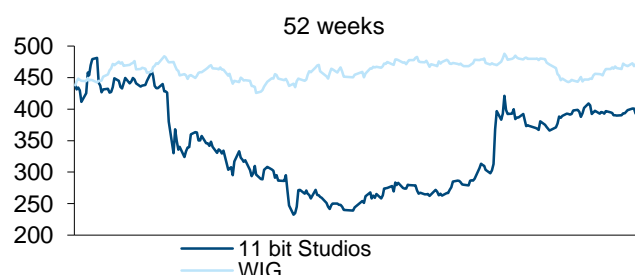


# 11 bit Studios

Buy

PLN mn	2018	2019e	2020e	2021e
Net sales	82.8	78.8	70.8	197.3
EBITDA	51.4	37.5	24.5	140.3
EBIT	46.9	31.9	17.8	125.0
Net result after min.	37.5	25.9	14.7	101.8
EPS (PLN)	16.42	11.33	6.08	42.09
CEPS (PLN)	18.38	13.77	8.83	48.42
BVPS (PLN)	39.31	50.64	59.56	101.65
Div./share (PLN)	0.00	0.00	0.00	0.00
EV/EBITDA (x)	10.0	22.1	35.1	5.4
P/E (x)	14.9	34.6	64.4	9.3
P/CE (x)	13.3	28.4	44.3	8.1
Dividend Yield	0.0%	0.0%	0.0%	0.0%
Share price (PLN) close as of 02/07/2019				391.5
Number of shares (mn)				2.3
Market capitalization (PLN mn / EUR mn)				,895 / ,211
Enterprise value (PLN mn / EUR mn)				,829 / ,196



Performance	12M	6M	3M	1M
in PLN	-10.6%	54.1%	-0.4%	-1.5%
Reuters	11B.WA	Free float	77.5%	
Bloomberg	11B.PW	Shareholders	zegorz Miechowski (7.0%)	
Div. Ex-date				NN TFI (5.21%)
Target price	493.4	Homepage:	www.11bitstudios.com	

## Project 8 to boost earnings in 2021e

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A successful Frostpunk launch should help 11 bit achieve a sufficient net cash position close to PLN 67mn in 2019e, which would, in our opinion, allow the company to spend approx. PLN 20mn for Project 8 production and marketing and almost double this amount in the case of Project 9, which we expect in 2023e. At the same time, we believe that, in the event of Project 8 success, we can expect that the company may acquire a new development team with a unique IP or decide on the first dividend payment in 2022e with a DPS of 21.05 or DY of 5.4%, according to our calculations.

In our base case scenario, we assume that the company should be able to introduce Project 8 in the first half of 2021e and sell approx. 2.4mn copies in the release year, achieving sales revenue of PLN 147mn. We expect total revenue of PLN 197.3mn and net income of PLN 101.8mn. Based on this assumption and the current market price, the company should be priced at 9.3x P/E and 5.4x EV/EBITDA in 2021e. Moreover, the three-year average P/E ratio might be close to 18.1x. We also present different scenarios for copies sold, margins, dividend sensitivity and a Monte Carlo simulation for the number of copies sold in the base case scenario. We also calculate a target price and probability for each presented scenario.

**Taking all of this into account, we believe that company should enjoy attractive earnings improvement thanks to Project 8 release, which leads us to assign 11 bit studios a Buy recommendation and target price of PLN 493.4, implying a 26% upside to the current market price.**

## Adjusted valuation method

*We are firmly convinced that the valuation methods of some gaming companies have been inadequate. The usual DCF method does not always give appropriate signals and does not correctly reflect the value of the company's fundamentals. Moving the game release date to a later period makes it closer to the DCF Terminal Value, which artificially increases the company's valuation, which is devoid of fundamentals. On the other hand, if a given company speeds up a game's premiere, which in general is positive, the terminal value might be negatively affected, as the EBIT in the year before terminal might be lower. **We believe that the ordinary DCF method leaves unnecessary room for an incorrect interpretation of the company's value and the ability to create a favorable valuation, which might be misleading for report recipients.***

*We decided to use the Adjusted DCF method to conduct an adequate valuation process that would fully reflect the value of the company, which will be immune to shifting the premiere of a given game. We have smoothed out and equated all FCF using a 3% annual growth rate. WACC is used as a discount rate for the given periods. The terminal value FCF is equal to the previous year's FCF increased by 3%. Please note that, for comparison purposes, we also present ordinary FCFs in our DCF valuation template. Moreover, in Appendix 1 of this report, we present the ordinary DCF template with the standard FCFs used in the valuation process, which we believe is inadequate.*

## Valuation

We use an adjusted DCF model in our valuation, based on our forecasts for 2019-23, with the appropriate adjustment described above. We used a discount rate based on WACC and a terminal value based on perpetuity and the diluted number of shares. As a second tool, we used a peer comparison method. The former method, i.e. the DCF model, reflects the value of 11 bit in a more proper way than a peer comparison, as it includes future prospects.

