Mabion

Poland, Biotechnology

Reuters: MABP.WA Bloomberg: MAB PW

08:00, 28 March 2017

Lucrative market at its fingertips

Initiation of coverage. BUY. TP set at PLN142

We initiate coverage of Mabion, developer of biosimilar drugs, with a BUY rating and 12-month Target Price of PLN142 (42% potential upside). Mabion is one step away from completing important milestone in the development of its first biosimilar drug – Mabion CD20. The final, III phase of clinical trials should end in late 2017E. The positive outcome of trials, would significantly reduce the risk of failure and, therefore, should further boost value of Mabion CD20 project and the overall company. First drug shipments would under this scenario, be possible in 2019E. We expect that over ten years Mabion CD20 could reach sales equal to 10% of the original drug (US$1.9bn in Europe alone in 2016). Moreover, Mabion has recently secured its first partnership contract with big pharma company Mylan. The first successful introductions of monoclonal antibody biosimilars and limited competition among rituximab biosimilars further support our positive view on the company.

Investment story. Mabion was founded with a goal to develop biosimilar drugs from scratch. Unlike generic drugs, development of biosimilars requires a long, complex and expensive registration process, but, on the other hand, creates high entry barriers for potential new players. Mabion wants to take advantage of patent expiration of some blockbuster biologic drugs. The company's most advanced project is called Mabion CD20, a biosimilar to Roche's Rituxan/MabThera, which in 2016 generated over US$7bn in sales. Mabion CD20 is currently in III phase of clinical trials. We expect the end of the clinical trials in 4Q17 and the first drug shipments in 2019E.

Share issue. Mabion needs to raise its production capacity in Konstantynow Lodzki to meet demand on the EU market. Expansion of its production capacity is one of the main targets of the upcoming share issue. EGM in Feb'17 authorised the management to issue up to 4.5mn new shares. The minimum price was set at PLN84/share, which implies a PLN378mn share issue. Moreover, funds raised in the share placement will likely cover costs of the Mabion CD20 clinical trials phase III and registration in EMA and FDA.

Advantages in production process. Mabion implemented two innovations in its production technology that should provide it with flexibility and a cost advantage: 1) an orbital shaker that speeds up the cultivation process compared with the traditional bioreactor and 2) disposables technology, which means that the production process takes place without any contact between the cell culture and the device..

Financials. We assume the market launch of Mabion CD20 will take place in 2019E in the EU and 2020E in the US. Sales should peak at 10% of rituximab sales in US and EU and 2.5% in other countries. Prior to that, the company should recognise its first revenues from partnering contracts with Mylan and a licensing contract in the US, which we expect to be signed once the phase III is complete. Our assumption is that the licensing agreement will have a 50-50 revenue split. We applied 65.4% probability of success of phase III clinical trials and 89.7% success rate for approval. We assume the launch costs of Mabion CD20 at US$100mn or PLN400mn. This includes costs of phase III clinical trials, approval in EMA and FDA, and expansion of production capacity at facility in Konstantynow Lodzki..

12M TP for Mabion set at PLN142, based on a DCF model. The TP implies a 42% upside potential. DDM model yields a valuation of PLN136.3 per share.

Mabion: Financial summary*

PLNmn	2015	2016E	2017E	2018E	2019E	2020E
Revenues	2.7	0.0	40.0	171.0	108.6	253.1
EBITDA	-0.3	-1.7	-4.9	126.6	66.4	186.2
EBIT	-4.1	-6.5	-10.0	121.0	58.6	176.3
Net profit	-4.4	-6.5	-9.3	96.0	45.8	141.8
P/E (x)	n.a.	n.a.	n.a.	12.3	25.7	8.3
EV/EBITDA (x)	n.a.	n.a.	n.a.	9.5	18.0	5.9

*Source: Company data, BZ WBK Brokerage Research, *financial forecasts assuming 100% success rate of Mabion CD20*

Recommendation	BUY
Portfolio weighting	—

Price (PLN, 24 March 2017)	100.0
Target price (PLN, 12M)	142.0
Market cap. (PLNmn)	1,180
Free float (%)	44.4
Number of shares (mn)	11.8
Average daily turnover 3M (shares)	12.0k
EURPLN	4.27
USDPLN	3.95

The chart measures performance against the WIG index. On 03/24/2017, the WIG index closed at 59,070.

Main shareholders	% of shares
Twiti Investments	21.3
Polfarmex	12.2
Glatton	8.5
Celon Pharma	5.3
Amathus mutual fund	8.4
Generali pension fund	9.3

Company description

Producer of biosimilar drugs.

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Investment summary

Mabion is a producer of biosimilar drugs.

Mabion was founded in 2007 by four Polish drug companies: Celon Pharma, Polfarmex, Instytut Biotechnologii Surowic i Szczepionek BIOMED and Genexo; two biotech consulting companies Bio-Centrum and Bio-Tech Consulting and the company's present CEO Artur Chabowski. The founders decided to work together on this project and set-up a biotechnology company that will develop biologic and biosimilar drugs, later sold on a global scale.

Biologic drugs on a patent cliff.

Patents for several biologic blockbuster drugs will expire in the next few years. The arrival of biosimilars, the biologic equivalent of chemical generics, will have an impact on the current biopharmaceutical market. The registration process is long and expensive, it requires pre-clinical and clinical trials before getting the approval to be sold in the US or on the EU, the two largest drug markets.

Mabion CD20 is the most advanced drug in the pipeline.

Mabion CD20 is a biosimilar to Roche's Rituxan/MabThera.

Mabion CD20 is the most advanced project in Mabion's portfolio. It is a rituximab biosimilar drug that is currently in its third phase of clinical trials. The end of the clinical trials is scheduled for 4Q17. If the outcome of the clinical trials is positive, one more step would only remain, namely the drug's registration with the Food and Drug Agency (FDA) in the US and European Medicines Agency (EMA) in Europe. These registrations are obligatory if the product is to be launched on these key markets that generate over 80% of the original drug's revenues.

Limited competition for rituximab biosimilars.

Mabion faces several competitors on the rituximab biosimilar market. Celltrion and Sandoz are clearly ahead of Mabion. Mabion is at the same stage of development as Pfizer and Amgen (with both in phase III of clinical trials), but due to absence of detailed information it is difficult to estimate when the trials are scheduled to end. Meanwhile, some major competitors suspended their rituximab biosimilar R&D programme, including Boehringer Ingelheim, Merck, Samsung Bioepis, and Teva.

Innovative biosimilars production technology.

Mabion implemented two innovations in its production technology that should give Mabion flexibility and a cost advantage – 1) an orbital shaker that accelerates the cultivation process compared with the traditional bioreactor and 2) disposables technology, which means that the production process takes place without any contact between the cell culture and device.

Production capacity expansion.

Share issue plans.

Mabion's production facility is located in Konstantynow Lodzki's Special Economic Zone. The company has one 2 x 2,500 litre production lines. Mabion wants to expand its plant by adding several new lines to have sufficient production capacity to meet demand on the EU market. Expansion of its production capacity is one of the company's main targets of the upcoming share issue. EGM authorised the management to issue up to 4.5mn new shares. The minimum price was set at PLN84/share, which puts the share issue value at PLN378mn. Moreover, inflows from the share issue will likely cover the costs of Mabion CD20 clinical trials (phase III) and its registration process with EMA and FDA.

DCF valuation: PLN142
DDM valuation: PLN136.3

Based on our DCF valuation, we have set the 12-month Target Price at PLN142.0 for Mabion – a 42% upside against the current share price. DDM model yields a valuation of PLN136.3 per share.

