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Small & Mid-Caps

Biocartis Group NV

A newcomer strives for international growth

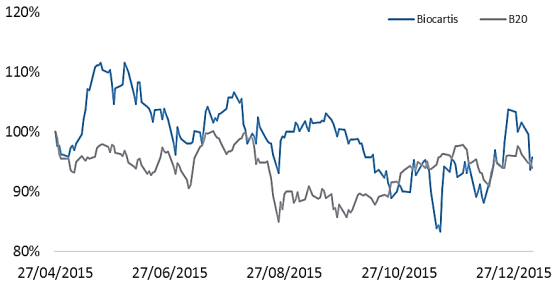
Recommendation:	SELL
Current price:	€ 12.45
Target price:	€ 8.34
Downside:	33%
Date:	06-01-16

Share Information	
Share outstanding (million):	40.5
Market Cap (million):	€ 504.2
Avg. volume (3 months):	18,433

Company overview	
Company:	Biocartis Group NV
Ticker:	BCART.BR (Reuters)
	BCART BB (Bloomberg)
Exchange:	Euronext Brussels
Sector:	Health Care
Industry:	Health Care Equipment & Services

Performance	
52-Week High:	€ 14.95
52-Week Low:	€ 10.84

Valuation	DCF	Transaction comps	Trading comps
Est. Price:	€ 7.40	€ 11.25	€ 7.30
Weights:	50%	25%	25%
Target price:		**8.34**	



Highlights

Sell recommendation with a 33% downside

We initiate the coverage of Biocartis Group NV with a **SELL** recommendation based on the one-year target price of €8.34, offering a 33 % downside from its closing price of €12.45 on January 6th 2016. We valued Biocartis with a DCF model and two multiple methods. As the DCF model best reflects the operating cash flow potential, we assign it a weight of 50%. Although Biocartis aims to reinvent the molecular diagnostics (MDx) industry with an innovative product, called Idylla, we believe that Biocartis' stock is currently overvalued for the following reasons:

Intensifying competition diminishes promising prospects

Rapid technology changes and the ever increasing demand for personalized medicine have fragmented the molecular diagnostics (MDx) market immensely, making segmentation a crucial prerequisite for success. Biocartis targets the two most attractive segments; 1) infectious diseases - the largest segment, and 2) oncology – the fastest-growing segment. While the infectious diseases segment is already highly competitive, the oncology one is currently underserved. However, the oncology segments promising growth rate is expected to attract numerous competitors, which is only a question of time. Considering the degree of competition, Biocartis' market share expectations seem bullish and need to be reviewed critically.

Postponements of assay launches impeach the credibility of assay projections

The majority of Biocartis' revenue will come from the sale of assays. The company promises to launch 4-5 assays per year, however we believe that only two assays will be used commercially, making the other 2-3 assays for non-clinical purposes only. This would greatly reduce potential revenues. Thus far, two assays have already been postponed and the much anticipated introduction of the company's Ebola assay will remain largely unused as the WHO declares the Ebola outbreak to be over.

Depletion of cash reserves by the end of 2019

Biocartis' IPO proceeds are insufficient to sustain its operations as they will run out of cash before they become profitable, which we expect to occur in 2019. This will require them to return to capital markets again, which poses a risk of dilution to existing shareholders and creates further uncertainties in share price developments

Lack of market experience introduces multiple risks

Major downside risks include: 1) A slower assay commercialization 2) A lower than expected assay market share 3) Curbing of government reimbursements 4) Lower than expected assay prices due to increasing competition 5) Failure of the sepsis assay to reach the market.

Forecasts

€ in Millions except per share figures	2013A	2014A	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E
Adj. Revenues	8.3	8.5	8.6	13.7	48.3	105.9	168.7	241.0	315.6	395.2	479.8	570.0	666.0
Adj. EBITDA	(26.3)	(26.6)	(22.6)	(24.1)	(20.6)	(4.3)	14.1	32.3	42.3	53.0	64.3	76.4	89.3
Adj. EBIT	(29.9)	(31.1)	(26.9)	(29.0)	(25.5)	(9.3)	8.8	26.6	36.1	46.1	56.7	67.8	80.7
Net Income	(35.6)	(9.7)	(26.0)	(28.1)	(24.7)	(9.4)	7.6	23.3	31.9	41.0	50.6	61.0	73.1
EPS	(1.25)	(1.14)	(0.64)	(0.69)	(0.61)	(0.23)	0.19	0.58	0.79	1.01	1.24	1.50	1.80
Book Value per Share	1.46	0.79	2.74	2.05	1.44	1.20	1.39	1.96	2.75	3.76	5.00	6.50	8.29

*Adjustment exclude government grants from continuing operations

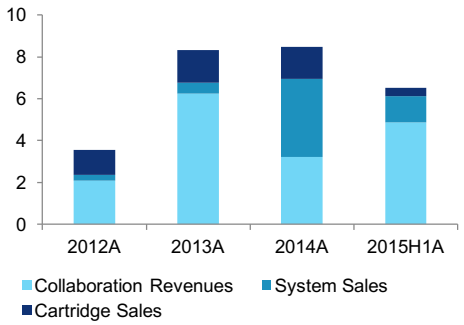


Figure 1: Biocartis' revenues in € million
Source: Annual report, Half-year report

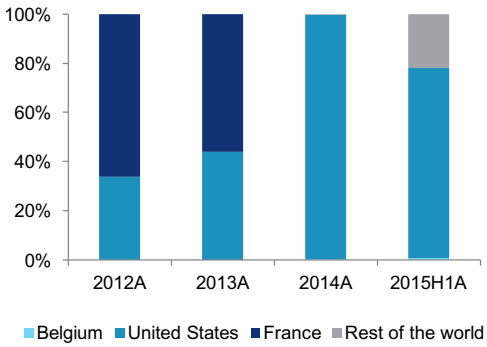


Figure 2: Biocartis' revenue split by geography
Source: Annual report, Half-year report

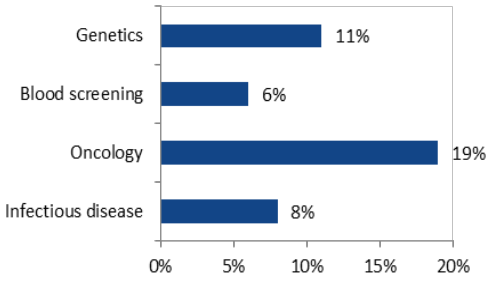


Figure 3: CAGR '13-'18 by segment
Source: Market & Markets 2014

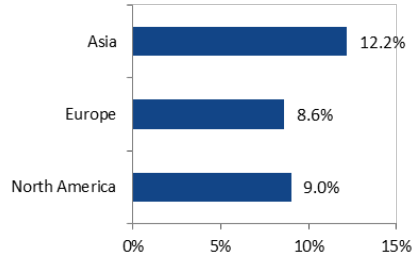


Figure 4: CAGR '13-'18 by geography
Source: Market & Markets 2014

[1] Refer to Glossary Page 11 for definitions

Business Description

Founded in 2007 and listed on the Euronext Brussels since April 27th 2015, Biocartis Group NV is a Belgian biotechnology company operating in the molecular diagnostics (MDx) market[1]. Biocartis consists of the holding company and three subsidiaries, located in Belgium, Switzerland, and the Netherlands. Headquartered in Mechelen, Belgium, the company employs ca. 200 people. Biocartis' initial public offering raised €115 million at a share price of €11.50. Well-established corporations, such as Johnson and Johnson, and the members of the management team hold majority stakes in Biocartis. *Exhibit 1* illustrates the diverse shareholder base. Biocartis offers automated instruments for gene-defect detection, data analysis and reporting services.

Idylla, the Innovative platform serving as the company's backbone

Biocartis acquired a technology platform for MDx testing from Koninklijke Philips Electronics N.V. in 2010, which is regarded as a key milestone in Biocartis' history (*Exhibit 2*). The technology serves as the backbone of Biocartis' core product Idylla, an automated instrument for gene-defect detection, data analysis, and reporting services. The platform requires complementary non-reusable tests, so called assays. Idylla's functionalities allow to detect numerous biomarkers simultaneously that each provide information about gene mutations, which in turn indicate a distinct disease. It is an essential prerequisite in diagnostics for prescribing the right treatment, as only patients with a certain gene mutation respond well to a specific drug. The product is composed of three components: the instrument, the console and the cartridge (*Exhibit 3*).

Early commercial stage with 2014 marking the first commercial sales

Up until September 2014, Biocartis has been selling Idylla platforms and assays for R&D purposes only. The first real commercial sales began in late 2014 and the company has sold 114 Idylla systems as of today. The sale of platforms and cartridges accounted for 26% of the company's revenues in the first half-year 2015, while the remaining 74% came from collaboration revenues and grants. Moreover, most of its product revenues are generated from the sale of experimental units to the US. The relatively high portion of collaboration revenues underlines Biocartis' early commercial stage. System sales are expected to be the key revenue driver in the coming years. In the long-term, driven by the expansion of the assay menu, assay sales will become more important. Figures 1&2 illustrate the revenue split. The SWOT analysis can be found in *Exhibit 4*.

Biocartis strives to become a leader in the MDx market

Company mission. Biocartis aims to make "*personalized medicine an everyday reality*" by:

Focusing on the right markets. Biocartis operates in the largest and fastest growing MDx segments, which are infectious diseases and oncology respectively. The company tries to differentiate itself from competition by targeting uncovered niches, such as sepsis. The oncology segment growing with a CAGR of 19% is currently underserved and creates promising prospects. Figures 3 & 4 illustrate the growth rates of segments and regions.

Product differentiation. Idylla's product advantages include: automation, specificity, scalability, sample versatility and multiplexing capabilities (*Exhibit 5*). Additionally, it does not require pre-sampling, which decreases both operating costs and human error. Furthermore, customers are locked-in since Biocartis' assays will only be compatible with the Idylla system.

Commercialization. Biocartis has developed an ambitious international commercialization strategy (*Exhibit 6*). In order to accelerate global expansion, Biocartis has both distributor and partnership agreements in place, which give the company direct access to existing networks. The company aims to build a presence in Western Europe through direct sales, and depending on the regulatory environment, expand globally through either partnerships or distributors.

Rapidly expanding test menu. Quickly expanding the assay menu improves the product's economic viability and is crucial to the company's long term success. Biocartis promises to launch 4-5 assays per year. Currently, Biocartis has two oncology assays on the market (*Exhibit 7*).

Knowing your customers. The initial commercial focus will be on the oncology segment in Europe. In 2017 there will be a shift towards the US and infectious diseases. Biocartis will use a two-step targeting approach. In the 1st wave, high volume pathology laboratories will be targeted. In the 2nd wave, Biocartis will gradually expand its commercial focus to low volume laboratories.

Achieving cost efficiency. Biocartis currently manufactures and assembles all components of the Idylla platform in-house at its production facility in Mechelen. In order to meet future capacity needs and to reduce costs, Biocartis outsourced the instrument and console production in the course of 2015. Furthermore, the production line of the cartridges will be expanded by adding workstations in 2016 and by adding an additional high capacity line in 2017.

Investment Summary

Biocartis at a glance

Idylla, Biocartis' core product, only offers a temporary competitive advantage

Biocartis is active in the molecular diagnostics market (MDx). In 2014, Biocartis introduced Idylla, a fully automated qPCR-based platform that enables a fast and easy-to-use access to molecular diagnostics The platform's key features include automation, scalability, sample versatility and advanced multiplexing capabilities (detecting up to 30 biomarkers). Compared to the rival products, Idylla has the following competitive advantages. First, it analyzes samples and produces the results in a minimum throughput time of only 35-150 minutes. Second, it can perform tests from any biological sample, which is currently unique in the market. However, we regard this competitive advantage as temporary since the market is highly vulnerable to rapid technology changes and competition is expected to intensify.

Intensifying competition reduces potential market share expectation

Highly competitive infectious disease segment

Biocartis targets the largest and fastest growing segments, which are infectious diseases and oncology respectively. Given its size, the infectious disease segment seems to be attractive, but it is overpopulated and highly competitive. Regarding the oncology segment, it is currently underserved. However, its promising growth rate will cause numerous companies to enter the segment, resulting in a similar competition as in the infectious disease segment. Consequently, causing fierce price competition, which reduces profit margins and flattens bullish expectations concerning potential market shares.

The financial picture: a SELL recommendation despite the bullish consensus

Contrary to bullish consensus, our valuation results in a potential downside of 33%

Biocartis' IPO in April brought in €115m that will be invested into a fully automated production line and R&D. Biocartis is expected to become profitable in 2019. Based on market comparables and DCF, we valued Biocartis at €8.34 and issue a SELL rating, implying a downside potential of 33%. We expect the company will deplete its IPO proceeds by 2019 and will need to raise further capital. We see the consensus revenue projections and gross margins as too high due to bullish market share assumptions and the understatement of costs. Furthermore, we believe that the three analysts covering Biocartis (Petercam, Kempen & Co and KBC) might have vested interests in the company as they acted as joint book runners in Biocartis' IPO /or invested in the company. Figure 5 illustrates the historical target prices of analysts and the actual stock price.

Postponement of assay launches in its very first year

Assays' postponement with a negative effect on valuation

According to management, Biocartis is expected to receive the FDA approval for its platform and its first assays by 2017, once achieved they plan to enter USA, the largest MDx market in the world. The company promises to launch 4-5 new assays per year and aims at expanding its commercial footprint in developing countries. However, we expect that only two clinical assays to be released per year, while the remaining two to three assays will be released for non clinical purposes only. This assumption is based on the fact that Biocartis has already postponed assay launches in its very first year since its IPO. Only 2 out of the 5 promised assays have been commercialized, while the other 2-3 have been launched for non-clinical purposes only. Assays for non-clinical purposes generally do not require strict approvals and do not generate considerable revenues.

High uncertainty meets high risk

Valuation is highly sensitive to successful commercialization and other key risks

Biocartis` future is highly dependent on its ability to increase its platform sales and on successful commercialization of assays. The sepsis assay is expected to be the main income source and makes the company highly vulnerable to postponements or test failures. There are large uncertainty factors about Biocartis` future prospects that put pressure on the valuation: technological disruptions, postponement in receiving region-specific approvals, success of commercialization and the current early stage position of the company.

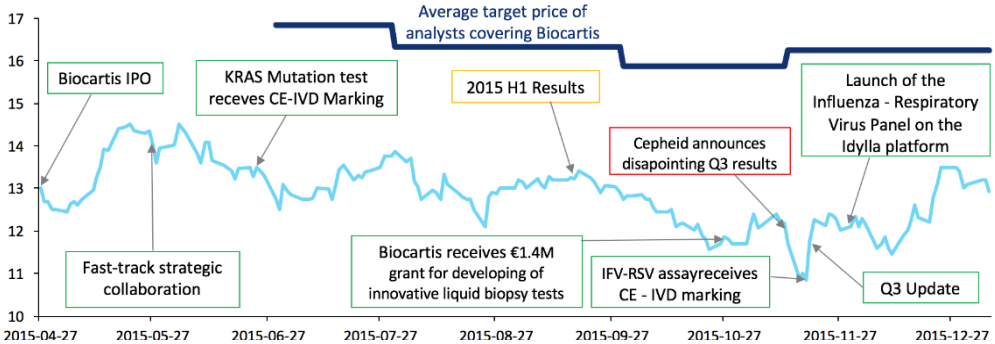


Figure 5: Stock price developments vs analyst target prices
Source: Team analysis, Factset, Bloomberg.

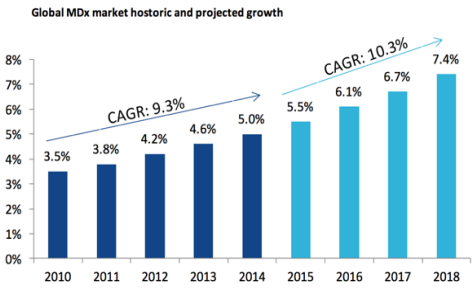


Figure 6: Historical and projected market growth
Source: Market & Markets 2014

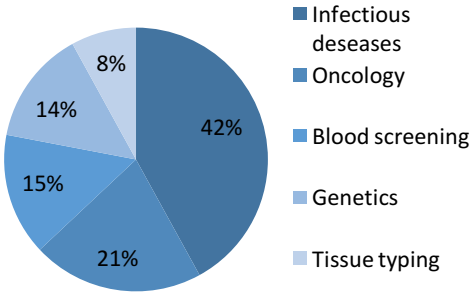


Figure 7: Market sizes by segment in 2014
Source: Visiongain 2015

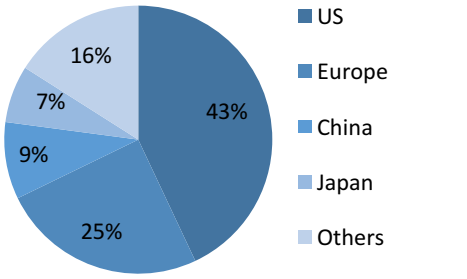


Figure 8: Forecasted MDx market by region in 2019
Source: Market & Markets 2014

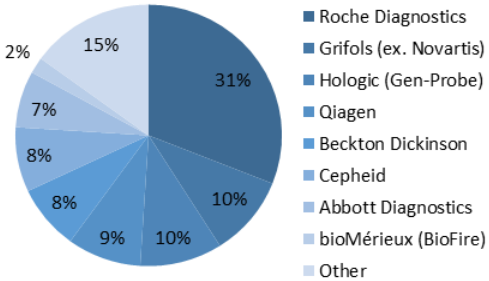


Figure 9: Major players in the MDx market in 2013
Source: Market & Markets 2014

Industry Analysis

Defining Molecular Diagnostics (MDx)

Molecular diagnostics are techniques, used to analyze biomarkers in the genetic code, that help to diagnose diseases, prognose the likelihood of a disease in the patient and determine the most effective therapies.

Growth rates create promising macro-trends

The global MDx market is forecasted to grow with a CAGR of 10.3% annually and will be worth $7bn-$8bn by 2018. Oncology, is the fastest growing MDx segment with 21% market share and 19% CAGR until 2018. Infectious disease is the largest MDx segment with a market share of 42% and CAGR of 8% until 2018. Figures 6&7 offer insights.

The West dominates the industry

The current MDx market share is globally dominated by US with approximately 45-50% market share, followed by Europe with 25-28% and Asia with 15-17% market share. Until 2018, Asia is expected to show the highest CAGR with 12.2%, followed by North America with 9% and Europe with 8.6%. Higher awareness, increasing acceptance of personalized medicine and improved healthcare systems are reasons why the MDx market will continue the high growth path in the coming decade. Figure 8 illustrates the forecasted MDx market by region in 2019.

Key players and competitors in the MDx market

Biocartis' competitive landscape is highly fragmented and consists of a broad spectrum of players that range from well-known and established companies to clinical service laboratories and individual assays developers (*Exhibit 8*). With a 31% market share, Roche Diagnostics is the leading force in the global MDx market (Figure 9). Various large players have been active in the MDx market for more than a decade and were able to successfully commercialize sophisticated platforms and tests.

Segmentation is key

Not every player on the MDx market poses a direct threat to Biocartis. The competitive landscape can be divided between companies that provide random-access platforms (such as Idylla) and companies that use batch systems, only the former pose a direct threat to Biocartis (for comparison see *Exhibit 9*). However, in the last decade, large companies such as Becton Dickinson, Roche, BioMérieux and Luminex have actively acquired random-access platforms such as HandyLab, IQuum, BioFire and GenturaDx respectively. Consequently, becoming Biocartis' direct competitors. Furthermore, companies that only develop assays (infectious disease or oncology) could also pose a threat to Biocartis.

Taking into consideration the type of the platform, the type of assays offered, and the segments served, we have divided the competitors into a two-tier system. Tier 1 competitors are direct random-access instrument competitors that pose a direct threat and include 12 companies. We believe that Cepheid is the closest competitor of Biocartis with its 9,279 installed GeneXpert systems, the largest installed base of molecular systems globally[2]. Tier 2 competitors include 10 companies and include well-known names, as Abbot and Siemens. The full competitor list can be found in *Exhibit 10*.

Key differentiating factors

Competition within the random-access segment have considerable feature differences. The most important factors of differentiation are the need for pre-treatment, the difficulty of usage, the amount of simultaneous detection of multiple molecular targets and the costs to buy and operate.

Idylla's competitive advantage is that it does not require pre-treatment of samples and can perform tests from any biological sample. That increases the speed of the process, reduces the high medical labor costs and substantially lowers the potential of errors. Biocartis' technology is simple to use, does not require much pre-knowledge and has a higher multiplexing capability than most competitors, which maximizes the amount of information that can be taken from a sample. The VRIO framework in *Exhibit 11* examines if Biocartis' competitive advantage can be considered as sustainable. The analysis shows that certain features of Idylla are rare or even inimitable. For these reasons, Idylla has a temporary competitive advantage. However, no

[2] Cepheid's Q3 2014

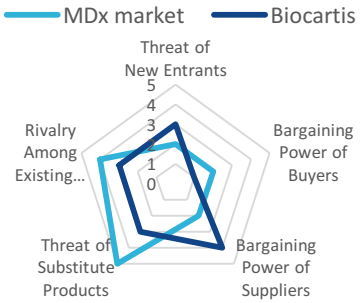


Figure 10: Porter's Five Forces
Source: Team Analysis

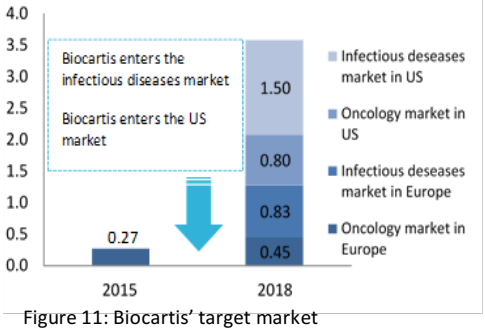


Figure 11: Biocartis' target market
Source: Market & Markets 2014

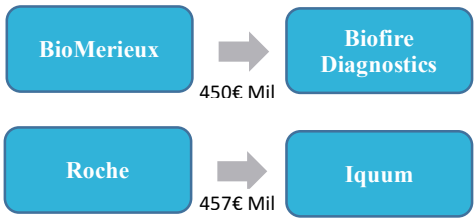


Figure 12: Most comparable transactions
Source: Merger Market

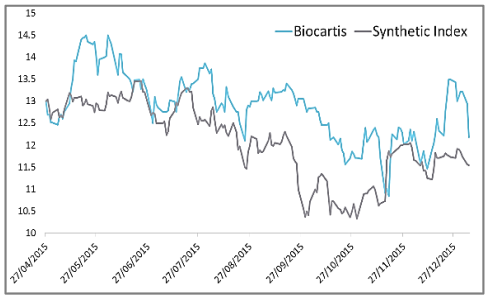


Figure 13: Synthetic peer index vs Biocartis
Source: Factset

feature seems to be sustainable, especially when considering that the market is vulnerable to rapid technology changes.

Compared to batch systems, Idylla offers more flexibility as it can connect up to eight instruments that can access different assays at different times. A high-throughput system with automatic loading is under development. This means that Idylla can benefit from the high-throughput advantage of batch systems while keeping the flexibility & speed advantage of the random-access systems. More details about differentiating factors can be found in *Exhibit 12*. Figure 10 illustrates the Porter's framework. The detailed analysis is presented in *Exhibit 13*.

