BTC Studios S.A.

Fair Value: PLN 19.50 Initiating Coverage Rating: n.a.

BTC Studios S.A. (BTC) is a Polish developer and publisher of kids/ family games for mobile devices, consoles and PC/Mac. Leveraging a 5-year exclusive licensing agreement with a leading international producer and distributor of blockbuster animated TV series for kids/family, Cyber Group Studios, BTC plans to release a strong lineup of games. Through several funding rounds since H2/19, the company has gained two investors with an impressive CV: Mr Andrzej Klesyk (former CEO of the largest insurer in CEE PZU and Partner at Boston Consulting Group) and Mr Peter Törnquist (ex Partner of CVC Capital Partners and Bain & Company). BTC benefits from their expertise in business development, strategic analysis and management as well as their international network. In 2020, BTC inked a strategic partnership (which includes a seat in its Supervisory Board) with the global leader in gaming investment and consulting, IDG Consulting, which has 30 years of expertise and a strong network in the worldwide gaming industry. Based on a weighted average of a DCF (80% weight) and peer group (20%), we have determined a 12-month fair value for the company of PLN 19.50 per share. Due to its lean business model we believe that BTC should be able to start paying out dividends in 2021E.

BTC plans to release an impressive lineup of 19 games, which are expected to generate multiple revenue streams overtime: (1) box sales (2) in-game advertising and (3) item sales. Four games are planned to be released this Fall: "Taffy: Feed the Kitty" (Mobile; 4.5/5 in Google Play store), "Steam Defense" (Mobile), "Sadie Sparks – Magic Match" (Mobile) and "Overlords: Empires at War" (Mobile). Three are planned to be published in Winter 2020E: "Taffy's Food Run" (Mobile), "Sadie Sparks – Magic Words" (Mobile) and "Steam Defense" (Nintendo Switch). The release of additional 12 (mainly mobile) games is scheduled for 2021E-24E.

Given BTC's lean business model and monthly cash burn of c. PLN 220k, we expect that this lineup will allow the company to reach break-even in 2021E. We forecast that in full-year 2020E sales will equal PLN 6.1m, EBIT PLN -0.9m and net income PLN -0.7m. Due to an increasing number of downloads and an improvement of monetization, in 2021E these figures should improve to PLN 34.6m, PLN 4.2m and PLN 3.4m respectively, which, according to its dividend policy, should allow BTC to pay out a DPS of PLN 0.12 (30% of EPS).

in PLNm	2019	2020E	2021E	2022E	2023E	2024E
Net sales	0.02	6.05	34.61	58.69	72.26	79.26
EBITDA	-1.45	-0.41	4.85	12.64	19.16	25.08
EBIT	-1.77	-0.91	4.15	11.74	18.06	23.78
Net income	-1.78	-0.74	3.36	9.51	14.64	19.27
EPS	-0.22	-0.09	0.41	1.17	1.81	2.38
DPS	0.00	0.00	0.12	0.35	0.54	0.71
Dividend yield	0.00%	0.00%	2.26%	6.40%	9.85%	12.97%
RoE	-29.07%	-6.14%	22.29%	45.27%	47.00%	43.33%
Net gearing	-2.29%	-35.57%	-74.26%	-96.99%	-94.48%	-90.07%
EV/Sales	2177.55x	7.25x	1.27x	0.75x	0.61x	0.55x
EV/EBITDA	neg	neg	9.04x	3.47x	2.29x	1.75x
P/E	neg	neg	13.18x	4.66x	3.02x	2.30x

Company profile

BTC Studios S.A. is a Polish developer and publisher of games for mobile devices, consoles and PC/Mac.

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Website	www.btc-studios.pl
Sector	Gaming
Country	Poland
ISIN	PLDMNMN00016
Reuters	BTC.WA
Bloomberg	BTC PW

Share information

Last price	5.50
Number of shares (m)	8.05
Market cap. (PLNm)	44.27
Market cap. (EURm)	10.02
52-weeks range	PLN 6.95 / PLN 0.50
Average volume	15,958

Performance

4-weeks	-3.51%
13-weeks	281.94%
26-weeks	179.19%
52-weeks	856.52%
YTD	525.00%

Shareholder structure

Mobilum Limited*	45.96%
Artur Pumpurs	5.36%
Andrzej Klesyk**	2.48%
Free float	46.20%

* belongs to Mr Wojciech Kaszycki, who is advisor to BTC's board
** ex CEO of the largest insurer in CEE PZU and Graduate of Harvard Business School

Financial calendar

H1/20 report	August 14, 2020

Analyst

Adrian Kowollik
a.kowollik@eastvalueresearch.com

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Investment Case

- BTC Studios S.A. (previously: Blockchain Lab S.A.) is a Polish developer and publisher of kids/family games for mobile devices, consoles and PC/Mac. BTC's strategy is to catch a share of the massive value creation opportunity provided by the global gaming industry's growth prospects. In 2019, the company started implementing its strategy with the signing of a 5-year exclusive licensing agreement with the leading international producer and distributor of animated TV series for kids/family Cyber Group Studios. This year, it set up a JV with the leading developer MadSword (track-record of >160 games developed and >20 million downloads) and inked a strategic partnership (which includes a seat in its Supervisory Board) with the worldwide leader in gaming investment and consulting, IDG Consulting, which has 30-year expertise and strong network in the global gaming industry.
- BTC plans to release an impressive lineup of 19 games, which are supposed to generate multiple revenue streams overtime: (1) box sales (2) in-game advertising and (3) item sales. Four games are planned to be released this Fall: "Taffy: Feed the Kitty" (Mobile; 4.5/5 in Google Play store), "Steam Defense" (Mobile), "Sadie Sparks – Magic Match" (Mobile) and "Overlords: Empires at War" (Mobile). Three games are scheduled for publication in Winter 2020E: "Taffy's Food Run" (Mobile), "Sadie Sparks – Magic Words" (Mobile) and "Steam Defense" (Nintendo Switch). The release of 12 additional games is planned for 2021E-24E.
- According to latest research by Newzoo, the value of the global gaming market in 2020E is estimated at USD 159.3bn (+9.3% y-o-y). By 2023E, the sector is expected to surpass USD 200bn (CAGR of c. 8%). While in-game advertising and item sales are valued at USD 3bn, as the fastest-growing area of the market Newzoo regards Mobile Games (+13.3% y-o-y to USD 77.2bn in 2020E). The number of players worldwide is expected to increase from 2.69bn to c. 3bn by 2023E, with Asia/Pacific region accounting for >50%.
- In Q1/20, BTC Studios had a net loss of PLN 133k. We estimate that at the end of March 2020 net cash equaled PLN 409k. As monthly cash burn equals c. PLN 220k and first official releases are scheduled for this Fall, we expect that in full-year 2020E the company will generate sales of PLN 6.1m, EBIT of PLN -908k and net income of PLN -743k. Due to a growing number of downloads (the cooperation with Cyber Group Studios allows BTC to market its games in synergy with Cyber Group's series that are broadcasted internationally e.g. on Disney Junior, Disney Channel and Turner's Boomerang) and an improving monetization of its games we expect that in 2021E sales will reach PLN 34.6m (+471.9% y-o-y), EBIT PLN 4.2m (12% margin) and net income PLN 3.4m. By 2028E, sales and net income should grow at a CAGR of 43.2% and 37.2% respectively.
- We initiate coverage of BTC Studios with a 12-months FV of PLN 19.50 per share, which implies a P/E 2022E of 16.5x. Due to the licensing deal with Cyber Group Studios, partnership with IDG and the impressive list of shareholders we regard the company as currently one of the most promising Gaming projects on the Warsaw Stock Exchange (#2 rank behind Japan in terms of the number of listed gaming companies). In our view, its lean business model and low operating costs will allow BTC to generate substantial cash flows and pay attractive dividends to its shareholders in the future.