Valuation

DCF valuation

In keeping with BZ WBK Brokerage methodology, DCF is our primary valuation tool. We have based our DCF valuation on the following assumptions:

- **Sales:** In our model, we assume sales as well as financial results only come from Mabion CD20 sales. It is the most advanced product in the company's portfolio, while its other projects are in early stages of development and have a low chance of success. We assume the company will recognise milestones starting from 2017E (EU). In 2018E we expect the company to sign partnering contract for the US market. We assume that the start of the market launch of Mabion CD20 will take place in 2019E in the EU and 2020E in the US. We also assume that the drug's sales will peak at 10% of rituximab sales in the US and the EU, and 2.5% in other countries (higher competition on lower entry barriers). We expect sales to peak within 10 years following the launch. Our assumption is that the licensing agreement will be a 50-50 revenue split, the same for all markets. In our model, we assume the USDPLN rate at 4.00.
- **Margins:** In our model we applied the operating margin at 35%, which is the average EBIT margin for Roche (developer of the original rituximab drug) over the last couple of years in its drug business unit.
- **Success rates:** We applied a 65.4% probability of success of phase III clinical trials and an 89.7% success rate for the drug's approval (rates for oncology drugs from '*Valuation in Life Sciences'* by B. Bogdan and R. Villinger).
- **Costs:** We assume that the launch costs of Mabion CD20 will settle at US$100mn or PLN400mn. This includes costs of the phase III clinical trials, approval from EMA and FDA, and expansion of the company's production capacity in the Konstantynow Lodzki facility.
- **WACC:** We have assumed an RFR of 3.7%, an ERP of 5.0%, a debt risk premium of 1.0% and an unlevered beta of 1.5. Overall, we have arrived at a WACC level of 11.0% in our forecast period and in terminal value calculation.

Fig. 1. Mabion: Key underlying assumptions

USDmn	2014	2015	2016	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E
Rituximab sales US	3,641	3,909	3,970	4,009	4,049	4,090	4,131	4,172	4,214	4,256	4,298	4,341	4,385
Target market share US				10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Peak sales US				401	405	409	413	417	421	426	430	434	438
Sales curve							5%	19%	36%	51%	65%	75%	84%
Mabion CD20 revenues US							**21**	**79**	**152**	**217**	**279**	**326**	**368**
US milestones					**34**	**17**	**28**	**75**					
Rituximab sales EU	2,200	1,890	1,907	1,936	1,965	1,994	2,024	2,055	2,085	2,117	2,148	2,181	2,213
Target market share EU				10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Peak sales EU				194	196	199	202	205	209	212	215	218	221
Sales curve						5%	19%	36%	51%	65%	75%	84%	91%
Mabion CD20 revenues EU						**10**	**38**	**74**	**106**	**138**	**161**	**183**	**201**
EU milestones				**10**	**5**	**8**	**22**						
Rituximab sales ROW	1,695	1,525	1,533	1,563	1,595	1,626	1,659	1,692	1,726	1,760	1,796	1,832	1,868
Target market share ROW				2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
Peak sales ROW				39	40	41	41	42	43	44	45	46	47
Sales curve							5%	19%	36%	51%	65%	75%	84%
Mabion CD20 revenues ROW							**2**	**8**	**16**	**22**	**29**	**34**	**39**
ROW milestones					**3**	**2**	**3**	**7**					
Total revenues						**10**	**61**	**161**	**274**	**377**	**470**	**543**	**609**
Total milestones				**10**	**43**	**27**	**53**	**82**					

Source: BZ WBK Brokerage Research

Our DCF model indicates Mabion's 12-month Target Price of PLN142.0.

Fig. 2. Mabion: WACC calculation

Risk-free rate (10-yr Polish government bonds)	3.7%
Unlevered beta	1.5
Equity risk premium	5.0%
Cost of equity	**12.5%**
Risk-free rate	3.7%
Debt risk premium	1.0%
Tax rate	19%
After tax cost of debt	**3.8%**
%D	17%
%E	83%
WACC	**11.0%**

Source: Company data, BZ WBK Brokerage Research

Fig. 3. Mabion: DCF assumptions

Launch costs	USD100mn
Operating margin	35.0%
License fee	50.0%
Phase 3 success rate	65.4%
Approval success rate	89.7%

Source: BZ WBK Brokerage Research

Fig. 4. Mabion: DCF valuation

PLNmn	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E
Phase	**Phase 3**	**Approval**	**Approval**	**Market**	**Market**	**Market**	**Market**	**Market**	**Market**	**Market**
Sales	0.0	0.0	0.0	41.3	183.3	399.0	618.2	823.7	994.2	1,138.7
Milestones	40.0	171.0	108.6	211.8	328.1	0.0	0.0	0.0	0.0	0.0
Opex	0.0	0.0	0.0	-26.8	-119.2	-259.4	-401.8	-535.4	-646.2	-740.2
Launch costs	-100.0	-100.0	-100.0	-100.0	0.0	0.0	0.0	0.0	0.0	0.0
Success rate	100%	65%	100%	90%	100%	100%	100%	100%	100%	100%
Probability	100%	100%	65%	65%	59%	59%	59%	59%	59%	59%
Risk adjusted FCF	**-60.0**	**71.0**	**5.6**	**82.6**	**230.1**	**81.9**	**126.9**	**169.1**	**204.1**	**233.8**
WACC (2017-26)	11.0%									
PV FCF 2017-26	540									
Terminal growth	2.0%									
Terminal Value (TV)	2,592									
PV TV	897									
Total EV	**1,437**									
Net debt	-20.0									
Equity value	**1,457**									
Number of shares (mn)	11.8									
Value per share (PLN, 1 Jan 2017)	**123.4**									
Month	4									
Current value per share (PLN)	**128.0**									
12-month target price (PLN)	**142.0**									

Source: BZ WBK Brokerage Research

DDM valuation

Fig. 5. Mabion: DDM valuation

PLN	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E
DPS	0.00	0.00	0.00	0.00	5.38	6.79	10.53	13.98	16.86	19.31
Pay-out ratio	0%	0%	0%	0%	20%	70%	70%	70%	70%	70%
Discount factor	0.90	0.81	0.73	0.65	0.59	0.53	0.48	0.43	0.38	0.35
NPV of 2017-26E (PLN/share)	**30.9**									
Terminal value (TV)	219.5									
PV TV	**77.5**									
PV cash	**14.5**									
Total NPV per share	**122.9**									
12-month target price	**136.3**									

Source: BZ WBK Brokerage Research

Valuation summary

Two different approaches to the valuation of Mabion (DCF and DDM) yield a price range of PLN136.3 – PLN142.0 However, since DCF remains our primary valuation tool, we are setting the Target Price for Mabion at PLN142.0.

Fig. 6. Mabion: Valuation summary

	Implied equity value (PLN per share)
DDM	**136.3**
DCF model [12-month TP]	**142.0**

Source: BZ WBK Brokerage Research

Sensitivity analysis

In our view, the company is best tested by looking at its sensitivity factors. Below we present a valuation matrix dependent on RFR and terminal growth rates.

Fig. 7. Mabion: Valuation sensitivity matrix, PLN

Terminal growth rate	RFR 3.0%	3.5%	3.7%	4.0%	4.5%
0.5%	140.1	131.8	128.6	124.2	117.3
1.0%	145.0	136.0	132.7	127.9	120.6
1.5%	150.4	140.7	137.1	132.0	124.2
2.0%	156.4	145.9	**142.0**	136.5	128.1
2.5%	163.1	151.7	147.5	141.5	132.5
3.0%	170.8	158.2	153.6	147.1	137.4
3.5%	179.6	165.6	160.6	153.5	142.8

Source: BZ WBK Brokerage Research

Fig. 8. Mabion: Valuation sensitivity matrix, percentage change

Terminal growth rate	RFR 3.0%	3.5%	3.7%	4.0%	4.5%
0.5%	-1.3%	-7.2%	-9.4%	-12.5%	-17.4%
1.0%	2.1%	-4.2%	-6.6%	-9.9%	-15.1%
1.5%	5.9%	-0.9%	-3.5%	-7.0%	-12.5%
2.0%	10.1%	2.7%	0.0%	-3.9%	-9.8%
2.5%	14.9%	6.8%	3.9%	-0.3%	-6.7%
3.0%	20.3%	11.4%	8.2%	3.6%	-3.3%
3.5%	26.5%	16.6%	13.1%	8.1%	0.6%

Source: BZ WBK Brokerage Research

Mabion – company profile

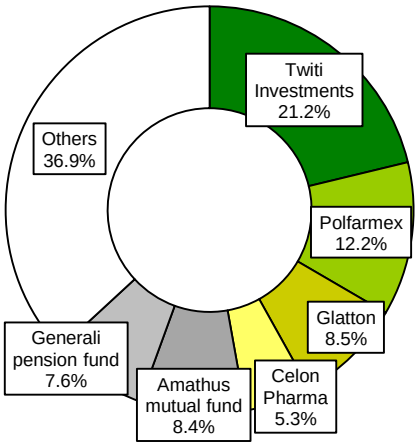
Brief overview

Mabion was founded in 2007 by four Polish drug companies: Celon Pharma, Polfarmex, Instytut Biotechnologii Surowic i Szczepionek BIOMED and Genexo; two biotech consulting companies Bio-Centrum and Bio-Tech Consulting and the company's present CEO Artur Chabowski. The founders united to set-up a biotechnology company that will develop biologic and biosimilar drugs, later sold on a global scale. Its particular aim from the very beginning was to enter a new lucrative market but with large entry barriers – monoclonal antibody biosimilar drugs that emerge once the parent protection for original biologic drug expires. The company's long-term goal is to have a portfolio of biosimilars and also develop original drugs.

