



Dom Maklerski BDM S.A.

# ARTIFEX MUNDI

## ANALYTICAL REPORT - SUMMARY

In the past few months, the company has consistently exceeded our expectations regarding the monetization of 'Unsolved.' Apart from the impressive revenue growth, the most surprising factor for us has been the shift in the trajectory of marketing expenditures. Through further improvement in KPIs of this application, despite seasonally unfavorable market conditions (high CPI), the company continues to increase user acquisition investments simultaneously maintaining consistent expected returns. Keeping the above in mind, we anticipate that when user acquisition costs begin to decline (likely around end of the 3rd or beginning of the 4th quarter), the potential of the implemented changes in the application should be further unlocked, resulting in its continued dynamic progression of results. Additionally, we would like to point out that the most significant changes regarding 'Unsolved' are still ahead of us. As we indicated in our previous recommendation, the new metagra should prove to be the element that will contribute the most to the improvement of the application's KPIs. We expect to see the initial effects of these changes around 2H'24. The production of the studio's second most important project (a new RPG game) is proceeding according to schedule. A technical soft launch of the game was conducted during 2Q'23, which received positive reviews from testers. We anticipate that this project will make its market debut in 2024. Despite the recent dynamic increase in the stock price, our estimated results for the 2023-24 period imply an attractive multiple valuation for the company (adjusted P/E at the level of 8-10x). Furthermore, the decrease in the risk-free rate also has a positive impact on the valuation. With this in mind, we maintain our BUY recommendation for Artifex Mundi, while simultaneously raising the target price to 22,8 PLN per share, which is 30% above the current market price.

Apart from the impressive revenue growth, the most surprising factor for us has been the shift in the trajectory of marketing expenditures. We would like to note that in recent years, the company has reduced user acquisition costs around April-May, due to rising seasonal CPI, and returned to increasing marketing budgets at the turn of the 3rd and 4th quarter. Currently, despite being in a period of seasonally unfavorable market conditions, the company continues to increase user acquisition investments simultaneously maintaining consistent expected returns. Further improvement of KPIs of this application contributed to such conditions. Part of this improvement can be attributed to the content path and further growth in LTV, but significant changes have also taken place in terms of feature development, mechanics, and game economy optimization. Keeping this in mind, we expect that around the turn of 3Q/4Q'23, due to the seasonal decline in CPI, the impact of the changes made in this application will be even more noticeable in the company's results.

The most significant changes regarding 'Unsolved' are still ahead of us. Work is underway on a new metagame, which should significantly translate into an improvement of the application's KPIs. We assume that regardless of the form of its implementation ('Unsolved 2.0' or an update to the current version), it should have a similar overall economic effect. We anticipate the initial results of these changes around 2H'24.

The RPG studio's most important project is currently progressing according to schedule. A technical soft launch of the game was conducted during 2Q'23, which received positive reviews from testers. We anticipate that the release of this project will take place in 2H'24, hence the first revenues from the game appear in 2024.

We forecast that over the 2023-2024 period, the company will generate 22,0/ 28,1 million PLN in adj. net profit, which translates to an attractive multiple valuation for the company (adjusted P/E at a level of 8-10x).

	2019	2020	2021	2022	2023F	2024F	2025F	2026F
Revenues [mln PLN]	16,7	25,7	39,1	38,5	81,3	98,8	113,2	158,0
EBITDA [mln PLN]	-8,2	17,0	20,3	14,9	27,0	37,0	42,0	60,4
EBITDA adj. [mln PLN]	11,2	19,5	21,5	16,4	28,6	38,6	43,6	62,0
EBIT [mln PLN]	-14,4	10,0	15,3	9,9	21,1	27,9	30,0	46,3
Net income [mln PLN]	-13,7	8,2	13,0	12,1	20,4	26,5	28,8	43,8
Net income adj. [mln PLN]	5,6	10,8	14,2	13,6	22,0	28,1	30,4	45,4
P/E	-	25,4	17,6	19,0	11,2	8,6	8,0	5,2
P/E adj.*	37,1	19,4	16,1	16,9	10,4	8,1	7,5	5,0
EV/EBITDA	-	12,3	11,3	15,4	8,5	6,2	5,5	3,8
EV/EBITDA adj.*	18,8	10,7	10,6	13,9	8,0	5,9	5,2	3,7
DPS	0,0	0,0	0,0	0,0	0,0	0,0	0,6	0,7
DY	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	3,5%	3,8%