SWOT Analysis

Strengths

- 5-year exclusive licensing contract allowing the development of games based on popular series for kids/family
- Highly competent, international management and investors
- Strategic partnership (which includes a seat in its Supervisory Board) with a worldwide leader in gaming investment and consulting
- 6 games are supposed to be officially released in H2/20E, whose development only costs c. EUR 100k each
- Development in Poland, where labor costs are still significantly below Western Europe; as Gaming is a big industry in Poland (e.g. only in Japan, there are more Gaming companies listed), BTC has good access to talented staff

Weaknesses

- No prolongation of the 5-year licensing agreement with Paris-based Cyber Group Studios, on whose IP most of BTC's games are based
- BTC is still pre-revenue, has to prove its business model and the ability to generate stable revenues

Opportunities

- 12 additional games by 2024E incl. Mobile and console games
- The global gaming market is expected to be worth USD 159.3bn in 2020E, thereof USD 77.2bn the mobile games segment; At 13.3%, Mobile is the fastest-growing area of the market; Worldwide, the number of gamers is expected to grow from 2.69bn in 2020E to c. 3bn by 2023E
- According to various media sources, Gaming is one of the sectors, which have benefitted the most during the coronavirus pandemia
- Lean business model with only little necessary CAPEX and low operating costs of c. EUR 50k/month allows to pay attractive dividends in the long run

Threats

- Risks relating to breach of intellectual property rights
- Loss of key employees
- In the area of Mobile games: high competition and very low entry barriers
- In the area of Console games: potential problems with certification of games

Valuation

We have valued BTC Studios by using a weighted average of a DCF model (80% weight) and peer-group-based fair value (20%). Our model derives a 12-months fair value for the stock of PLN 19.50 per share.

DCF model

in PLNm	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E
Net sales	**6.05**	**34.61**	**58.69**	**72.26**	**79.26**	**86.27**	**93.11**	**99.95**	**106.79**
(y-o-y change)	29939.6%	471.9%	69.6%	23.1%	9.7%	8.8%	7.9%	7.3%	6.8%
EBIT	**-0.91**	**4.15**	**11.74**	**18.06**	**23.78**	**29.33**	**33.52**	**35.70**	**37.83**
(EBIT margin)	-15.0%	12.0%	20.0%	25.0%	30.0%	34.0%	36.0%	35.7%	35.4%
NOPLAT	**-0.74**	**3.36**	**9.51**	**14.63**	**19.26**	**23.76**	**27.15**	**28.91**	**30.65**
+ Depreciation & amortisation	0.50	0.70	0.90	1.10	1.30	1.50	1.70	1.90	2.10
= Net operating cash flow	-0.24	4.06	10.41	15.73	20.56	25.26	28.85	30.81	32.75
- Total investments (Capex and WC)	-5.31	6.76	4.17	-2.03	-3.59	-3.85	-4.13	-4.27	-4.77
Capital expenditure	-1.70	-2.20	-1.00	-1.20	-1.40	-1.60	-1.80	-2.00	-2.20
Working capital	-3.61	8.96	5.17	-0.83	-2.19	-2.25	-2.33	-2.27	-2.57
= Free cash flow (FCF)	-5.54	10.82	14.58	13.70	16.97	21.40	24.72	26.54	27.98
PV of FCFs	**-5.23**	**8.89**	**10.41**	**8.50**	**9.16**	**10.05**	**10.09**	**9.42**	**8.63**

PV of FCF's in explicit period	69.92
PV of FCF's in terminal period	72.51
Enterprise value	**142.43**
+ Net cash / - Net debt (31 December 2020E)	4.76
+ Investments / - Minorities	0.00
Shareholder value	**147.19**
Number of shares outstanding	**8.10**
WACC	**15.0%**
Cost of equity	6.5%
Pre-tax cost of debt	3.5%
Normal tax rate	19.0%
After-tax cost of debt	2.8%
Share of equity	100.0%
Share of debt	0.0%
Fair value per share in PLN (today)	**18.16**
Fair value per share in PLN (in 12 months)	**20.89**

WACC \ Terminal EBIT margin	32.4%	33.4%	34.4%	35.4%	36.4%	37.4%	38.4%
11.0%	30.93	31.51	32.09	32.66	33.24	33.82	34.40
12.0%	27.34	27.83	28.31	28.79	29.27	29.76	30.24
13.0%	24.43	24.84	25.24	25.65	26.06	26.47	26.87
14.0%	22.02	22.37	22.71	23.06	23.41	23.75	24.10
15.0%	19.99	20.29	20.59	**20.89**	21.18	21.48	21.78
16.0%	18.27	18.53	18.78	19.04	19.30	19.55	19.81
17.0%	16.79	17.01	17.24	17.46	17.68	17.90	18.13

Source: East Value Research GmbH

Peer Group

The following list contains listed companies, whose main business is gaming and which are leading players in the area of mobile games worldwide:

(1) *Ten Square Games S.A.*: Ten Square Games, which is based in Wroclaw/Poland is a developer of mobile games. According to sensortower.com, in June 2020 its hit title "Fishing Clash" had 2m downloads on Google Play and 300k on Apple Store and generated sales of USD 5m and USD 4m respectively on both platforms. In 2019, Ten Square Games generated revenues of PLN 241.1m.

(2) *Netmarble Corporation.*: Netmarble, which is based in Seoul, is the largest developer of mobile games in South Korea. The company's titles include e.g. "Seven Knights" (in total USD 120k monthly sales according to sensortower.com), "StoneAge World" (USD 3m), "The Seven Deadly Sins" (USD 13m) and "Lineage 2: Revolution" (USD 1.1m). In 2019, Netmarble had sales of KRW 2.2tr.

(3) *GungHo Online Entertainment Inc.*: GungHo Online Entertainment, which is based in Tokyo/Japan, plans, develops, operates, and distributes online computer games, smartphone applications, and console games. The company's mobile games include e.g. "Teppen" (in total USD 30k monthly sales according to sensortower.com) and "Puzzles & Dragons" (USD 200k). Examples of the company's online and console games are "Ninjala" (68/100 on Metacritic.com), "Ragnarok Odyssey Ace" (61-67/100) and "Let It Die" (72/100). In 2019, GungHo's sales equaled JPY 101.4bn.