Shareholders

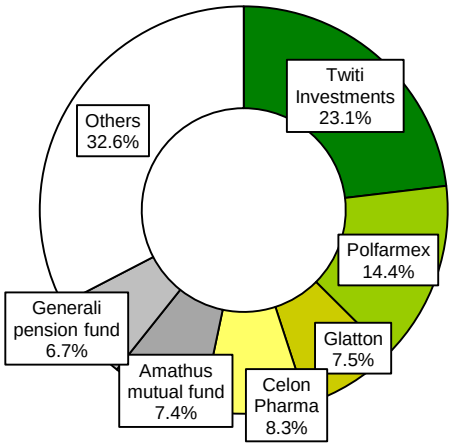
Mabion has a very diversified shareholder structure. The company's six founders and the current management hold the majority stake. The largest single shareholder is Twiti Investments (21.2% stake) after Genexo transferred its stake to this entity. Mabion's former CEO Maciej Wieczorek holds 13.8% stake through Celon Pharma and Glatton. Another founder Polfarmex holds 12.2% stake. Among institutional investors, Generali pension fund holds 7.6% stake.

Fig. 9. Mabion: shareholder structure



Source: Company data, BZ WBK Brokerage Research

Fig. 10. Mabion: share of votes



Source: Company data, BZ WBK Brokerage Research

Mabion portfolio

Mabion's portfolio consists of five biosimilar drugs that are under development, one of which is an external project of Celon Pharma. Mabion CD20 is the most advanced project. It is a rituximab biosimilar drug that is currently in its third phase of clinical trials. The end of the clinical trials is scheduled for later this year. If the outcome of the clinical trials is positive, only the drug's registration with the Food and Drug Agency (FDA) in the US and European Medicines Agency (EMA) in Europe would remain. Those

registrations are obligatory if the product is to be launched on the key markets that generate over 80% of the original drug's revenues.

MabionHER2 (Herceptin biosimilar) was the second most advanced project next to Mabion CD20, but when the company decided to focus 100% on the development of Mabion CD20, the development process of HER2 was suspended. Like the remaining other three biosimilars, it is currently in its pre-clinical phase. Once Mabion CD20 is launched, the company will decide which project to pick next as a candidate for clinical trials.

In our view, it is even possible that Mabion will pick biosimilars that are not being currently developed. The decision will depend on the potential market size and competitors. While in the CD20 case Mabion is among the five most advanced companies. The launch of CD20 could rank it third, shortly behind Celltrion's and Novartis' biosimilars. As far as the HER2 and VEGF projects are concerned, the competitors are much more advanced in their projects with several biosimilars already in phase III.

Fig. 11. Mabion: biosimilars in the pipeline

Project (product)	API	Original drug	Major indication	Current status
Mabion CD20	Rituximab	Rituxan/MabThera (Roche)	Non-Hodgkin's lymphoma	Phase III clinical trials
MabionHER2	Trastuzumab	Herceptin (Roche)	Breast cancer	Pre-clinical trials
MabionEGFR	Cetuximab	Erbitux (Amgen)	Colon cancer	Pre-clinical trials
MabionVEGF	Bevacizumab	Avastin (Roche)	Colon cancer	Pre-clinical trials
MabionVEGF_Fab*	Ranimizumab	Lucentis (Roche)	Age-related macular degeneration	Pre-clinical trials

*Source: Company data, BZ WBK Brokerage Research, *external project for Celon Pharma*

Moreover, apart from the biosimilars, the company has several externally outsourced R&D projects: anti-ANGPTL4 (early stage; lowering of the level of triglycerides), protease for double cutting technology and most advanced cell platform for targeted and specific introduction of cDNA re-combined protein in the host's genome.

Deal with Mylan on Mabion CD20

Mabion has its first commercialisation contract for Mabion CD20. It was signed in November 2016 with a big US pharma company, Mylan. It gives Mylan exclusive rights to sell Mabion's biosimilar of Rituximab/MabThera in all EU countries and the non-EU Balkan states. Mylan will also support Mabion in the EMA approval process. The deal consists of three elements: 1) US$10mn up-front payment of US$10mn, 2) milestones for a total of US$35mn (for filing and approval of marketing authorisations and commercial launch in key countries), and 3) royalties based on annual net sales of Mabion CD20. Mabion will manufacture the product in its facility in Konstantynow Lodzki.

Fig. 12. Mabion – Mylan deal: basic parameters

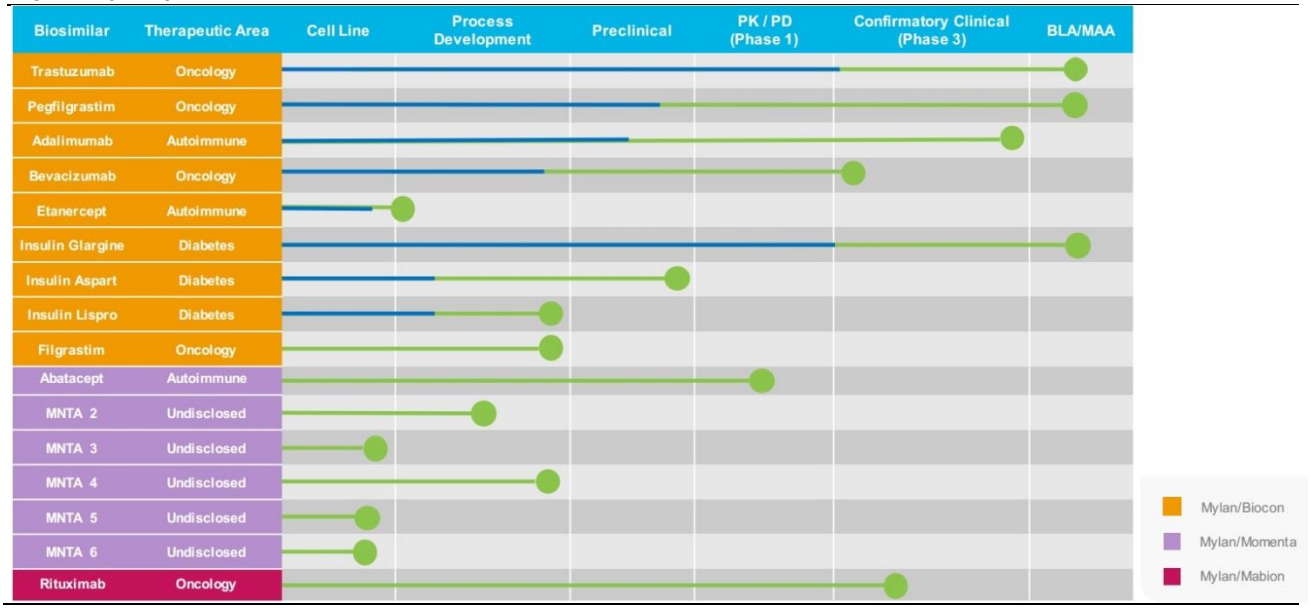
Parameter	Value
Up-front payment	US$10mn
Milestones	US$35mn
Royalties	Not disclosed

Source: Company data, BZ WBK Brokerage Research

Mabion's plan for 2016 was to sign a contract for both the major territories – the EU and the US. The contract it had signed only concerns the EU, which means that the company delayed signing of the US contract till after phase III is complete. At that point, Mabion should be able to negotiate better conditions not only due to the c2x larger market but also a higher success probability.