## Assumptions

Our estimates are based on the following assumptions:

- **Adjusted valuation method used**
- Risk-free rate of 3.0% and 4% in perpetuity, equity premium of 6%, debt premium of 3% and beta of 1.0x
- Nominal tax rate of 19%
- Terminal value growth rate of 3%
- Project 8 release @ 2021e
- Project 9 release @ 2023e

**Peer group comparison**

	P/E			EV/EBITDA		
	2019E	2020E	2021E	2019E	2020E	2021E
Activision Blizzard Inc	21.1	17.9	15.8	13.7	11.9	11.1
Electronic Arts Inc	26.1	22.9	20.5	17.3	15.4	13.8
Ubisoft Entertainment	26.3	23.5	20.0	9.5	8.3	7.9
Take-Two Interactive Software	20.2	19.5	17.6	14.0	12.9	11.8
Konami	18.3	16.7	15.8	8.6	7.9	7.4
Capcom	20.4	18.0	16.4	12.7	10.9	9.9
Naver Corp	30.4	24.2	21.0	15.7	12.6	10.7
Tencent	32.2	25.4	20.9	23.2	18.8	16.3
Square Enix	24.5	18.2	18.0	10.7	7.8	7.8
Ten Square Games	15.0	13.9	11.6	13.0	12.0	9.7
CD Projekt	57.4	15.3	22.9	33.4	9.8	14.8
<b>Median</b>	<b>24.5</b>	<b>18.2</b>	<b>18.0</b>	<b>13.7</b>	<b>11.9</b>	<b>10.7</b>
<b>11 bit studios</b>	<b>34.6</b>	<b>64.4</b>	<b>9.3</b>	<b>22.1</b>	<b>35.1</b>	<b>5.4</b>
<i>Premium/discount</i>	<i>41%</i>	<i>254%</i>	<i>-48%</i>	<i>61%</i>	<i>195%</i>	<i>-49%</i>
<b>Implied value (PLN/share)</b>	<b>262.2</b>	<b>110.6</b>	<b>759.4</b>	<b>240.5</b>	<b>157.1</b>	<b>696.8</b>

*Source: Bloomberg, Erste Group Research*

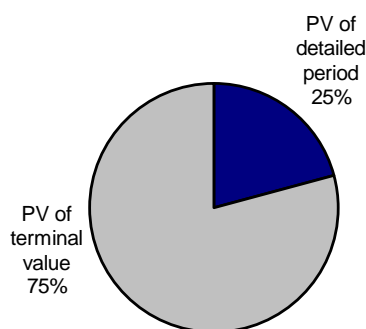
## WACC calculation

	2019e	2020e	2021e	2022e	2023e	Term. value Normalized
Risk free rate	2.4%	2.4%	2.4%	2.4%	2.4%	4.0%
Equity risk premium	6.0%	6.0%	6.0%	6.0%	6.0%	5.7%
Beta	1.0	1.0	1.0	1.0	1.0	1.0
<b>Cost of equity</b>	<b>8.4%</b>	<b>8.4%</b>	<b>8.4%</b>	<b>8.4%</b>	<b>8.4%</b>	<b>9.7%</b>
Cost of debt	4.4%	4.4%	4.4%	4.4%	4.4%	6.0%
Effective tax rate	19.0%	19.0%	19.0%	19.0%	19.0%	19.0%
<b>After-tax cost of debt</b>	<b>3.6%</b>	<b>3.6%</b>	<b>3.6%</b>	<b>3.6%</b>	<b>3.6%</b>	<b>4.9%</b>
Equity weight	99%	99%	99%	99%	99%	99.5%
<b>WACC</b>	<b>8.3%</b>	<b>8.4%</b>	<b>8.4%</b>	<b>8.4%</b>	<b>8.4%</b>	<b>9.7%</b>