(4) *Square Enix Holdings Co. Ltd.*: Square Enix, which is headquartered in Tokyo/Japan, develops games, operates amusement facilities, distributes arcade game machines and publishes entertainment content. Its mobile games include e.g. "Final Fantasy: Brave Exvius" (USD 1.5m monthly sales according to sensortower.com), "Dragon Quest of the Stars" (USD 300k) and "Kingdom Hearts Ux Dark Road" (USD 400k). Examples of the company's games for other platforms include e.g. "Final Fantasy VII" (87/100 on Metacritic.com), "Dragon Quest XI" (81/100) and "Kingdom Hearts" (85/100). In 2019/20, Square Enix generated sales of JPY 260.5bn.

(5) *Rovio Entertainment Oyj*: Rovio Entertainment Oyj, which is based in Espoo/Finland, creates, develops, and publishes mobile games worldwide. Its mobile games include e.g. "Angry Birds 2" (USD 6m monthly sales according to sensortower.com), "Angry Birds: Dream Blast" (USD 3m), "Small Town Murders" (USD 400k) and "Sugar Blast: Pop & Relax" (USD 400k). In 2019, Rovio's revenues amounted to EUR 289.1m.

(6) *Ourpalm Co. Ltd.*: Ourpalm, which is headquartered in Beijing/China, develops, publishes and operates smart mobile and social games, and websites (so far, more than 200 games have been developed). Its titles include e.g. "Zombie Lord" (4.5/5 on Google Play) and "Super Wings" (4.1/5 on Google Play). In 2019, Ourpalm generated revenues of RMB 1.6bn.

(7) *COLOPL Inc.*: COLOPL Inc., which is based in Tokyo/Japan, develops game applications for smartphones. Examples of the company's mobile games include "DREAM!ing" (USD 12k per month according to sensortower.com) and "LINE: Tsumtsum Land" (USD 400k). In 2018/19, COLOPL generated sales of JPY 38.9bn.

(8) *Com2us Corporation*: Com2us, which is based in Seoul/South Korea, develops and publishes online and mobile games e.g. "Summoners War" (USD 18m monthly sales according to sensortower.com), "Tiny Farm" (USD 50k), "Soccer Spirits" (USD 140k), "Golfstar" (USD 90k), "Dragon Sky: Idle & Merge" (USD 600k), "Ace Fishing: Wild Catch" (USD 800k) and "MLB 9 Innings 20" (USD 1.8m). In 2018/19, COLOPL generated sales of JPY 38.9bn. In 2019, Com2us generated sales of KRW 469.3bn.

	EV/Sales		EV/EBITDA		P/E		P/BVPS	EBITDA margin	Net gearing
Company	**2021E**	**2022E**	**2021E**	**2022E**	**2021E**	**2022E**	**Latest**	**2019**	**Latest**
Ten Square Games S.A. (PLN)	5.68x	5.10x	15.41x	14.11x	17.97x	16.45x	30.84x	35.59%	-77.02%
Netmarble Corporation (KRW)	3.97x	3.71x	24.20x	22.11x	35.96x	31.73x	2.22x	14.72%	-4.19%
GungHo Online Entertainment (JPY)	0.70x	0.75x	2.61x	3.02x	12.30x	14.63x	1.56x	28.90%	-94.97%
Square Enix Holdings Co. Ltd. (JPY)	1.73x	1.77x	10.43x	10.28x	19.86x	20.11x	3.07x	15.42%	-55.66%
Rovio Entertainment Oy (EUR)	1.10x	1.08x	7.28x	7.16x	17.06x	16.11x	2.69x	6.47%	-71.97%
Ourpalm Co. Ltd (RMB)	8.28x	6.81x	22.89x	19.13x	25.30x	19.50x	4.58x	30.31%	-33.16%
COLOPL Inc. (JPY)	1.31x	1.48x	12.11x	19.80x	16.85x	19.51x	1.69x	9.02%	-87.45%
Com2us Corporation (KRW)	1.28x	1.18x	4.17x	3.71x	9.68x	8.68x	1.62x	28.27%	-74.08%
Median	**1.52x**	**1.62x**	**11.27x**	**12.19x**	**17.51x**	**17.98x**	**2.46x**	**21.85%**	**-73.03%**
BTC Studios S.A. (PLN)	1.27x	0.75x	9.04x	3.47x	13.27x	4.69x	9.68x	-7203.38%	-8.94%
Premium/discount	***-16.8%***	***-54.0%***	***-19.8%***	***-71.5%***	***-24.2%***	***-73.9%***			
Fair Value BTC Studios (PLN)	**12.15**								

Source: CapitalIQ, East Value Research GmbH

Price target calculation

Valuation method	Fair value	Weight
DCF model	18.16	80%
Peer group analysis	12.15	20%
Weighted average (present value)	**16.96**	
In 12-months (PV * (1+WACC))	**19.50**	

Source: CapitalIQ, East Value Research GmbH

Recent results

Revenues and Profitability

In Q1/20, BTC Studios had no revenues as it had not released any games. Only in April 2020, the company completed the name change from Blockchain Lab S.A. (previously a developer of blockchain systems).

in PLNm	Q1/20
Net sales	**0.00**
EBITDA	**-0.13**
EBITDA margin	*n.a*
EBIT	**-0.13**
EBIT margin	*n.a*
Net income	**-0.13**
Net margin	*n.a*

Source: Company information, East Value Research GmbH

Between January and March 2020, EBIT and net income reached PLN -133k. The largest cost positions were Cost of Goods Sold of PLN 122k, which comprise external services e.g. costs of freelancers and data centers. In Q1/20, BTC did not have any full-time employees.

Balance sheet and Cash flow

As of 31 March 2020, BTC Studios had equity of PLN 4.6m, which had a share of 36.2% in the balance sheet total. By far the largest balance sheet position were intangible assets of PLN 7.6m. Long-term investments of PLN 3.4m included the value of 100% of Latvian company Game Oliver SIA, which was acquired in Q1/20, as well as 70% in the Latvian JV MadSword Studios SIA (incl. a PLN 138k loan from BTC). Long-term liabilities of PLN 4.3m and short-term debt of PLN 2.1m related to the value of acquired licensing rights from Cyber Group Studios. PLN 1.1m of short-term debt stemmed from shares, which were issued (but not yet registered) in Q1/20 (issue price of PLN 12.27 per share).

Between January and March 2020, BTC Studios generated an operating cash flow of PLN -176k, while cash flow from investing and financing equaled PLN -546k and PLN 773k (included PLN 794k from the issue of 766,635 new shares at PLN 1.50 per share in January 2020) respectively. As of 31/03/2020, BTC had cash of PLN 409k.