Competitive infectious disease market

Idylla's competitive advantage is the full automation in the oncology segment, something that has not yet been achieved. The oncology segment is underserved by random-access instruments. There are only two direct competitors Roche (Iquum) and Rhoenix which offer oncology assays that are directly competing with Biocartis. The largest MDx market of infectious diseases is however overpopulated and highly competitive, pushing the assay prices to very low levels. For example, Cepheid, being on the market for over 10 years, has commercialized over 20 assays in the infectious disease segment, having a considerable market share.

Considering Biocartis' current product offering and its geographic expansion, its potential target market is ca. $270m. By 2017 Biocartis plans to receive the FDA approval and thereby introducing its infectious disease assays into the US market, which will increase the company's potential target market to ca. $3.6bn. Figure 11 illustrates Biocartis' target market expansion.

Valuation

To value Biocartis, we used three methodologies: transaction comparables, trading comparables anda discounted cash flow analysis.

Transaction comparables

Since 2005, there have been multiple transactions in the general MDx industry. Given Biocartis' current early commercial stage, we do not see transaction comparables as a good valuation benchmark since most of the technologies acquired have been in later commercial stages. However, we still applied the valuation methodology because Biocartis has a high likelihood of being acquired in the near future. We believe that Biocartis' revenue estimates of 2018 better represent the company's capacity, and thus 2018 is set as the target acquiring date. We chose 2018 as the company is expected to commercially expand into United States, following its second expansion wave. At this point, the company will have released the "core" oncology and sepsis assays, reaching a similar commercial stage as other acquisition targets. Assuming a WACC of 9.8%, the average EV/Sales multiple ranges of 3.4x and 5.1x and Biocartis' revenue estimates in 2018 of 105.9 million euro, we derived a share price range between €9.60 and €12.90.

Two transactions in the fully automated random-access market are relatively comparable. These transactions include BioMerieux's acquisition of Biofire and Roche's acquisition of Iquum (Figure 12). Although not very recent, another important transaction was the acquisition of HandyLab by Becton Dickinson in 2009. The whole transaction analysis can be found in *Exhibit 14*. There is a clear trend of large and established companies acquiring new random-access technologies for a high premium.

Trading comparables

We believe that seven companies in the MDx market are comparable peers, the most important peer being Cepheid. We have constructed a synthetic index from Biocartis' these closest peers and have compared the average stock price development of the peer group with Biocartis. As can be seen in figure 13, Biocartis outperformed the index since its IPO. With the similar reasoning as in the transaction comparables analysis, we derived the EV/Sales multiple ranges of 1.9x to 2.6x in 2018, implying a share price between €6.60 and €8.00 after discounting. Figure 14 illustrates the comparable companies' analysis. The complete trading comparables method can

Seven companies in the MDx market are comparable peers of Biocartis

Company	Ticker	Market Cap.	EV	EV / Sales 2015E	2016E	2017E	2018E
BioMerieux (BioFire)	BIM FP	4884	2.4	2.2	2.1	2.0	1.9
Cepheid	CPHD	2516	4.7	4.1	3.5	2.9	2.6
Genmark Diagnostics	GNMK	258	6.7	5.3	3.4	2.0	1.4
Luminex (GenturaDx)	LMNX	722	3.0	2.9	2.7	2.7	2.8
Nanosphere	NSPH	24	1.2	0.9			
T2 Diosystems	TTOO	230	76.6	14.5	3.4	2.0	1.6
Qiagen	QGEN	6861	5.3	5.0	4.7	4.3	4.0

Figure 14: Trading comparables
Source: Bloomberg

WACC	
Debt-to-Total Capitalization	2.6%
Equity-to-Total Capitalization	97.4%
Cost of Debt	
Cost of Debt	5.0%
Tax Rate	30.0%
After-tax Cost of Debt	**3.5%**
Cost of Equity	
Risk-free Rate	1.99%
Market Risk Premium (Rm-Rf)	5.0%
Levered Beta	0.25
Size Premium	6.74%
Cost of Equity	**10.0%**
WACC	9.81%

Figure 15: WACC calculation
Source: Team analysis and valuation model

WACC \ Perpetual growth rate	2.00%	2.25%	2.50%	2.75%	3.00%
8.8%	8.5	8.7	9.0	9.3	9.7
9.3%	7.7	7.9	8.1	8.4	8.7
9.8%	7.0	7.2	7.4	7.6	7.9
10.3%	6.4	6.6	6.8	7.0	7.1
10.8%	5.9	6.1	6.2	6.4	6.5

Figure 16: Perpetual growth & WACC sensitivity – Base Case
Source: Valuation model

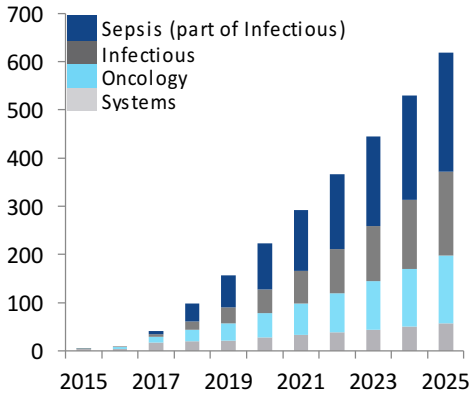


Figure 18: Forecasted revenue split
Source: Valuation model

be found in *Exhibit 15*. The peer list should be considered with caution due to different commercial stages of the platforms and due to companies operating in multiple segments. Companies using Next Generation Sequencing (NGS) technologies have not been included as these technologies are still in early stage. Technological differences between qPCR and NGS are illustrated in *Exhibit 16*.

Discounted cash flow analysis

To value Biocartis, we used the discounted cash flow analysis and projected the company figures up until 2025. We derived a WACC of 9.8%, illustrated in Figure 15 (explanations in *Exhibit 17*) and assumed a perpetual growth rate of 2.5% in the base case scenario. The WACC and perpetual growth sensitivity is illustrated in Figure 16. Figure 17 illustrates the DCF analysis.

Discounted Cash Flow Analysis (€ in Millions)	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E
EBITDA	(22.6)	(24.1)	(20.6)	(4.3)	14.1	32.3	42.3	53.0	64.3	76.4	89.3
EBIT	(26.9)	(29.0)	(25.5)	(9.3)	8.8	26.6	36.1	46.1	56.7	67.8	80.7
Less: Cash Taxes	-	-	-	-	(0.8)	(2.6)	(3.5)	(4.6)	(5.6)	(6.8)	(8.1)
NOPAT	(26.9)	(29.0)	(25.5)	(9.3)	8.0	24.0	32.6	41.6	51.1	61.0	72.6
Plus: D&A	4.4	4.9	4.9	5.0	5.3	5.7	6.2	6.8	7.6	8.6	8.5
Less: CAPEX & investments in int.	(12.1)	(8.2)	(3.5)	(4.0)	(5.6)	(7.1)	(8.4)	(9.5)	(11.2)	(13.0)	(14.8)
Plus/(Less) change in working capital	(0.3)	(2.1)	(9.0)	(9.2)	(20.1)	(20.3)	(18.0)	(19.4)	(20.9)	(22.4)	(24.0)
Unlevered Free Cash Flow	(35.0)	(34.3)	(33.1)	(17.6)	(12.5)	2.3	12.4	19.5	26.6	34.2	42.3
NPV of unleveraged Cash Flows	(48.3)										
Perpetuity Growth Rate 2.5%											
Terminal Value (discounted)	232.9										
Implied EV	184.6										
-Net Debt (Total Debt - Cash)	(115.1)										
Implied Equity Value	299.7										
S/Out	40.5										
Implied Price per Share	7.4										

Figure 17: Discounted Cash Flow Analysis – Base Case
Source: Financial Model

Revenue assumptions

Biocartis is an early-stage company with high growth potential that intends to generate revenues by selling its Idylla platforms and assays globally. The assays are only sold in the oncology and in infectious diseases segments. We believe that the majority of Biocartis' revenues will be generated by the sale of assays, led by the sale of sepsis assays (Figure 18). Before 2014, the majority of Biocartis' income was generated by sales of products for non-clinical R&D purposes, from government grants and collaboration revenues. The full figures for the revenue split can be found in *Exhibit 18*.

Idylla sales assumptions

Company management communicated the price of Idylla to be approximately €50,000. Based on this price, we project the number of systems sold worldwide by working with three waves of expansion. In the first wave, management will focus on 950 large/ mid-size European pathology laboratories. Additionally, we assumed they will commercially expand to the US in 2017/2018, after receiving FDA approval. Figure 19 illustrates Biocartis' target customers. Due to the two waves, the largest percentage increase in Idylla sales is estimated to be in 2017/2018 and in 2020. Based on industry trends, we believe that developing countries will comprise 41% of total sales in 2025 and play a large role in Biocartis' success.

Biocartis aims to expand globally by working with three waives of expansion

			Wave 1: 2015-2016	Wave 2: 2017-2019	Wave 3: After 2019
Oncology	Europe	Target customers	▪ Large/ mid-size pathology labs	▪ Low volume labs	▪ Total market
		Number	▪ 400 performing oncology tests ▪ 550 not performing oncology tests	1,250	4,000
	US	Target customers		▪ Pathology labs	▪ Molecular diagnostics labs ▪ CAP-accredited pathology labs
		Number		750	7,700
Infectious	Worldwide	Target customers		▪ Decentralized rapid response labs ▪ Microbiology labs	
		Number		10,000	

Figure 19: Biocartis' targeting strategy
Source: Company information

Assay assumptions

Each assay has been modelled individually, while considering the year of introduction, the prices between €120-€350 for oncology assays and €100-€350 for infectious diseases assays. Revenue per assay was calculated by taking the number of people affected by the disease worldwide, multiplied by the assay price and by the market share of the assay. The management estimates that the market share of each assay will be between 3-7% after full commercialization. Therefore, we assumed 5% market share for assays at maturity in 2025. We projected it would take on average 10 years to reach a 5% market share, thus only assays that were released in 2015 will gradually reach the 5% market share in 2025. For instance, an assay released in 2017 will have a market share of 4% in 2025. An undisclosed assay, released in 2023 will have a market share of less than 1% by 2025. With sensitivity analysis, we varied the "mature" market shares between 2-8% and derived EV ranges. Figure 20 illustrates the importance of the assay market share on the valuation and the relative insignificance of the Idylla price. We did not project revenue from Ebola, as new cases during the past month amounted to only a one-digit number worldwide.

		Assay market share						
	7.4	2%	3%	4%	5%	6%	7%	8%
Idylla Price (in €)	65000	3.9	5.1	6.3	7.6	8.8	10.1	11.3
	60000	3.9	5.1	6.3	7.5	8.8	10.0	11.3
	55000	3.8	5.0	6.2	7.5	8.7	10.0	11.2
	50000	3.8	5.0	6.2	7.4	8.7	9.9	11.2
	45000	3.7	4.9	6.1	7.3	8.6	9.9	11.1
	40000	3.6	4.8	6.1	7.3	8.5	9.8	11.1
	35000	3.6	4.8	6.0	7.2	8.5	9.8	11.0

Figure 20: Assay maturity market share & Idylla price sensitivity – Base Case
Source: Team analysis

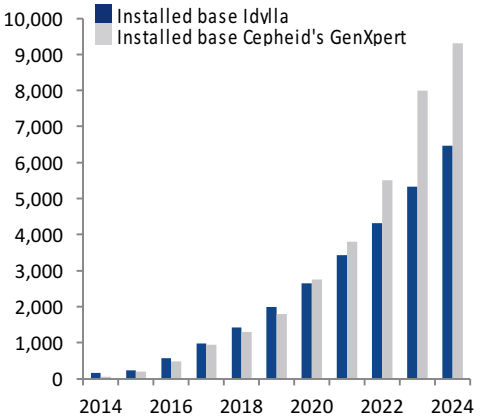


Figure 21: Comparison of platform installed bases
Source: Biocartis' and Cepheid's corporate presentation

Biocartis has forecasted to release 4-5 assays per year. However, we modelled with the assumption that the company will release only two undisclosed assays for clinical purposes per year after 2017, one in oncology and one in infectious diseases. This assumption was made based on the fact that Cepheid has commercialized 20 clinical assays in the past 10 years and that Biocartis already postponed the release of the NRAS (colon) and the NRAS/BRAF (colon). Due to the lack of information on prices and potential markets of undisclosed assays, a conservative approach to projecting their potential revenue has been pursued. Undisclosed assays' revenue has been estimated by taking the assay with the least amount of sales that year. Details about each assay can be found in the *Exhibit 19*.

Better than the best? The intense competition makes the difference

We expect Idylla's installed base to be around 6,500 units by the end of 2025. We forecast Biocartis' installed base to be lower than Cepheid's, mainly due to higher competition now compared to that of ten years ago. For the same reason, we expect that the system sales growth will gradually decrease in comparison to Cepheid's system sales growth. Cepheid introduced its random-access platform GenXpert in 2005 and is a leading molecular diagnostics company with a focus on infectious diseases. Figure 21 compares the forecasted installed base of Idylla with the historic installed base of Cepheid (sales occurred in the period 2005-2015).

COGS, R&D, S&M, G&A and CAPEX assumptions

We expect the gross margin to improve in the coming years due to the economies of scale and partnerships for co-developing assays. Moreover, the gross margin is assumed to be in line with the peer average of 59% after 2020. After the successful Idylla development and high R&D costs from 2012-2014, R&D is expected to converge from the current level of 256% to the industry average of approximately 16%. The assay development will be the main driver of R&D costs. According to the management, bringing an assay to the market costs the between company €3m-€8m. Sales and marketing costs are expected to level gradually, reaching 20% of sales. The sharp increase in sales & marketing costs within the first years can be explained by Biocartis partially building its own salesforce. The SG&A will gradually decrease to the industry standard of ca. 10%. The automated production line will require high CAPEX, according to the management, are estimated to be at around €22 million in the next 3 years. Afterwards, we modelled CAPEX as gradually decreasing percentage of sales. Figure 22 illustrates the peer financials used for our assumptions.

		as % of sales			
Peer group	Gr. Margin	R&D	S&M	G&A
bioMérieux (BioFire)	52%	12%	18%	8%
Cepheid	52%	21%	21%	12%
Genmark Diagnostics*	57%	104%	41%	39%
Luminex (GenturaDx)**	68%	19%	24%	14%
Qiagen	64%	12%	28%	9%
Average	**59%**	**16%**	**23%**	**11%**

*Genmark Diagnostics has not been included in R&D, S&M, G&A averages
**All numbers, except Luminex show 5 year averages.
Luminex illlustrates data as of its last financial year

Figure 22: Peer comparison
Source: Factset

Scenario:	Bull	Base	Bear
Gross Margin	60.5%	59.5%	58.5%
Long term R&D as % of sales	15.5%	16.0%	16.5%
Long term marketing and distribution expenses as % of sales	19.5%	20.0%	20.5%
Long term SG&A expenses as % of sales	9.7%	10.0%	10.3%
Idylla price	55,000 €	50,000 €	45,000 €
Assay market share (at maturity)	5.5%	5.0%	4.5%
Average oncology assay prices	250 €	230 €	210 €
Sepsis assay price	225 €	200 €	175 €
Perpetuity Growth Rate	2.75%	2.50%	2.25%
WACC	9.6%	9.8%	10.0%

Figure 23: Scenario analysis
Source: Team analysis

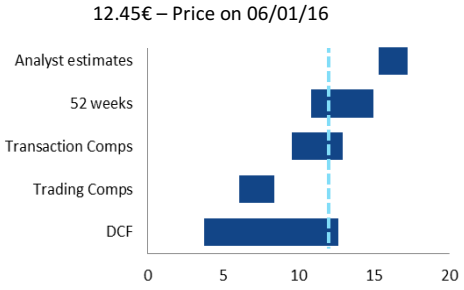


Figure 24: Valuation summary
Source: Valuation model

Biocartis will generate its first positive operating cash flows by 2021 and will burn through its IPO proceeds by 2019

Scenarios – Bear and Bull

We identified ten essential factors (Figure 23) that play a major role in our DCF model. By creating two additional scenarios on top of the base case, we derived a DCF range of €3.70 and €12.60.

Sanity check: Holt Lens by Credit Suisse

Credit Suisse's Holt lens is an objective framework to value and compare companies around the world. Based on its own methodology, it is designed to provide an understanding of a company's profile, including its operations, market expectations and valuation. Although we did not incorporate it in our valuation, we used it as a sanity check. The Holt valuation resulted in a warranted price of €6.38, implying a downside potential of 49%. This confirms our valuation with respect to downside potential.

Valuation summary

We used three main valuation methodologies to derive the target price, assigning the DCF a weight of 50%, the transaction comparables and the trading comparables a weight of 25% each. We assigned a higher importance to DCF because of the early commercial stage and high growth potential of Biocartis. By taking the midpoint of all three ranges and assigning the weights, we derived the target price of €8.34. Figure 24 compares the share prices derived by our valuation methods.

Financial Analysis

The financial table in Figure 25 reveals Biocartis' future prospects by highlighting our assumptions and forecasts.

Financial Condition (€ in Millions)	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E
Profitability											
Gross Margin	58.0%	58.3%	58.6%	58.9%	59.3%	59.5%	59.5%	59.5%	59.5%	59.5%	59.5%
EBITDA Margin	(262.5%)	(176.6%)	(42.6%)	(4.1%)	8.3%	13.4%	13.4%	13.4%	13.4%	13.4%	13.4%
Operating Margin	(313.3%)	(212.3%)	(52.8%)	(8.8%)	5.2%	11.1%	11.4%	11.7%	11.8%	11.9%	12.1%
Profit Margin	(302.8%)	(206.0%)	(51.1%)	(8.9%)	4.5%	9.7%	10.1%	10.4%	10.5%	10.7%	11.0%
ROA	(18.8%)	(27.1%)	(28.0%)	(12.1%)	7.3%	17.2%	17.8%	17.7%	17.1%	17.2%	16.5%
ROE	(23.5%)	(33.9%)	(42.4%)	(19.4%)	13.5%	29.3%	28.6%	26.9%	24.9%	23.1%	21.7%
Liquidity											
Current Ratio	7.8x	9.2x	3.5x	2.1x	2.3x	2.6x	2.8x	3.1x	3.3x	3.6x	3.9x
Quick Ratio	7.6x	8.7x	3.0x	1.4x	1.5x	1.6x	1.8x	2.1x	2.3x	2.5x	2.8x
Cash Ratio	7.0x	7.7x	1.8x	.2x	.2x	.2x	.4x	.6x	.8x	1.0x	1.3x
Activity											
Days Inventory Oustanding	288	230	184	147	147	147	147	147	147	147	147
Days Sales Outstanding	172	121	84	59	59	59	59	59	59	59	59
Days Payables Outstanding	100	100	100	100	100	100	100	100	100	100	100
Cash Conversion Cycle	360	251	169	107	107	107	107	107	107	107	107
Financial Leverage											
Debt/ EBITDA	(0.6x)	(0.3x)	(0.4x)	0.0x	1.1x	0.5x	0.4x	0.3x	0.2x	0.0x	0.0x
Debt/ (EBITDA-CAPEX)	(0.4x)	(0.3x)	(0.3x)	0.0x	1.8x	0.6x	0.4x	0.3x	0.3x	0.0x	0.0x
EBITDA/ Interest expense	(33.9x)	(44.6x)	(49.5x)	(20.8x)	37.7x	43.3x	56.7x	71.0x	86.2x	204.7x	n/m
Debt/ Assets	0.1x	0.1x	0.1x	0.0x	0.1x	0.1x	0.1x	0.1x	0.1x	0.0x	0.0x
Debt/ Equity	0.1x	0.1x	0.1x	0.0x	0.3x	0.2x	0.1x	0.1x	0.1x	0.0x	0.0x
Debt/ Total Capital	0.1x	0.1x	0.1x	0.0x	0.2x	0.2x	0.1x	0.1x	0.1x	0.0x	0.0x
Shareholder Ratios											
EPS	(0.64)	(0.69)	(0.61)	(0.23)	0.19	0.58	0.79	1.01	1.24	1.50	1.80
Book Value per Share	2.74	2.05	1.44	1.20	1.39	1.96	2.75	3.76	5.00	6.50	8.29

Figure 25: Financial summary – Base Case
Source: Valuation model

Sepsis market share (maturity) \ Sepsis assay price (in €)	7.4	140	160	180	200	220	240	260
	6.5%	7.9	8.4	8.8	9.3	9.7	10.2	10.7
	6.0%	7.4	7.8	8.2	8.7	9.1	9.5	9.9
	5.5%	6.9	7.3	7.6	8.0	8.4	8.8	9.2
	5.0%	6.4	6.7	7.1	7.4	7.8	8.1	8.5
	4.5%	5.8	6.2	6.5	6.8	7.1	7.4	7.7
	4.0%	5.3	5.6	5.9	6.2	6.4	6.7	7.0
	3.5%	4.8	5.1	5.3	5.6	5.8	6.1	6.3

Figure 26: Sepsis assay sensitivity – Base Case
Source: Valuation model

Given Biocartis' early stage, the first years are not the ideal starting points for the analysis. With the MDx market enjoying a double digit growth and shifting towards flexible random-access instruments, we expect Biocartis to grow explosively in the first years of commercialization and to converge with the industry growth rate at maturity. We expect the test menu to be the main driver of revenues and to reach >80% share of total revenues after 2020. After 2017, the sepsis assay will play a major part in Biocartis' profitability picture, making the valuation highly sensitive to the sepsis assay price and to the market share at maturity (Figure 26). For comparison, Figure 27 illustrates that the average oncology assay prices will be less significant than sepsis alone. The projected financial statements of the three scenarios can be found in the *Exhibit 20*.

		Oncology assay prices (excl. MSI assay)						
	7.4	130	150	170	190	210	230	250
MSI assay price (in €)	320	6.8	7.0	7.1	7.2	7.3	7.4	7.5
	300	6.8	6.9	7.1	7.2	7.3	7.4	7.5
	280	6.8	6.9	7.0	7.2	7.3	7.4	7.5
	260	6.8	6.9	7.0	7.1	7.3	7.4	7.5
	240	6.8	6.9	7.0	7.1	7.2	7.4	7.4
	220	6.7	6.9	7.0	7.1	7.2	7.3	7.4
	200	6.7	6.8	7.0	7.1	7.2	7.3	7.3

Figure 27: Oncology assay prices sensitivity
Source: Valuation model

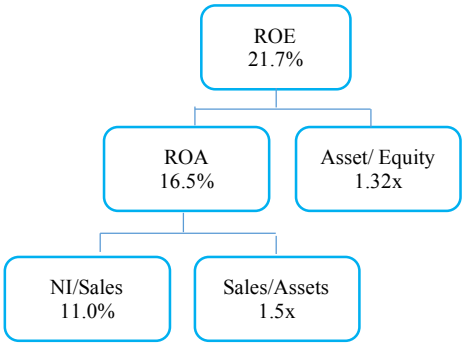


Figure 28: DuPont Analysis in 2025
Source: Valuation model

2009 Belgian Code on Corporate Governance	
Principle	**Score**
Governance structure	5
Board effectiveness and efficiency	4
Directors' integrity and commitment	5
Transparent appointment and evaluation procedures	5
Specialised committees	3
Executive management structure	5
Fairly and responsibly remuneration	3
Dialogue with shareholders	5
Corporate governance disclosure	5
Overall score	**4.44**

** 1 poor - 5 excellent

Figure 29: Belgian Code on Corporate Governance
Source: The 2009 Belgian Code on Corporate Governance and team analysis

Sepsis: a shift toward high-margin tests

Biocartis' margins are expected to expand moderately due to the shift of the revenue mix towards high margin tests such as sepsis. We modeled Biocartis to become profitable after 2019; however, it could be later due to delayed assay development or because of issues with FDA approvals. Biocartis' gross margin contains a major leverage potential due to the premium pricing of the platform compared to low-plex MDx platforms, while keeping the production costs on a similar level. Economies of scale, which results from workstation additions in 2016 and addition of the new high capacity line are further factors for margin growth.