For Mylan the deal is in line with its strategy of building a portfolio of biosimilars and insulin generic products in their development phase. Mylan currently has 16 drugs in its portfolio including: three in their approval phase and three other in phase III clinical trials.

Fig. 13. Mylan: portfolio of biosimilars



Source: Mylan

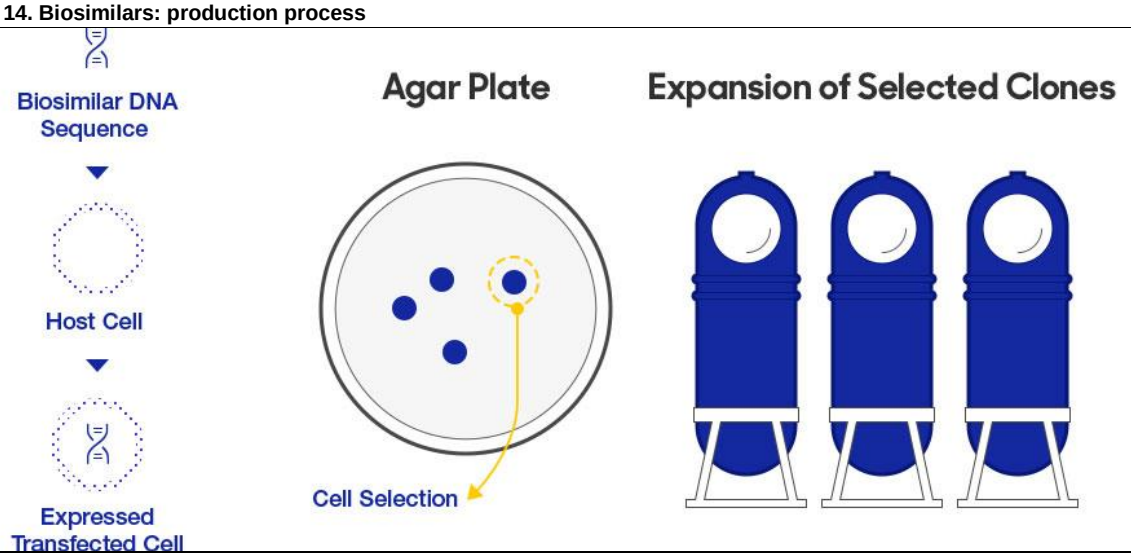
Production site in Konstantynow Lodzki

The company' first laboratory was located in Lodz, but once Mabion CD20 entered clinical trials, Mabion started construction of a factory with production capacities sufficient for the market size. Mabion picked Konstantynow Lodzki, near Lodz, in a special economic zone. This is where it built a PLN70mn worth production facility and the company's new headquarters. The current production capacity is 2 x 2,500 litres bioreactor. This could be relatively easily doubled by adding two more reactors (there is space left in the building), but the company plans to multiply this capacity by adding more reactors. This would require the construction of new buildings. The current size of the plot is the only factor that will limit the company's production capacity.

Production process of biosimilars

The development of a biosimilar begins with a characterisation of the reference biologic drug to generate a lead cell line that will ultimately become the production source for the biosimilar drug. In Mabion CD20's case, the lead cell line was developed in the company's lab in Lodz.

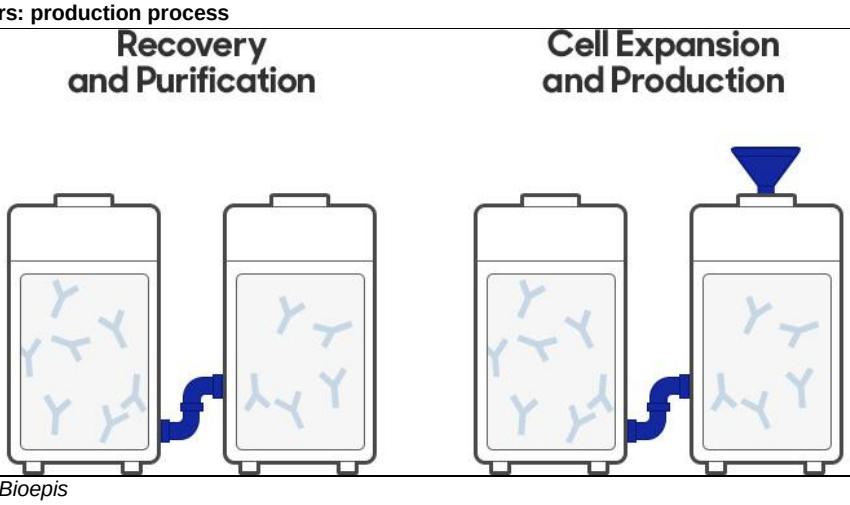
Fig. 14. Biosimilars: production process



Source: Samsung Bioepis

The next step is to set up a manufacturing process of the biosimilar from the lead cell line, at first on a lab scale. The cell culture conditions are refined to improve yield and reduce impurities. Hundreds of cell culture experiments are conducted to develop a process that maintains optimal growth conditions. Hundreds of purification experiments are performed for each product to effectively remove impurities and to help achieve consistency and quality.

Fig. 15. Biosimilars: production process



Source: Samsung Bioepis

The next step in the production process is to scale up the cell cultivation from the lab scale to mass production. This process also involves some risks as the cell cultures often behave differently when produced on a large scale. Mabion has already successfully scaled up its production of Mabion CD20 from a 200 litres bioreactor to a 2,500 litres mass-production bioreactor.

Innovations in cell cultivation process

The major difference between Mabion and other biologic and biosimilar drug producers is its different production technology. Mabion uses, as the first company in the world, Kuhner 2500l bioreactors with two innovative features – an orbital shaker and disposables technology.

So far orbital shaking bioreactors have only been used on a small scale, mostly by pharmaceutical companies in R&D pilot processes. Orbital shakers accelerate the

cultivation process compared to the traditional bioreactor, which means that Mabion is capable of producing more drugs from a single reactor than, for example, Roche.

The second feature is disposable technology that means that the production process takes place without any contact between the cell culture and the device. This means that Mabion CD20 may finally be of better quality than the original drug and any of its competitors. Moreover, the disposable technology may offer some flexibility with production capacity management – one reactor may be used in cultivation of different cells.

Share issue plans

The company's EGM in Feb'17 authorised the management to issue up to 4.5mn new shares. The minimum price was set at PLN84/share. Of that, 4.0mn shares are to be sold in an SPO in the US or at one of the stock exchanges in Western Europe, while the remaining 0.5mn in an SPO in Warsaw. The deadline for the share issue is February 2018, so the SPO is a matter of the next few months. The share issue's size and minimum price show that the offer value might settle at a minimum of PLN378mn. The new shares will account for up to 27.6% of the total shares after the deal.

The main goals of the share issue are: 1) expansion of production capacities of the Konstantynow Lodzki production site, 2) covering of costs of Mabion CD20 registration with EMA and FDA, 3) R&D and 4) other opex.

Biosimilars market – key themes

What are biologics?

Biologic drugs (biologics) are an important part of the global drug market. They account roughly for a quarter of the total drug sales. Moreover, many biologic drug IPs are ranked high on the drug blockbuster lists, with best-selling drugs like Humira, Remicade, Rituxan/MabThera reaching annual sales of a couple to dozens US$bn.

In contrast to most drugs, biologics are not chemical substances with a known structure. Biologics are not easily identified or characterised. They are produced from living matter using living microorganisms, plant or animal cells. Many of them are produced using recombinant DNA technology. The complex manufacturing process of biologics is the reason they tend to be much more expensive than other medications. This is why these drugs have such high revenues compared with the typical drugs despite an often much smaller market size in volume terms.

There were two waves of biologic drug discoveries: the first in the 1980s when recombinant versions of human endogenous molecules (i.e., hormones and enzymes) were patented. The second wave and one of more complex products, such as monoclonal antibodies, started in the late 1990s / early 2000s. Because of patent protection and high market prices those biologics' IP have been generating substantial revenues.

Blockbuster biologic drugs near their patent cliff

Patent protection is 10 years long in the EU and 12 years in the US, which means that the currently blockbuster drugs patented in late 1990s / early 2000s already reached the end of their patent life or they are just ahead of the patent cliff.