Financial forecasts

Revenues and Profitability

On 1 April 2020, BTC published its guidance for 2020E-2024E, which is ambitious but not unrealistic in our view. Sales are expected to grow from PLN 10.2m in 2020E to PLN 78.3m (CAGR of 66.3%), while net income is supposed to increase from PLN -638k to PLN 23.2m.

Below are our detailed revenue estimates for the games, which BTC plans to release this year. Apart from the Nintendo Switch game "Steam Defense", they are all supposed to be available for free and generate sales through in-game-advertising and item sales ("freemium" model). Based on information provided by Gaming consulting firm Newzoo, we believe that 38% of all users, who will download BTC's mobile games, will pay for in-game items, which will cost on average PLN 60/EUR 14 per item. In our view, each game will generate sales from in-game advertising of PLN 20,000 per year. We expect that for the games based on Cyber Group Studios' series BTC will have to pay to the Paris-based studio a royalty representing 20% of the games' revenues.

Our forecasts for sales in 2020E-2021E as well as EBITDA and net income (2020E-2024E) are lower than BTC's guidance as we wanted to be conservative and account for potentially weaker monetization of games and higher operating costs.

in PLNm	2020E	2021E	2022E	2023E	2024E
Taffy: Feed the Kitty	**2.20**	**8.77**	**14.24**	**16.43**	**17.53**
(% of net sales)	*36.4%*	*25.3%*	*24.3%*	*22.7%*	*22.1%*
Number of downloads	10,000	40,000	65,000	75,000	80,000
Share of paying clients	38.0%	38.0%	38.0%	38.0%	38.0%
Items per paying client per month	1	1	1	1	1
Avg. fee per in-game item (in PLN)	60	60	60	60	60
Sales from in-game advertising (in PLN)	20,000	20,000	20,000	20,000	20,000
Share of Cyber Group Studios	20.0%	20.0%	20.0%	20.0%	20.0%
Sadie Sparks - Magic Match	**1.11**	**4.39**	**6.58**	**8.77**	**9.87**
(% of net sales)	*18.4%*	*12.7%*	*11.2%*	*12.1%*	*12.4%*
Number of downloads	5,000	20,000	30,000	40,000	45,000
Share of paying clients	38.0%	38.0%	38.0%	38.0%	38.0%
Items per paying client per month	1	1	1	1	1
Fee per in-game item (in PLN)	60	60	60	60	60
Sales from in-game advertising (in PLN)	20,000	20,000	20,000	20,000	20,000
Share of Cyber Group Studios	20.0%	20.0%	20.0%	20.0%	20.0%
Pirates Next Door: The Mad Chase	**0.00**	**3.30**	**5.49**	**7.68**	**8.77**
(% of net sales)	*0.0%*	*9.5%*	*9.4%*	*10.6%*	*11.1%*
Number of downloads	0	15,000	25,000	35,000	40,000
Share of paying clients	38.0%	38.0%	38.0%	38.0%	38.0%
Items per paying client per month	1	1	1	1	1
Fee per in-game item (in PLN)	60	60	60	60	60
Sales from in-game advertising (in PLN)	0	20,000	20,000	20,000	20,000
Share of Cyber Group Studios	20.0%	20.0%	20.0%	20.0%	20.0%
Steam Defence (only Mobile)	**0.27**	**0.84**	**1.39**	**1.61**	**1.83**
(% of net sales)	*4.5%*	*2.4%*	*2.4%*	*2.2%*	*2.3%*
Number of downloads	1,000	3,000	5,000	5,800	6,600
Share of paying clients	38.0%	38.0%	38.0%	38.0%	38.0%
Items per paying client per month	1	1	1	1	1
Fee per in-game item (in PLN)	60	60	60	60	60
Sales from in-game advertising (in PLN)	0	20,000	20,000	20,000	20,000
Overlord: Empires at War	**0.27**	**0.84**	**1.39**	**1.61**	**1.83**
(% of net sales)	*4.5%*	*2.4%*	*2.4%*	*2.2%*	*2.3%*
Number of downloads	1,000	3,000	5,000	5,800	6,600
Share of paying clients	38.0%	38.0%	38.0%	38.0%	38.0%
Items per paying client per month	1	1	1	1	1
Fee per in-game item (in PLN)	60	60	60	60	60
Sales from in-game advertising (in PLN)	0	20,000	20,000	20,000	20,000
Sadie Sparks - Potion Maker	**0.00**	**3.30**	**5.49**	**7.68**	**8.77**
(% of net sales)	*0.0%*	*9.5%*	*9.4%*	*10.6%*	*11.1%*
Number of downloads	0	15,000	25,000	35,000	40,000
Share of paying clients	38.0%	38.0%	38.0%	38.0%	38.0%
Items per paying client per month	1	1	1	1	1
Fee per in-game item (in PLN)	60	60	60	60	60
Sales from in-game advertising (in PLN)	0	20,000	20,000	20,000	20,000
Share of Cyber Group Studios	20.0%	20.0%	20.0%	20.0%	20.0%
Taffy's Food Run	**0.00**	**6.58**	**12.05**	**14.24**	**15.34**
(% of net sales)	*0.0%*	*19.0%*	*20.5%*	*19.7%*	*19.4%*
Number of downloads	0	30,000	55,000	65,000	70,000
Share of paying clients	38.0%	38.0%	38.0%	38.0%	38.0%
Items per paying client per month	1	1	1	1	1
Fee per in-game item (in PLN)	60	60	60	60	60
Sales from in-game advertising (in PLN)	0	20,000	20,000	20,000	20,000
Share of Cyber Group Studios	20.0%	20.0%	20.0%	20.0%	20.0%
Sadie Sparks - Magic Words	**2.19**	**6.58**	**12.05**	**14.24**	**15.34**
(% of net sales)	*36.2%*	*19.0%*	*20.5%*	*19.7%*	*19.4%*
Number of downloads	10,000	30,000	55,000	65,000	70,000
Share of paying clients	38.0%	38.0%	38.0%	38.0%	38.0%
Items per paying client per month	1	1	1	1	1
Fee per in-game item (in PLN)	60	60	60	60	60
Sales from in-game advertising (in PLN)	0	20,000	20,000	20,000	20,000
Share of Cyber Group Studios	20.0%	20.0%	20.0%	20.0%	20.0%
Total sales	**6.05**	**34.61**	**58.69**	**72.26**	**79.26**
(change y-o-y)	n.a	471.9%	69.6%	23.1%	9.7%