\*- adj. for cost of the incentive program

This report has been prepared in compliance with Regulation (EU) No. 596/2014 of the European Parliament and of the Council of 16 April 2014 (on market abuse), Commission Delegated Regulation (EU) 2016/958 and Commission Delegated Regulation (EU) 2017/565. Detailed contents of legal notes is located on the last page of this report. The report has been prepared and made available for distribution by BDM. GPW shall be a copyright holder to this report from the date of its publication. The report can be published and made available without limitation by GPW through any mass communication media as decided by GPW.

This document is a summary of a full version of the report prepared in Polish. In case of any disputes the Polish version shall prevail.

The report was prepared by Dom Maklerski BDM at the request of the WSE as part of the Exchange's Analytical Coverage Support Programme

## BUY

(INITIAL REPORT)

### TARGET PRICE 22,8 PLN

30 AUGUST 2023, 08:50 CEST

Target price [PLN]	22,8
Price upside/downside	30%
Cost of capital	15,7%
Price [PLN]	17,6
Market cap [mln PLN]	209,4
Shares mln. szt.]	11,9
Max. price 6M [PLN]	17,7
Min. price 6m [PLN]	8,5
Rate of return 3M	53%
Rate of return 6M	106%
Rate of return 9M	200%
Shareholders (% of votes):	
Shareholders' agreement	21,5%
Warsaw Equity ASI	13,1%
Nationale-Nederlanden OFE	9,9%
TFI Allianz Polska	6,6%
Robert Mikuszewski	5,3%
G5 Entertainment AB	5,2%
Others	38,4%

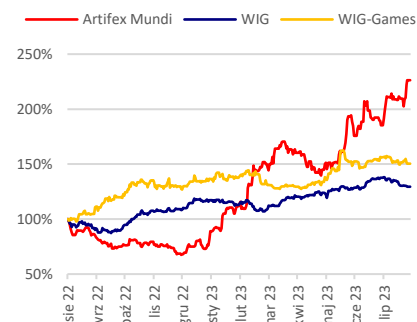
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**Valuation summary**

	Share	Valuation
DCF valuation	70%	20,3
Peer valuation	30%	28,7
<b>Target price [PLN]</b>		<b>22,8</b>

Source: BDM S.A.

**DCF valuation**

	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F	2032F
Revenues [mln PLN]	81,3	98,8	113,2	158,0	166,7	175,5	184,7	194,3	204,2	214,3
EBIT [mln PLN]	21,1	27,9	30,0	46,3	49,8	51,7	53,5	55,4	57,3	59,1
Tax rate	10,3%	10,0%	10,0%	10,0%	10,0%	10,0%	10,0%	10,0%	10,0%	10,0%
Tax on EBIT [mln PLN]	2,2	2,8	3,0	4,6	5,0	5,2	5,4	5,5	5,7	5,9
NOPLAT [mln PLN]	18,9	25,1	27,0	41,7	44,8	46,5	48,2	49,8	51,5	53,2
Amortization [mln PLN]	1,0	1,0	1,0	1,1	1,1	1,1	1,1	1,1	1,2	1,2
CAPEX [mln PLN]	-0,9	-1,2	-1,2	-1,3	-1,3	-1,3	-1,3	-1,3	-1,4	-1,4
Purchase of investment [mln PLN]	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Working capital movement [mln PLN]	-10,5	-12,3	-8,3	-6,2	-7,1	-6,3	-5,8	-5,4	-5,4	-5,8
FCF [mln PLN]	8,5	12,6	18,5	35,3	37,5	40,0	42,2	44,2	45,9	47,1
DFCF [mln PLN]	8,4	10,8	13,7	22,5	20,7	19,1	17,4	15,8	14,2	12,6
Total DFCF [mln PLN]	155,1									
Terminal value [mln PLN]	332,2									
Discounted terminal value [mln PLN]	88,6									
Enterprise value [mln PLN]	243,7									
Net debt 2022 [mln PLN]	-20,5									
<b>Equity value [mln PLN]</b>	<b>264,2</b>									
Number of shares [mln]	13,0									
<b>Value per share [PLN]</b>	<b>20,3</b>									