Fig. 16. Biologics: patent expiry dates for major drugs

Type	Name	API	Producer	Annual sales	Expiry date EU	Expiry date US
Humanized antibodies	Avastin	Bevacizumab	Roche	6.7bn	Jan'22	Jul'19
	Herceptin	Trastuzumab	Roche	6.7bn	Expired, Jul'14	Jun'19
	Humira	Adalimumab	AbbVie	14.0bn	Apr'18	Expired, Dec'16
	Synagis	Palivizumab	AstraZeneca	1.1bn	Expired, Aug'15	Expired, Oct'15
Antibodies not humanized	Erbitux	Cetuximab	Eli Lilly	2.3bn	Expited, Jun'14	Expired, Feb'16
	Remicade	Infliximab	Johnson & Johnson	6.6bn	Expired, Feb'15	Sep'18
	Rituxan/MabThera	Rituximab	Roche	7.3bn	Expired, Nov'13	Expired, Sep'16
Not antibodies	Aranesp	Darbepoetin Alfa	Amgen	2.0bn	Expired, Jul'16	May'24
	Avonex/Rebif	Interferon Beta-1a	Biogen Idec	5.5bn	Expired, 2015	Expired, 2015
	Enbrel	Etanercept	Amgen	5.4bn	Expired, Feb'15	Nov'28
	Epogen/Eprex	Epoetin Alfa	Amgen	1.9bn	Expired	Expired, Nov'13
	Neulasta	Pegfilgrastim	Amgen	4.7bn	Aug'17	Expired, Oct'13
	Neupogen	Filgrastim	Amgen	1.0bn	Expired	Expired, Dec'13
	Lantus	Insulin Glargine	Sanofi	7.1bn	Expired, 2014	Expired, 2014
	Lovenox	Enoxaparin/Sodium	Sanofi	1.7bn	Expired, 2012	Expired

Source: Company data, BZ WBK Brokerage Research

Biosimilars

The patent cliff creates market opportunities for generic drugs. However, there is a huge difference between a generic drug as a chemical substance and a biologic generic drug. In case of a typical chemical substance with a known structure, the registration process is rather simple and there is no difference between the original drug and its generic version. In case of a biologic drug, this process cannot be implemented. Biologic drugs are living matter. There is no possibility to make an exact copy. The generic drugs for biologics are called biosimilars. They are biological medical products similar to the original biological drugs. Because of their nature (they cannot be an exact copy), biosimilars have a much more complex registration process to go though than generics.

Fig. 17. Biosimilars: projects currently in development by global peers

Original	Phase III	Submit filings for approval	Approved	Launch
Remicade	Novartis Sandoz (Aug'14) Amgen (Oct'16)	Samsung Bioepis (US, May'16)	Samsung Bioepis (EU, Apr'16)	Celltrion (US, Dec'16 / EU Feb'15 / Japan and others 2014-15) Samsung Bioepis (EU, Aug'16)
Rituxan	Mabion (Jan'15) Pfizer (Dec'13) Amgen (Aug'14)	Novartis Sandoz (EU, May'16)	Celltrion (EU, Feb'17)	
Herceptin	Pfizer (Feb'14) Samsung Bioepis (Apr'14)	Biocon/Mylan (EU, Aug'16) Samsung Bioepis (EU, Oct'16) Celltrion (EU, Nov'16) Amgen (EU, Mar'17)		
Enbrel	Coherus (Aug'14)	Novartis Sandoz (EU, Dec'15)	Novartis Sandoz (US, Jul'16)	Samsung Bioepis (EU, Feb'16)
Humira	Novartis Sandoz (Dec'13) Boehringer Ingelheim (Jun'15) Pfizer (Jun'15) Coherus (Aug'15) Biocon/Mylan (May'15)	Amgen (EU, Dec'15) Samsung Bioepis (EU, Jul'16)	Amgen (US, Sep'16)	
Avastin	Amgen (Jul'12) Samsung Bioepis (Apr'14) Pfizer (Jun'15) Boehringer Ingelheim (Jun'15)			
Lantus		Samsung Bioepis (EU, Dec'15, US Aug'16)	Boehringer Ingelheim (US, Dec'15)	Boehringer Ingelheim (EU, Aug'16)

Source: Company data, BZ WBK Brokerage Research

The registration process was first introduced by EMA (in 2003), later by FDA. It is based on a demonstration of comparability of the similar product with the existing approved original drug. The process is almost the same as the registration path of the original drug. The producer of a biosimilar needs to complete pre-clinical tests, clinical trials and long EMA/FDA registration. Registration of a biosimilar is a long, complex and expensive process that also involves risk of failure, which is why the competition among biosimilar companies is limited. The major difference between an original and biosimilar

drug is lack of phase II clinical trials (required to confirm the effectiveness of the drug and set up doses), which means that phase III can start once phase I is complete.

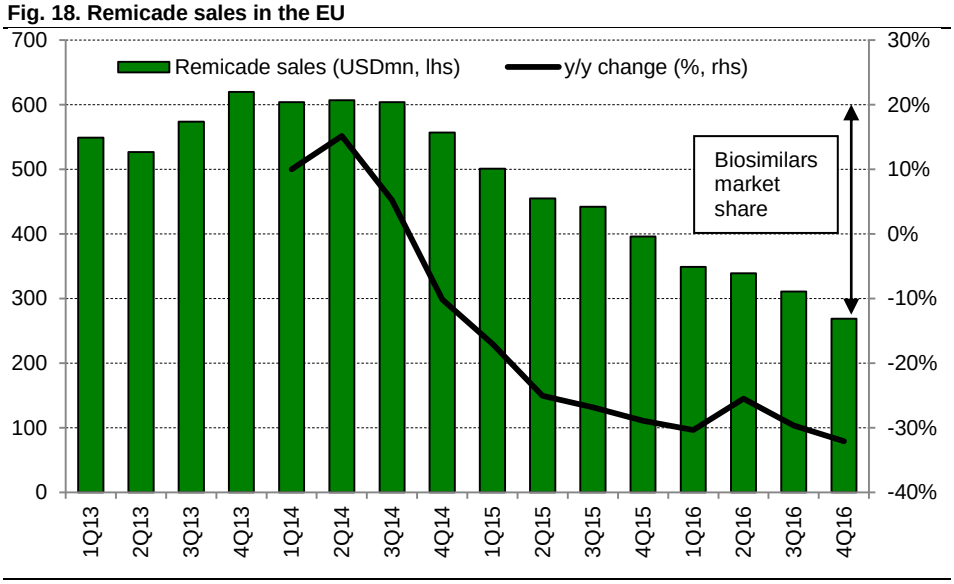
There is hope that the introduction of biosimilars could lead to lower costs for patients and the healthcare system.

Introducing biosimilars

The introduction of monoclonal antibody biosimilars is a matter of the several last quarters, but initial data suggest that the market is smoothly shifting to biosimilars. Market potential is high.

The first monoclonal antibody blockbusters that faced competition from biosimilars is infliximab. Celltrion registered and launched its biosimilar in the EU in 1Q15 and Samsung Bioepis in 3Q16. Merck, the EU distributor of the drug, lost over 40% of the market shares within two years after the launch of biosimilars, and the market shares of biosimilars is constantly growing. Johnson & Johnson expects to lose c10-15% in its market share in the US in the first year after biosimilars are launched on that market.

Fig. 18. Remicade sales in the EU



Source: Merck, BZ WBK Brokerage Research

The introduction of biosimilars to the first wave of biologics confirms the growth prospects for monoclonal antibody biosimilars, when looking at three drugs that were launched earlier (EPO, G-CSF and HGH). Biosimilars took over more than one-third of the market shares with a price decline of 19-34%.