Source: East Value Research GmbH

	2020E		2021E		2022E		2023E		2024E	
in PLNm	our est.	guid.	our est.	guid.	our est.	guid.	our est.	guid.	our est.	guid.
Net sales	**6.05**	**10.24**	**34.61**	**39.18**	**58.69**	**56.59**	**72.26**	**68.57**	**79.26**	**78.32**
EBITDA	**-0.41**	**-0.31**	**4.85**	**8.61**	**12.64**	**16.22**	**19.16**	**21.13**	**25.08**	**24.77**
EBITDA margin	*-6.7%*	*-3.0%*	*14.0%*	*22.0%*	*21.5%*	*28.7%*	*26.5%*	*30.8%*	*31.6%*	*31.6%*
EBIT	**-0.91**		**4.15**		**11.74**		**18.06**		**23.78**	
EBIT margin	*-15.0%*		*12.0%*		*20.0%*		*25.0%*		*30.0%*	
Net income	**-0.74**	**-0.64**	**3.36**	**7.89**	**9.51**	**15.26**	**14.64**	**19.90**	**19.27**	**23.23**
Net margin	*-12.3%*	*-6.2%*	*9.7%*	*20.1%*	*16.2%*	*27.0%*	*20.3%*	*29.0%*	*24.3%*	*29.7%*

Source: East Value Research GmbH

CAPEX and Working capital

In our model, we have assumed gross CAPEX of PLN 7.5m in 2020E-2024E, which in our opinion will increase intangibles due to investments in new IPs. We have forecasted that working capital will amount to -8% of total sales in the long run and the cash conversion cycle to -30 days (BTC neither needs inventory nor has trade receivables as in-game items and advertising are paid immediately with credit card).

Business description

BTC Studios S.A., which is based in Warsaw, is a Polish developer of mobile, console and PC/Mac games. The company plans to release 19 games by 2024E. BTC, which has two subsidiaries in Latvia (100% in Game Oliver SIA, 70% stake in the MadSword Studios SIA), is listed in the NewConnect segment of the Warsaw Stock Exchange. It currently works with c. 26 people (3 Members of the Management Board, c. 15 freelance developers, 4 freelance marketing experts, 3 external accountants and one advisor to the management board).

Company history

Until 2019: The company operates under the name Domenomania.pl S.A. (active in hosting) and Blockchain Lab S.A. (active in the development of blockchain systems).

2019: In April 2019, BTC (then Blockchain Lab) publishes a new strategy, which foresees the incubation of PC, console or mobile game projects with implemented elements of cryptocurrencies and a release of at least one such project per quarter. Moreover, the company plans to launch a blockchain-based platform for trading of game items.

Also in April, the company announces the incubation of a new adventure game, which however was abandoned a few months later.

In May, the company sells rights to the domain Domenomania.pl for PLN 89.5k net. Another project, the 3rd person shooter "Under the Dead Sky", is started and abandoned shortly thereafter.

In October, BTC/Blockchain Lab signs a 5-year exclusive licensing agreement with the Paris-based Cyber Group Studios, a leading international producer and distributor of animated movies and TV series for kids/family and business partner of e.g. The Walt Disney Company, Warner Media and Discovery Networks. The agreement covers the production, publishing, distribution and marketing of at least 9 games based on the animated movies "Sadie Sparks", "Taffy" and "Pirates Next Door". Due to the agreement, which allows to market games in synergy with Cyber Group Studios' series that are broadcasted on leading TV networks, BTC gains access to 270m potential players from around the world.

Also in October, the company acquires 100% of Latvian game developer Game Oliver SIA from its owners Artürs Pumpurs and Janis Innuss, who are now members of BTC's management board. Game Oliver owns the exclusive rights for the educational game "Professor Oliver", with a Virtual Reality engine, as well as for the prototype of the game "Oliver Words". As part of the contract, BTC issues 646.9k (worth PLN 3.2m) new shares to the previous owners of Game Oliver, which were paid against an outstanding receivable.

In the same month, signing of an agreement for consulting and capital raising services (USD 5m) with Canadian Digimax Global Solutions.

In November, BTC initiates the development work on the games "Taffy: Feed the Kitty" (estimated total development costs of PLN 400k), "Pirates Next Door: The Mad Chase" (PLN 370k), "Sadie Sparks' Potion Maker" (PLN 400k) and "Taffy's Food Run" (PLN 390k).

2020: In January, BTC completes the issue of 766.6k new shares at a price of PLN 1.50 per share (total value of PLN 1.1m)

Also in January, the company establishes the 70%:30% Joint-Venture MadSword Studios SIA with the Latvian game developer MadSword (since its foundation in 2012, it has developed >160 games). The objective of the JV is the financing of development of the game "Lord of Clans" (now: "Overlords: Empires at War"). MadSword Studios will also own the intellectual property rights and game engine for other games, which have already been developed or are currently in development.

BTC lends MadSword Studios PLN 1.1m (interest rate of 3% per annum), which is supposed to be paid back in 18 months at the earliest and 36 months at the latest. The company has the option to buy an additional 10% stake in MadSword Studios for 40,000 shares at a price of EUR 1.50 per share.

In May, BTC announces the signing of a strategic partnership (which includes a seat in its Supervisory Board) with the global leader in gaming investment and consulting, IDG Consulting, which has 30-year expertise and a wide network in the worldwide gaming industry. The contract also foresees that IDG will be the leader of the consortium of investors in BTC's next funding round.

Also in May, BTC completes the sale of 89,443 new shares at PLN 12.27 per share to Mr Anthony Poullain and his company PHB Group. The investor, who wants to acquire shares in BTC for in total c. EUR 400,000, will pay for the second tranche (53,664 shares) by 15 September 2020.

What are BTC's games in development?

BTC is developing several games, most of which are based on franchises that are owned by its licensing partner Cyber Group Studios. Each games' development costs, which BTC has to finance, are estimated at c. EUR 100k. If results of the mobile games are satisfactory, for each game BTC plans to develop a version for the Nintendo Switch console.

BTC's official game pipeline

Title	Platform	Status	Planned release date	Download potential
Sadie Sparks - Magic Match	iOS & Android	Beta version in PL and IRL since Jul 2020	Sep 2020	>1m
Sadie Sparks - Magic Words	iOS & Android	In development	Dec 2020	>1m
Taffy: Feed the Kitty	iOS & Android	In development	Aug 2020	>3m
Taffy's Food Run	iOS & Android	In development	Dec 2020	>3m
Steam Defence	iOS & Android	Final tests of iOS version; Android version is ready	Aug 2020	n.a
Steam Defence	Nintendo Switch	In development	Dec 2020	n.a
Overlords: Empires at War	iOS & Android	Beta tests in PL and IRL in 29.06-05.07 after content update	Sep 2020	n.a
Sadie Sparks - Potion Maker	iOS & Android	In development	H1 2021	>1m
Pirates Next Door: The Mad Chase	iOS & Android	In development	H1 2021	n.a

Source: Company information, East Value Research GmbH

"Sadie Sparks"



Source: Cyber Group Studios, East Value Research GmbH

"Sadie Sparks" is an animated series for 6-11 years-old that was created by Brown Bag Films' Studios and Cyber Group Studios. The series, which is being broadcasted by leading TV stations worldwide such as Disney Channel, Boomerang (Warner Media) and Discovery, follows the adventures of a 14-year-old girl with magical powers, who must juggle high school life with her new role as a wizard-in-training. The official Youtube channel of "Sadie Sparks" has currently 306 subscribers and some episodes of the series have so far been watched several ten thousand times.