## DCF valuation

(PLN mn)	2019e	2020e	2021e	2022e	2023e	Normalized
<i>Sales growth</i>	-4.8%	-10.1%	178.7%	-40.0%	127.3%	3.0%
EBIT	31.9	17.8	125.0	48.1	178.5	138.6
<i>EBIT margin</i>	40.5%	25.1%	63.4%	40.6%	66.3%	50.0%
<i>Tax rate</i>	19.0%	19.0%	19.0%	19.0%	19.0%	19.0%
Taxes on EBIT	-6.1	-3.4	-23.8	-9.1	-33.9	-26.3
<b>NOPLAT</b>	<b>25.9</b>	<b>14.4</b>	<b>101.3</b>	<b>38.9</b>	<b>144.6</b>	<b>112.3</b>
+ Depreciation	5.6	6.6	15.3	12.6	23.8	25.5
<i>Capital expenditures / Depreciation</i>	266.8%	191.1%	98.7%	142.2%	89.6%	100.0%
+/- Change in working capital	6.6	0.3	-4.5	2.8	-5.4	0.1
<i>Chg. working capital / chg. Sales</i>	-165.3%	-3.6%	-3.6%	-3.6%	-3.6%	1.0%
- Capital expenditures	-14.9	-12.7	-15.1	-17.9	-21.4	-25.5
<b>Adjusted free cash flow to the firm</b>	<b>55.1</b>	<b>58.1</b>	<b>61.2</b>	<b>64.5</b>	<b>68.0</b>	<b>70.1</b>
<i>Terminal value growth</i>						3.0%
Terminal value						1 151.2
Discounted free cash flow - Dec 31 2018	50.8	49.5	48.1	46.8	45.5	770.7
<b>Enterprise value - Dec 31 2018</b>	<b>1 011.4</b>					
Minorities	0.0					
Non-operating assets	0.0					
Net debt	-43.6					
Other adjustments	0.0					
<b>Equity value - Dec 31 2018</b>	<b>1 055.0</b>					
Number of shares outstanding (mn)	2.4					
Cost of equity	8.4%					
<b>12M target price per share (PLN)</b>	<b>493.4</b>					
Current share price (PLN)	391.5					
<i>Up/Downside</i>	26.0%					

## Enterprise value breakdown



## Adjusted DCF calculation method

2019e	2020e	2021e	2022e	2023e	
23.2	8.6	97.0	36.4	141.7	FCFF
				306.9	Sum of FCFF
				0.00	Check
55.1	58.1	61.2	64.5	68.0	Adjusted FCFF
				306.9	Sum of FCFF
	3%	3%	3%	3%	growth rate