Fig. 19. EU: Impact of biosimilars' introduction

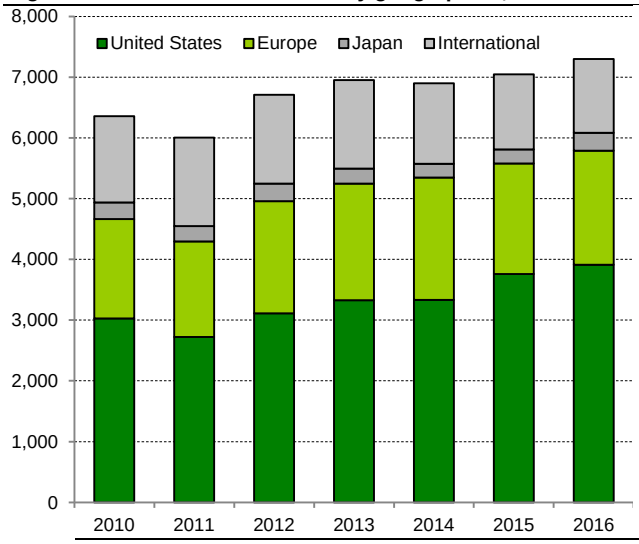
Drug	Market shares	Price evolution
Epoetin	34%	-34%
G-CSF	72%	-32%
HGH	35%	-19%
Anti-TNF	13%	-8%
Follitropin alfa	4%	-1%

Source: EMA, BZ WBK Brokerage Research

Rituxan/MabThera

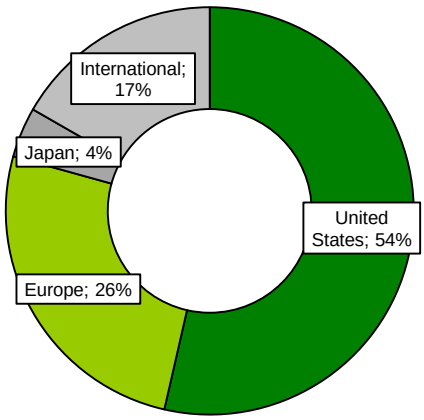
Rituximab is the name of a biologic drug owned by Roche. It is sold under name Rituxan in the US and MabThera in the EU. The drug is used in two major therapeutic areas: oncology (c80% of sales) and immunology (20% of sales). The US market is responsible for more than half of the global sales and the EU for a quarter. The rest of the world accounts for one-fifth of the global sales. Rituximab is one of the blockbuster drugs with annual sales at US$7bn. Unfortunately for Roche, the patent protection for Rituxan/MabThera had already expired in the EU (in November 2013) and in the US (September 2016). The race for Rituxan/MabThera market started a couple of years ago and the first biosimilars are to be launched within several years.

Fig. 20. Rituxan/MabThera: sales by geographies, CHFmn



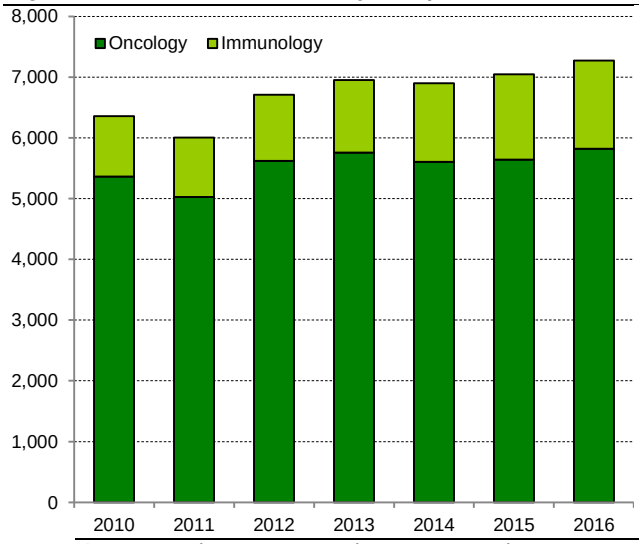
Source: Roche, BZ WBK Brokerage Research

Fig. 21. Rituxan/MabThera: sales by geographies



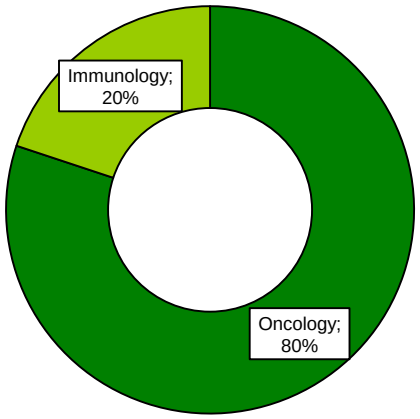
Source: Roche, BZ WBK Brokerage Research

Fig. 22. Rituxan/MabThera: sales by therapeutic area, CHFmn



Source: Roche, BZ WBK Brokerage Research

Fig. 23. Rituxan/MabThera: sales by therapeutic areas



Source: Roche, BZ WBK Brokerage Research

MabThera is used to treat the following blood cancers and inflammatory conditions:

- follicular lymphoma and diffuse large B cell non-Hodgkin's lymphoma (two types of non-Hodgkin's lymphoma, a blood cancer),

- chronic lymphocytic leukaemia (CLL, another blood cancer affecting white blood cells),
- severe rheumatoid arthritis (an inflammatory condition of the joints),
- two inflammatory conditions of blood vessels known as granulomatosis with polyangiitis (GPA or Wegener's granulomatosis) and microscopic polyangiitis (MPA).

Depending on the condition it is used to treat, MabThera may be given on its own, or with chemotherapy, methotrexate or a corticosteroid. The drug is given as an infusion (drip) into a vein. Patients with blood cancers can switch to an injection given under the skin after they have received one full dose of the infusion. It can only be obtained with a prescription.

The active substance in Rituxan/MabThera, rituximab, is a monoclonal antibody designed to recognise and attach to a protein called CD20 present on the surface of B-lymphocytes. When rituximab attaches to CD20, it causes the death of B-lymphocytes, which helps in lymphoma and CLL (where B-lymphocytes have become cancerous) and in rheumatoid arthritis (where B-lymphocytes are involved in joint inflammation). In GPA and MPA, destroying the B-lymphocytes lowers the production of antibodies thought to play an important role in attacking the blood vessels and causing inflammation.

Competitors for rituximab biosimilars

Mabion has several competitors on the rituximab biosimilar market. It is important to be among the first on the market because the first companies may take over higher market shares than the followers.

Korean company Celltrion is the most advanced in the race for the US$7bn market. It has already secured approval for its biosimilar (called Truxima) in the EU and plans to file for an FDA review in 2017. Celltrion estimates that the EU could save around EUR570mn in the first three years after the introduction of Truxima. This calculation is based on the assumption that the price of Truxima is 70% of the Rituxan/MabThera price and that the market share of Truxima is 30% (first year), 40% (second year) and 50% (third year).

Novartis Sandoz is the second most advanced company in this race. Last year it had filed for approval from EMA and is currently waiting for the decision.

Celltrion and Sandoz are clearly ahead of Mabion. Mabion is at the same stage as Pfizer and Amgen (which are in phase III clinical trials), but due to absence of detailed information, it is hard to estimate when the trials are scheduled to end.

Meanwhile, some major competitors suspended their rituximab biosimilar R&D programmes, including Boehringer Ingelheim, Merck, Samsung Bioepis, and Teva.

Financial statements and forecasts

Fig. 24. Mabion: Income statement forecasts*

PLNmn	2015	2016E	2017E	2018E	2019E	2020E
Net sales	**2.7**	**0.0**	**40.0**	**171.0**	**108.6**	**253.1**
Opex	6.8	6.5	50.0	50.0	50.0	76.8
EBITDA	**-0.3**	**-1.7**	**-4.9**	**126.6**	**66.4**	**186.2**
Operating profit	**-4.1**	**-6.5**	**-10.0**	**121.0**	**58.6**	**176.3**
Net financial costs (income)	-0.4	0.0	-1.4	-2.4	-2.0	-1.2
Profit before tax	**-4.5**	**-6.5**	**-11.4**	**118.6**	**56.6**	**175.0**
Income tax	-0.1	0.0	-2.2	22.5	10.8	33.3
Net profit before minorities	**-4.4**	**-6.5**	**-9.3**	**96.0**	**45.8**	**141.8**
Minorities	0.0	0.0	0.0	0.0	0.0	0.0
Net profit	**-4.4**	**-6.5**	**-9.3**	**96.0**	**45.8**	**141.8**
EBITDA margin	-11.9%	n.a.	-12.3%	74.1%	61.2%	73.6%
Operating margin	-149.3%	n.a.	-25.0%	70.8%	54.0%	69.6%
Net margin	-162.6%	n.a.	-23.1%	56.2%	42.2%	56.0%
Sales growth	229.3%	-100.0%	n.a.	327.5%	-36.5%	133.1%
EBITDA growth	-90.6%	416.4%	193.0%	-2683.5%	-47.5%	180.3%
Operating profit growth	-10.7%	60.0%	53.2%	-1310.0%	-51.6%	200.9%
Net profit growth	-0.1%	46.9%	41.7%	-1138.3%	-52.3%	209.3%