Based on this franchise, BTC is currently developing three mobile games: "Sadie Sparks - Magic Match", "Sadie Sparks - Magic Words" (release planned this Fall/Winter) and "Sadie Sparks – Potion Maker" (2021E).

„Taffy"



Source: Cyber Group Studios, East Value Research GmbH

"Taffy" is a French animated television series for 6-10 years old produced by Cyber Group Studios with the participation of France Televisions for Boomerang. The series follows a grey raccoon, Taffy, who gets adopted by Mrs. Muchmore after thinking he is a cat. It can be watched on e.g. Disney Channel, Boomerang (Warner Media), France Television. The official Youtube channel of "Taffy" currently has 3,720 subscribers, while some episodes of the series have so far been watched several ten thousand times.

Based on this franchise, BTC is currently developing two mobile games: "Taffy: Feed the Kitty" and "Taffy's Food Run" (release planned this Fall/Winter).

"Pirates Next Door"



Source: Cyber Group Studios, East Value Research GmbH

„Pirates Next Door" is an animated TV series for 6 to 10 years old based on the best-seller by Jonny Duddle, the winner of the United Kingdom 2012 Waterstones Children's Book prize. It is about the city Dull-on-Sea, which is turned upside down by the appearance of a family of pirates. "Pirates Next Door" is being broadcasted by such TV stations as France Television, TeleQubec and Discovery. Its official Youtube channel currently has 254 subscribers and some episodes of the series have so far been watched several ten thousand times.

Based on this franchise, BTC is currently developing "Pirates Next Door: The Mad Chase", which it plans to release in 2021E.

"Overlords: Empires at War"



Source: Company information, East Value Research GmbH

Through its 70% JV MadSword Studios, BTC also develops the multi-platform strategic game "Overlords: Empires at War" (previously: "Lord of Clans"), which takes place during the Middle Ages. The game has been available in a beta version ("soft launch") for Polish and Irish players since March 2020. The official release of this mobile game is scheduled for Fall 2020.

How is BTC going to make money?

BTC plans to offer its mobile games in a "freemium" model. Gamers will download the games from Google Play or Apple Store for free, however will have to pay for items in the game between EUR 5 and EUR 150. In addition, the company plans to generate revenues from in-game advertising.

How is BTC going to market its games?

Together with its licensing partner Cyber Group Studios, BTC plans to advertise its games on social media and through websites of the TV channels that broadcast the respective animated series.

Management

Artürs Pumpurs (CEO): Mr. Artürs Pumpurs is Chief Executive Officer of BTC Studios and owns 15% of the company's Latvian JV MadSword Studios. He is co-owner of Ernest Development Center Ltd., which develops three projects: Ernestapp.com, Ble Locking and Gameoliver.com. Game Oliver's educational game "Professor Oliver" was one of three most innovative projects in Latvia in 2018, according to the Latvian Agency for Investment and Innovation. Other game projects, in which Mr Pumpurs has been involved in the last years, include "Poli Pong" (500,000 downloads in the first week), "Zole" (250,000 users, yearly sales of EUR 1.2m), "Hogs Run" and "Heroes Squad". Artürs Pumpurs, who graduated with a Bachelor's degree in Marketing Management from the University of Latvia in Riga and received an MBA from the Stockholm School of Economics, is also mentor of >30 IT startups.

Janis Innuss (CTO): Mr. Janis Innuss is Chief Technology Officer of BTC Studios and as such responsible for the development of games, sourcing of people, project management and customer support. He is also a 15% shareholder in the company's Latvian JV MadSword Studios and a shareholder of SIA Farma PET, a leading manufacturer of pharmaceuticals in the Baltics. In the last years, Mr Innuss has worked among others as CTO and Senior iOS Developer at Ernest Development Center and iOS Developer at Exigen Services. He graduated with a Bachelor's and Master's degree in Computer Science from the University of Latvia in Riga.

Jaroslaw Zeisner (COO): Mr. Jaroslaw Zeisner is BTC's Chief Operating Officer. In the past, he has worked among others as Director and Project Manager at the large Polish retail group Empik. Mr Zeisner graduated with a Master's degree in Commercial & Advertising Art from the University of Warsaw.

Derrick Ogrodny (CCC): Mr. Derrick Ogrodny is Chief Creative Officer at BTC Studios. In the past, he has been among others Creative Director and Channel Manager at MTV Networks Polska, Creative & On-Air Manager at Discovery Networks CEE, Director of Production at Comedy Central Studios in Abu Dhabi and Interim CEO at TV Vijesti in Montenegro. Mr Derrick Ogrodny graduated with a Bachelor's degree in Communication and Media Studies from the Loyola University of Chicago.

Carlos Ortega (Advisor to the Board): Mr. Carlos Ortega is Advisor to the Management Board of BTC Studios. He has extensive experience in media e.g. as Executive Vice President and Regional Manager CEE at Fox Networks Group and Managing Director at Walt Disney-subsidiary Jetix Spain S.A. Mr. Carlos Ortega graduated with a Bachelor's degree in Business & Economics and an MBA from Universidad del Pais Vasci/Euskal Herriko Unibertsitatae.

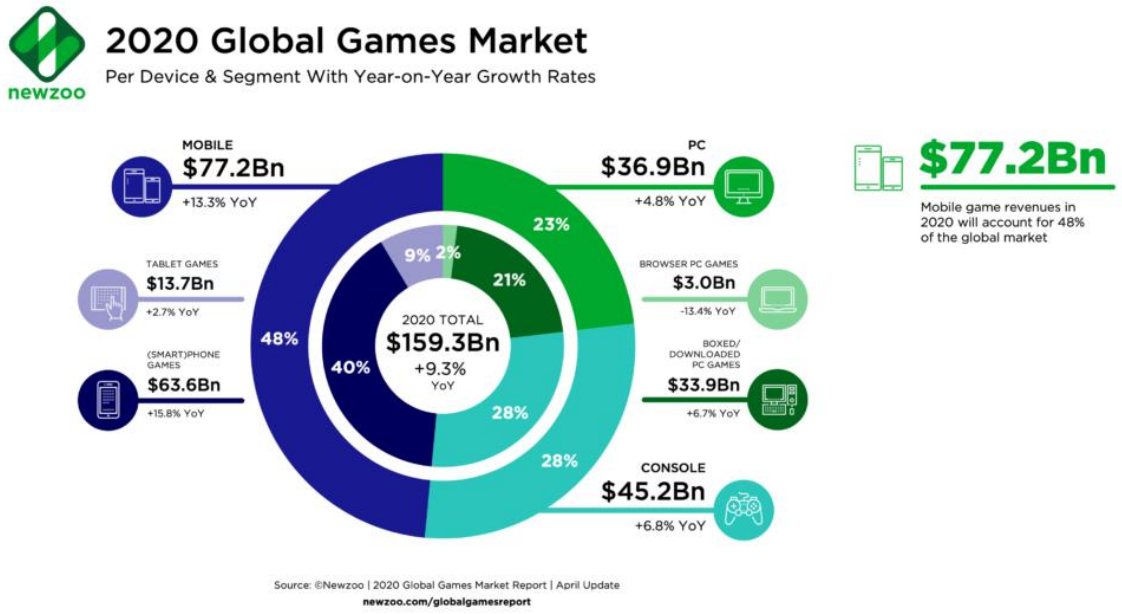
Peter Törnquist (Member of the Supervisory Board): Mr. Peter Törnquist is Member of BTC's Supervisory Board and one of the company's investors. In the past, he has been among others Director and Senior Partner at Bain & Company in London and Munich, Managing Director of Lehman Brothers in London and Partner at Private Equity firm CVC Capital Partners. Over the last 30 years, he has also gained experience as CEO as well as Member of Audit and Remuneration Committees. Peter Törnquist graduated with a Master's degree in Business and Economics from the Stockholm Business School and an MBA from IMEDE in Lausanne.

