the business since FY15. Adjusted revenues exclude a perpetual licence signed at the end of FY17, instead treating it as a subscription licence in FY18 and FY19, to show the underlying level of growth. We show the split of revenues between licences, services and other in Exhibit 9. The company generates a high level of recurring revenue, with annualised recurring revenue (ARR) at €17.6m at the end of 2019. The company started adding sales and marketing headcount from the end of FY18, which resulted in 50% growth in ARR in FY19. Recurring revenue of 70% in FY19 was made up of the combination of cloud-based subscription licences, on-premise subcription licences and maintenance contracts (with a roughly equal contribution from each). Customer churn has been relatively stable over the last four years, ranging from 4.0% to 5.5%, and was 4.0% in FY19.

Exhibit 7: Income statement, FY17–19

€m	FY17	FY18	FY19
Revenue (A)	16.97	17.72	21.61
Adjusted revenue (B)	15.06	18.29	22.18
Cost of materials (C)	(2.29)	(1.63)	(2.42)
Gross profit	16.35	17.74	21.36
Operating gross profit (D)	15.02	16.34	19.53
Other operating income (E)	0.34	0.26	0.34
Staff costs	(8.33)	(10.65)	(24.32)
Capitalised development costs (F)	1.33	1.40	1.83
Other operating costs	(4.50)	(5.32)	(7.99)
EBITDA	3.53	1.76	(10.96)
Adjusted EBITDA (G)	2.19	2.90	(0.62)
D&A	(1.67)	(1.87)	(2.20)
EBIT	1.86	(0.10)	(13.16)
Net interest expense	(0.53)	(0.53)	(0.70)
PBT	1.33	(0.63)	(13.85)
Tax	(0.01)	(0.00)	(0.13)
Net income	1.32	(0.63)	(13.98)
Operating gross margin	89%	92%	90%
EBITDA margin	20.8%	10.0%	(50.7%)
Adjusted EBITDA margin	14.5%	15.8%	(2.8%)
EBIT margin	10.9%	(0.6%)	(60.9%)

Source: Exasol. Note: Shaded metrics are company adjusted. Gross profit = A+C+E+F; operating gross profit = A+C+E; adjusted EBITDA uses adjusted revenue and excludes one-off items (see discussion below). Operating gross margin = D/A; adjusted EBITDA margin = G/B.

Exhibit 8: Key revenue metrics

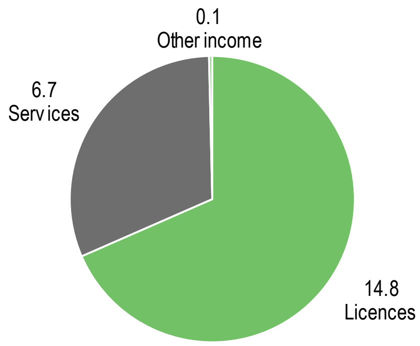
	FY15	FY16	FY17	FY18	FY19
Revenue (€m)	9.4	13.4	17.0	17.7	21.6
Adjusted revenue (€m)	9.4	13.4	15.1	18.3	22.2
CAGR 15–19 revenue					23.1%
CAGR 15–19 adjusted revenue					23.9%
ARR at year-end (€m)		9.2	10.2	11.8	17.6
Growth in ARR			11%	16%	50%
Annual customer churn		4.9%	4.8%	5.5%	4.0%

Source: Exasol

The majority of revenues are currently generated in the DACH region, but with investment in headcount in the US and UK, we expect the contribution from DACH to reduce in relative terms (see Exhibit 10). In FY19, revenues from the US increased 94% y-o-y.

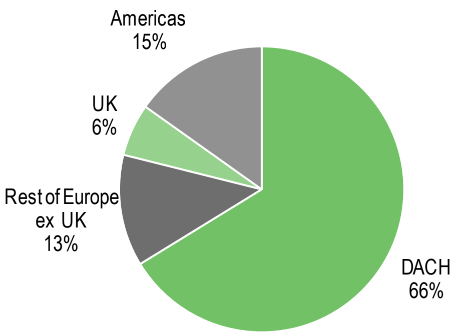
The company notes that although it is physically located in only three countries, it has customers in approximately 30 countries. There is some revenue concentration, with the top customer generating 11% of FY19 revenues and the top 10 contributing 35% of revenues.