A favorable tax environment

The Belgian tax regime (Patent Box) exempts 80% of income coming from patented goods. Thus, it is highly unlikely that Biocartis will have substantial tax expenses in the near future. 2019 onwards (when the company is likely to become profitable) we do not expect the company to pay a substantial amount of taxes due to its deferred tax assets from accumulated losses and the Belgian Patent Box regime.

DuPont analysis: asset turnover is key

By 2025, we expect Biocartis to have a ROE of 21.7%. The main drivers of such a high level of profitability are the asset turnover and the financial leverage. Biocartis' ROE will peak in 2020, subsequently declining afterwards due to the decreasing asset turnover, caused by the declining revenue growth after 2020. Figure 28 illustrates the DuPont analysis.

Slow cash generating engine

In the analyzed historical period (2012-2014), strongly relying on equity issuance, Biocartis presented weak cash-generating abilities. We expect the company to generate the first positive operating cash flows by 2021, two years after becoming profitable. Biocartis has to repay its debt by 2018 and will need to raise new capital in 2019 to fund its operations. IPO proceeds will be insufficient to cover all costs in 2019.

Liquid prospects

The company's liquidity ratios will fall until 2018 due to their cash spending on the automated production line and on R&D in the next three years. Nevertheless, they will remain above optimal levels due to their high cash levels as of H1 2015. Interest coverage is expected to be high after 2019 due to the low debt and interest expense levels.

Net Working Capital

We expect Biocartis' activity ratios to converge with Cepheid's: cash conversion cycle is expected to improve and reach 107 days after 2018. Cepheid was used as it is Biocartis' closest competitor and its many years in business indicate acceptable norms in the industry. Activity ratios were used to calculate the net working capital items.

Corporate Governance & Corporate Social Responsibility

Biocartis has declared to comply with the 2009 Belgium Code on Corporate Governance. The Code consists of nine principles that aim to support long-term value creation of all stakeholders. An assessment of the quality of Biocartis' corporate governance, illustrated in Figure 29, resulted in an overall score of 4.44 (out of 5). This reflects a high compliance with the nine principles (details in *Exhibit 21 & 22*). In spite of the high compliance, we regard as critical that Rudi Mariën is a member of the audit committee while he is at the same time also a large shareholder.

Who is in charge?

A remarkable aspect of Biocartis' governance is that the executive management team has changed significantly since Biocartis' IPO in April 2015. The former CFO, Hilde Windels, has been promoted to Deputy CEO and now works closely alongside the CEO, founder Rudi Pauwels. Ewoud Welten, who has extensive experience of the healthcare sector as a corporate financier, has joined Biocartis as CFO. It is noteworthy that his considerable experience in M&A would be advantageous in the event Biocartis were to be acquired. In addition, to strengthen the management team, Biocartis has created new positions such as Head of Marketing, Head of Applied R&D or General Counsel. This move is regarded as a critical step for further growth.

Efficient risk management system

Biocartis has introduced a risk management system that is designed to identify, monitor and manage all health and safety or environmental issues. The aim of the system is twofold. First, it

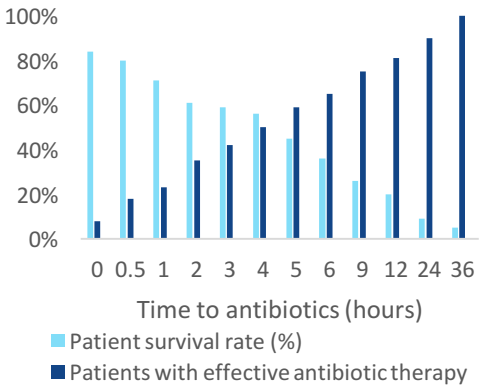


Figure 30: Sepsis survival rate in relation to time
Source: Kumar et al., 2006. Duration of hypotension before initiation of effective antimicrobial therapy is the critical determinant of survival in human septic shock.

meant to guarantee a safe and healthy work environment for Biocartis' employees. Second, it designed to prevent any risk of injury, illness or damage to local communities or the environment. A prevention and protection steering team is responsible for implementing and overseeing the risk management system. The team meets on a monthly basis and is advised by an internal prevention advisor.

Biocartis' contribution towards the world

Random-access platforms, such as Idylla, offer a unique solution to traditional diagnostics workflows that require highly trained staff and long diagnostic horizons. The benefits of these platforms are immense; they can save lives, the right treatment can be identified rapidly, which is for certain diseases indispensable. For instance, within sepsis every minute matters (Figure 30). Besides the benefits for patients, the fast and accurate results can lead to cost benefits in the entire health care sector. On the one hand, automated testing with random-access platforms is cheaper than traditional testing. On the other hand, identifying the right treatment rapidly and accurately helps to avoid costs associated with wrong treatments; and could also potentially reduce hospital stays.

Risk

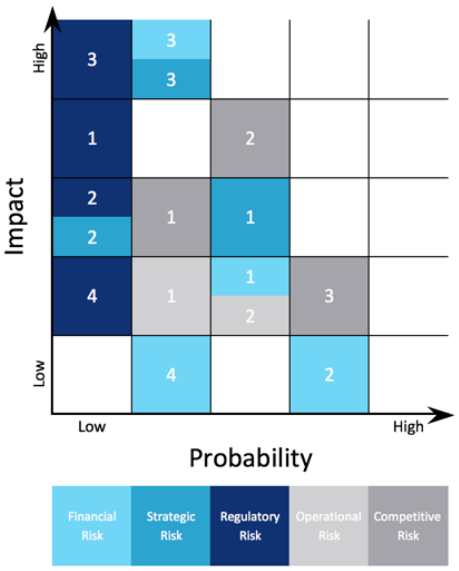


Figure 31: Risk matrix
Source: Valuation model

Risk Type	Risk #	Risk Factor
Financial Risk	1	Cash reserves
Financial Risk	2	Dilution of shareholder equity
Financial Risk	3	Profitability
Financial Risk	4	Stock Liquidity
Strategic Risk	1	Young Company
Strategic Risk	2	Risk of Partnership Failures
Strategic Risk	3	Technology becoming obsolete
Regulatory Risk	1	Assay Reimbursment risk
Regulatory Risk	2	Not Obtaining a CLIA Waiver
Regulatory Risk	3	Development of new assays
Regulatory Risk	4	Intelectual Property Risk
Operational Risk	1	Production Risk
Operational Risk	2	Supply Chain Risk
Competitive Risk	1	Product differentiation
Competitive Risk	2	Limited Assay Selection
Competitive Risk	3	New Entrants

Figure 32: Risk factors
Source: Valuation model

Financial Risk

Biocartis will not be able to sustain its operations through its sales in the next four years, thus relying on its IPO cash and on various investors. There is a risk that Biocartis will burn its cash quicker than anticipated or before being able to ramp up sales. Therefore, Biocartis would be forced to return to capital markets quicker than anticipated. Additionally, its stock currently lacks liquidity as the daily volume is fairly low with on average 15,000 shares traded per day.

Strategic Risk

Biocartis' long term strategy is to offer a large portfolio of assays for its Idylla platform. This strategy is complemented through partnerships that will contribute to this portfolio of assays. There is a risk exists that Biocartis will lose existing partners like Johnson & Johnson. Furthermore, Biocartis' ability to offer a large scope of assays may be questioned by its relatively short existence as a company and postponed assay developments. Finally, there is a risk that Biocartis' technology will become obsolete, reducing their ability to recuperate their initial investment. Figure 32 shows all targeted risks, mitigating factors can be found in *Exhibit 24*.

Regulatory Risk

One of the main selling features of the Idylla platform is that it has the potential to be used by untrained professionals. For that however, a CLIA waiver is required. Although the management is confident they will receive the waiver in the near future, there is still a risk it will not be granted. Moreover, Biocartis is dependent on its intellectual property which could be challenged in the future. The company is currently developing and selling assays that are being reimbursed by insurance companies and/or governments. Assay prices will decline if the governments adjust the reimbursement coverage and more competitors enter the industry. In order to be able to sell medical diagnostics devices, the Idylla platform and individual assays need to be either FDA 510(k) approved or CE marked (depending on the region). Biocartis' Idylla platform and its first three assays are currently CE marked but have yet to be granted FDA approval. FDA approval is an ongoing risk as each of its assays needs to be compliant with its strict requirements. Postponing assay commercialization can have a severe impact on share price.

Operational Risk

The production of medical diagnostics instruments needs to be very precise. Manufacturing issues related to badly calibrated machinery or human error, could easily cause product anomalies. In the event such anomalies occur, products may need to be written off, repaired or even recalled, all of which would affect Biocartis' profitability. Furthermore, Biocartis relies on unique key suppliers for the production of its products. Suppliers could raise prices, cause production bottlenecks, quality issues or even halt production completely.

Competitive Risk

Biocartis has many competitors that are selling similar products and compete with the company directly or indirectly. Furthermore, as outlined earlier, Biocartis' current limited assay selection increases the competitive landscape within which Biocartis operates. Finally, multiple firms are entering the medical diagnostics industry, all of which are a potential threat to Biocartis' existence. The full risk analysis can be found in *Exhibit 23* and the risk matrix output in Figure 31.

Glossary

Assay

In the field of diagnostics, an assay is a qualitative or quantitative test of a certain substance in a sample to determine its components. It is frequently used to investigate or analyze the presence of concentration of antibodies or infectious agents etc.

Biomarker

Biomarkers, or biological markers, are measurable indicators of some biological state or condition that can be objectively measured through an assay. They are generally used as a clinical assessment to monitor and predict health states in patients so that appropriate therapeutic interventions can be planned.

Companion Diagnostics (CDx)

Diagnostic tests that provide information, which is essential for the safe and effective use of a corresponding drug or biological product. These tests helps to determine particular therapeutic product's benefits and whether there a certain side effects or risks from medical treatment.

CE-mark

The letters "CE" are the abbreviation for "Conformité Européenne" ("European Conformity"). The CE-mark is a mandatory conformance mark for certain device sold within the European Union. It is the manufacturer's declaration that ensures the device's conformity with the essential requirements of the relevant European health, safety and environmental protection legislation.

CLIA-waived

A Food and Drug Administration (FDA) classification for medical devices, which ensures, in accordance with US rules, that the device can be operated outside of specialized, dedicated laboratories without the need for technically specialized and highly trained staff.

Deoxyribonucleic acid (DNA)

Molecule that contains genetic instructions used in the development and functioning of all known living organisms and many viruses.

FDA approval

The American equivalent to the European CE-mark. It is the regulatory hurdle for devices sold within the United States. Applicants must provide reasonable assurance that the device can be used safely and effectively. It is noteworthy that the FDA follows stricter rules than the EU, whereby it is more difficult to obtain an FDA approval than the CE-mark.

Influenza

Also commonly known as "the flu", is a highly contagious infectious disease that attacks the respiratory system – nose, throat and lungs. Symptoms can be mild to severe and include among others, high fever, runny nose, headache and muscle pains.

Melanoma

The most dangerous form of skin cancer that develops from pigment-containing cells, known as melanocytes. The primary cause of melanoma is intense, occasional UV exposure.

Molecular Diagnostics (MDx)

Molecular diagnostics are techniques, used to analyze biomarkers in the genetic code that help to diagnose diseases, determining the likelihood of a disease in the patient and determine the most effective therapies.

Multiplexing

Capability to detect simultaneously more than one analyte or biomarker from a single sample.

Next generation sequencing (NGS)

Used to sequence millions of small DNA fragments at the same time, creating a massive pool of data. This pool can reach gigabytes in size, which is equivalent of 1 billion base pairs of DNA. NGS is often referred to massively parallel sequencing.

Polymerase chain reaction (PCR)

Used in molecular biology to generate thousands to millions of copies of a particular DNA sequence by amplifying small selected section of a DNA across several orders of magnitude.

Real-time quantitative polymerase chain reaction (qPCR)

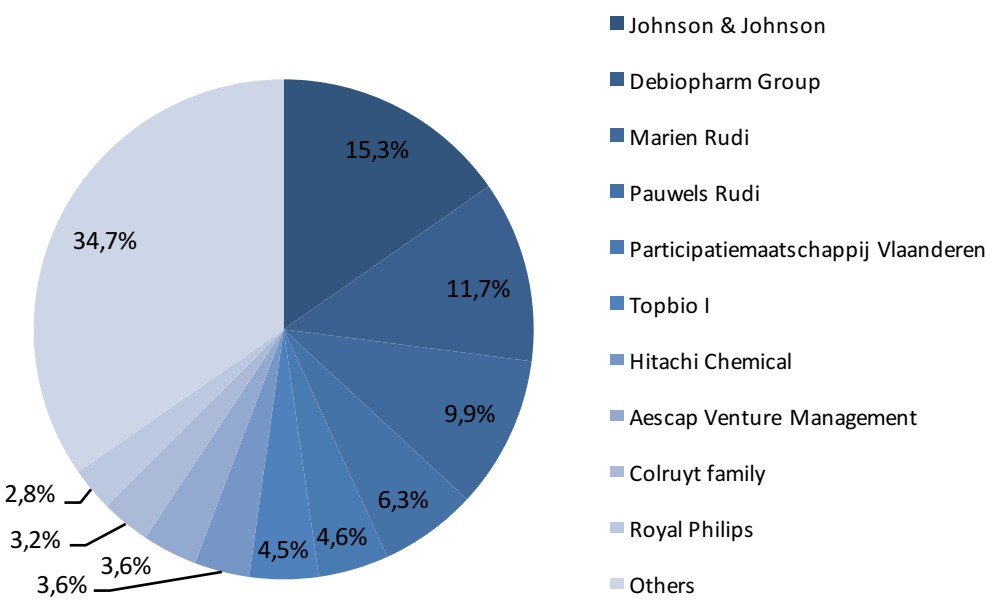
Measures PCR amplification as it occurs, whereas traditional PCR measures the accumulated PCR product at the end of the PCR cycles. Moreover, it quantifies the initial number of copies of a particular DNA fragment. Benefits are improved sensitivity, dynamic range, throughput, reproducibility and costs.

Research Use Only (RUO)

Category of medical device products that are non-approved (i.e. no CE-marking or FDA approval). They can only be used for research purposes.

Exhibits

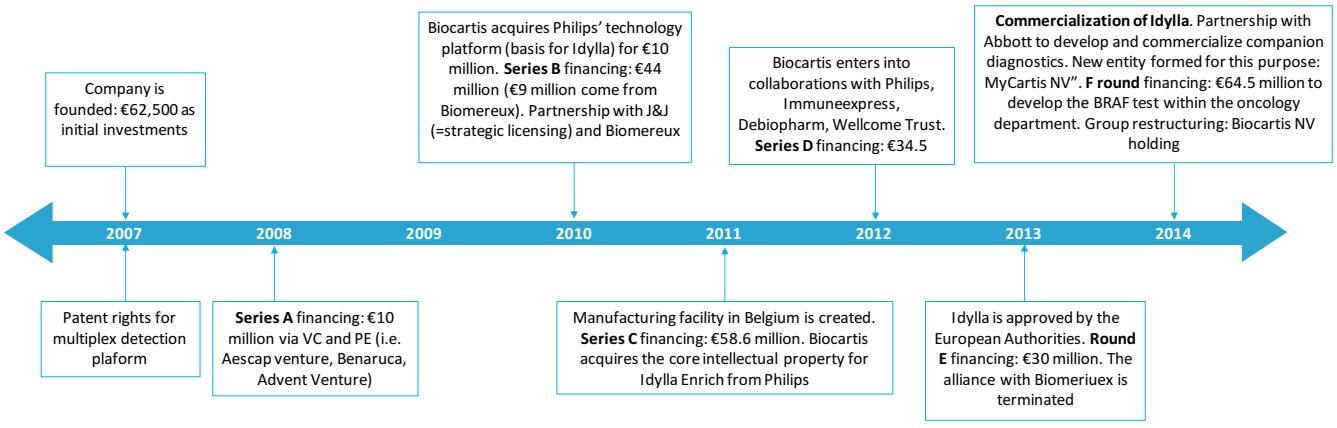
Exhibit 1 – shareholders' composition



Well-established corporations, such as Johnson and Johnson, and the management team have majority stakes in Biocartis. Strong commitments from all sides is expected

Source: Factset

Exhibit 2 – History Timeline



Source: Company information

Exhibit 3 – Idylla: the key to success?

With Idylla, Biocartis has developed a state of the art, fully-automated, MDx platform that is designed to offer fast, accurate and highly reliable results. By analyzing samples up to the molecular level, it is applicable for personalized medicine. Idylla is based on the industry standard, real time polymerase chain reaction (qPCR), whereby it targets the widest possible customer base. Each Idylla consists of three general components: console, instrument, and cartridge.

Source: Company information

The console: This is a touch screen computer, equipped with a barcode scanner to enter the sample information into the system, which serves as the data collection and transmission center. The software that is currently on the console allows for up to eight independently working instruments to be connected to the console simultaneously.

The instrument: This is an independent driver, which performs the test process within the cartridge. It is equipped with an internal computer and different sensors that do the required verifications and analysis.

The cartridge: This is a single-use plastic container that already has all the required reagents to perform the testing of the sample to detect the presence of some disease. All cartridges have the same design but the reagent content is disease specific. The sample can be blood, plasma, serum, swap, urine, sputum, stool, FFPE (formalin-fixed paraffin-embedded), and fine needle aspirate. The technology used for detection is the polymerase chain reaction, which is a method used to create numerous copies of a segment DNA of interest, producing a great amount of copies from a small initial sample. Intensification of DNA segments enables the uncovering of infectious diseases, caused by both virus or bacteria, and the distinction of non-pathogenic from pathogenic forms of specific genes.

Exhibit 4 – SWOT Analysis

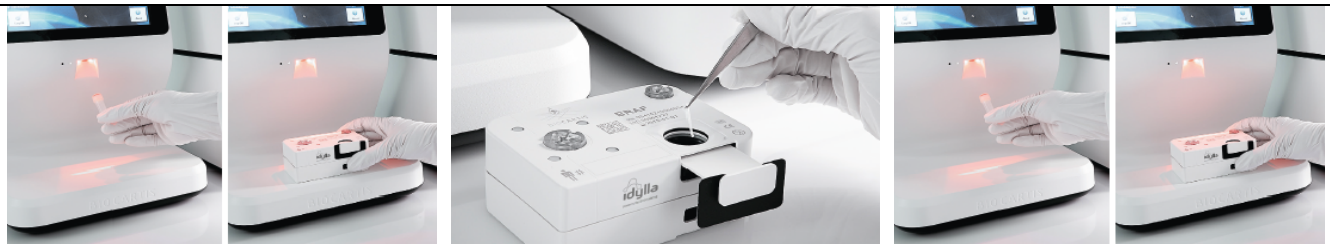
SWOT analysis	
Strengths	**Weaknesses**
▪ Fully automated plattform that is able to analyze any sample type	▪ Limited assays on the market and a small installed base of Idyllas
▪ Well established partnerships with leading companies in the field (J&J, Abbott)	▪ Further funding is necessary due to expansion plans in US and Asia
▪ Experienced management team and supervisory board	▪ The ebola assay might not be very useful considering current epidemic developments
▪ Ease of use of the plattform, rapid and highly precise results without the need for pre-treatment	▪ A weak brand recognition, as the company is very young
Opportunities	**Threats**
▪ High growth potential in the almost uncovered market of oncology and sepsis	▪ Very competetive environement in infectious diseases, with Cepheid's dominance
▪ Belgian tax regime that supports the profit optimization	▪ Fast paced environment, where technological innovation could disrupt the industry
▪ High probability of being acquired by large and established companies that want to expand into the random-access market	▪ Uncertainty regarding reimbursement policies and developments in the healthcare industry
▪ The CLIA waver could revolutionize the way the product may be used	▪ Idylla's competetive advantages may not be perceived by the public as relevant features

Source: Company information and team analysis

Exhibit 5 – Idylla: Key features

Automation: Outstanding ease of use & speed

Idylla's platform does not require any sample pre-treatment or skilled workers and covers the entire "sample-to-result" process in 35 to 150 minutes with a hands-on time of about 2 minutes.



1. Scan sample & cartridge **2. Load sample into cartridge** **3. Insert the cartridge into Idylla**

Source: Company information

Scalability

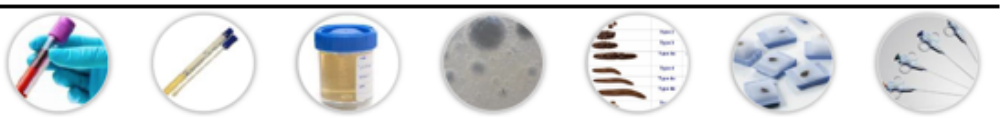
Another key feature of Idylla is its scalability. In a standard setting, one console is connected with one instrument. However, it is possible to connect up to 8 instruments with the console, allowing multiple tests to be conducted at the same time. Moreover, Biocartis is currently developing a high-throughput system that allows more than 16 simultaneous tests.