Yoshio Osaki (Member of the Supervisory Board): Mr Yoshio Osaki is Member of BTC's Supervisory Board and President of IDG Consulting, a gaming consulting and investment firm, with which the company co-operates. Within IDG, he is in charge of project management, customer relationships and business development. In the past, he has been presenting during such events as Robin Hood Conference, Activision Blizzard Sales Summit, Take-Two PR Summit and Google North American App Summit. He is regularly quoted by Wall Street Journal, Associated Press, Barron's, Bloomberg News and The New York Times.

Market environment

The global Games market incl. Mobile games

According to gaming consultancy Newzoo, the global Games market is expected to reach a value of USD 159.3bn in 2020E, which corresponds to an increase of 9.3% y-o-y. The number of gamers is estimated at 2.7bn. One of the reasons are the COVID-19-related lockdown measures, which significantly increased the popularity of gaming around the world. Moreover, in Q4/20E the next generation of consoles will be released (Playstation 5, Xbox Series X). Due to low barriers to entry and wide availability of necessary devices (>2/5 of the global population owns a smartphone) mobile games are supposed to be the fastest-growing category with a y-o-y growth of 13.3%. At the end of 2020E, they will likely account for USD 77.2bn or 48.5% of the total market. While China and the US will together account for c. 50% of the global market, growth will be the fastest in Latin America and Asia-Pacific in the coming years. By 2023E, the global Games market is expected to reach USD >200bn and the number of gamers c. 3bn.



Source: Newzoo, East Value Research GmbH

According to Newzoo, the console market is expected to grow by 6.8% y-o-y to a value of USD 45.2bn in 2020E (28.4% share of the total Games market). The number of players, who use these devices, is estimated at 729m worldwide.

The market for in-game items and advertising

According to Fortunly, revenue from Free-to-Play games (F2P) amounts to over 85% of all game revenues (USD 135.4bn in 2020E). The Entertainment Software Association estimates that almost 50% of all gamers (c. 1.3bn people worldwide) made a microtransaction last year. According to Techcrunch, consumer spend in games in China exceeded USD 28bn in 2018 and USD 13bn in the US and Japan, both at high double-digit yearly growth rates.

The Polish Gaming market

According to PwC, the Polish Gaming market was worth USD 664m in 2019, USD 400m more than in 2014. In Poland, c. 50% of the population regards itself as gamers and there are c. 400 video game companies, which is significantly more than e.g. in Germany. Polish developers are benefitting from low labour costs as well as well-educated staff. An important factor is also the recent global success of local video game companies, especially CD Projekt S.A., Techland S.A., 11bit Studios S.A, PlayWay S.A. and Ten Square Games S.A. Poland is the second country worldwide behind Japan for the number of listed gaming companies (40).

The largest Polish video game companies

Company	Market cap	Sales Last FY	Examples of titles
CD Projekt S.A.	PLN 38bn	PLN 521.3m	"The Witcher" series (>40m copies sold to date), "Cyberpunk 2077" (release in Nov 2020)
Techland S.A.	not listed	PLN 182.7m (2018)	"Dying Light" (c. 20m copies sold)
11bit Studios S.A.	PLN 1.2bn	PLN 71.2m	"Frostpunk", "This War of Mine" (together >10m copies sold)
PlayWay S.A.	PLN 3.4bn	PLN 116.3m	"Car Mechanics Simulator"
Ten Square Games S.A.	PLN 4.1bn	PLN 241.1m	"Fishing Clash" (USD 4m monthly revenues)

Source: CapitalIQ, bankier.pl, East Value Research GmbH

Profit and loss statement

in PLNm	2019	2020E	2021E	2022E	2023E	2024E
Net sales	**0.02**	**6.05**	**34.61**	**58.69**	**72.26**	**79.26**
Cost of goods sold	-0.14	-4.94	-24.23	-39.91	-44.08	-45.18
Gross profit	**-0.12**	**1.11**	**10.38**	**18.78**	**28.18**	**34.08**
Other operating income	0.82	0.20	0.20	0.20	0.21	0.21
Distribution costs	0.00	0.00	0.00	0.00	0.00	0.00
Personnel costs	0.00	-0.01	-1.51	-4.01	-6.51	-6.71
Other operating expenses	-2.15	-1.71	-4.22	-2.33	-2.71	-2.50
EBITDA	**-1.45**	**-0.41**	**4.85**	**12.64**	**19.16**	**25.08**
Depreciation & Amortization	-0.32	-0.50	-0.70	-0.90	-1.10	-1.30
EBIT	**-1.77**	**-0.91**	**4.15**	**11.74**	**18.06**	**23.78**
Net financial results	-0.01	-0.01	-0.01	0.00	0.01	0.01
EBT	**-1.78**	**-0.92**	**4.15**	**11.74**	**18.07**	**23.79**
Income taxes	0.00	0.17	-0.79	-2.23	-3.43	-4.52
Minority interests	0.00	0.00	0.00	0.00	0.00	0.00
Net income / loss	**-1.78**	**-0.74**	**3.36**	**9.51**	**14.64**	**19.27**
EPS	-0.22	-0.09	0.41	1.17	1.81	2.38
DPS	0.00	0.00	0.12	0.35	0.54	0.71
Share in total sales						
Net sales	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Cost of goods sold	-689.50 %	-81.60 %	-70.00 %	-68.00 %	-61.00 %	-57.00 %
Gross profit	-589.50 %	18.40 %	30.00 %	32.00 %	39.00 %	43.00 %
Other operating income	4073.88 %	3.31 %	0.58 %	0.35 %	0.29 %	0.26 %
Distribution costs	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %
Personnel costs	-17.29 %	-0.23 %	-4.37 %	-6.84 %	-9.02 %	-8.47 %
Other operating expenses	-10670.47 %	-28.21 %	-12.19 %	-3.97 %	-3.75 %	-3.15 %
EBITDA	-7203.38 %	-6.74 %	14.02 %	21.53 %	26.52 %	31.64 %
Depreciation & Amortization	-1571.32 %	-8.26 %	-2.02 %	-1.53 %	-1.52 %	-1.64 %
EBIT	-8774.70 %	-15.00 %	12.00 %	20.00 %	25.00 %	30.00 %
Net financial results	-47.91 %	-0.17 %	-0.01 %	0.00 %	0.01 %	0.01 %
EBT	-8822.62 %	-15.17 %	11.99 %	20.00 %	25.01 %	30.01 %
Income taxes	0.00 %	2.88 %	-2.28 %	-3.80 %	-4.75 %	-5.70 %
Minority interests	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %
Net income / loss	-8822.62 %	-12.28 %	9.71 %	16.20 %	20.26 %	24.31 %