Exhibit 9: Exasol FY19 revenue by type (€m)



Source: Exasol

Exhibit 10: Exasol FY19 revenue by region



Source: Exasol

FY19 EBITDA reflects investment in growth

Cost of materials comprises fees paid to partners, costs of hardware and hosting fees (for the ExaCloud). The company calculates opertating gross margin (revenues plus other operating income less cost of materials), which it views as an important metric as it incorporates all variable costs and represents the contribution availabile to cover the fixed cost base. The company has an operating gross margin of c 90% (see Exhibit 7). We note that the cost of staff providing services is not included within this calculation; the company estimates that this would reduce the operating gross margin by c 5pp.

From FY15 to FY19, the company saw variability in the EBITDA margin. Adjusting for the perpetual licence in FY17, the adjusted EBITDA margin was 14.5% in FY17 and 15.8% in FY18. In FY19, adjusted EBITDA excludes €9.77m of one-off costs, mostly the accrual for employee incentives (see below). Even after this adjustment, the margin was negative. This was mainly due to the 54% increase in underyling staff costs year-on-year as the company hired in the UK and the US (year-end headcount increased from 108 at the end of FY18 to 149 at the end of FY19).

Staff incentives: SARs and stock options

The company has a stock appreciation rights (SARs) scheme in place and at the date of IPO, had issued 569,000 SARs. These give the holders the right to participate in the growth in value of the share. The IPO triggered the vesting of the SARs; for each SAR an employee is entitled to receive a gross amount equal to the difference between the share price and €1. The remuneration is due to be paid in three tranches: 30% 12 months after the date of the IPO, 40% after 24 months and 30% after 36 months. In FY19, the company accrued €7.9m for these within staff costs, included within 'other provisions' at year-end. The management team were also issued SARs calculated on a different basis with slightly different payment terms (the first instalment of €2.4m is due four weeks after the initial listing, the second instalment is due 27 months after listing). Prior to the IPO, certain shareholders transferred 881,794 shares to the company to be used solely to fund management SARs in future years. 285,000 of these shares were placed in the IPO and the €2.7m gross proceeds will be used to fund the payment of the first instalment of the management board SARs.

The company is also planning to implement either a stock option plan or a phantom stock programme.

Dividend policy: Reinvest profits into the business

The company is not currently in a position to pay a dividend as it does not have high enough distributable reserves. We expect that in the short to medium term, all profits will be reinvested in the business.

Balance sheet and cash flow

Exhibit 11: Summarised balance sheet and cash flow

€m	FY17	FY18	FY19
Balance sheet			
Total non-current assets	7.19	7.39	7.87
Total current assets	5.41	6.77	3.19
Total assets	12.60	14.16	11.06
Total liabilities	(18.40)	(20.65)	(23.07)
Net assets	(5.80)	(6.49)	(12.01)
Net cash/(debt)	(0.15)	(0.27)	(1.58)
Cash flow			
Net cash flow from operating activities	1.81	1.23	2.23
Net cash flow from investing activities	(1.53)	(2.07)	(2.68)
Net cash flow from financing activities	(3.06)	0.86	(0.90)
Net cash flow	(2.77)	0.02	(1.36)
Cash & cash equivalents at period end*	(0.12)	(0.10)	(1.47)

Source: Exasol. Note: *Includes cash on hand and at bank as well as bank overdrafts.

The company capitalises development costs: €1.4m in FY18 (7.9% of sales) and €1.8m in FY19 (8.4% of sales). Working capital is helped by upfront licence payments; deferred income stood at €4.2m at the end of 2019.

To date the company has been self-funded, with a mixture of bank overdrafts and more substantially with loans from shareholders. At the end of 2019, the company had a net debt position of €1.58m plus shareholder loans totalling €3.14m. In April 2020, a further €1.2m was lent by shareholders. All shareholder loans are due to be repaid after the IPO (totalling €5.6m including accrued interest at the end of April 2020).

Valuation

As consensus forecasts are not yet available, we look at valuation metrics based on financial performance in the last reported financial year (LY) and compare Exasol to two groups of peer companies: US SaaS software companies and German software companies (which are a mix of SaaS and traditional software models).

We note that the US SaaS companies are much larger in size, both in terms of market cap and revenues. They tend to report recurring revenues at a higher level than Exasol, anywhere from 80% to 100%. As Exasol shifts more of its business to subscription licensing, and sells more via the channel (so it does not undertake implementation work), it should see its recurring revenues increase as a percentage of revenues from the current c 70% level. Of the 39 US SaaS companies included in the averages, 12 were loss-making in the last reported year.