Instruments	1	4	8	16+
Maximum throughput*	12	48	96	384+

Source: Company information ** based on a 60-minute test, 12 hour/day operation time; high throughput system (384+) concept currently under design*

Wide variety of sample types & multiplexing

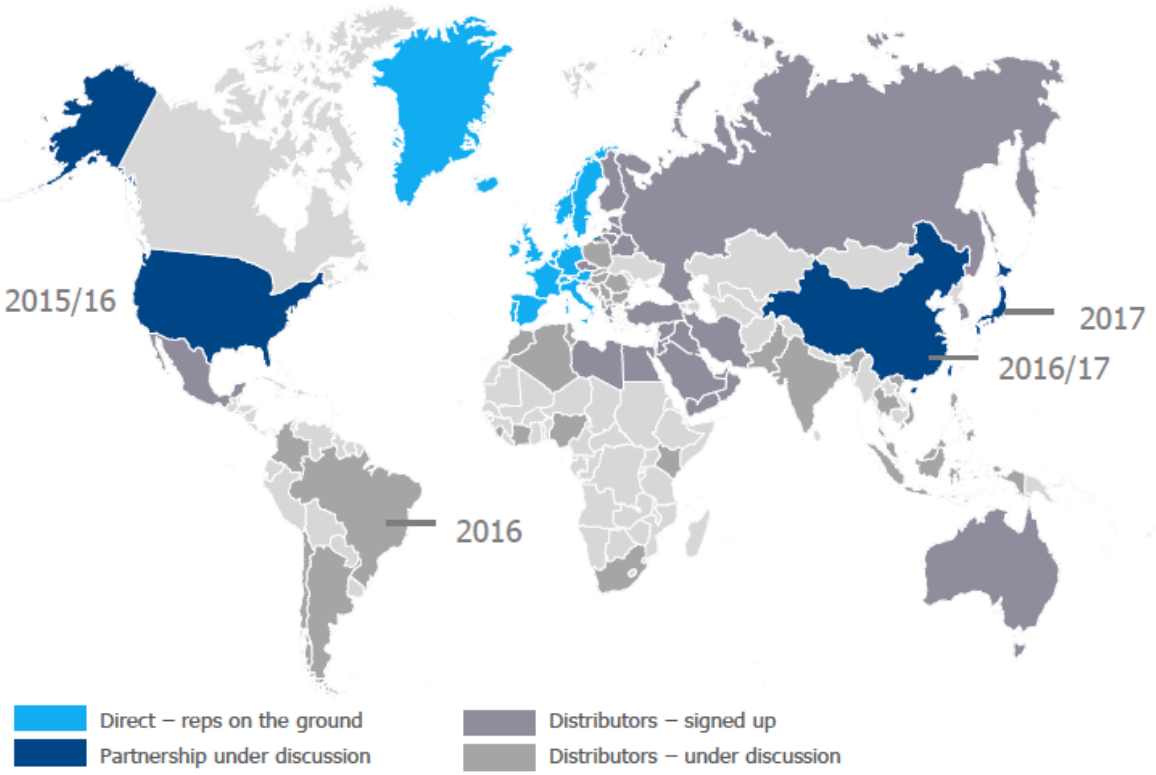
Idylla's powerful sample preparation functionalities allows to process any primary clinical sample types. In this regard, Idylla offers a broad range of potential application (e.g. oncology, virology, etc.). Moreover, multiplexing allows to simultaneously detect and analyze multiple targets in a single sample.



Blood/Plasma/ Serum	Swab	Urine	Sputum	Stool	FFPE	Fine needle aspirate
Viral load tests	Infectious disease tests	STD's	Respiratory tract infections	Gastrointestinal tract infections	Standard sample type for tumor biopsies	Lung biopsies spinal fluid (meningitis)
Sepsis	Genetic tests	Urogenital cancers				
Liquid biopsies		Liquid				

Source: Company information

Exhibit 6 – Global expansion



Source: Company information

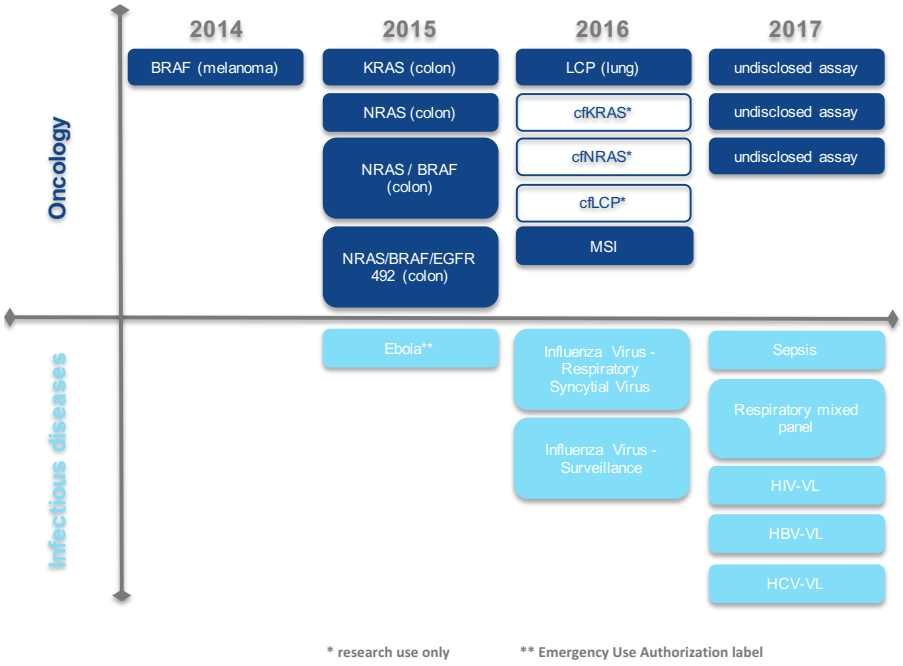
Explanation of the commercialization strategy

As an early-stage, loss making company, Biocartis is strongly dependent on a rapid increase in sales. In order to achieve rapid sales, Biocartis has to expand globally. In this regard, it has defined a well-developed commercialization strategy. Presence in key European markets is built through a direct sales approach. Other countries where market access is enabled by CE-marking (European approval) are entered through a distributor model. Moreover, Biocartis applies a **direct sales model**, **a distributor model** or a **partnership model** in countries where additional regulatory approvals are required. For example, a partnership model is expected for the United States, where FDA approval is required. Distributors differ from partners to the extent that partners will be supported by a small number of Biocartis' employees. The mixture of direct sales, distributors and partners accelerate the global expansion process, enables direct market access and allows Biocartis to overcome obstacles, such as limited experience in commercialization.

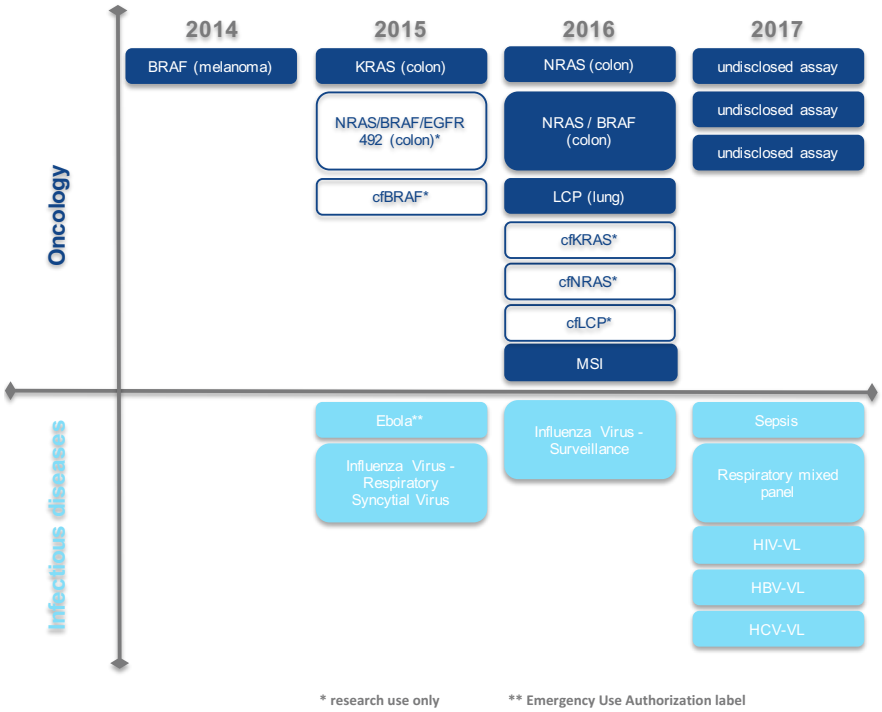
Exhibit 7 – Assay menu schedule

Biocartis plans to launch 4-5 assays per year. The schedule for launching the assays can be found in the two tables below; one as per the IPO prospectus from April 2015 and the other as per Biocartis' corporate presentation from September 2015. By comparing the schedules, we noticed significant deviations. For example, the launch of the assays "KRAS (colon)" and "NRAS / BRAF (colon)" is postponed from 2015 to 2016. Moreover, the assay "NRAS/BRAF/EGFR 492 (colon)" was thought to be launched for commercial purposes in 2015 according to the IPO prospectus. But the corporate presentation highlights that it is now only available for research purposes, which is a remarkable difference, since assays for research only do not require regulatory approvals, such as the European CE-mark or the American FDA approval. We regard these facts with caution as they might indicate that there is either a delay in the assay development or in receiving the required approvals. Therefore, we are critical with respect to Biocartis adherence to the expected schedule.

Schedule according to the IPO prospectus (April 2015):



Schedule according to the Corporate Presentation (September 2015):



Source: Company information

Exhibit 8 – Competing forces in the MDx market

Competing Forces in the MDx market	Characteristics
• Large and established companies	• High acquisition appetite • More often involved into high-throughput batch-based instruments that are centralized
• Clinical device laboratories	• Offer entire full service solutions to customers • Process assays on commercially available instruments and assay platforms
• Companies that develop random-access platforms (Idylla)	• Random-access analysers allow for more flexibility, include rapid processing of samples
• Assay developers	• Companies that develop assays for the above-mentioned systems • Do not compete with Biocartis on a platform level

Source: Company information

Exhibit 9 – Difference between random-access and batch instruments

Random-access instruments	Batch-based instruments
• A next generation of analysers that was designed to measure multiple analytes from multiples samples	• Can examine multiple samples and provide access to the test samples for the formation of subsequent reaction mixtures
• Multiple test samples can be analysed and multiple testing can be performed on any test sample	• Permit only one type of analysis at a time; multiple analysis of one sample is not possible
• Allow for more flexibility and include rapid processing of samples. High throughput in also possible by modification.	• Work best if only one type of testing is performed on a large scale of **identical** samples (high throughput)
• Decentralized systems	• Centralized systems
• No skilled personnel needed	• Skilled personnel needed
• Fast speed	• Maximizes efficiency, however slow speed

Source: Med. Journals

Exhibit 10 – Competitor analysis (Tier 1)

Competitors (Tier 1)									
#	Tier	Name	Description	Product/ Technology	Compete on	Random Access vs Batch	Automation	Sample versatility	Multiplexing capability	Throuput
1	Tier 1	Atlas Genetics	Headquartered in US, Atlas Genetics develops solutions for the detection of DNA and RNA	io System	Platform	R	Information not disclosed, only available on request			
2	Tier 1	Becton Didkinson (HandyLab)	Headquartered in US, HandyLab develops, manufactures, and markets clinical diagnostic testing products	BD-Max System	Platform	R	Fully automated	Information not disclosed, only available on request		
3	Tier 1	bioMérieux (BioFire)	Headquartered in US, Biofire is a clinical diagnostics company that is engaged in manufacturing and distribution of molecular diagnostic systems	FilmArray	Platform and Assays (Ebola assay)	R	Automated, but sample pre-treatment always required	Liquid and Solid samples require manual sample pre-treatment	1-100	Scalable via additional instruments
4	Tier 1	Cepheid	Headquartered in US, Cepheid is a molecular diagnostics company involved in manufacturing molecular systems and genetic tests and genetic-based diseases	GeneXpert	Platform and Assays (Ebola, influenza and HIV assay)	R	Automated, but sample pre-treatment often required	Limited to liquid samples, solid samples require manual pre-	1-6	Scalable via different product configurations, up to 16 modules per system
5	Tier 1	Curetis	Headquartered in Germany, Curetis develops and manufactures molecular diagnostic products. The Company offers diagnostic testing device for the detection of molecular disease infections	Unyvero Solutions	Platform	R	Fully automated	Sample pre-treament sometimes required	1-116	Scalable via additional instruments, up to 16 samples per configuration
6	Tier 1	Enigma Diagnostics	Headquartered in US, Enigma Diagnostics develops rapid molecular diagnostic instrument platforms for decentralized and point-of-care settings	Enigma Minilab	Platform	R	Fully automated	Limited to liquid samples 1-6		Scalable via additional modules, up to 6 samples per configuration
7	Tier 1	Genmark Diagnostics	Headquartered in US, Genmark Diagnostics is a molecular diagnostics company focused on developing and commercializing its biomarker detection technology	ePlex	Platform	R	Fully automated, but only for certain sample types	Limited to liquid samples, solid samples require manual pre-	1-21	Scalable via additional cartridges per instrument, up to 12 samples per configuration
8	Tier 1	Luminex (GenturaDx)*	Headquartered in US, GenturaDx develops and delivers automated molecular diagnostic testing instruments	Aries	Platform and Assays	R	Fully automated, but only for certain sample types	Information not yet published	1-6	Scalable via additional instruments and additional cartridges per instrument, up to 12 samples per
9	Tier 1	Nanosphere	Headquartered in US, Nanosphere develops, manufactures and markets an advanced molecular diagnostics platform	Verigene System	Platform	R	Automated, but sample pre-treatment sometimes required	Many sample types require manual pre-treatment	1-368	Scalable via additional instruments, up to 2 samples per configuration
10	Tier 1	Rheonix	Headquartered in US, Rheonix develops automated molecular testing solutions	Encompass Platform	Platform and Assays (BRAF and KRAS assay)	R	Fully automated, but sample pre-treatment sometimes required	Sample pre-treament sometimes required	1-50	Scalable via additional cartridges per instrument and multi samples per cartridge, up to 12 samples per
11	Tier 1	Roche Diagnostics (IQuum)	Headquartered in US, Iquum develops biological sample testing technology. Liat Analyzer enables sensitive molecular diagnostic tests	Liat Analyzer	Platform and Assays (BRAF, KRAS, NRAS, HIV, Hepatitis B, Hepatitis C and Ebola assay)	R	Automated, but sample pre-treatment often required	Limited to liquid samples, solid samples require manual pre-treatment	1-4	Scalable via additional instruments
12	Tier 1	T2 Biosystems	Headquartered in US, T2 Biosystems develops direct detection products for diagnostic applications. The Company offers diagnostic instrument for detection of infectious diseases	T2Dx product	Platform and Assays (Sepsis assay)	R	Fully automated	Whole blood	Information not disclosed, only available on request	

Source: Group research and company information

Exhibit 10 contd. – Competitor analysis (Tier 2)

Competitors (Tier 2)						
#	Tier	Name	Desription	Product/ Technology	Compete on	Random Access vs Batch
1	Tier 2	Abbott	Headquartered in US, Abbott Laboratories discovers, develops, manufactures, and sells a broad and diversified line of health care products and services	m2000	Assays (HIV, Hepatitis B, Hepatitis C viral load assays)	B
2	Tier 2	Autogenomics	Headquartered in US, Autogenomics is a molecular diagnostics company, provides automated microarray technology solutions for molecular diagnostics	Infinity System	Assays (Respiratory mixed panel assays)	B
3	Tier 2	Diacarta	Headquartered in US, Diacarta is a translational genomics and molecular diagnostics company that develops and commercializes molecular diagnostics products for cancer and infectious diseases	QClamp	Assays (NRAS/BRAF and NRAS/BRAF/EGFR492)	n/m
4	Tier 2	Focus Diagnostics	Headquartered in US, Focus Diagnostics manufactures and distributes molecular and immunology products to hospitals and commercial laboratories worldwide	3M Integrated Cycler	Assays (Respiratory Panel Assay, Respiratory Syncytial Virus)	B
5	Tier 2	Great Basin Scientific	Headquartered in US, Great Basin Scientific develops and commercialises molecular diagnostic testing platforms	Great Basin Platform	Platform	B
6	Tier 2	Grifols (Novartis)	Headquartered in Switzerland, Novartis manufactures pharmaceutical and consumer healthcare products.	Procleix Technology	Assays (HIV, Hepatitis B, Hepatitis C viral load assays)	B
7	Tier 2	Hologic (Gen-Probe)	Headquartered in US, Hologic develops, manufactures, and supplies diagnostics products, medical imaging systems, and surgical products	Tigris and Panther	Assays (Respiratory Panel Assay, Respiratory Syncytial Virus)	B
8	Tier 2	Promega	Headquartered in US, Promega provides solutions and technical support services for the life sciences industry	Maxwell® CSC System	Assays (MSI)	B
9	Tier 2	Qiagen	Headquartered in Netherlands, Qiagen provides sample and assay technologies and automated solutions that are used to process biological samples and to analyze analytes	QiAsymphony	Assays (For the BRAF Mutation Test and the KRAS and NRAS assays)	B
10	Tier 2	Siemens Healthcare	Headquartered in Germany, Siemens Healthcare provides clinical diagnostics and therapeutic systems	Versant kPCR Molecular System	Assays (HIV, Hepatitis B, Hepatitis C viral load assays)	B

Source: Group research and company information

Exhibit 11 – Competitive advantage analysis: The VRIO framework

To assess the sustainability of Idylla's key features, we applied the VRIO (Value, Rarity, Inimitability, and Organization) framework. In particular, we investigated to what extent these features are sustainable and differ from competition.

Feature	Value Competitive parity	Rarity Temporary Competitive Advantage	Inimitability Temporary Competitive Advantage	Organization Sustained Competitive Advantage
Scalibility	YES			
Multiplexing capabilities	YES	YES		
Automation	YES	YES		
Sample versatility	YES	YES	YES	

Source: Barney, J. B. (1995). Looking Inside for Competitive Advantage. Academy of Management Executive, Vol. 9, Issue 4, pp. 49-61

Scalability

Currently, up to 8 instruments can be connected with one Idylla, which allows 8 simultaneous tests. However, in the random-access MDx market it is a common practice that the platforms are scalable. All platforms of Biocartis' direct competitors can be scaled either through additional instruments or additional cartridges per instrument. As a result, scalability is only at *competitive parity*.

Multiplexing capabilities

Idylla is able to detect 30 targets in standard mode. Compared with other random-access platforms that use the same technology, qPCR, Idylla's capability is the benchmark. For example, Cepheid's GeneXpert and Genmark's ePlex can only detect 6 and 21 targets respectively. Therefore, we consider Idylla's capability as rare. However, we do not think that it is inimitable; we expect new platforms entering the market will have similar capabilities. This argument is based on the fact that Idylla is currently the latest on the market. Hence, Idylla's multiplexing capability is only a *temporary competitive advantage*.

Automation

The same reasoning as for the multiplexing capabilities can be applied to automation. All random-access platforms are either automated or fully automated. What differentiates Idylla from competition is only the need for sample pre-treatment, which is not required for Idylla, no matter which sample type is used. This is currently unique on the market. Competitors often require sample pre-treatment, depending on the sample type. However, apart from the step of sample pre-treatment all platforms are automated or fully automated, whereby it does not seem to be inimitable. Therefore, Idylla's automation can be regarded as a *temporary competitive advantage*.

Sample versatility

Idylla's sample preparation functionalities allows to process a wide variety of sample types, i.e. whole blood, stool, urine, swab or FFPE. Although it is not unique, it is rare on the market. Most competitors can only process certain sample types and require sample pre-treatment if other sample types are used. For example, Idylla's closest competitor, Cepheid's GeneXpert, is limited to liquid sample types. If solid sample types are used, they need to be liquidized first before they can be processed. As no other competitor is able to process the variety of sample types that Idylla is able to process, we consider is hard to imitate. However, as competitors can also process other sample types if they are pre-treated, we do not believe that it is a sustained competitive advantage. As a result, Idylla's sample versatility is only a *temporary competitive advantage*.

Closing remark

The analysis shows that certain features of Idylla are rare or even inimitable. For these reason, Idylla has certain competitive advantages over competition. But no feature seems to be sustainable, especially when considering that the market is vulnerable to rapid technology changes.

Exhibit 12 – Differentiating factors

Differentiating points of random-access platforms	Biocartis' Idylla
The need for sample pre-treatment	• No need for sample pre-treatment that not only increases the speed, but also reduced the potential for errors • A strong competitive point
Difficulty of usage	• Simplicity without any pre-knowledge required to operate the system • Most competitors' technologies are easy to use as well
Price per assay	• €120 - €350 Oncology; €100 - €350 Infectious diseases
Initial expenditure for the platform	• €50,000
Detection of multiple molecular targets (Multiplexing capability)	• Able to detect <30 molecular targets from a single sample in the standard mode (more than 30 also possible) • A strong competitive advantage in oncology field since most similar technologies detect <6 targets

Source: Group research and company information

Exhibit 13 - Porter's Five Forces Analysis

In the following analysis we assess both the overall MDx market and Biocartis' positioning along Porter's five forces. The distinction between the overall market and Biocartis is important, since Biocartis operates in the specialized, random-access MDx market and focuses on only two segments, which are oncology and infectious diseases.

1) Threat of New Entrants | Low | Moderate

Rapid technological changes and the growing demand for personalized medicine create promising opportunities in the fast-growing MDx market. However, the path to successfully enter the MDx market is a road paved with substantial obstacles, including a strict regulatory pathway, enormous CAPEX and R&D expenditures, the need for strong commercial capabilities or highly trained staff. In addition, companies have to incorporate a reasonable time horizon, since it takes years to develop and launch systems and/or assays. For example, developing and launching a system requires expenditures in the range of €80-€100 million and takes approximately 7 years[1]. As a result of these high entry barriers, the threat of new entrants is low in the MDx market. However, Biocartis focuses on the two most attractive segments, which attract a larger number of potential entrants. In particular, companies with large cash reserves pose a severe threat, since they might overcome the high entry barriers more easily through M&A activity. Thus, we consider the the threat of new entrants for Biocartis as moderate.

2) Bargaining Power of Buyers | Low | Insignificant

The main customer base in the MDx market is concentrated and can be classified as pathology laboratories (including hospital labs, reference labs and research labs), rapid response laboratories and microbiology laboratories. Contrary to the assumption that high customer concentration indicates a high bargaining power, high level of performance differentiation greatly reduces this power as the high gross margins show. Moreover, labs have to consider precisely the system requirements (e.g. how fast are the results needed) and/or the required range of assays (e.g. oncology, infectious diseases or virology). As the MDx market is highly fragmented, customers only have a limited choice. Customers will also face high switching costs due to high product differentiation. Biocartis has positioned itself in the random-access MDx market that limits the product differentiation to a distinct type of product and targets market niches with its assays. Therefore, the bargaining power of customers is even lower for Biocartis.

3) Bargaining Power of Suppliers | Low | Significant

The opportunities in the MDx market have also attracted numerous suppliers. Companies usually buy the materials for their products from many suppliers at competitive, stable prices and are not dependent on a certain group of suppliers, which reduces significantly the bargaining power of suppliers. Also, Biocartis buys components from a variety of suppliers. However, some components are bought from single source suppliers. If these relationships fail, Biocartis' business operations will be interrupted and consequently, Biocartis will not be able to fulfill its strategy of a rapid global expansion. Moreover, as an early-stage company with respect to market integration, Biocartis still has to build brand

[1] These figures have been estimated based on Biocartis' financing and time necessary to bring Idylla on the market

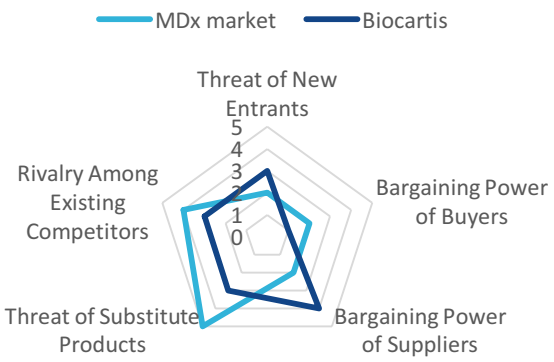
awareness. Failing to deliver the products in the quantity ordered and in a timely manner will result in a loss of credibility. These reasons increase significantly the bargaining power of Biocartis' suppliers.