Terminal growth rate: 3,0%

**WACC calculation**

	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F	2032F
Risk-free rate	5,5%	5,5%	5,5%	5,5%	5,5%	5,5%	5,5%	5,5%	5,5%	5,5%
Risk premium	6,5%	6,5%	6,5%	6,5%	6,5%	6,5%	6,5%	6,5%	6,5%	6,5%
Beta	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10
Credit premium	1,5%	1,5%	1,5%	1,5%	1,5%	1,5%	1,5%	1,5%	1,5%	1,5%
Cost of equity	15,7%	15,7%	15,7%	15,7%	15,7%	15,7%	15,7%	15,7%	15,7%	15,7%
Contribution of equity	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%
Cost of debt after tax	6,3%	6,3%	6,3%	6,3%	6,3%	6,3%	6,3%	6,3%	6,3%	6,3%
Contribution of debt	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
<b>WACC</b>	<b>15,7%</b>	<b>15,7%</b>	<b>15,7%</b>	<b>15,7%</b>	<b>15,7%</b>	<b>15,7%</b>	<b>15,7%</b>	<b>15,7%</b>	<b>15,7%</b>	<b>15,7%</b>

Source: BDM S.A.

**Sensitivity analysis**

beta	Terminal growth rate			Risk premium	Terminal growth rate			Risk premium	Beta		
	2,5%	3,0%	3,5%		2,5%	3,0%	3,5%		1,0	1,1	1,2
1,0	21,0	21,4	21,8	5,5%	21,8	22,2	22,6	5,5%	22,6	22,2	21,8
1,1	20,0	20,3	20,6	6,5%	20,0	20,3	20,6	6,5%	20,7	20,3	20,0
1,2	19,1	19,3	19,6	7,5%	18,5	18,7	19,0	7,5%	19,1	18,7	18,4

Source: BDM S.A.

**Peer valuation – Polish game developers**

	P/E			EV/EBITDA		
	2023F	2024F	2025F	2023F	2024F	2025F
11 BIT STUDIOS	55,8	8,8	10,3	60,5	6,2	6,7
BIG CHEESE STUDIO	8,3	5,7	-	6,3	3,9	-
BOOMBIT	15,3	13,1	10,5	5,6	3,5	2,6
CD PROJEKT SA	37,7	62,3	78,6	24,6	41,8	44,5
CREEPLY JAR	19,4	8,1	8,9	14,9	5,6	5,5
HUUUGE GAMES	7,6	8,6	8,4	3,3	3,3	3,1
PCF GROUP	71,3	112,2	-	-	-	-
PLAYWAY	15,0	12,8	11,5	11,3	9,7	8,7
TEN SQUARE GAMES	12,8	10,1	10,2	7,9	5,9	6,1
<b>Median</b>	<b>15,3</b>	<b>10,1</b>	<b>10,3</b>	<b>9,6</b>	<b>5,8</b>	<b>6,1</b>
Artifex Mundi*	10,4	8,1	7,5	8,0	5,9	5,2
Premium/discount	-31,9%	-19,4%	-26,8%	-16,4%	3,1%	-14,4%
<b>Valuation [PLN/share]</b>	<b>25,9</b>	<b>21,8</b>	<b>24,0</b>	<b>22,2</b>	<b>19,3</b>	<b>23,7</b>
Year's contribution	33%	33%	33%	33%	33%	33%
<b>Average valuation [PLN/share]</b>	<b>23,9</b>			<b>21,7</b>		
Multiple's contribution	50%			50%		
<b>Value per share [PLN]</b>	<b>22,8</b>					