Exhibit 12: US SaaS software metrics

	Market cap $m LY	Revenue $m LY	Rev growth LY	EBIT margin (%) LY	EV/Sales LY	EV/EBIT LY	P/E LY
Average	16,585	1,126	33.8	6.1	17.8	174.4	178.9
Median	6,625	577	28.6	8.1	13.1	55.5	82.1

Source: Refinitiv (as at 18 May). Note: Average EV/EBIT and P/E excludes loss-making companies.

The German software peers are all profitable at the EBIT level. Those with a market cap sub-€1bn grew revenues at an average of 16.6% last year, compared to Exasol's 22% growth, and are forecast to grow on average 13.8% in the current year. On an EV/sales multiple, Exasol is trading at a premium to the group average on last year's revenues, but looking at the higher growth peers, the valuation looks more in line.

Exhibit 13: German software peer group metrics

	Market cap	EV	Sales growth (%)		EBITDA margin (%)		EBIT margin (%)		EV/Sales (x)	
	€m	€m	LY	CY	LY	CY	LY	CY	LY	CY
Exasol AG	**205**	**159**	**22.0**		**-2.8***		**-60.9**		**7.4**	
SAP SE	127,316	136,993	11.7	2.0	36.5	33.3	29.7	28.7	5.0	4.9
TeamViewer AG	8,485	6,922	51.1	16.1	48.6	57.2	39.2	47.4	17.7	15.3
Nemetschek SE	7,108	7,254	20.7	4.6	29.8	27.0	22.2	20.1	13.0	12.5
Software AG	2,413	2,145	2.9	-4.2	28.7	22.7	23.4	19.3	2.4	2.5
RIB Software SE	1,397	1,307	56.8	30.3	29.6	20.8	15.6	10.1	6.1	4.7
Mensch und Maschine Software SE	760	782	32.8	11.1	14.9	15.1	11.1	11.6	3.2	2.9
Atoss Software AG	707	689	14.0	10.9	31.5	30.6	27.0	26.3	9.7	8.7
PSI Software AG	298	278	13.1	(4.3)	N/A	11.5	7.6	6.4	1.2	1.3
IVU Traffic Technologies AG	213	192	14.1	5.9	14.3	12.8	11.8	10.6	2.2	2.0
init innovation in traffic systems SE	270	270	15.3	12.1	15.0	14.6	10.4	10.5	1.7	1.5
Cyan AG	144	139	16.8	56.7	43.6	34.8	20.7	24.3	5.2	3.3
USU Software AG	159	163	5.7	2.3	10.4	9.5	6.5	5.6	1.7	1.7
GK Software SE	122	155	17.4	8.4	6.4	10.9	1.5	2.8	1.5	1.3
Serviceware SE	108	75	20.6	20.8	6.9	3.9	6.2	2.4	1.1	0.9
Average			**20.9**	**12.3**	**24.3**	**21.8**	**16.6**	**16.2**	**5.1**	**4.5**
Median			**16.1**	**9.7**	**28.7**	**18.0**	**13.7**	**11.1**	**2.8**	**2.7**
Average – market cap <€1bn			**16.6**	**13.8**	**17.9**	**16.0**	**11.4**	**11.2**	**3.0**	**2.6**
Median – market cap <€1bn			**15.3**	**10.9**	**14.6**	**12.8**	**10.4**	**10.5**	**1.7**	**1.7**

Source: Refinitiv (as at 18 May). Note: *Adjusted EBITDA margin.

Sensitivities

The company's financial performance and hence its share price will be sensitive to the following factors:

- **Managing growth:** this includes hiring and retaining skilled staff, adapting to local markets, providing sufficient customer support to minimise churn rates, winning new business (made more difficult by the inability to currently have face-to-face meetings).
- **Competition:** Exasol competes with large US companies such as Amazon and Google, which have substantially larger resources. The company will need to respond to rapid technological changes in the data analytics market. We note that Exasol does not hold any patents.
- **Reliance on third-party hardware and software:** the ExaCloud uses third-party data centres and the company uses infrastructure from cloud service providers such as Amazon and Microsoft. Exasol's database engine was developed in-house but uses open-source software to provide integration to third-party software.
- **Economic outlook:** the company is not dependent on any one end market, but could ultimately be affected if there is a global slowdown in economic activity, including for example a COVID-19-driven recession.
- **Stock overhang:** members of the Supervisory Board hold 32% of shares in aggregate. They are not able to sell any further shares until 12 months after the IPO.
- **Currency:** as the company expands outside of Germany, it will have increasing exposure to US dollar and sterling exchanges rates versus the euro. To a certain extent this will be mitigated by natural hedging.

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