4) Threat of Substitute Products | High | Moderate

Substitutes in the MDx market can be regarded in terms of different products (e.g. instruments, assays) and in terms of different technologies (e.g. PCR, Sequencing, Chips, Microassays). Growing demand for personalized medicine and advances in technologies create a variety of substitutes, which represents a high risk in the overall MDx market. But, products are often designed to target individual market segments and to meet the needs of a distinct customer base, which reduces the number of available substitutes. Biocartis targets with its Idylla platform the random-access MDx market for which there is no substitute instrument. However, Biocartis is subject to rapid technology changes that might overrule Idylla's core technology, real-time qPCR. Among the available substitutes, Next Generation Sequencing (NGS) constitutes the largest higher multiplexing capabilities. However, this technology is not expected to pose a credible threat in the near future due to several limitations. First, despite the current trend toward cost reduction, the capital investment is still high. Second, NGS has a lower reliability and reproducibility compared to PCR. Third, is not fully automated and still requires pre-sample treatments that can increase human error. Last, NGS requires a highly skilled labor to be operated.

5) Rivalry Among Existing Competitors | Significant | Moderate

Although the MDx market is dominated by a few large companies, the multiple segments have enabled smaller companies to enter the market. These companies search for distinct market niches that are currently uncovered. The result of the fragmented landscape in the MDx market is a monopolistic competition. Further evidence is provided by an Herfindahl-Hirschman index (HHI) of 12.42% that promotes significant competition. Biocartis is one example for a smaller company targeting niche markets. Biocartis operates in the random-access segment and targets certain niches. In oncology there are currently only two direct competitors Roche (Iquum) and Rhoenix that are directly competing with Biocartis. However, given Roche's size and capabilities, it is a major competitor. A more intense rivalry can be noticed for some of Biocartis' infectious disease assays. Although not as significant as in the overall MDx market, the rivalry for Biocartis is considered to be moderate.



Legend

0	No threat
1	Insignificant threat
2	Low threat
3	Moderate threat
4	Significant threat
5	High threat

Final score

MDx	3,0
Biocartis	2,8

Exhibit 14 – Transaction comparables

Ann. Date	Target Company	Bidder Company	Target Description	EV	EV Sales	EV EBITDA
21/10/2015	Clarient	NeoGenomics	A US-based cancer and molecular diagnostics company providing cancer diagnostics services	242.6	2.2x	78.6x
07/04/2014	Iquum	Roche Holding	A US-based provider of biological sample testing technology for the molecular diagnostics market	205.3	n.a	n.a
11/11/2013	Novartis AG (Blood transfusion diagnostics unit)	Grifols	A blood transfusion diagnostics unit from a Switzerland-based company engaged in pharmaceutical business	1242.1	2.9x	n.a
03/09/2013	BioFire Diagnostics	BioMerieux	A US-based company headquartered in Salt Lake City, is a clinical diagnostics company engaged in developing, manufacturing and distributing diagnostic respiratory panels.	341.6	n.a	n.a
16/07/2012	One Lambda	Thermo Fisher Scientific	A US-based company engaged in manufacturing medical-diagnostic products, laboratory instruments and computer software used in testing procedures and evaluations	756.9	5.1x	10.9x
09/07/2012	GenturaDx	Luminex Corporation	A US-based company engaged in developing and manufacturing of high-performance molecular diagnostic products	40.7	n.a	n.a
30/04/2012	Gen-Probe	Hologic	A US-based company engaged in development, manufacturing and supply of premium diagnostics products and medical imaging systems	2720.5	6.2x	20.8x
05/10/2011	QuantaLife	Bio-Rad Laboratories	A US-based life sciences company that provides advanced genetic analysis systems for research	121.1	n.a	n.a
27/04/2011	Rules-Based Medicine	Myriad Genetics	A US-based life sciences company focused on the development and commercialization of molecular diagnostic tests	54.1	3.2x	n.a
04/04/2011	Cellestis	QIAGEN	An Australian-based biotechnology company commercialising QuantiFERON technology for diagnosing TB and other diseases	250.0	8.5x	32.0x
10/01/2010	Diagnostic Hybrids	Quidel Corporation	A US-based company that manufactures, and markets cellular and molecular diagnostic kits	90.2	3.4x	n.a
23/10/2009	HandyLab	Becton, Dickinson and Company	A US-based company engaged in development, manufacture, and marketing of clinical diagnostic testing products	183.3	n.a	n.a
23/06/2009	Monogram Biosciences	Mastiff Acquisition Corporation	A US-based life sciences company engaged in the development of molecular diagnostic products.	86.5	2.0x	n.a
03/06/2007	Digene Corporation	QIAGEN	A US-based developer and manufacturer of gene-based diagnostic tests for the screening, monitoring and diagnosis of human diseases	1120.3	9.9x	59.0x
15/02/2007	Sangtec Molecular Diagnostics	Cepheid	A Sweden-based developer and manufacturer of PCR based molecular diagnostics products	20.6	3.4x	n.a
14/12/2006	TM Bioscience	Luminex Corporation	A Canada-based molecular diagnostic company developing DNA-based tests for genetic disorders and infectious diseases	29.1	5.8x	n.a
Low				20.6	2.0x	10.9x
Mean				469.1	4.8x	40.3x
Median				194.3	3.4x	32.0x
High				2720.5	9.9x	78.6x
Closest EV/Sales multiples to the mean					3.4x	5.1x
Revenue 2018E Biocartis					105.9	105.9
Implied EV					360.2	540.3
Discounted EV with WACC of	9.8%				272.0	408.1
- Net Debt					(115.1)	(115.1)
Equity Value					387.2	523.2
S/ Out					40.5	40.5
Implied Price per Share					**9.6**	**12.9**

Source: Merger market and group research

Exhibit 15 – Trading comparables

Company	Ticker	Market Cap.	EV	EV / Sales 2015E	EV / Sales 2016E	EV / Sales 2017E	EV / Sales 2018E
BioMerieux (BioFire)	BIM FP	4884	2.4	2.2	2.1	2.0	1.9
Cepheid	CPHD	2516	4.7	4.1	3.5	2.9	2.6
Genmark Diagnostics	GNMK	258	6.7	5.3	3.4	2.0	1.4
Luminex (GenturaDx)	LMNX	722	3.0	2.9	2.7	2.7	2.8
Nanosphere	NSPH	24	1.2	0.9			
T2 Diosystems	TTOO	230	76.6	14.5	3.4	2.0	1.6
Qiagen	QGEN	6861	5.3	5.0	4.7	4.3	4.0
Low		23.7	1.2	0.9x	2.1x	2.0x	1.4x
Mean		2213.6	14.3	5.0x	3.3x	2.6x	2.4x
Median		722.4	4.7	4.1x	3.4x	2.3x	2.2x
High		6861.0	76.6	14.5x	4.7x	4.3x	4.0x
Closest EV/Sales 2018E multiples to the mean						1.9x	2.6x
Revenue 2018E Biocartis						105.9	105.9
Implied EV						201.3	275.5
Discounted EV with WACC of		9.8%				152.0	208.0
- Net Debt						(115.1)	(115.1)
Equity Value						267.1	323.1
S/ Out						40.5	40.5
Implied Price per Share						**6.6**	**8.0**

Source: Factset, company information and group analysis

Exhibit 16 – Difference between competing technologies

	NGS	real-time qPCR	PCR
Sensitivity	High	High	Moderate
Automation	Automated, but seperate sample preparation	Fully automated	Automated, but sometimes seperate sample preparation
Data analysis	Might require inputs from specialist	Automated and integrated	Automated and integrated
Complexity	High, requires highly skilled personnel	Low to moderate	Low to moderate
Turnaround	Days	Hours	Hours
Multiplexing throuput	High	High	Limited, usually single test per sample
Costs	Approaching cost-effectiveness	Cost-effective	Cost-effective

Sources: Wu & Choudhry (2015), Next Generation Sequencing in Cancer Research, Volume 2: From Basepairs to Bedsides

National Genetics and Genomics Education Centre (http://www.geneticseducation.nhs.uk/laboratory-process-and-testing-techniques/pcr)

ThermoFisher Scientific (https://www.thermofisher.com/uk/en/home/life-science/pcr/real-time-pcr/qpcr-education/qpcr-vs-digital-pcr-vs-traditional-pcr.html#2)

Definitions:

Polymerase chain reaction (PCR)

PCR is used in molecular biology to generate thousands to millions of copies of a particular DNA sequence by amplifying small selected section of a DNA across several orders of magnitude.

Real-time quantitative polymerase chain reaction (qPCR)

Real-time PCR measures PCR amplification as it occurs, whereas traditional PCR measures the accumulated PCR product at the end of the PCR cycles. Moreover, it quantitates the initial number of copies of a particular DNA fragment. Benefits are improved sensitivity, dynamic range, throughput, reproducibility and cost.

Next generation sequencing (NGS)

NGS is used to sequence millions of small DNA fragments at the same time, creating a massive pool of data. This pool can reach gigabytes in size which is equivalent of 1 billion base pairs of DNA. NGS is often referred to massively parallel sequencing.

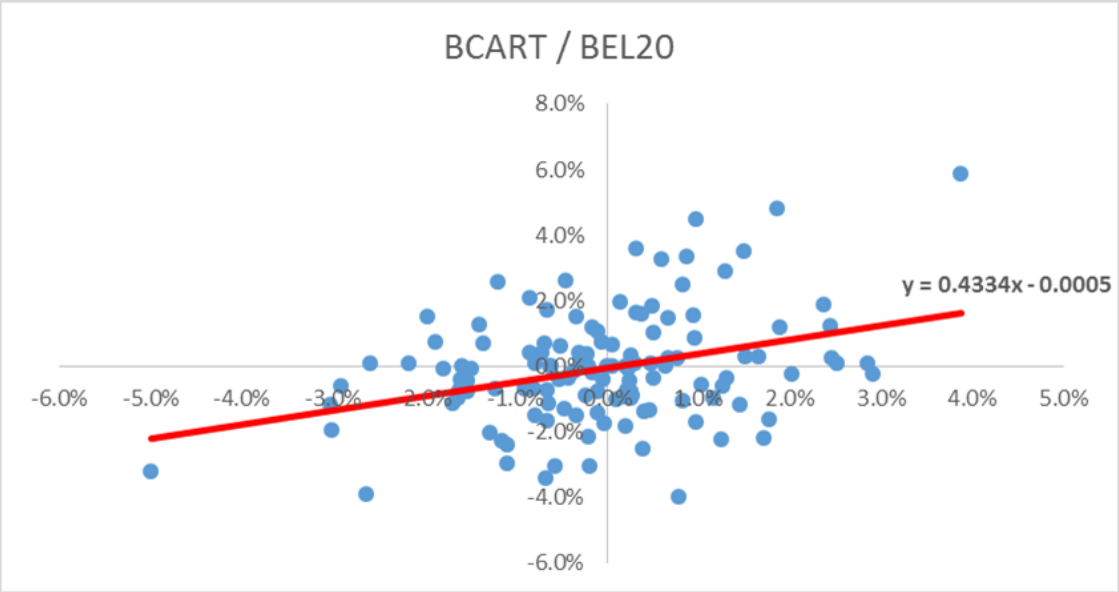
Exhibit 17 – WACC illustration

WACC assumptions		
Risk-free Rate	1.99%	Based on Belgian 30y gov. bond
Market Risk Premium (Rm-Rf)	5.00%	Based on Professor Damodaran's country risk premium computation from Stern University
Levered Beta (peers)	0.25	Based on unlevering the betas of Biocartis' peers and relevering using its capital structure
Levered Beta (Regression)	0.43	Based on regression. This Beta was not used in the WACC calculation due to the limited stock price history
Long term D/E ratio	2.70%	Based on the assumption that Biocartis will keep low levels of debt debt in the capital structure
Size premium	6.74%	Based on Duff & Phelps Risk Premium Report 2013. The size premium is derived by creating portfolios of similar-sized companies. Size is defined by multiple factors: Market value of equity, book value of equity, average income, total assets, EBITDA, sales and number of employees.
Cost of Equity	10.00%	Based on CAPM
Long term tax rate	30.00%	Based on Belgian corporate tax rate. Even though, we believe that Biocartis will not be taxed with 30% until 2025, we assume it to be the long term tax rate in the WACC calculation

Beta through peers

Beta Calculation					
Peers	Country	Levered beta	D/E	Tax rate	Unlevered. Beta
bioMerieux	France	0.47	0.27	0.33	0.39
Cepheid	United States	0.23	0.78	0.40	0.16
Genmark Diagnostics	United States	0.15	0.20	0.40	0.13
Luminex	United States	0.23	0.00	0.40	0.23
Qiagen	Netherlands	0.41	0.42	0.25	0.31
Biocartis	**Belgium**	**0.25**	**0.03**	**0.30**	**0.24**

Beta through Regression



Source: Factset, company information and group analysis

Exhibit 18 – Revenue split assumptions

Revenue split illustration											
€ in Millions	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E
Biocartis total projected revenue	8.6	13.7	48.3	105.9	168.7	241.0	315.6	395.2	479.8	570.0	666.0
Idylla											
Annual nr. of systems sold	75	80	342	408	437	568	666	772	887	1010	1143
Total Installed Base	157	237	578	986	1424	1991	2658	3430	4317	5326	6469
Revenue from system sales	3.8	4.0	17.1	20.4	21.9	28.4	33.3	38.6	44.3	50.5	57.1
% of total Revenue	43.6%	29.1%	35.4%	19.3%	13.0%	11.8%	10.6%	9.8%	9.2%	8.9%	8.6%
Oncology Assays											
BRAF Revenue	0.1	0.6	2.4	4.2	6.0	7.8	9.6	11.4	13.2	14.9	16.7
% of total Revenue	0.9%	4.7%	5.0%	4.0%	3.6%	3.2%	3.0%	2.9%	2.7%	2.6%	2.5%
KRAS Revenue	0.5	2.0	3.5	5.0	6.5	8.1	9.6	11.1	12.6	14.2	15.7
% of total Revenue	5.3%	14.5%	7.2%	4.7%	3.9%	3.3%	3.0%	2.8%	2.6%	2.5%	2.4%
NRAS Revenue	0.0	0.3	1.8	3.3	4.9	6.4	7.9	9.4	11.0	12.5	14.0
% of total Revenue	0.0%	2.2%	3.8%	3.2%	2.9%	2.7%	2.5%	2.4%	2.3%	2.2%	2.1%
MSI Revenue	0.0	0.4	2.4	4.4	6.4	8.3	10.3	12.3	14.3	16.3	18.3
% of total Revenue	0.0%	2.9%	4.9%	4.1%	3.8%	3.5%	3.3%	3.1%	3.0%	2.9%	2.7%
LCP Revenue	0.0	0.4	2.5	4.6	6.6	8.7	10.8	12.8	14.9	17.0	19.0
% of total Revenue	0.0%	3.0%	5.1%	4.3%	3.9%	3.6%	3.4%	3.2%	3.1%	3.0%	2.9%
Undisclosed Assays Revenue	0.0	0.0	0.3	2.1	5.5	10.4	16.7	24.7	34.1	45.1	57.5
% of total Revenue	0.0%	0.0%	0.6%	2.0%	3.2%	4.3%	5.3%	6.2%	7.1%	7.9%	8.6%
Oncology Assays	0.5	3.7	12.9	23.6	35.9	49.6	64.9	81.7	100.1	119.9	141.3
% of total Revenue	6.2%	27.4%	26.8%	22.3%	21.3%	20.6%	20.6%	20.7%	20.9%	21.0%	21.2%
Infectious Diseases Assays											
Ebola Revenue	-	-	-	-	-	-	-	-	-	-	-
% of total Revenue	-	-	-	-	-	-	-	-	-	-	-
Respiratory Ciral Panel Revenue	0.3	1.6	3.1	4.7	6.6	8.7	11.1	13.7	16.5	19.7	23.1
% of total Revenue	4.0%	11.8%	6.4%	4.5%	3.9%	3.6%	3.5%	3.5%	3.4%	3.4%	3.5%
Viral Load Revenue	0.0	0.0	2.0	12.9	24.1	35.7	47.8	60.3	73.4	86.9	101.0
% of total Revenue	0.0%	0.0%	4.2%	12.1%	14.3%	14.8%	15.1%	15.3%	15.3%	15.3%	15.2%
Sepsis Revenue	0.0	0.0	6.0	36.0	66.0	96.0	126.0	156.0	186.0	216.0	246.0
% of total Revenue	0.0%	0.0%	12.4%	34.0%	39.1%	39.8%	39.9%	39.5%	38.8%	37.9%	36.9%
Undisclosed Assays Revenue	0.0	0.0	0.0	0.3	2.0	5.0	9.7	16.3	25.0	36.1	49.8
% of total Revenue	0.0%	0.0%	0.0%	0.3%	1.2%	2.1%	3.1%	4.1%	5.2%	6.3%	7.5%
Infectious Dieseases Assays	0.3	1.6	11.1	53.9	98.6	145.4	194.6	246.3	301.0	358.7	419.8
% of total Revenue	4.0%	11.8%	23.0%	50.9%	58.5%	60.3%	61.6%	62.3%	62.7%	62.9%	63.0%
Total Revenue from Assays	0.9	5.3	24.0	77.6	134.5	195.1	259.5	328.1	401.0	478.6	561.1
% of total Revenue	10.2%	39.2%	49.8%	73.2%	79.7%	81.0%	82.2%	83.0%	83.6%	84.0%	84.3%

Source: Financial model

Infectious Diseases

Assay	Infection type	affected or market value	Price assumption	Description	Sources
Sepsis	Sepsis	30,000,000	200€*	Sepsis is the poisoning of blood / tissue organisms, often caused within hospitals. A large amount of deaths are attributed to sepsis every year (258,000 in the USA alone). A promising recovery rate exists when diagnosed early. However, the recovery rate decreases exponentially as the hours go on, according to medecinenet.com mortality rate increases by 7% per hour the disease is not treated. Thus, why a 30min - 1h30 time to detect the results in comparison to up to a week using traditional methods could save the life of many. We believe sepsis will account for a large portion of revenue in the future as the target market is large and we believe a large demand for the product exists. We have assumed a conservative market share only because there are other bigger players coming out with similar solutions (BioMérieux, Cepheid & Nanosphere).	http://www.sepsis.org/sepsis/definition/ http://www.medicinenet.com/sepsis/page6.htm
RCP	Respiratory Viral Panel	230 m. Euro	Price assumption not needed since modelled with market value	There are currently 3 assays being developed for RCP, 2 of which are jointly with Johnson and Johnson. Respiratory diseases currently have methods that are inexpensive and obtain quick results. However, current methods are not accurate and often require retesting. This is where Biocartis hopes to distinguish itself, with a product that is just as quick but more accurate for a slightly higher cost. Two main areas of focus are respiratory syncytial virus (RSV) and Influenza.	https://www.nlm.nih.gov/medlineplus/ency/article/001564.htm http://www.ncbi.nlm.nih.gov/pubmed/20666690
EBOLA	Ebola	28,490	-	We have decided to omit the inclusion of Ebola in our revenue projections simply because we believe the epidemic is over and that other products have entered the market before Biocartis taking the very little market share that exists over. There are currently less than 30,000 cases of Ebola and said to be decreasing.	http://apps.who.int/ebola/current-situation/ebola-situation-report-14-october-2015 https://www.abdserotec.com/an-introduction-to-elisa.html
Viral load	Viral Load market val	2.04 bn. Euro	Price assumption not needed since modelled with market value	Biocartis aims to launch 3 Viral load tests; human immunodeficiency virus (HIV), hepatitis C Virus (HCV) and Hepatitis B Virus (HBV). These infectious diseases represent a very large global market. HIV, HCV, HBV are currently predominantly being tested using a batch method, which inherently takes longer and requires more manipulation. Biocartis aims to penetrate the market via their random access competitive advantage which gives results much quicker with similar accuracy then current methods.	http://www.cdc.gov/niosh/topics/bbp/ http://hivinsite.ucsf.edu/InSite?page=kb-05-03-04#S5X
Undisclosed assays	Undisclosed Assays	?		Similar to Oncologies Undisclosed assays, it is hard to determine the potential market size, profit and costs of future Infectious disease undisclosed assays. We took a conservative approach by including only 1 new assay per year for Infectious diseases. We assumed a modest revenue equivalent to the smallest revenue from disclosed assays that year. We understand that there is a large potential to come out with very promising assays however given our limited information we have taken a conservative approach. Having a large assay portfolio is crucial to the companies success and the content of undisclosed assays could greatly sway future valuations.	

*T2 Biosystems, one of Biocartis' main competitors in sepsis, disclosed that the price of its sepsis assay is 250$ (http://biotuesdays.com/2015/05/12/t2-biosystems-to-double-sales-force-this-year/). Conservatively, we assume a sepsis price of 200€

Exhibit 19 – Assay assumptions (Infectious diseases)

Exhibit 19 contd. – Assay assumptions (Oncology)

Source: Group research

Oncology

Assay	Cancer Type	# of people affected	Price assumption	Description	Sources
BRAF	Melanoma BRAF Mutation Colon BRAF Mutation	230,000 115,000 1,323,900 152,249	230€* 230€*	BRAF cells are responsible for sending cell growth signals causing cell growth. Ultimately, triggering certain cancers including Melanoma and Colon cancer. BRAF gene is found in approximately 50% of Melanoma patients, and approximately 10-15% of Colon cancer patients. Due to the high occurrence within cancer patients, our pool of potential customers include the Melanoma and Colon cancer patients as a whole since they are all systematically tested once diagnosed and in some cases even retested.	http://globocan.iarc.fr/Default.aspx http://seer.cancer.gov
KRAS	Colon KRAS Mutation	1,323,900 595,755	230€*	KRAS mutation is relatively rare, it is responsible for uncontrollable cell growth which could cause cancer. Although the mutation is rare, approximately half of all colorectal patients are being tested for KRAS.	http://www.e-cancer.fr
NRAS	Colon NRAS Mutation	1,323,900 728,145	230€*	NRAS is being tested for wild-type KRAS tumours. It will often be tested at the same time as BRAF which is why we assumed the same number of tests as that of BRAF Colorectal incidents.	http://www.mycancergenome.org
MSI	Colon MSI Mutation	1,323,900 198,585	300€**	Microsatellite Instability (MSI) is a genetic hyper mutability impairment of DNA after being mismatched during a repair (MMR). It occurs on average 15% of the time in colectoral tumours. It is important to screen the presence of MSI, since cancerous colectoral tumours with MSI do not react the same way to Chemotherapy as tumours without its presence. There is currently very little MSI screening being done as it is a complicated test to complete, thus is fairly expensive. Idylla could help make MSI screening more available.	http://www.ncbi.nlm.nih.gov/pubmed/15528788
LCP	Lung Cancer	1,800,000	230€*	Biocartis is currently developing Lung Cancer screening assays which could represent a very large part of their revenues since Lung cancer is the leading cause of death in the United States of America. However Biocartis's has not publicly stated its areas it was targeting yet we anticipate a large portion of the future undisclosed oncology assays to be related to lung cancer.	http://www.cancer.org/acs/groups/content/@editorial/documents/document/acspc-044552.pdf
Undisclosed assays	Undisclosed Assays	?	?	As it is hard to determine the potential market size, profit and costs of future undisclosed assays we took a conservative approach by including only 1 new assay per year for Oncology (as we can see that they have already struggled to meet their assay portfolio timeline). We assumed a modest revenue equivalent to the smallest revenue from disclosed assays that year. We understand that there is a large potential to come out with very promising assays however given our limited information we have taken a conservative approach. Having a large assay portfolio is crucial to the companies success and the content of undisclosed assays could greatly sway future valuations.	