*Source: Company data, BZ WBK Brokerage Research, *financial forecasts assuming 100% success rate of Mabion CD20*

Fig. 25. Mabion: Balance sheet forecasts*

PLNmn	2015	2016E	2017E	2018E	2019E	2020E
Current assets	**12.4**	**46.7**	**22.4**	**74.1**	**57.8**	**142.5**
cash and equivalents	6.1	40.1	15.8	67.5	51.2	129.1
other short term investments	0.0	0.0	0.0	0.0	0.0	0.0
accounts receivable	2.7	2.9	2.9	2.9	2.9	6.2
inventories	3.1	3.1	3.1	3.1	3.1	6.6
prepaid expenses / other	0.5	0.6	0.6	0.6	0.6	0.6
Fixed assets	**181.1**	**228.5**	**273.4**	**317.8**	**359.9**	**399.9**
PPE	72.1	68.1	113.0	157.4	199.5	239.5
long-term investments	0.1	0.1	0.1	0.1	0.1	0.1
intangibles	0.0	0.0	0.0	0.0	0.0	0.0
goodwill			0.0	0.0	0.0	0.0
long-term receivables	0.0	0.0	0.0	0.0	0.0	0.0
Long-term deferred charges	109.0	160.2	160.2	160.2	160.2	160.2
Total assets	**193.5**	**275.2**	**295.8**	**391.9**	**417.7**	**542.4**
Current liabilities	**17.1**	**54.2**	**54.2**	**54.2**	**54.2**	**57.1**
bank debt	0.2	20.0	20.0	20.0	20.0	20.0
account payables	0.0	0.0	0.0	0.0	0.0	2.9
other current liabilities	15.7	31.8	31.8	31.8	31.8	31.8
Provisions	1.3	2.4	2.4	2.4	2.4	2.4
Long-term liabilities	**48.8**	**85.8**	**115.7**	**115.7**	**95.7**	**75.7**
bank debt	0.2	0.1	70.0	70.0	50.0	30.0
other long-term liabilities	48.6	45.7	45.7	45.7	45.7	45.7
Provisions	0.0	40.0	0.0	0.0	0.0	0.0
Equity	**127.6**	**135.2**	**126.0**	**222.0**	**267.9**	**409.6**
share capital	1.1	1.2	1.2	1.2	1.2	1.2
capital reserves	131.0	140.6	134.0	124.8	220.8	266.7
net income	-4.4	-6.5	-9.3	96.0	45.8	141.8
Minority Interest	**0.0**	**0.0**	0.0	0.0	0.0	0.0
Total liabilities and equity	**193.5**	**275.2**	**295.8**	**391.9**	**417.7**	**542.4**
Net debt	-5.7	-20.0	74.2	22.5	18.8	-79.1
Net debt/Equity (%)	-4%	-15%	59%	10%	7%	-19%

*Source: Company data, BZ WBK Brokerage Research,*financial forecasts assuming 100% success rate of Mabion CD20*

Fig. 26. Mabion: Cash flow statement forecasts*

PLNmn	2015	2016E	2017E	2018E	2019E	2020E
Cash flow from operations	**-45.5**	**54.4**	**-45.1**	**101.7**	**53.7**	**147.9**
Net profit	-4.4	-6.5	-9.3	96.0	45.8	141.8
Provisions	1.1	41.1	-40.0	0.0	0.0	0.0
Depreciation and amortisation	3.8	3.9	4.1	5.7	7.9	10.0
Changes in WC, o/w	1.0	-0.2	0.0	0.0	0.0	-3.9
inventories	1.4	0.0	0.0	0.0	0.0	-3.5
receivables	-0.4	-0.2	0.0	0.0	0.0	-3.3
payables	0.0	0.0	0.0	0.0	0.0	2.9
Other, net	-46.9	16.0	0.0	0.0	0.0	0.0
Cash flow from investment	**-20.9**	**-54.2**	**-50.0**	**-50.0**	**-50.0**	**-50.0**
Additions to PPE and intangibles	-12.6	0.0	-50.0	-50.0	-50.0	-50.0
Change in long-term investments	-0.1	0.0	0.0	0.0	0.0	0.0
Other, net	-8.2	-54.2	0.0	0.0	0.0	0.0
Cash flow from financing	**64.6**	**33.8**	**69.9**	**0.0**	**-20.0**	**-20.0**
Change in long-term borrowing	0.1	-0.1	69.9	0.0	-20.0	-20.0
Change in short-term borrowing	0.2	19.8	0.0	0.0	0.0	0.0
Change in equity and profit distribution	32.3	14.1	0.0	0.0	0.0	0.0
Dividends (paid)	0.0	0.0	0.0	0.0	0.0	0.0
Other, net	32.1	0.0	0.0	0.0	0.0	0.0
Net change in cash and equivalents	**-1.7**	**34.0**	**-25.2**	**51.7**	**-16.3**	**77.9**
Beginning cash and equivalents	7.8	6.1	40.1	14.9	66.6	50.3
Ending cash and equivalents	6.1	40.1	14.9	66.6	50.3	128.2

*Source: Company data, BZ WBK Brokerage Research,*financial forecasts assuming 100% success rate of Mabion CD20*

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Mid-caps – if a stock is included into a mid-cap portfolio it means that, according to the authors of this document, a particular stock price may outperform the WIG20 index during one month.
Stocks are added to or deleted from the list on the basis of the requirement to rotate the stocks included in the list.
Any change in weight of stocks already included in the portfolio should not be construed as investment recommendation. Such changes are aimed exclusively at making the total weight of all stocks equal 100%.

DM BZ WBK confirms that the adjustment for dividend paid, adjustment for preemptive rights, share split or merger, or any other purely technical adjustments to the share price will result in corresponding changes in the stocks' target prices - such situations must be considered within purely technical context and should not be considered as changes to recommendations in the meaning of the law.

Explanations of special terminology used in the recommendation:
EBIT – earnings before interest and tax
EBITDA – earnings before interest, taxes, depreciation, and amortization
P/E – price-earnings ratio
EV – enterprise value (market capitalisation plus net debt)
PEG - P/E to growth ratio
EPS - earnings per share
CPI – consumer price index
WACC - weighted average cost of capital
CAGR – cumulative average annual growth
P/CE – price to cash earnings (net profit plus depreciation and amortisation) ratio
NOPAT – net operational profit after taxation
FCF - free cash flows
BV – book value
ROE – return on equity
P/BV – price-book value

Recommendation definitions:
Buy - indicates a stock's total return to exceed more than 15% over the next twelve months.
Hold - indicates a stock's total return to be in range of 0%-15% over the next twelve months.
Sell - indicates a stock's total return to be less than 0% over the next twelve months.

In the opinion of DM BZ WBK., this document has been prepared with all due diligence and excludes any conflict of interests which could influence its content. DM BZ WBK is not obliged to take any actions which could cause financial instruments that are the subject of the valuation contained in this document to be valued by the market in accordance with the valuation contained in this document.
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The date and time on the first page of this report is the date and time of preparation of the report. The document is disseminated on the same day after the trading day, and no later than before the opening of the next trading day.
All the prices of financial instruments which have been mentioned in the report correspond to the rates at which the last transactions on these financial instruments were realized during a given day.

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DISCLOSURES

This report contains recommendations referring to company/companies: **Mabion S.A.** („Issuer").
DM BZ WBK emphasizes that this document is going to be updated at least once a year.
This document has not been disclosed to Issuer.

In preparing this document DM BZ WBK applied at least two of the following valuation methods:

1) discounted cash flows (DCF),
2) comparative,
3) mid-cycle,
4) dividend discount model (DDM),
5) residual income,
6) warranted equity method (WEV),
7) SOTP valuation,
8) liquidation value.