<b>Income Statement</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019e</b>	<b>2020e</b>	<b>2021e</b>
(IAS, PLN mn, 31/12)	31/12/2016	31/12/2017	31/12/2018	31/12/2019	31/12/2020	31/12/2021
<b>Net sales</b>	<b>27.50</b>	<b>19.50</b>	<b>82.78</b>	<b>78.78</b>	<b>70.80</b>	<b>197.30</b>
Invent. changes + capitalized costs	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total revenues</b>	<b>27.50</b>	<b>19.50</b>	<b>82.78</b>	<b>78.78</b>	<b>70.80</b>	<b>197.30</b>
Other operating revenues	0.00	0.00	0.00	0.00	0.00	0.00
Material costs	-6.90	-6.24	-16.75	-21.14	-22.10	-23.65
Personnel costs	-2.43	-2.17	-12.97	-16.36	-20.51	-29.61
Other operating expenses	-1.47	-1.85	-1.63	-3.75	-3.75	-3.75
<b>EBITDA</b>	<b>16.70</b>	<b>9.24</b>	<b>51.44</b>	<b>37.53</b>	<b>24.45</b>	<b>140.30</b>
Depreciation/amortization	-2.57	-1.71	-4.49	-5.59	-6.65	-15.28
<b>EBIT</b>	<b>14.13</b>	<b>7.52</b>	<b>46.95</b>	<b>31.94</b>	<b>17.80</b>	<b>125.02</b>
Financial result	1.60	-3.23	1.16	0.05	0.34	0.60
Extraordinary result	0.00	0.24	0.00	0.00	0.00	0.00
<b>EBT</b>	<b>15.73</b>	<b>4.53</b>	<b>48.11</b>	<b>31.99</b>	<b>18.14</b>	<b>125.62</b>
Income taxes	-2.80	-0.97	-10.56	-6.08	-3.45	-23.87
Result from discontinued operations	0.00	0.00	0.00	0.00	0.00	0.00
Minorities and cost of hybrid capital	0.00	0.00	0.00	0.00	0.00	0.00
<b>Net result after minorities</b>	<b>12.93</b>	<b>3.56</b>	<b>37.55</b>	<b>25.91</b>	<b>14.70</b>	<b>101.75</b>
<b>Balance Sheet</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019e</b>	<b>2020e</b>	<b>2021e</b>
(IAS, PLN mn, 31/12)						
Intangible assets	7.92	13.07	17.14	22.40	29.26	29.81
Tangible assets	0.78	0.81	18.73	22.80	22.00	21.26
Financial assets	0.79	0.24	0.35	0.35	0.35	0.35
<b>Total fixed assets</b>	<b>9.49</b>	<b>14.12</b>	<b>36.22</b>	<b>45.55</b>	<b>51.61</b>	<b>51.42</b>
Inventories	0.00	0.00	0.00	0.00	0.00	0.00
Receivables and other current assets	7.05	3.30	16.70	12.93	11.84	29.17
Other assets	0.00	0.00	0.00	0.00	0.00	0.00
Cash and cash equivalents	29.11	31.23	56.34	77.80	98.46	194.90
<b>Total current assets</b>	<b>36.16</b>	<b>34.53</b>	<b>73.04</b>	<b>90.74</b>	<b>110.31</b>	<b>224.07</b>
<b>TOTAL ASSETS</b>	<b>45.65</b>	<b>48.65</b>	<b>109.26</b>	<b>136.29</b>	<b>161.91</b>	<b>275.49</b>
<b>Shareholders'equity</b>	<b>42.13</b>	<b>46.22</b>	<b>89.91</b>	<b>115.82</b>	<b>143.96</b>	<b>245.71</b>
<b>Minorities</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Hybrid capital and other reserves</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Pension and other LT personnel accruals</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>LT provisions</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Interest-bearing LT debts	0.00	0.00	12.79	11.04	9.34	8.34
Other LT liabilities	0.44	0.76	0.68	0.68	0.68	0.68
<b>Total long-term liabilities</b>	<b>0.44</b>	<b>0.76</b>	<b>13.47</b>	<b>11.72</b>	<b>10.02</b>	<b>9.02</b>
Interest-bearing ST debts	0.00	0.00	0.00	0.00	0.00	0.00
Other ST liabilities	3.08	1.66	5.88	8.74	7.94	
<b>Total short-term liabilities</b>	<b>3.08</b>	<b>1.66</b>	<b>5.88</b>	<b>8.74</b>	<b>7.94</b>	<b>20.76</b>
<b>TOTAL LIAB. , EQUITY</b>	<b>45.65</b>	<b>48.65</b>	<b>109.26</b>	<b>136.29</b>	<b>161.91</b>	<b>275.49</b>
<b>Cash Flow Statement</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019e</b>	<b>2020e</b>	<b>2021e</b>
(IAS, PLN mn, 31/12)						
Cash flow from operating activities	12.15	8.07	39.05	38.13	21.63	112.52
Cash flow from investing activities	-5.41	-10.03	-55.57	-14.92	-12.71	-15.09
Cash flow from financing activities	-0.60	1.03	12.60	-1.75	11.74	-1.00
<b>CHANGE IN CASH , CASH EQU.</b>	<b>6.14</b>	<b>-0.94</b>	<b>-3.93</b>	<b>21.46</b>	<b>20.66</b>	<b>96.44</b>
<b>Margins &amp; Ratios</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019e</b>	<b>2020e</b>	<b>2021e</b>
Sales growth	17.3%	-29.1%	324.6%	-4.8%	-10.1%	178.7%
EBITDA margin	60.7%	47.4%	62.1%	47.6%	34.5%	71.1%
EBIT margin	51.4%	38.6%	56.7%	40.5%	25.1%	63.4%
Net profit margin	47.0%	18.2%	45.4%	32.9%	20.8%	51.6%
ROE	36.5%	8.1%	55.2%	25.2%	11.3%	52.2%
ROCE	117.8%	41.7%	116.7%	53.5%	27.4%	175.6%
Equity ratio	92.3%	95.0%	82.3%	85.0%	88.9%	89.2%
Net debt	-29.1	-31.2	-43.6	-66.8	-89.1	-186.6
Working capital	33.1	32.9	67.2	82.0	102.4	203.3
Capital employed	13.5	15.8	47.0	49.7	55.5	59.8
Inventory turnover	nm	nm	nm	nm	nm	nm

Source: Company data, Erste Group estimates

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### **Published by:**

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