* Price estimation for oncology assays is difficult since countries have different reimbursement schemes (for example Belgium reimburses BRAF tests for 340€) and the prices of competing assays show a large price variance. A price of 230€ was estimated after researching competing assay prices on www.bio-rad.com and the average of Biocartis' management estimates. Large quantity discounts apply to assays, which makes estimation difficult. We applied sensitivity analysis to derive the share price, using different assay prices.

** MSI is estimated to be priced slightly higher according to Biocartis, mainly due to the lack of low complexity tests with high sensitivity

Exhibit 20 – Income Statement – Base Case

Adjusted Income Statement *€ in Millions except per share figures*	2012A	2013A	2014A	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E
Collaboration revenue	2.1	6.2	3.2	3.5	3.5	3.5	-	-	-	-	-	-	-	-
System sales	0.3	0.5	3.7	3.8	4.0	17.1	20.4	21.9	28.4	33.3	38.6	44.3	50.5	57.1
Cartridge sales	1.2	1.6	1.5	0.9	5.3	24.0	77.6	134.5	195.1	259.5	328.1	401.0	478.6	561.1
Product sales revenue	1.4	2.1	5.3	4.6	9.3	41.1	98.0	156.4	223.4	292.8	366.7	445.3	529.1	618.2
Service revenue	-	-	-	0.1	0.1	0.6	0.7	0.8	1.0	1.2	1.3	1.5	1.8	2.0
Non-clinical revenue	-	-	-	0.3	0.7	3.0	7.3	11.6	16.5	21.7	27.1	33.0	39.2	45.7
Total revenue	**3.6**	**8.3**	**8.5**	**8.6**	**13.7**	**48.3**	**105.9**	**168.7**	**241.0**	**315.6**	**395.2**	**479.8**	**570.0**	**666.0**
Growth (%)		*134.7%*	*1.7%*	*1.4%*	*58.8%*	*253.5%*	*119.5%*	*59.2%*	*42.8%*	*31.0%*	*25.2%*	*21.4%*	*18.8%*	*16.8%*
Cost of sales	(0.8)	(1.3)	(3.6)	(3.6)	(5.7)	(20.0)	(43.5)	(68.7)	(97.7)	(128.0)	(160.2)	(194.6)	(231.1)	(270.1)
Gross profit	**2.8**	**7.0**	**4.8**	**5.0**	**8.0**	**28.3**	**62.4**	**100.0**	**143.3**	**187.7**	**234.9**	**285.3**	**338.9**	**395.9**
Margin (%)	*78.0%*	*84.2%*	*57.1%*	*58.0%*	*58.3%*	*58.6%*	*58.9%*	*59.3%*	*59.5%*	*59.5%*	*59.5%*	*59.5%*	*59.5%*	*59.5%*
R&D expense	(32.0)	(25.4)	(21.7)	(17.6)	(20.4)	(28.8)	(31.6)	(32.8)	(38.6)	(50.6)	(63.3)	(76.9)	(91.3)	(106.7)
Selling expenses	(0.7)	(1.2)	(3.1)	(3.1)	(4.5)	(11.1)	(22.0)	(34.0)	(48.3)	(63.3)	(79.2)	(96.2)	(114.2)	(133.5)
General & Administrative expenses	(5.9)	(6.8)	(6.7)	(6.9)	(7.2)	(8.9)	(13.1)	(19.1)	(24.1)	(31.5)	(39.5)	(47.9)	(56.9)	(66.5)
EBITDA	**(35.8)**	**(26.3)**	**(26.6)**	**(22.6)**	**(24.1)**	**(20.6)**	**(4.3)**	**14.1**	**32.3**	**42.3**	**53.0**	**64.3**	**76.4**	**89.3**
Margin (%)	*n/m*	*n/m*	*n/m*	*n/m*	*n/m*	*n/m*	*n/m*	*8.3%*	*13.4%*	*13.4%*	*13.4%*	*13.4%*	*13.4%*	*13.4%*
Depreciation & Amortization expense	(2.6)	(3.6)	(4.4)	(4.4)	(4.9)	(4.9)	(5.0)	(5.3)	(5.7)	(6.2)	(6.8)	(7.6)	(8.6)	(8.5)
EBIT	**(38.4)**	**(29.9)**	**(31.1)**	**(26.9)**	**(29.0)**	**(25.5)**	**(9.3)**	**8.8**	**26.6**	**36.1**	**46.1**	**56.7**	**67.8**	**80.7**
Margin (%)	*n/m*	*n/m*	*n/m*	*n/m*	*n/m*	*n/m*	*n/m*	*5.2%*	*11.1%*	*11.4%*	*11.7%*	*11.8%*	*11.9%*	*12.1%*
Other (non)operating income	2.6	3.5	1.9	1.0	1.0	1.0	-	-	-	-	-	-	-	-
Financial income	0.1	0.1	0.1	0.6	0.4	0.2	0.1	0.0	0.0	0.1	0.1	0.3	0.4	0.5
Financial expense	(0.8)	(1.0)	(0.9)	(0.7)	(0.5)	(0.4)	(0.2)	(0.4)	(0.7)	(0.7)	(0.7)	(0.7)	(0.4)	-
Foreign exchange gains (losses), net	0.0	(0.2)	(0.1)	-	-	-	-	-	-	-	-	-	-	-
Pretax income	**(36.5)**	**(27.4)**	**(30.1)**	**(26.0)**	**(28.1)**	**(24.7)**	**(9.4)**	**8.5**	**25.9**	**35.4**	**45.5**	**56.2**	**67.8**	**81.3**
Income taxes	(0.0)	(0.0)	0.9	-	-	-	-	(0.8)	(2.6)	(3.5)	(4.6)	(5.6)	(6.8)	(8.1)
Net income (loss) from continuing operations	(36.5)	(27.4)	(29.2)	(26.0)	(28.1)	(24.7)	(9.4)	7.6	23.3	31.9	41.0	50.6	61.0	73.1
Net income (loss) from discontinued operations	(7.9)	(8.2)	19.5	-	-	-	-	-	-	-	-	-	-	-
Net income (loss)	**(44.4)**	**(35.6)**	**(9.7)**	**(26.0)**	**(28.1)**	**(24.7)**	**(9.4)**	**7.6**	**23.3**	**31.9**	**41.0**	**50.6**	**61.0**	**73.1**
Margin (%)	***n/m***	***n/m***	***n/m***	***n/m***	***n/m***	***n/m***	***n/m***	***4.5%***	***9.7%***	***10.1%***	***10.4%***	***10.5%***	***10.7%***	***11.0%***
Attributable to owners of the company	(44.4)	(35.6)	(9.1)	(26.0)	(28.1)	(24.7)	(9.4)	7.6	23.3	31.9	41.0	50.6	61.0	73.1
Attributable to (non)controlling interest	-	-	(0.6)	-	-	-	-	-	-	-	-	-	-	-
Diluted weighted average shares	17.0	21.9	25.5	24.7	40.5	-	40.5	40.5	40.5	40.5	40.6	40.6	40.6	40.6
EPS - continuing and discontinued operations	(2.62)	(1.62)	(0.36)	(0.64)	(0.69)	(0.61)	(0.23)	0.19	0.58	0.79	1.01	1.24	1.50	1.80
EPS - continuing operations	(2.15)	(1.25)	(1.14)	(0.64)	(0.69)	(0.61)	(0.23)	0.19	0.58	0.79	1.01	1.24	1.50	1.80

Source: Financial Model

Exhibit 20 contd. – Balance Sheet – Base Case

Balance Sheet *€ in Millions*	2012A	2013A	2014A	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E
Assets														
Inventory	0.2	1.1	3.6	2.8	3.6	10.1	17.6	27.8	39.5	51.7	64.7	78.6	93.4	109.1
Trade receivables	1.4	3.1	15.8	4.1	4.5	11.2	17.2	27.3	39.0	51.1	64.0	77.7	92.3	107.9
Other receiveables	0.8	1.0	0.1	1.9	2.2	5.3	8.2	13.1	18.7	24.4	30.6	37.1	44.1	51.5
Other current assets	1.9	4.4	2.7	2.6	2.1	3.7	4.0	3.2	2.3	1.5	0.9	0.6	0.3	0.2
Cash and Cash equivalents	40.5	29.0	10.9	100.9	62.4	30.1	4.0	6.2	7.8	19.5	38.4	64.5	83.7	126.6
Total current assets	**44.8**	**38.6**	**33.1**	**112.3**	**74.7**	**60.3**	**51.0**	**77.6**	**107.2**	**148.3**	**198.7**	**258.5**	**313.8**	**395.3**
Intangible assets	10.3	10.0	9.7	12.8	14.4	13.7	13.2	13.4	14.1	15.2	16.5	18.3	20.5	23.6
Property plant and equipment	11.0	11.2	9.2	13.1	14.7	14.0	13.5	13.7	14.4	15.6	16.9	18.7	20.9	24.1
Participating interests	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-
Other long term receivables	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deferred tax assets	-	-	0.9	-	-	-	-	-	-	-	-	-	-	-
Non-current assets	**21.4**	**21.5**	**19.9**	**25.9**	**29.1**	**27.8**	**26.8**	**27.1**	**28.6**	**30.8**	**33.5**	**37.0**	**41.4**	**47.7**
Total assets	**66.2**	**60.1**	**53.0**	**138.2**	**103.9**	**88.1**	**77.8**	**104.6**	**135.8**	**179.1**	**232.1**	**295.6**	**355.2**	**443.0**
Liabilities														
Financial debt	1.3	3.4	5.1	5.0	-	-	-	5.0	5.0	5.0	5.0	5.0	-	-
Trade payables	8.5	5.8	4.3	1.0	1.6	5.5	11.9	18.8	26.8	35.1	43.9	53.3	63.3	74.0
Deferred income	1.3	0.8	5.1	5.1	4.0	7.0	7.6	6.0	4.3	5.6	7.0	8.5	10.1	11.8
Other current liabilities	0.8	1.7	3.3	3.3	2.6	4.5	4.9	3.9	5.5	7.3	9.1	11.0	13.1	15.3
Current liabilities	**11.8**	**11.6**	**17.7**	**14.3**	**8.1**	**17.0**	**24.5**	**33.8**	**41.6**	**52.9**	**65.0**	**77.9**	**86.6**	**101.1**
Financial debt	10.1	12.8	8.5	8.3	8.3	8.3	-	10.0	10.0	10.0	10.0	10.0	-	-
Deferred income	5.0	1.7	4.5	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Retirement benefit obligation	0.5	0.3	-	-	-	-	-	-	-	-	-	-	-	-
Accrued charges	2.0	1.7	2.0	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Non-current liabilities	**17.6**	**16.5**	**15.0**	**12.9**	**12.9**	**12.9**	**4.5**	**14.5**	**14.5**	**14.5**	**14.5**	**14.5**	**4.5**	**4.5**
Total Liabilities	**29.4**	**28.2**	**32.7**	**27.2**	**21.0**	**29.9**	**29.0**	**48.3**	**56.1**	**67.4**	**79.5**	**92.4**	**91.1**	**105.6**
Equity														
Legal share capital	0.8	0.9	222.3											
Historical share capital adjustment	-	-	(221.2)											
Share premium	146.4	175.9	166.6											
Gains and losses on defined benefit plans	(0.4)	(0.3)	-											
Share based payment reserve	-	1.0	1.2											
Accumulated deficit	(110.0)	(145.6)	(148.5)											
Total equity	**36.8**	**32.0**	**20.3**	**111.0**	**82.9**	**58.2**	**48.8**	**56.4**	**79.7**	**111.6**	**152.6**	**203.2**	**264.2**	**337.3**
Total liabilities and equity	**66.2**	**60.1**	**53.0**	**138.2**	**103.9**	**88.1**	**77.8**	**104.6**	**135.8**	**179.1**	**232.1**	**295.6**	**355.2**	**443.0**

Source: Financial Model

Exhibit 20 contd. – Cash flow statement

Cash Flow Statement *€ in Millions*	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E
Cash from operating activities:											
Net Income (Loss) from cont. Operations	(26.0)	(28.1)	(24.7)	(9.4)	7.6	23.3	31.9	41.0	50.6	61.0	73.1
Adjustments for	-	-	-	-	-	-	-	-	-	-	-
Plus: D&A	4.4	4.9	4.9	5.0	5.3	5.7	6.2	6.8	7.6	8.6	8.5
Changes in working capital	-	-	-	-	-	-	-	-	-	-	-
Net movement in inventories	3.6	(0.7)	(6.5)	(7.5)	(10.2)	(11.7)	(12.2)	(13.0)	(13.9)	(14.8)	(15.7)
Net movement in trade and other receivables and other current assets	(2.0)	(0.1)	(11.4)	(9.2)	(14.2)	(16.4)	(17.1)	(18.5)	(19.9)	(21.3)	(22.8)
Net movement in trade payables & other current liabilities	(1.9)	(0.1)	5.9	6.9	5.9	9.6	10.0	10.7	11.4	12.1	12.9
Net movement in deferred income	0.0	(1.1)	3.0	0.6	(1.6)	(1.7)	1.3	1.4	1.5	1.6	1.7
(Increase)/ Decrease in net working capital	(0.3)	(2.1)	(9.0)	(9.2)	(20.1)	(20.3)	(18.0)	(19.4)	(20.9)	(22.4)	(24.0)
Changes in other long-term assets and liabilities	6.5	-	-	-	-	-	-	-	-	-	-
Stock-based compensation expense	-	-	-	-	-	-	-	-	-	-	-
Total cash from operating activities	**(15.5)**	**(25.3)**	**(28.8)**	**(13.7)**	**(7.2)**	**8.7**	**20.1**	**28.4**	**37.3**	**47.2**	**57.7**
Cash from investing activities:											
CAPEX	(12.0)	(8.0)	(3.0)	(3.0)	(4.1)	(5.2)	(6.2)	(6.9)	(8.4)	(10.0)	(11.7)
Investments in Intangibles	(0.1)	(0.2)	(0.5)	(1.0)	(1.5)	(1.9)	(2.3)	(2.6)	(2.8)	(3.0)	(3.1)
Other cash flows from investments	-	-	-	-	-	-	-	-	-	-	-
Total cash from investing activities	**(12.1)**	**(8.2)**	**(3.5)**	**(4.0)**	**(5.6)**	**(7.1)**	**(8.4)**	**(9.5)**	**(11.2)**	**(13.0)**	**(14.8)**
Cash flow available for financing activities	(27.6)	(33.5)	(32.3)	(17.7)	(12.8)	1.6	11.7	18.9	26.1	34.2	42.9
Cash from financing activities:											
Issuance of long term debt	-	-	-	-	10.0	-	-	-	-	-	-
Repayment of long term debt	-	-	-	(8.3)	-	-	-	-	-	(10.0)	-
Issuance of short term debt	-	-	-	-	5.0	-	-	-	-	-	-
Repayment of short term debt	-	(5.0)	-	-	-	-	-	-	-	(5.0)	-
Repuchase of equity	-	-	-	-	-	-	-	-	-	-	-
Dividends	-	-	-	-	-	-	-	-	-	-	-
Option proceeds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total cash from financing activities	**0.0**	**(5.0)**	**0.0**	**(8.3)**	**15.0**	**0.0**	**0.0**	**0.0**	**0.0**	**(15.0)**	**0.0**
Beginning Cash Balance	**128.5**	**100.9**	**62.4**	**30.1**	**4.0**	**6.2**	**7.8**	**19.5**	**38.4**	**64.5**	**83.7**
Change in Cash	(27.6)	(38.5)	(32.3)	(26.0)	2.2	1.6	11.7	18.9	26.1	19.2	42.9
Effects of exchange rate charges on cash	-	-	-	-	-	-	-	-	-	-	-
Ending Cash Balance	**100.9**	**62.4**	**30.1**	**4.0**	**6.2**	**7.8**	**19.5**	**38.4**	**64.5**	**83.7**	**126.6**

Source: Financial Model

Exhibit 20 contd. – DCF – Base Case

Discounted Cash Flow Analysis *(€ in Millions)*	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E
EBITDA	(22.6)	(24.1)	(20.6)	(4.3)	14.1	32.3	42.3	53.0	64.3	76.4	89.3
EBIT	(26.9)	(29.0)	(25.5)	(9.3)	8.8	26.6	36.1	46.1	56.7	67.8	80.7
Less: Cash Taxes	-	-	-	-	(0.8)	(2.6)	(3.5)	(4.6)	(5.6)	(6.8)	(8.1)
NOPAT	(26.9)	(29.0)	(25.5)	(9.3)	8.0	24.0	32.6	41.6	51.1	61.0	72.6
Plus: D&A	4.4	4.9	4.9	5.0	5.3	5.7	6.2	6.8	7.6	8.6	8.5
Less: CAPEX & investments in int.	(12.1)	(8.2)	(3.5)	(4.0)	(5.6)	(7.1)	(8.4)	(9.5)	(11.2)	(13.0)	(14.8)
Plus/(Less) change in working capital	(0.3)	(2.1)	(9.0)	(9.2)	(20.1)	(20.3)	(18.0)	(19.4)	(20.9)	(22.4)	(24.0)
Unlevered Free Cash Flow	**(35.0)**	**(34.3)**	**(33.1)**	**(17.6)**	**(12.5)**	**2.3**	**12.4**	**19.5**	**26.6**	**34.2**	**42.3**
NPV of unleveraged Cash Flows	**(48.3)**										
Perpetuity Growth Rate **2.5%**											
Terminal Value (discounted)	232.9										
Implied EV	**184.6**										
-Net Debt (Total Debt - Cash)	(115.1)										
Implied Equity Value	299.7										
S/Out	40.5										
Implied Price per Share	**7.4**										

Source: Financial Model

Exhibit 20 contd. – Income Statement – Bull Case

Adjusted Income Statement *€ in Millions except per share figures*	2012A	2013A	2014A	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E
Collaboration revenue	2.1	6.2	3.2	3.5	3.5	3.5	-	-	-	-	-	-	-	-
System sales	0.3	0.5	3.7	4.1	4.4	18.8	22.4	24.1	31.2	36.6	42.5	48.8	55.5	62.9
Cartridge sales	1.2	1.6	1.5	0.9	5.8	26.8	90.5	157.8	229.1	304.6	384.7	469.4	559.1	654.1
Product sales revenue	1.4	2.1	5.3	5.0	10.2	45.6	112.9	181.8	260.3	341.3	427.1	518.1	614.6	716.9
Service revenue	-	-	-	0.1	0.2	0.7	0.8	0.8	1.1	1.3	1.5	1.7	1.9	2.2
Non-clinical revenue	-	-	-	0.4	0.8	3.4	8.4	13.5	19.3	25.3	31.6	38.3	45.5	53.1
Total revenue	**3.6**	**8.3**	**8.5**	**9.1**	**14.6**	**53.2**	**122.0**	**196.1**	**280.7**	**367.8**	**460.2**	**558.2**	**662.1**	**772.2**
Growth (%)		*134.7%*	*1.7%*	*6.9%*	*61.2%*	*263.9%*	*129.5%*	*60.7%*	*43.1%*	*31.1%*	*25.1%*	*21.3%*	*18.6%*	*16.6%*
Cost of sales	(0.8)	(1.3)	(3.6)	(3.7)	(5.9)	(21.5)	(48.9)	(78.0)	(111.0)	(145.5)	(182.0)	(220.8)	(261.8)	(305.4)
Gross profit	**2.8**	**7.0**	**4.8**	**5.3**	**8.7**	**31.7**	**73.1**	**118.2**	**169.7**	**222.4**	**278.2**	**337.4**	**400.2**	**466.8**
Margin (%)	*78.0%*	*84.2%*	*57.1%*	*59.0%*	*59.3%*	*59.6%*	*59.9%*	*60.3%*	*60.5%*	*60.5%*	*60.5%*	*60.5%*	*60.5%*	*60.5%*
R&D expense	(32.0)	(25.4)	(21.7)	(17.9)	(21.1)	(30.7)	(35.3)	(36.9)	(43.5)	(57.0)	(71.3)	(86.5)	(102.6)	(119.7)
Selling expenses	(0.7)	(1.2)	(3.1)	(3.2)	(4.7)	(12.0)	(24.7)	(38.5)	(54.8)	(71.8)	(89.9)	(109.0)	(129.3)	(150.8)
General & Administrative expenses	(5.9)	(6.8)	(6.7)	(7.0)	(7.5)	(9.5)	(14.6)	(21.6)	(27.3)	(35.7)	(44.7)	(54.2)	(64.3)	(75.0)
EBITDA	**(35.8)**	**(26.3)**	**(26.6)**	**(22.8)**	**(24.6)**	**(20.5)**	**(1.5)**	**21.2**	**44.1**	**57.8**	**72.3**	**87.7**	**104.0**	**121.3**
Margin (%)	*n/m*	*n/m*	*n/m*	*n/m*	*n/m*	*n/m*	*n/m*	*10.8%*	*15.7%*	*15.7%*	*15.7%*	*15.7%*	*15.7%*	*15.7%*
Depreciation & Amortization expense	(2.6)	(3.6)	(4.4)	(4.4)	(4.9)	(4.9)	(5.0)	(5.3)	(5.7)	(6.3)	(7.0)	(7.9)	(8.9)	(8.9)
EBIT	**(38.4)**	**(29.9)**	**(31.1)**	**(27.2)**	**(29.5)**	**(25.5)**	**(6.5)**	**15.9**	**38.3**	**51.4**	**65.3**	**79.8**	**95.1**	**112.4**
Margin (%)	*n/m*	*n/m*	*n/m*	*n/m*	*n/m*	*n/m*	*n/m*	*8.1%*	*13.7%*	*14.0%*	*14.2%*	*14.3%*	*14.4%*	*14.6%*
Other (non)operating income	2.6	3.5	1.9	1.0	1.0	1.0	-	-	-	-	-	-	-	-
Financial income	0.1	0.1	0.1	0.6	0.4	0.2	0.1	0.0	0.1	0.1	0.3	0.5	0.7	0.9
Financial expense	(0.8)	(1.0)	(0.9)	(0.7)	(0.5)	(0.4)	(0.2)	(0.4)	(0.7)	(0.7)	(0.7)	(0.7)	(0.4)	-
Foreign exchange gains (losses), net	0.0	(0.2)	(0.1)	-	-	-	-	-	-	-	-	-	-	-
Pretax income	**(36.5)**	**(27.4)**	**(30.1)**	**(26.3)**	**(28.6)**	**(24.6)**	**(6.7)**	**15.5**	**37.6**	**50.8**	**64.8**	**79.5**	**95.4**	**113.3**
Income taxes	(0.0)	(0.0)	0.9	-	-	-	-	(1.6)	(3.8)	(5.1)	(6.5)	(8.0)	(9.5)	(11.3)
Net income (loss) from continuing operations	(36.5)	(27.4)	(29.2)	(26.3)	(28.6)	(24.6)	(6.7)	14.0	33.9	45.7	58.3	71.6	85.8	102.0
Net income (loss) from discontinued operations	(7.9)	(8.2)	19.5	-	-	-	-	-	-	-	-	-	-	-
Net income (loss)	**(44.4)**	**(35.6)**	**(9.7)**	**(26.3)**	**(28.6)**	**(24.6)**	**(6.7)**	**14.0**	**33.9**	**45.7**	**58.3**	**71.6**	**85.8**	**102.0**
Margin (%)	***n/m***	***n/m***	***n/m***	***n/m***	***n/m***	***n/m***	***n/m***	***7.1%***	***12.1%***	***12.4%***	***12.7%***	***12.8%***	***13.0%***	***13.2%***
Attributable to owners of the company	(44.4)	(35.6)	(9.1)	(26.3)	(28.6)	(24.6)	(6.7)	14.0	33.9	45.7	58.3	71.6	85.8	102.0
Attributable to (non)controlling interest	-	-	(0.6)	-	-	-	-	-	-	-	-	-	-	-
Diluted weighted average shares	17.0	21.9	25.5	24.7	40.5	-	40.5	40.5	40.5	40.5	40.6	40.6	40.6	40.6
EPS - continuing and discontinued operations	(2.62)	(1.62)	(0.36)	(0.65)	(0.71)	(0.61)	(0.16)	0.34	0.83	1.13	1.44	1.76	2.11	2.51
EPS - continuing operations	(2.15)	(1.25)	(1.14)	(0.65)	(0.71)	(0.61)	(0.16)	0.34	0.83	1.13	1.44	1.76	2.11	2.51