The discounted cash flows (DCF) valuation method is based on expected future discounted cash flows. One advantage of the DCF valuation method is that it takes into account all cash streams reaching Issuer and the cost of money over time. Some disadvantages of the DCF valuation method are that a large number of parameters and assumptions need to be estimated; and the valuation is sensitive to changes in those parameters.
The comparative valuation method is based on the economic rule of "one price". Some advantages of the comparative valuation method are that the analyst need only estimate a small number of parameters; the valuation is based on current market conditions; the relatively large accessibility of indicators for companies being compared; and that there is an extensive knowledge of the comparative method among investors. Some disadvantages of valuation by the comparative method are the considerable sensitivity of the results of the valuation on the choice of companies to the comparative group; the method can lead to a simplification of the picture of the company which in turn can lead to omitting certain important factors (e.g. growth dynamics, extra-operational assets, corporate governance, the repeatability of results, differences in applied accounting standards); and the uncertainty of the effectiveness of a market valuation of companies being compared.
The mid-cycle valuation is based on long-term averages for the two-year forward consensus P/E and EV/EBITDA multiples for the members of the peer group. The methodology is aimed calculating a fair, through the cycle value of cyclical stocks. Among its shortfalls is that at peaks and/or troughs of the cycle, the implied fair value may deviate substantially from the market's value of an analysed stock as well as the methods' reliance on the quality of external data (we use Bloomberg consensus here). Simplicity and average through-cycle value allowing to capture over as well as under-valuation of a given stock are the main advantages of this methodology.
The dividend discount model (DDM) valuation is based on the net present value of the future dividends that are expected to be paid out by the company. Some advantages of the DDM valuation method are that it takes into account real cash flows to equity-owners and that the methodology is used in respect to companies with long dividend payout history. Main disadvantage of the DDM valuation method is that dividend payouts are based on a large number of parameters and assumptions, including dividend payout ratio.
Residual income method is conceptually close to the discounted cash flows method (DCF) for non-financial stocks, the difference being that it is based on expected residual income (returns over COE) rather than expected future cash flows. One advantage of this valuation method is that it captures the excess of profit potentially available to shareholders and the cost of money over time. Main disadvantage of the valuation method is that a large number of parameters and assumptions need to be estimated; and the valuation is sensitive to changes in those parameters.
The warranted equity method (WEV) is based on the formula P/BV = (two year forward ROE less sustainable growth rate)/(Cost of equity less sustainable growth rate) which allows estimating a fair value (FV) of a given stock in two years time. Subsequently the FV is discounted back to today. The main advantage of the WEV method is that it is a transparent one and based on relatively short term forecasts, hence substantially reducing the margin of forecasting error. The main disadvantage in our view is that the model is based on the principle that stock price should converge towards its fair value implied by company's ROE and COE.
SOTP valuation - different assets of a company are being valued according to different valuation methods, and the sum of these valuations represents the final valuation of the company. SOTP valuation advantages / disadvantages are identical to advantages and disadvantages of the specific valuation methods used.
Liquidation value method – liquidation value is the estimated amount of money that an asset or company could be quickly sold for, such as if it were to go out of business. Then, the estimated assets value is adjusted for liabilities and liquidation expenses. One advantage of this valuation method is its simplicity. This method does not account for intangible assets as goodwill, which is the main disadvantage.

Global statistics:

		% of Companies
Rating	**Covered with This Rating**	**Provided with Investment Banking in Past 12M**
Buy	48,89	13,64
Hold	17,78	0,00
Sell	15,56	0,00
Under Review	17,78	25,00

Definition of each rating was provided in the above section Limitation of liability.

The Stock performance charts in this report include line graphs of the securities' daily closing prices for one year period. Information relating to a longer period (max 3 years) is available upon request.

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A list of all recommendations on any financial instrument or issuer that were prepared by the Analyst who prepared this document that were disseminated during the preceding 12 month period:

Asseco South Eastern Europe

Rec.	Date	Price		Performance	
		on issue date	12 month target	absolute	Relative (p.p)
Buy	2-17-17	11.75	12.9	-2.1%	-3.47
Buy	11-3-16	9.03	11.9	30.1%	9.09
Buy	7-28-16	9.47	11.9	-4.6%	-7.17

ABC Data

Rec.	Date	Price		Performance	
		on issue date	12 month target	absolute	Relative (p.p)
Hold	2-17-17	2.34	2.5	-18.4%	-19.72
Hold	11-3-16	2.05	2.2	14.1%	-6.88

AB

Rec.	Date	Price		Performance	
		on issue date	12 month target	absolute	Relative (p.p)
Buy	2-17-17	37.09	45.1	3.0%	1.65
Buy	11-3-16	32.55	43.6	13.9%	-7.08

Asseco Business Solutions

Rec.	Date	Price		Performance	
		on issue date	12 month target	absolute	Relative (p.p)
Hold	2-17-17	24.69	24.8	5.5%	4.17
Buy	11-3-16	23.1	27.9	6.9%	-14.15
Hold	7-28-16	21	21	10.0%	7.47

Asseco Poland

Rec.	Date	Price		Performance	
		on issue date	12 month target	absolute	Relative (p.p)
Hold	2-17-17	55	61.2	-1.7%	-3.03
Hold	7-21-16	56.78	62	-3.1%	-27.44

Action

Rec.	Date	Price		Performance	
		on issue date	12 month target	absolute	Relative (p.p)
Under Review	8-2-16	4.64	n.a.	-6.5%	-31.38

Benefit Systems

Rec.	Date	Price		Performance	
		on issue date	12 month target	absolute	Relative (p.p)
Buy	3-10-17	890	1096	3.4%	2.63
Buy	11-3-16	709.95	900	25.4%	3.61
Buy	9-29-16	690	900	2.9%	2.04

CD Projekt

Rec.	Date	Price		Performance	
		on issue date	12 month target	absolute	Relative (p.p)
Buy	2-2-17	59	70	25.3%	19.02
Buy	7-28-16	33.7	39.8	75.1%	56.70

CI Games

Rec.	Date	Price		Performance	
		on issue date	12 month target	absolute	Relative (p.p)
Hold	2-2-17	2.96	3.3	-6.1%	-12.31
Buy	11-3-16	2.67	3.59	10.9%	-4.59
Buy	7-28-16	2.68	3.5	-0.4%	-2.90

Comarch

Rec.	Date	Price		Performance	
		on issue date	12 month target	absolute	Relative (p.p)
Hold	2-17-17	210	211	10.9%	9.59
Buy	11-3-16	159.6	206	31.6%	10.55
Hold	7-28-16	150.65	155.9	5.9%	3.41

Cyfrowy Polsat

Rec.	Date	Price		Performance	
		on issue date	12 month target	absolute	Relative (p.p)
Buy	2-17-17	23.25	28.5	0.7%	-0.65
Buy	7-28-16	24.45	30.6	-4.9%	-29.00
Buy	4-22-16	24.49	31	-0.2%	3.40

Livechat Software

Rec.	Date	Price		Performance	
		on issue date	12 month target	absolute	Relative (p.p)
Buy	2-17-17	50.5	65.8	4.1%	2.80
Buy	11-3-16	46.58	62.3	8.4%	-12.61
Buy	7-28-16	46.9	60.4	-0.7%	-3.21
Buy	6-28-16	42.5	60.4	10.4%	5.63

Medicalgorithmics

Rec.	Date	Price		Performance	
		on issue date	12 month target	absolute	Relative (p.p)
Buy	2-17-17	341.2	437	0.4%	-0.90
Buy	11-3-16	288	340	18.5%	-2.56

Synektik

Rec.	Date	Price		Performance	
		on issue date	12 month target	absolute	Relative (p.p)
Hold	11-3-16	18.15	18.7	-7.4%	-30.09

Voxel

Rec.	Date	Price		Performance	
		on issue date	12 month target	absolute	Relative (p.p)
Buy	11-3-16	19.6	25.8	-8.3%	-30.92

11 Bit Studios

Rec.	Date	Price		Performance	
		on issue date	12 month target	absolute	Relative (p.p)
Buy	2-2-17	150.5	180	24.3%	18.02