Balance Sheet

in PLNm	2019	2020E	2021E	2022E	2023E	2024E
Assets						
Cash and cash equivalents	0.36	4.86	12.53	24.57	35.06	46.82
Other financial assets	0.00	0.00	0.00	0.00	0.00	0.00
Inventories	0.00	0.00	0.00	0.00	0.00	0.00
Trade accounts and notes receivable	0.00	0.03	0.28	0.64	0.99	1.30
Prepaid expenses, deferred charges and others	0.04	0.10	0.35	0.59	0.72	0.79
Current assets	**0.40**	**5.00**	**13.16**	**25.80**	**36.77**	**48.91**
Property, plant and equipment	0.00	0.00	0.00	0.00	0.00	0.00
Other intangible assets	6.58	7.78	9.28	9.38	9.48	9.58
Goodwill	0.00	0.00	0.00	0.00	0.00	0.00
Long-term financial assets	14.40	14.69	14.98	15.28	15.59	15.90
Deferred tax assets	0.06	0.00	0.00	0.00	0.00	0.00
Non-current assets	**21.04**	**22.47**	**24.27**	**24.67**	**25.07**	**25.48**
Total assets	**21.44**	**27.47**	**37.43**	**50.47**	**61.85**	**74.40**
Liabilities						
Trade payables	2.16	2.71	11.95	17.49	16.91	14.85
Short-term financial debt	0.11	0.10	0.09	0.08	0.07	0.06
Other short-term liabilities	4.07	4.27	4.49	4.71	4.95	5.19
Pension provision	0.00	0.00	0.00	0.00	0.00	0.00
Other provisions	0.00	0.00	0.00	0.00	0.00	0.00
Current liabilities	**6.34**	**7.08**	**16.52**	**22.28**	**21.92**	**20.11**
Long-term financial debt	0.00	0.00	0.00	0.00	0.00	0.00
Other long-term liabilities	4.26	7.00	4.15	2.93	2.89	2.38
Pension provision	0.00	0.00	0.00	0.00	0.00	0.00
Deferred tax liabilities	0.00	0.00	0.00	0.00	0.00	0.00
Long-term liabilities	**4.26**	**7.00**	**4.15**	**2.93**	**2.89**	**2.38**
Total liabilities	**10.60**	**14.08**	**20.68**	**25.22**	**24.81**	**22.48**
Shareholders equity	**10.84**	**13.39**	**16.75**	**25.25**	**37.03**	**51.91**
Minority interests	0.00	0.00	0.00	0.00	0.00	0.00
Total liabilities and equity	**21.44**	**27.47**	**37.43**	**50.47**	**61.85**	**74.40**

Cash Flow Statement

in PLNm	2019	2020E	2021E	2022E	2023E	2024E
Net income / loss	-1.78	-0.74	3.36	9.51	14.64	19.27
Depreciation & Amortization	0.32	0.50	0.70	0.90	1.10	1.30
Change of working capital	0.28	-3.61	8.96	5.17	-0.83	-2.19
Others	1.08	0.00	0.00	0.00	0.00	0.00
Net operating cash flow	**-0.09**	**-3.85**	**13.02**	**15.58**	**14.90**	**18.38**
Cash flow from investing	**-0.28**	**-1.70**	**-2.20**	**-1.00**	**-1.20**	**-1.40**
Free cash flow	-0.37	-5.55	10.82	14.58	13.70	16.98
Cash flow from financing	**0.73**	**10.06**	**-3.15**	**-2.54**	**-3.21**	**-5.23**
Change of cash	0.36	4.50	7.67	12.04	10.49	11.75
Cash at the beginning of the period	0.00	0.36	4.86	12.53	24.57	35.06
Cash at the end of the period	0.36	4.86	12.53	24.57	35.06	46.82

Financial ratios

	2019	2020E	2021E	2022E	2023E	2024E
Profitability and balance sheet quality						
Gross margin	-589.50%	18.40%	30.00%	32.00%	39.00%	43.00%
EBITDA margin	-7203.38%	-6.74%	14.02%	21.53%	26.52%	31.64%
EBIT margin	0.20%	-15.00%	12.00%	20.00%	25.00%	30.00%
Net margin	-8822.62%	-12.28%	9.71%	16.20%	20.26%	24.31%
Return on equity (ROE)	-29.07%	-6.14%	22.29%	45.27%	47.00%	43.33%
Return on assets (ROA)	-14.74%	-3.00%	10.37%	21.63%	26.05%	28.27%
Return on capital employed (ROCE)	-11.71%	-3.61%	16.09%	33.73%	36.65%	35.48%
Economic Value Added (in PLNm)	-4.03	-3.79	0.23	5.28	8.64	11.12
Net debt (in PLNm)	-0.25	-4.76	-12.44	-24.49	-34.99	-46.76
Net gearing	-2.29%	-35.57%	-74.26%	-96.99%	-94.48%	-90.07%
Equity ratio	50.55%	48.75%	44.76%	50.03%	59.88%	69.78%
Current ratio	0.06	0.71	0.80	1.16	1.68	2.43
Quick ratio	0.06	0.69	0.78	1.13	1.64	2.39
Net interest cover	-183.13	-90.77	830.63	n.a.	-3612.85	-2377.83
Net debt/EBITDA	0.17	11.68	-2.56	-1.94	-1.83	-1.86
Tangible BVPS	1.35	1.66	2.07	3.12	4.57	6.41
Capex/Sales	-27430.92%	-28.09%	-6.36%	-1.70%	-1.66%	-1.77%
Working capital/Sales	-51888.87%	-113.12%	-45.66%	-35.74%	-27.87%	-22.65%
Cash Conversion Cycle (in days)	n.a	-198	-177	-156	-135	-114
Trading multiples						
EV/Sales	2177.55	7.25	1.27	0.75	0.61	0.55
EV/EBITDA	-30.23	-107.60	9.04	3.47	2.29	1.75
EV/EBIT	-24.82	-48.33	10.56	3.74	2.43	1.84
P/Tangible BVPS	4.09	3.31	2.66	1.77	1.20	0.86
P/E	-24.91	-59.56	13.18	4.66	3.02	2.30
P/FCF	-118.58	-7.98	4.09	3.04	3.23	2.61

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Lurgiallee 12

60439 Frankfurt