Source: Financial Model

Exhibit 20 contd. – Balance Sheet – Bull Case

Balance Sheet *€ in Millions*	2012A	2013A	2014A	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E
Assets														
Inventory	0.2	1.1	3.6	2.9	3.8	10.8	19.8	31.5	44.8	58.8	73.5	89.2	105.8	123.4
Trade receivables	1.4	3.1	15.8	4.3	4.8	12.3	19.8	31.8	45.5	59.6	74.5	90.4	107.2	125.1
Other receiveables	0.8	1.0	0.1	2.0	2.3	5.9	9.4	15.2	21.7	28.5	35.6	43.2	51.2	59.8
Other current assets	1.9	4.4	2.7	2.8	2.2	4.0	4.6	3.7	2.7	1.7	1.1	0.7	0.4	0.2
Cash and Cash equivalents	40.5	29.0	10.9	100.3	61.2	27.7	2.2	7.2	15.7	38.0	70.8	114.3	154.6	222.6
Total current assets	**44.8**	**38.6**	**33.1**	**112.3**	**74.3**	**60.8**	**55.8**	**89.3**	**130.4**	**186.5**	**255.5**	**337.7**	**419.3**	**531.1**
Intangible assets	10.3	10.0	9.7	12.8	14.4	13.7	13.3	13.6	14.5	15.7	17.2	19.1	21.4	24.6
Property plant and equipment	11.0	11.2	9.2	13.1	14.7	14.1	13.6	13.9	14.8	16.1	17.6	19.6	21.9	25.2
Participating interests	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-
Other long term receivables	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deferred tax assets	-	-	0.9	-	-	-	-	-	-	-	-	-	-	-
Non-current assets	**21.4**	**21.5**	**19.9**	**25.9**	**29.2**	**27.8**	**27.0**	**27.5**	**29.3**	**31.8**	**34.8**	**38.7**	**43.3**	**49.8**
Total assets	**66.2**	**60.1**	**53.0**	**138.2**	**103.4**	**88.6**	**82.8**	**116.9**	**159.7**	**218.3**	**290.3**	**376.4**	**462.6**	**580.9**
Liabilities														
Financial debt	1.3	3.4	5.1	5.0	-	-	-	5.0	5.0	5.0	5.0	5.0	-	-
Trade payables	8.5	5.8	4.3	1.0	1.6	5.9	13.4	21.4	30.4	39.9	49.9	60.5	71.7	83.7
Deferred income	1.3	0.8	5.1	5.2	4.2	7.5	8.6	6.8	4.9	6.4	8.0	9.7	11.5	13.4
Other current liabilities	0.8	1.7	3.3	3.4	2.7	4.9	5.5	4.4	6.3	8.2	10.3	12.5	14.8	17.3
Current liabilities	**11.8**	**11.6**	**17.7**	**14.6**	**8.5**	**18.3**	**27.5**	**37.6**	**46.6**	**59.5**	**73.2**	**87.7**	**98.1**	**114.4**
Financial debt	10.1	12.8	8.5	8.3	8.3	8.3	-	10.0	10.0	10.0	10.0	10.0	-	-
Deferred income	5.0	1.7	4.5	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Retirement benefit obligation	0.5	0.3	-	-	-	-	-	-	-	-	-	-	-	-
Accrued charges	2.0	1.7	2.0	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Non-current liabilities	**17.6**	**16.5**	**15.0**	**12.9**	**12.9**	**12.9**	**4.5**	**14.5**	**14.5**	**14.5**	**14.5**	**14.5**	**4.5**	**4.5**
Total Liabilities	**29.4**	**28.2**	**32.7**	**27.5**	**21.4**	**31.1**	**32.0**	**52.1**	**61.1**	**74.0**	**87.7**	**102.2**	**102.6**	**118.9**
Equity														
Legal share capital	0.8	0.9	222.3											
Historical share capital adjustment	-	-	(221.2)											
Share premium	146.4	175.9	166.6											
Gains and losses on defined benefit plans	(0.4)	(0.3)	-											
Share based payment reserve	-	1.0	1.2											
Accumulated deficit	(110.0)	(145.6)	(148.5)											
Total equity	**36.8**	**32.0**	**20.3**	**110.7**	**82.1**	**57.4**	**50.8**	**64.7**	**98.6**	**144.3**	**202.7**	**274.2**	**360.0**	**462.0**
Total liabilities and equity	**66.2**	**60.1**	**53.0**	**138.2**	**103.4**	**88.6**	**82.8**	**116.9**	**159.7**	**218.3**	**290.3**	**376.4**	**462.6**	**580.9**

Source: Financial Model

Exhibit 20 contd. – Cash flow statement – Bull Case

Cash Flow Statement *€ in Millions*	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E
Cash from operating activities:											
Net Income (Loss) from cont. Operations	(26.3)	(28.6)	(24.6)	(6.7)	14.0	33.9	45.7	58.3	71.6	85.8	102.0
Adjustments for	-	-	-	-	-	-	-	-	-	-	-
Plus: D&A	4.4	4.9	4.9	5.0	5.3	5.7	6.3	7.0	7.9	8.9	8.9
Changes in working capital	-	-	-	-	-	-	-	-	-	-	-
Net movement in inventories	3.5	(0.8)	(7.1)	(8.9)	(11.7)	(13.3)	(13.9)	(14.8)	(15.7)	(16.6)	(17.6)
Net movement in trade and other receivables and other current assets	(2.5)	(0.3)	(12.9)	(11.6)	(16.8)	(19.2)	(19.9)	(21.5)	(23.0)	(24.6)	(26.2)
Net movement in trade payables & other current liabilities	(1.8)	(0.1)	6.4	8.2	6.8	10.9	11.4	12.1	12.8	13.6	14.4
Net movement in deferred income	0.2	(1.0)	3.4	1.0	(1.7)	(2.0)	1.5	1.6	1.7	1.8	1.9
(Increase)/ Decrease in net working capital	(0.6)	(2.2)	(10.2)	(11.3)	(23.5)	(23.6)	(21.0)	(22.5)	(24.2)	(25.8)	(27.5)
Changes in other long-term assets and liabilities	6.5	-	-	-	-	-	-	-	-	-	-
Stock-based compensation expense	-	-	-	-	-	-	-	-	-	-	-
Total cash from operating activities	**(16.0)**	**(26.0)**	**(29.9)**	**(12.9)**	**(4.2)**	**16.1**	**31.1**	**42.8**	**55.3**	**68.9**	**83.4**
Cash from investing activities:											
CAPEX	(12.0)	(8.0)	(3.0)	(3.0)	(4.1)	(5.3)	(6.2)	(7.0)	(8.5)	(10.1)	(11.8)
Investments in Intangibles	(0.1)	(0.2)	(0.6)	(1.2)	(1.7)	(2.2)	(2.6)	(3.0)	(3.3)	(3.5)	(3.6)
Other cash flows from investments	-	-	-	-	-	-	-	-	-	-	-
Total cash from investing activities	**(12.1)**	**(8.2)**	**(3.6)**	**(4.2)**	**(5.8)**	**(7.5)**	**(8.9)**	**(10.0)**	**(11.8)**	**(13.6)**	**(15.4)**
Cash flow available for financing activities	(28.1)	(34.1)	(33.5)	(17.1)	(10.0)	8.5	22.2	32.8	43.5	55.4	68.0
Cash from financing activities:											
Issuance of long term debt	-	-	-	-	10.0	-	-	-	-	-	-
Repayment of long term debt	-	-	-	(8.3)	-	-	-	-	-	(10.0)	-
Issuance of short term debt	-	-	-	-	5.0	-	-	-	-	-	-
Repayment of short term debt	-	(5.0)	-	-	-	-	-	-	-	(5.0)	-
Repuchase of equity	-	-	-	-	-	-	-	-	-	-	-
Dividends	-	-	-	-	-	-	-	-	-	-	-
Option proceeds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total cash from financing activities	**0.0**	**(5.0)**	**0.0**	**(8.3)**	**15.0**	**0.0**	**0.0**	**0.0**	**0.0**	**(15.0)**	**0.0**
Beginning Cash Balance	**128.5**	**100.3**	**61.2**	**27.7**	**2.2**	**7.2**	**15.7**	**38.0**	**70.8**	**114.3**	**154.6**
Change in Cash	(28.1)	(39.2)	(33.5)	(25.5)	5.0	8.5	22.2	32.8	43.5	40.4	68.0
Effects of exchange rate charges on cash	-	-	-	-	-	-	-	-	-	-	-
Ending Cash Balance	**100.3**	**61.2**	**27.7**	**2.2**	**7.2**	**15.7**	**38.0**	**70.8**	**114.3**	**154.6**	**222.6**

Source: Financial Model

Exhibit 20 contd. – DCF – Base Case

Discounted Cash Flow Analysis *(€ in Millions)*	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E
EBITDA	(22.8)	(24.6)	(20.5)	(1.5)	21.2	44.1	57.8	72.3	87.7	104.0	121.3
EBIT	(27.2)	(29.5)	(25.5)	(6.5)	15.9	38.3	51.4	65.3	79.8	95.1	112.4
Less: Cash Taxes	-	-	-	-	(1.6)	(3.8)	(5.1)	(6.5)	(8.0)	(9.5)	(11.3)
NOPAT	(27.2)	(29.5)	(25.5)	(6.5)	14.3	34.6	46.4	58.8	71.8	85.5	101.0
Plus: D&A	4.4	4.9	4.9	5.0	5.3	5.7	6.3	7.0	7.9	8.9	8.9
Less: CAPEX & investments in int.	(12.1)	(8.2)	(3.6)	(4.2)	(5.8)	(7.5)	(8.9)	(10.0)	(11.8)	(13.6)	(15.4)
Plus/(Less) change in working capital	(0.6)	(2.2)	(10.2)	(11.3)	(23.5)	(23.6)	(21.0)	(22.5)	(24.2)	(25.8)	(27.5)
Unlevered Free Cash Flow	**(35.6)**	**(35.0)**	**(34.3)**	**(17.0)**	**(9.7)**	**9.2**	**22.9**	**33.3**	**43.8**	**55.1**	**67.1**
NPV of unleveraged Cash Flows	**(6.5)**										
Perpetuity Growth Rate **2.8%**											
Terminal Value (discounted)	402.2										
Implied EV	**395.6**										
-Net Debt (Total Debt - Cash)	(115.1)										
Implied Equity Value	510.8										
S/Out	40.5										
Implied Price per Share	**12.6**										

Source: Financial Model

Exhibit 20 contd. – Income Statement – Bear Case

Adjusted Income Statement *€ in Millions except per share figures*	2012A	2013A	2014A	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E
Collaboration revenue	2.1	6.2	3.2	3.5	3.5	3.5	-	-	-	-	-	-	-	-
System sales	0.3	0.5	3.7	3.4	3.6	15.4	18.4	19.7	25.5	30.0	34.8	39.9	45.4	51.4
Cartridge sales	1.2	1.6	1.5	0.8	4.9	21.4	65.7	113.2	163.9	218.3	276.4	338.6	405.1	476.2
Product sales revenue	1.4	2.1	5.3	4.2	8.5	36.8	84.1	132.9	189.5	248.2	311.1	378.5	450.5	527.6
Service revenue	-	-	-	0.1	0.1	0.5	0.6	0.7	0.9	1.0	1.2	1.4	1.6	1.8
Non-clinical revenue	-	-	-	0.3	0.6	2.7	6.2	9.8	14.0	18.4	23.0	28.0	33.3	39.0
Total revenue	**3.6**	**8.3**	**8.5**	**8.1**	**12.7**	**43.5**	**91.0**	**143.4**	**204.4**	**267.7**	**335.4**	**407.9**	**485.4**	**568.4**
Growth (%)		*134.7%*	*1.7%*	*(4.1)%*	*56.5%*	*242.0%*	*109.1%*	*57.6%*	*42.6%*	*31.0%*	*25.3%*	*21.6%*	*19.0%*	*17.1%*
Cost of sales	(0.8)	(1.3)	(3.6)	(3.5)	(5.4)	(18.4)	(38.3)	(59.9)	(84.9)	(111.2)	(139.4)	(169.5)	(201.7)	(236.2)
Gross profit	**2.8**	**7.0**	**4.8**	**4.6**	**7.3**	**25.1**	**52.7**	**83.5**	**119.5**	**156.4**	**196.0**	**238.4**	**283.7**	**332.2**
Margin (%)	*78.0%*	*84.2%*	*57.1%*	*57.0%*	*57.3%*	*57.6%*	*57.9%*	*58.3%*	*58.5%*	*58.5%*	*58.5%*	*58.5%*	*58.5%*	*58.5%*
R&D expense	(32.0)	(25.4)	(21.7)	(17.2)	(19.6)	(26.8)	(28.0)	(28.7)	(33.8)	(44.2)	(55.4)	(67.4)	(80.2)	(93.9)
Selling expenses	(0.7)	(1.2)	(3.1)	(3.0)	(4.3)	(10.3)	(19.3)	(29.5)	(41.8)	(54.8)	(68.7)	(83.5)	(99.4)	(116.4)
General & Administrative expenses	(5.9)	(6.8)	(6.7)	(6.7)	(6.9)	(8.3)	(11.6)	(16.8)	(21.1)	(27.7)	(34.7)	(42.2)	(50.2)	(58.8)
EBITDA	**(35.8)**	**(26.3)**	**(26.6)**	**(22.2)**	**(23.5)**	**(20.3)**	**(6.3)**	**8.5**	**22.7**	**29.8**	**37.3**	**45.4**	**54.0**	**63.2**
Margin (%)	*n/m*	*n/m*	*n/m*	*n/m*	*n/m*	*n/m*	*n/m*	*5.9%*	*11.1%*	*11.1%*	*11.1%*	*11.1%*	*11.1%*	*11.1%*
Depreciation & Amortization expense	(2.6)	(3.6)	(4.4)	(4.4)	(4.9)	(4.9)	(5.0)	(5.2)	(5.6)	(6.1)	(6.7)	(7.4)	(8.4)	(8.2)
EBIT	**(38.4)**	**(29.9)**	**(31.1)**	**(26.6)**	**(28.4)**	**(25.2)**	**(11.3)**	**3.3**	**17.2**	**23.7**	**30.6**	**37.9**	**45.6**	**55.0**
Margin (%)	*n/m*	*n/m*	*n/m*	*n/m*	*n/m*	*n/m*	*n/m*	*2.3%*	*8.4%*	*8.9%*	*9.1%*	*9.3%*	*9.4%*	*9.7%*
Other (non)operating income	2.6	3.5	1.9	1.0	1.0	1.0	-	-	-	-	-	-	-	-
Financial income	0.1	0.1	0.1	0.6	0.4	0.2	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.2
Financial expense	(0.8)	(1.0)	(0.9)	(0.7)	(0.5)	(0.4)	(0.2)	(0.4)	(0.7)	(0.7)	(0.7)	(0.7)	(0.4)	-
Foreign exchange gains (losses), net	0.0	(0.2)	(0.1)	-	-	-	-	-	-	-	-	-	-	-
Pretax income	**(36.5)**	**(27.4)**	**(30.1)**	**(25.7)**	**(27.5)**	**(24.4)**	**(11.4)**	**2.9**	**16.4**	**23.0**	**29.9**	**37.3**	**45.4**	**55.2**
Income taxes	(0.0)	(0.0)	0.9	-	-	-	-	(0.3)	(1.6)	(2.3)	(3.0)	(3.7)	(4.5)	(5.5)
Net income (loss) from continuing operations	(36.5)	(27.4)	(29.2)	(25.7)	(27.5)	(24.4)	(11.4)	2.6	14.8	20.7	27.0	33.6	40.9	49.7
Net income (loss) from discontinued operations	(7.9)	(8.2)	19.5	-	-	-	-	-	-	-	-	-	-	-
Net income (loss)	**(44.4)**	**(35.6)**	**(9.7)**	**(25.7)**	**(27.5)**	**(24.4)**	**(11.4)**	**2.6**	**14.8**	**20.7**	**27.0**	**33.6**	**40.9**	**49.7**
Margin (%)	***n/m***	***n/m***	***n/m***	***n/m***	***n/m***	***n/m***	***n/m***	***1.8%***	***7.2%***	***7.7%***	***8.0%***	***8.2%***	***8.4%***	***8.7%***
Attributable to owners of the company	(44.4)	(35.6)	(9.1)	(25.7)	(27.5)	(24.4)	(11.4)	2.6	14.8	20.7	27.0	33.6	40.9	49.7
Attributable to (non)controlling interest	-	-	(0.6)	-	-	-	-	-	-	-	-	-	-	-
Diluted weighted average shares	17.0	21.9	25.5	24.7	40.5	-	40.5	40.5	40.5	40.5	40.6	40.6	40.6	40.6
EPS - continuing and discontinued operations	(2.62)	(1.62)	(0.36)	(0.63)	(0.68)	(0.60)	(0.28)	0.06	0.36	0.51	0.66	0.83	1.00	1.22
EPS - continuing operations	(2.15)	(1.25)	(1.14)	(0.63)	(0.68)	(0.60)	(0.28)	0.06	0.36	0.51	0.66	0.83	1.00	1.22

Source: Financial Model

Exhibit 20 contd. – Balance Sheet – Bear Case

Balance Sheet *€ in Millions*	2012A	2013A	2014A	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E
Assets														
Inventory	0.2	1.1	3.6	2.8	3.4	9.3	15.5	24.2	34.3	44.9	56.3	68.5	81.5	95.4
Trade receivables	1.4	3.1	15.8	3.8	4.2	10.1	14.7	23.2	33.1	43.3	54.3	66.1	78.6	92.1
Other receiveables	0.8	1.0	0.1	1.8	2.0	4.8	7.0	11.1	15.8	20.7	26.0	31.6	37.6	44.0
Other current assets	1.9	4.4	2.7	2.5	1.9	3.3	3.5	2.7	1.9	1.3	0.8	0.5	0.3	0.2
Cash and Cash equivalents	40.5	29.0	10.9	101.5	63.7	32.8	6.8	7.3	3.7	7.2	15.2	27.6	30.0	52.8
Total current assets	**44.8**	**38.6**	**33.1**	**112.4**	**75.3**	**60.3**	**47.5**	**68.5**	**88.9**	**117.5**	**152.6**	**194.1**	**228.0**	**284.5**
Intangible assets	10.3	10.0	9.7	12.8	14.4	13.7	13.1	13.2	13.8	14.7	15.9	17.5	19.6	22.6
Property plant and equipment	11.0	11.2	9.2	13.1	14.7	14.0	13.4	13.5	14.1	15.1	16.3	17.9	20.0	23.1
Participating interests	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-
Other long term receivables	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deferred tax assets	-	-	0.9	-	-	-	-	-	-	-	-	-	-	-
Non-current assets	**21.4**	**21.5**	**19.9**	**25.8**	**29.1**	**27.7**	**26.6**	**26.7**	**27.9**	**29.8**	**32.2**	**35.5**	**39.6**	**45.7**
Total assets	**66.2**	**60.1**	**53.0**	**138.2**	**104.4**	**88.0**	**74.1**	**95.2**	**116.8**	**147.3**	**184.8**	**229.6**	**267.6**	**330.2**
Liabilities														
Financial debt	1.3	3.4	5.1	5.0	-	-	-	5.0	5.0	5.0	5.0	5.0	-	-
Trade payables	8.5	5.8	4.3	1.0	1.5	5.1	10.5	16.4	23.3	30.5	38.2	46.4	55.3	64.7
Deferred income	1.3	0.8	5.1	4.9	3.8	6.5	6.7	5.3	3.7	4.9	6.1	7.4	8.8	10.4
Other current liabilities	0.8	1.7	3.3	3.2	2.5	4.2	4.3	3.4	4.8	6.3	7.9	9.6	11.4	13.4
Current liabilities	**11.8**	**11.6**	**17.7**	**14.1**	**7.8**	**15.7**	**21.6**	**30.0**	**36.8**	**46.6**	**57.2**	**68.5**	**75.5**	**88.4**
Financial debt	10.1	12.8	8.5	8.3	8.3	8.3	-	10.0	10.0	10.0	10.0	10.0	-	-
Deferred income	5.0	1.7	4.5	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Retirement benefit obligation	0.5	0.3	-	-	-	-	-	-	-	-	-	-	-	-
Accrued charges	2.0	1.7	2.0	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Non-current liabilities	**17.6**	**16.5**	**15.0**	**12.9**	**12.9**	**12.9**	**4.5**	**14.5**	**14.5**	**14.5**	**14.5**	**14.5**	**4.5**	**4.5**
Total Liabilities	**29.4**	**28.2**	**32.7**	**26.9**	**20.6**	**28.6**	**26.1**	**44.5**	**51.3**	**61.2**	**71.7**	**83.0**	**80.0**	**93.0**
Equity														
Legal share capital	0.8	0.9	222.3											
Historical share capital adjustment	-	-	(221.2)											
Share premium	146.4	175.9	166.6											
Gains and losses on defined benefit plans	(0.4)	(0.3)	-											
Share based payment reserve	-	1.0	1.2											
Accumulated deficit	(110.0)	(145.6)	(148.5)											
Total equity	**36.8**	**32.0**	**20.3**	**111.3**	**83.8**	**59.4**	**48.1**	**50.7**	**65.5**	**86.1**	**113.1**	**146.7**	**187.5**	**237.2**
Total liabilities and equity	**66.2**	**60.1**	**53.0**	**138.2**	**104.4**	**88.0**	**74.1**	**95.2**	**116.8**	**147.3**	**184.8**	**229.6**	**267.6**	**330.2**