Source: BDM S.A., Bloomberg; \*-adj. for cost of the incentive program

**Peer valuation – global game developers**

	P/E			EV/EBITDA		
	2023P	2024P	2025P	2023P	2024P	2025P
PLAYTIKA HOLDING CORP	11,9	10,7	10,0	5,8	5,2	4,4
G5 ENTERTAINMENT AB	9,4	9,1	8,5	3,8	3,3	2,9
ROVIO ENTERTAINMENT OY	25,4	21,9	20,3	11,4	9,8	9,1
TENCENT HOLDINGS LTD	21,2	18,1	15,9	15,3	12,8	10,8
NETMARBLE CORP	-	37,4	33,4	26,3	15,3	11,8
SCIPLAY CORP-CLASS A	123,1	106,3	44,6	11,3	10,1	9,0
STILLFRONT GROUP AB	9,6	6,8	5,9	4,9	4,3	3,8
ROBLOX	-	-	-	55,4	35,8	26,0
NEXON	21,0	19,8	18,0	13,1	10,8	9,5
<b>Median</b>	<b>21,0</b>	<b>18,9</b>	<b>17,0</b>	<b>11,4</b>	<b>10,1</b>	<b>9,1</b>
Artifex Mundi*	10,4	8,1	7,5	8,0	5,9	5,2
Premium/discount	-50,5%	-56,9%	-55,6%	-29,4%	-41,4%	-42,1%
<b>Valuation [PLN/share]</b>	<b>35,5</b>	<b>40,9</b>	<b>39,6</b>	<b>26,1</b>	<b>32,2</b>	<b>33,5</b>
Year's contribution	33%	33%	33%	33%	33%	33%
<b>Average valuation [PLN/share]</b>	<b>38,7</b>			<b>30,6</b>		
Multiple's contribution	50%			50%		
<b>Value per share [PLN]</b>	<b>34,6</b>					

Source: BDM S.A., Bloomberg; \*-adj. for cost of the incentive program

**Main risks:** 1) Risk associated with Apple's new privacy policy and planned changes in Google's policy; 2) Risk of diverse and unpredictable demand for the company's individual products; 3) The risk related to possible delays in game production; 4) Risk related to the loss of key employees; 5) Risk related to difficulties in acquiring experienced employees; 6) Risk related to the possible failure of IT systems, telecommunications infrastructure and servers; 7) Risk related to the competitive environment; 8) Risk related to the development of new technologies and industry 9) Risk of volatility of foreign exchange rates.

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**Ratings and price targets history:**

rating	price target	previous rating	previous target price	report date	report date (hour)	price	WIG
<b>buy *</b>	<b>22,8</b>	<b>buy</b>	<b>14,1</b>	<b>30.08.2023</b>	<b>08:50 CEST</b>	<b>17,6</b>	<b>68 795</b>
buy	14,1	buy	18,0	13.03.2023	12:40 CET	10,4	58 050
buy	18,0	buy	22,5	18.01.2022	07:00 CEST	9,94	72 250
Buy*	22,5	buy	13,9	16.04.2021	07:00 CEST	17,8	60 280
Buy*	13,9	buy	13,6	19.10.2021	07:00 CEST	9,00	48 210
Buy*	13,6	-	-	10.08.2021	07:00 CEST	9,12	51 732

\* The report was prepared by Dom Maklerski BDM at the request of the WSE as part of the Exchange's Analytical Coverage Support Programme

**Explanations of terminology:**

EBIT - earnings before interest and tax  
 EBITDA — earnings before interest, taxes, depreciation, and amortization  
 Net debt – interest bearing debt minus cash and equivalents  
 WACC - weighted average cost of capital  
 CAGR - cumulative average annual growth  
 EPS - earnings per share  
 DPS - dividend per share  
 CEPS - net profit plus depreciation per share  
 EV – market capitalization plus interest bearing debt minus cash and equivalents  
 EV/S – market capitalization / sales  
 EV/EBITDA – EV / sales  
 P/EBIT – market capitalization / EBIT  
 MC/S – market capitalization / sales  
 P/E – market capitalization / net profit  
 P/BV – market capitalization / book value  
 P/CE - market capitalization / net profit plus depreciation  
 ROE – net profit / equity  
 ROA - net income / assets  
 Gross margin - gross profit on sales / sales  
 EBITDA margin – EBITDA / sales  
 EBIT margin – EBIT / sales  
 Net margin – net profit / sales

**Explanation of ratings:**

Buy – we believe that the security will reach the target price in the recommended period, which significantly exceeds the current market price (at least + 15%);  
 Accumulate – we believe that the security will reach the target price in the recommended period, which exceeds the current market price (in the range of +5 to + 14.99%);  
 Hold – we believe that a security in the recommended period will fluctuate around the target price, which is close to the current market price (in the range from -4.99% to + 4.99%);  
 Reduce – we believe that the security will reach the target price in the recommended period, which is lower than the market price (range of decline from 5% to 14.99%);  
 Sell – we believe that a security in the recommended period will reach the target price, which is significantly lower than the market price (suggested erosion of the value exceeds 15%).  
 Target price – the theoretical price which, in our opinion, should reach a security in the recommended period; This price is the result of the company's value (eg based on DCF, comparative and other valuations), market conditions and the industry as well as other factors subjectively considered by the analyst.  
 Recommendations made by BDM are binding for 12 months from the issue date or until the target level is reached, unless they are updated during this period of time.

**The strengths and weaknesses of the valuation methods used in the report:**

DCF – the most popular and the most effective of the valuation methods - it is based on the discounting of future cash flows generated by the company. The disadvantage is the high sensitivity to changes in the basic financial parameters forecast in the model (interest rates, exchange rates, profits, residual value).  
 DDM – the method is based on discounting future cash flows from dividends. The advantage of the valuation is the inclusion of future financial results and cash flows from dividends. The main disadvantages are the high sensitivity to changes in the basic financial parameters forecasted in the model (capital cost, profits, residual value) and the risk of changing the dividend payment policy.  
 Comparative – the method is based on current and forecasted market multipliers of companies from the industry or related industries, which better than DCF shows the current market situation. The main disadvantages are the difficulty in choosing the right companies for comparison, the risk of ineffective valuation of companies compared at a given moment, as well as high volatility (along with price fluctuations).

Distribution of BDM's recommendations in 3Q'23*:		, distribution of BDM's recommendations for the companies which BDM has supplied with investment banking services within the last 12 months	
numbers	%	numbers	%
Buy	5 63%	0	0%
Accumulate	2 25%	0	0%
Hold	0 0%	0	0%
Reduce	1 13%	0	0%
Sell	0 0%	0	0%

\* detailed list of all analytical reports (recommendations) published by BDM during the last 12 months is included at <https://www.bdm.pl/analizy-i-informacje/analizy/historia-rekomendacji>

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The report constitutes an investment research within the meaning of art. 36 §1 of Commission Delegated Regulation (EU) 2017/565.

The report has been prepared by Dom Maklerski BDM S.A. (hereinafter BDM S.A.) within the Exchange Analytical Coverage Support Programme (<https://www.gpw.pl/gpwpa>). BDM S.A. is a party to the „Agreement on the provision of analytical report services” concluded with the Warsaw Stock Exchange Company („GPW”), on the basis of which BDM provides services of analytical coverage of the Issuer for the term of the Agreement. Under the agreement BDM obtains remuneration from GPW. All materials prepared by BDM within the framework of co-operation are available at <https://www.bdm.pl/program-wsparcia-pokrycia-analitycznego-gpw>.

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An investor should be aware that each investment decision in the capital market is subject to numerous risks that finally can result in a financial loss suffered by him. The return rate on individual investments can fluctuate depending on various factors beyond the control of the investor. Therefore, a customer who makes a single investment decision should not only check currency and correctness of individual assumptions made by the analyst in the report but also to have an independent assessment and own analysis (also based on scenarios other than the ones presented in the report) taking into consideration the level of acceptable risk. When deciding on activity on the capital market the Investor should take into consideration the fact that the investment portfolio structure (diversification of investment through possessing more than one financial instrument) can reduce risk exposure to an individual instrument bringing a negative rate of return in a given period. At the same time, however, it can lead to limitation of a positive rate of return the investor could achieve in the case of a single financial instrument in a given time period. The investor should be aware that the investment portfolio structure and any investment strategy for the stock market do not guarantee the achievement of a positive rate of return and do not protect him against final loss.

For the first time this report has been made available to the public on 30.08.2023 (08:50 CEST). Date of preparing the report is the date of making it accessible. Before the recommendation was made accessible, information included in it had been confidential.

The prices of the financial instruments listed in the document have been taken from the real-time pricing as provided by Bloomberg. Data concerning financial instrument prices used in the report could be loaded to 24 hours before the moment of completing the report.

Detailed list of all analytical reports (recommendations) published by BDM during the last 12 months is included in a cyclical “Monthly Report”.

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