Source: Financial Model

Exhibit 20 contd. – Cash flow statement – Bear Case

Cash Flow Statement *€ in Millions*	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E
Cash from operating activities:											
Net Income (Loss) from cont. Operations	(25.7)	(27.5)	(24.4)	(11.4)	2.6	14.8	20.7	27.0	33.6	40.9	49.7
Adjustments for	-	-	-	-	-	-	-	-	-	-	-
Plus: D&A	4.4	4.9	4.9	5.0	5.2	5.6	6.1	6.7	7.4	8.4	8.2
Changes in working capital	-	-	-	-	-	-	-	-	-	-	-
Net movement in inventories	3.7	(0.7)	(5.9)	(6.2)	(8.7)	(10.1)	(10.6)	(11.4)	(12.2)	(13.0)	(13.9)
Net movement in trade and other receivables and other current assets	(1.6)	(0.0)	(10.0)	(7.0)	(11.8)	(13.8)	(14.5)	(15.7)	(17.0)	(18.4)	(19.7)
Net movement in trade payables & other current liabilities	(2.1)	(0.2)	5.3	5.6	5.0	8.3	8.7	9.3	10.0	10.7	11.4
Net movement in deferred income	(0.1)	(1.1)	2.7	0.2	(1.5)	(1.5)	1.2	1.2	1.3	1.4	1.5
(Increase)/ Decrease in net working capital	(0.1)	(1.9)	(8.0)	(7.4)	(17.0)	(17.2)	(15.2)	(16.6)	(17.9)	(19.3)	(20.8)
Changes in other long-term assets and liabilities	6.5	-	-	-	-	-	-	-	-	-	-
Stock-based compensation expense	-	-	-	-	-	-	-	-	-	-	-
Total cash from operating activities	**(14.9)**	**(24.6)**	**(27.4)**	**(13.7)**	**(9.2)**	**3.2**	**11.5**	**17.0**	**23.1**	**29.9**	**37.1**
Cash from investing activities:											
CAPEX	(12.0)	(8.0)	(3.0)	(3.0)	(4.0)	(5.2)	(6.1)	(6.9)	(8.3)	(9.9)	(11.6)
Investments in Intangibles	(0.1)	(0.2)	(0.5)	(0.9)	(1.3)	(1.6)	(1.9)	(2.2)	(2.4)	(2.5)	(2.7)
Other cash flows from investments	-	-	-	-	-	-	-	-	-	-	-
Total cash from investing activities	**(12.1)**	**(8.2)**	**(3.5)**	**(3.9)**	**(5.3)**	**(6.8)**	**(8.0)**	**(9.0)**	**(10.7)**	**(12.5)**	**(14.3)**
Cash flow available for financing activities	(27.0)	(32.7)	(30.9)	(17.6)	(14.5)	(3.6)	3.5	8.0	12.4	17.4	22.8
Cash from financing activities:											
Issuance of long term debt	-	-	-	-	10.0	-	-	-	-	-	-
Repayment of long term debt	-	-	-	(8.3)	-	-	-	-	-	(10.0)	-
Issuance of short term debt	-	-	-	-	5.0	-	-	-	-	-	-
Repayment of short term debt	-	(5.0)	-	-	-	-	-	-	-	(5.0)	-
Repuchase of equity	-	-	-	-	-	-	-	-	-	-	-
Dividends	-	-	-	-	-	-	-	-	-	-	-
Option proceeds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total cash from financing activities	**0.0**	**(5.0)**	**0.0**	**(8.3)**	**15.0**	**0.0**	**0.0**	**0.0**	**0.0**	**(15.0)**	**0.0**
Beginning Cash Balance	**128.5**	**101.5**	**63.7**	**32.8**	**6.8**	**7.3**	**3.7**	**7.2**	**15.2**	**27.6**	**30.0**
Change in Cash	(27.0)	(37.8)	(30.9)	(26.0)	0.5	(3.6)	3.5	8.0	12.4	2.4	22.8
Effects of exchange rate charges on cash	-	-	-	-	-	-	-	-	-	-	-
Ending Cash Balance	**101.5**	**63.7**	**32.8**	**6.8**	**7.3**	**3.7**	**7.2**	**15.2**	**27.6**	**30.0**	**52.8**

Source: Financial Model

Exhibit 20 contd. – DCF – Bear Case

Discounted Cash Flow Analysis *(€ in Millions)*		2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E
EBITDA		(22.2)	(23.5)	(20.3)	(6.3)	8.5	22.7	29.8	37.3	45.4	54.0	63.2
EBIT		(26.6)	(28.4)	(25.2)	(11.3)	3.3	17.2	23.7	30.6	37.9	45.6	55.0
	Less: Cash Taxes	-	-	-	-	(0.3)	(1.6)	(2.3)	(3.0)	(3.7)	(4.5)	(5.5)
NOPAT		(26.6)	(28.4)	(25.2)	(11.3)	3.0	15.5	21.4	27.6	34.2	41.1	49.5
	Plus: D&A	4.4	4.9	4.9	5.0	5.2	5.6	6.1	6.7	7.4	8.4	8.2
	Less: CAPEX & investments in int.	(12.1)	(8.2)	(3.5)	(3.9)	(5.3)	(6.8)	(8.0)	(9.0)	(10.7)	(12.5)	(14.3)
	Plus/(Less) change in working capital	(0.1)	(1.9)	(8.0)	(7.4)	(17.0)	(17.2)	(15.2)	(16.6)	(17.9)	(19.3)	(20.8)
Unlevered Free Cash Flow		**(34.4)**	**(33.6)**	**(31.7)**	**(17.5)**	**(14.1)**	**(2.9)**	**4.2**	**8.7**	**13.0**	**17.7**	**22.6**
NPV of unleveraged Cash Flows		**(78.9)**										
Perpetuity Growth Rate	**2.3%**											
Terminal Value (discounted)		115.1										
Implied EV		**36.3**										
-Net Debt (Total Debt - Cash)		(115.1)										
Implied Equity Value		151.4										
S/Out		40.5										
Implied Price per Share		**3.7**										

Source: Financial Model

Exhibit 21 – Structure of the Board of Directors

Member	Position	Term	Career Background
Rudi Mariën	Chairman, Non-Executive Director	2015-2016	Mr. Mariën is President and Managing Director of Gengest BVBA and Biovest Comm.VA. He was the Vice President of Cerba European Lab. Through his management company, Gengest BVBA, Mr. Mariën has board mandates in different listed and private biotech companies. He was co-founder, reference shareholder and Chairman of Innogenetics, and has been the founder, shareholder and Managing Director of several clinical reference laboratories including the Barc Group, a leading international centralized clinical laboratory, exclusively dedicated to pharmaceutical studies. Mr. Mariën holds a degree in pharmaceutical sciences and a degree in clinical biology from the University of Ghent, Belgium.
Rudi Pauwels	Chief Executive Officer, Director, Founder	2015-2018	Mr. Pauwels founded Biocartis in 2007. He also co-founded several other European biotech companies, including Tibotec, Virco and Galapagos Genomics. His career has started as a researcher at the internationally renowned Rega Institute for Medical Research in Leuven. Moreover, he is recipient of several awards for his scientific and entrepreneurial accomplishments. Mr. Pauwels holds a PhD in Pharmaceutical Sciences from the Katholieke Universiteit Leuven, Belgium.
Hilde Windels	Deputy CEO, Managing Director	2015-2018	Mrs. Windels has close to 20 years of experience in biotech. From 2011 until Sept 2015, she was Biocartis' CFO. From 2009 to mid-2011, she worked as independent CFO for several private biotech companies. From 1999 to 2008, Mrs. Windels was CFO of publicly-listed Devgen. She also served on the boards of Devgen, MDxHealth and FlandersBio and currently is a member of board of Erytech and VIB. Mrs. Windels holds a Master in Economics (commercial engineer) from the University of Leuven, Belgium.
Roald Borré	Non-Executive Director	2015-2016	Mr. Borré serves as a Co-Head of Venture Capital at Participatiemaatschappij Vlaanderen NV. In 2011, after a period of five years as an entrepreneur, he joined the ParticipatieMaatschappij Vlaanderen (PMV). He also serves as Manager of PMV-TINA, is on the board of different TINA portfolio companies and a member of several advisory boards. Mr. Borré started his professional career at the Financieel Economische Tijds newspaper as a financial analyst specialized in high-tech companies in the ICT and biotech fields. In 1999, he joined Puilaecto Private Bankers as Senior Fund Manager, where he was in charge of the Biotechnology Fund and managed various investments in the therapeutics and diagnostics field. He held this position until 2006. Mr. Borré holds a Master in Financial and Commercial Sciences from EHSAL Management School, Belgium.
Peter Piot	Non-Executive Director (Independent)	2015-2018	Mr. Piot is Director at the London School of Hygiene & Tropical Medicine. He was the founding Executive Director of UNAIDS and Under Secretary-General of the United Nations from 1995 until 2008, and was an Associate Director of the Global Programme on AIDS of the WHO. In 1976 he co-discovered the Ebola virus in Zaïre. Mr. Piot holds an MD from the University of Ghent, Belgium, a PhD in Microbiology from the University of Antwerp, Belgium, and a Diploma of Tropical Medicine from the Antwerp Institute of Tropical Medicine, Belgium.
Renaat Berckmoes	Non-Executive Director (Independent)	2015-2018	Mr. Berckmoes is also a non-executive director at Primacom AG and FPIM-SFPI and a partner at Fortino CVA. He has held finance positions at Telenet, being CFO from 2006 to 2013. Mr. Berckmoes holds a Master in Business Economics and a Master in Maritime Economics from the University of Antwerp, Belgium, and a Master in Political & Social Sciences from the Katholieke Universiteit Leuven, Belgium.
Mark Shaffar	Non-Executive Director (Independent)	2015-2018	Mr. Shaffar has 38 years of experience in the biotechnology sector and held numerous positions at Abbott Laboratories from 1977 to 2014, including Divisional Vice-President of Acquisitions and Licensing. Mr. Shaffar holds a Master in Management Policy, Finance from Northwestern University (Kellogg Graduate School of Management), the US.

Sources: Company information, Bloomberg

Exhibit 21 contd. – Committees

Audit Committee	Position
Renaat Berckmoes	Chairperson
Rudi Mariën	Member
Mark Shaffar	Member
Roald Borré	Member
Remuneration and Nomination Committee	**Position**
Rudi Mariën	Chairperson
Renaat Berckmoes	Member
Mark Shaffar	Member

Sources: Company information, Bloomberg

Exhibit 21 contd. – Executive Management

Executive	Position	Career Background
Rudi Pauwels	CEO, Chairman, Founder	See Exhibit Structure of the Board of Directors
Hilde Windels	Deputy CEO, Managing Director	See Exhibit Structure of the Board of Directors
Ewoud Welten	CFO	Joined Biocartis in September 2015. Mr. Welten previously worked as Vice President Corporate Finance for the international investment bank Kempen & Co. He has a proven track record in the Life Sciences and Healthcare sector as a corporate financier, in which position he managed numerous international capital market transactions including IPOs, secondary fundraisings and M&A transactions. Mr. Welten holds a Master in Financial Economics (distinction) from Erasmus University Rotterdam, the Netherlands.
Ulrik Cordes	CCO	Joined Biocartis in 2013. Mr. Cordes has special experience in strategy, commercial partnering, global go-to market strategies and M&A activities. Prior to that, he held the position of Global Sales & Marketing Director Slides & Speciality Glass at Thermo Fisher Scientific. He was also Vice President Marketing Operations and Vice President Asia Pasific & Export Region at Dako. Mr. Cordes holds a Master in Biochemistry from the University of Copenhagen, Denmark.
Susy Spruyt	Director of Human Resources	Joined Biocartis in 2015. Prior to joining Biocartis, she held progressive HR roles primarily in the biotech and pharmaceutical industry. Mrs. Spruyt holds a Master in Law from VUB University of Brussels.
Patrick Hofkens	General Counsel	Joined Biocartis in September 2015. He has more than 20 years of international experience in legal and business development. Prior to joining Biocartis, Mr. Hofkens worked as Director in the intellectual property and licensing department of Ericsson. From 2006 to 2013, he worked for telecom company Option as a Corporate Secretary and Chief Development Officer. He previously worked in private practise as Counsel at Loyens&Loeff and as Senior Legal Counsel with Borealis. Mr. Hofkens holds a Master in Law from the University of Leuven, Belgium, and a Master after Master Degree in Corporate Law from the University of Brussels, Belgium.
Erwin Sablon	Head of Applied R&D	Joined Biocartis June 2010. In August 2012, he became Head of Applied Research and Development and is now responsible for all Biocartis internal and external life science R&D activities. He also manages relationships with the company's development partners. Mr. Sablon previously held the position of Director Project Management at Ablynx NV from 2008-2010. He also gained extensive experience in in vitro diagnostics (IVD) development of molecular diagnostics assays during his 18 years at Innogentics NV. Mr. Sablon holds a PhD in Molecular Biology from the University of Ghent, Belgium, and an Excecutive MBA from the Vlerick Leuven Ghent Management School, Belgium.
Caroline Collard	Head of Marketing	Joined Biocartis in February 2015. Mrs. Collard previously worked for Roche Pharmaceuticals, Serono, MerckSerno and Teva Pharmaceutical, where she gained a profound expertise in Sales and Marketing in the pharmaceutical and biotech industry. Mrs. Collard holds a Master in Labour Sociology, Midwifery, and an MBA from Vlerick Leuven Ghent Management School, Belgium.

Sources: Company information, Bloomberg

Exhibit 22 – Compliance with the "2009 Belgium Code on Corporate Governance"

To assess Biocartis' corporate governance, we estimated a score based on the compliance with the Belgium Code on Corporate Governance (hereinafter "Code"). The utilized scorecard can be found below. The code's main goal is to support long-term value creation of all stakeholders and it consists of the following 9 principles[2]:

1. The company shall adopt a clear governance structure
2. The company shall have an effective and efficient board that takes decisions in the corporate interest
3. All directors shall demonstrate integrity and commitment
4. The company shall have a rigorous and transparent procedure for the appointment and evaluation of the board and its members
5. The board shall set up specialised committees
6. The company shall define a clear executive management structure
7. The company shall remunerate directors and executive managers fairly and responsibly
8. The company shall enter into a dialogue with shareholders and potential shareholders based on a mutual understanding of objectives and concerns
9. The company shall ensure adequate disclosure of its corporate governance

Scorecard: Compliance with the Code
5 – Excellent. No potential improvements known.
4 – Very good. Some minor improvements possible.
3 – Good. Positive components, but improvements desired.
2 – Weak. Only small components in compliance with the Code.
1 – Poor. No compliance.

#	Assessment	Score
1	In compliance with the Code, Biocartis has adopted a clear governance structure. The roles are clearly specified and all the required information is made publicly available.	5
2	Biocartis fulfils all requirements of this principle. The board size is appropriate for efficient decision-making. Moreover, all members are well educated and have an extensive work experience. One potential drawback relates to gender diversity. According to the Code, companies should promote gender diversity and diversity in general. The fact that Biocartis has only one female member in its board does not follow this advice, albeit it is not regarded as a requirement.	4
3	Biocartis emphasizes its directors' integrity and commitment in its Corporate Governments Charter. The board has distinct tasks and the members have to act accordingly. The board members must comply with the applicable legal provisions. Any misconduct or conflict of interest must be reported immediately. This is in line with the Code.	5
4	According to the Code, a company must describe its procedures for the appointment and evaluation of the board and its members in its Corporate Governance Charter. Biocartis has made this information transparent. Additionally, Biocartis has a remuneration and nomination committee in place, which supports the procedure.	5
5	In order to fulfil the requirements of this principle, Biocartis has set up both a remuneration & nomination committee and an audit committee (Appendix X.2). However, the audit committee does not have a majority of independent directors as required by the Code. Although Biocartis justifies it by claiming that the chairman is an independent director and will have a casting role, it must be seen as an infringement against the Code. Apart from that, Biocatis fulfils all requirements.	3
6	Biocartis clearly defines the executive management structure. It can be found both in company documents and on its website. Since its IPO, Biocartis has continuously created additional management positions in order to delegate certain tasks to specialists, which highlights Biocartis' efforts for further improvement.	5
7	Directors and executive managers are fairly and responsibly enumerated as clearly described in the company documents. Biocartis incorporates stock based related incentives programs for independent directors, which is contrary the Code.	3
8	Biocartis has a formal website and has assigned a section to its shareholders. Furthermore, Biocartis encourages its shareholders to participate in general shareholders' meetings. All relevant information and agendas are made available on the website in advance of the meetings.	5
9	In compliance with the Code, Biocartis has published a Corporate Governments Charter that describes all the main aspects of its corporate governance. Moreover, it will be updated as required to reflect changes to the corporate governance.	5
	Overall score	**4.44**

Sources: Company information, Group analysis

[2] Provided by the Belgian Corporate Governance Committee

Exhibit 23 – Summary of investment risks

Investment Risks

Risk Type	Risk #	Risk Factor	Risk level	Likelihood	Impact	General Description
Financial Risk	1	Cash reserves	Large	3	2	Biocartis is currently undergoing a negative cash flow and will continue to do so until the sales of its products pick up in 2019/2020. A potential risk of insolvency is an important issue in the first three years, since the company is scheduled to repay all of its debt by 2018. A solvency problem might occur if Biocartis spends its IPO cash quicker than expected. A depletion of cash reserves could mean further debt issuance or equity issuance.
Financial Risk	2	Profitability	Large	2	5	Biocartis is not expected to become profitable within next 4 years. As a young company with no history of being profitable, there is no guarantee that Biocartis will be able to expand its commercial infrastructure.
Financial Risk	3	Stock liquidity	Large	2	1	Low liquidity exists in the stock as there is a relatively small volume of shares traded, average daily volume traded is approximately 15,000 shares, which could be considered a risky investment. Additionally, large block holders (created through early investors) seem to construct the make up of the firm.
Strategic Risk	1	Young company amongst more established players	Large	3	3	Market value has been created through the expectations that Biocartis will acquire an important market share. However, due to its relatively young company track record, its commercial operations could be belittled by larger, more established players. Furthermore, customers need to buy tests, as Biocartis is a young firm there is an ongoing concern, which could make pathology labs reluctant to buy the Biocartis platform.
Strategic Risk	2	Risk of partnership failures	Medium	1	3	Biocartis currently has a few strategic partners developing assays for their Idylla platform, Johnson and Johnson being an important partner. Johnson & Johnson is a large stakehold in Biocartis and have a strategic partnership with them on their platform. Biocartis is currently developing assays with Johnson and Johnson which will increase their portfolio of assays offered, they will gain royalties on the sales and increase the amount of platforms sold. Biocartis could suffer as a result of a dispute with Johnson & Johnson.
Strategic Risk	3	Risk of technology becoming obsolete	Large	2	5	Innovations in medical technology are constant and will deem Biocartis Idylla platform obsolete at one point. There is a risk that R&D costs of keeping up with the new technology will wipe out any potential profits. Ignoring R&D costs could trigger bankruptcy in the long run as their product will no longer be competitive. Their is a risk in insuring a constant flow of profits are spend on Research and development.
Regulatory Risk	1	Assay reimbursement risk	Medium	1	4	An important consideration when selling expensive medical diagnostic devices is the client's ability for reimbursement via a third party. Biocartis currently offers and is developing assays that are currently being reimbursed. Third parties such as governments and insurance companies could alter their reimbursement policies which could greatly reduce the demand for such tests.
Regulatory Risk	2	Risk of not obtaining a CLIA Waiver	Low	1	3	A CLIA waiver would essentially allow minimally trained personnel to administer the medical diagnostics tests. CLIA waivers are granted in the US when a product meets the stringent requirements that aim to make results comprehensive even for untrained personnel. Biocartis has yet to be granted the CLIA waiver and it will not be possible with all assays, they are currently working towards getting a CLIA waiver for their respiratory assay they are working on with Johnson and Johnson. Successfully being granted a CLIA Waiver would make Biocartis product much more accessible and desirable.
Regulatory Risk	3	Development of new assays - FDA 510 (k) + CE Markings	Medium	1	5	Products sold around the world need be either CE marked or FDA approved. A potential risk of not getting accepted by the United States FDA regulatory body could place potential future revenues at risk. Without FDA approval Biocartis product cannot be sold in the United States. Furthermore, Idylla and Biocartis first assay (BRAF) already passed the Conformity Assessment process (CE Marking), however problems could arise in the future which would restrict the sales of the non-CE marked products on the European market.
Regulatory Risk	4	Intellectual property risk	Low	1	2	Biocartis profits from its intellectual property which could be challenged in the future. Claims on existing patents could open and/or on future patents, which could limit the companies ability to sell its assays. Risk level set to medium as there are still ongoing oppositions to two of Biocartis' European patents. Additionally, defending patents could prove to be costly in the future.
Operational Risk	1	Production risk	Medium	2	2	Production of medical diagnostics instruments requires highly accurate tools and resources. Minor production errors could lead to defective instruments, consequently hurting the company's image and bottom line.
Operational Risk	2	Supply chain risk	Medium	3	2	Biocartis purchases multiple different components from different suppliers to construct its Idylla platform. Biocartis could experience quality/quantity/production issues, disputes and price hikes from multiple single source suppliers.
Competitive Risk	1	Product differentiation	Medium	2	3	Many competitors exist with similar products which include Cepheid with its GeneXpert system, bioMérieux (Biofire) with their FilmArray system, Luminex (GenturaDx) with their Aires system and Roche (IQuum) with their Liat analyser. Although Biocartis has patents on certain technologies, they are by no means the only player in their field of operations. Competitors offer similar products that could easily steal market share from Biocartis or could have been miss-identified in companies future revenue potential predictions.
Competitive Risk	2	Limited assay selection	Large	3	4	BioCartis offers a complete solution where its terminal has the ability to connect to an ever growing among of assay selection. However, the company currently only offers a limited menu of assays. Future growth opportunities lie in growing the assay offerings.
Competitive Risk	3	New entrants	Medium	4	2	Multiple new entrants exist that are attempting to achieve the same sample to result diagnostics, these new entrants include Curetis, Enigma Diagnostics, Nanosphere, Great Basin, Rheonix, Atlas Genetics and GenMark Dx

** (Low = 1, High = 5) ** (unlikely = 1, Likely = 5)

Sources: *Company information, Group analysis*

Exhibit 24 – Mitigating Factors

Mitigating Factors			
Risk Type	Risk #	Risk Factor	Mitigating Factors
Financial Risk	1	Cash reserves	Access to debt capital markets after 2019
Financial Risk	2	Dilution of shareholder equity	Access to debt capital markets after 2019
Financial Risk	3	Profitability	Stipulation of multiple partnership agreements
Financial Risk	4	Stock Liquidity	Creation of a solid brand
Strategic Risk	1	Young Company	Stipulation of multiple partnership agreements
Strategic Risk	2	Risk of Partnership Failures	Diversified portfolio of partnerships
Strategic Risk	3	Technology becoming obsolete	R&D Investments on emerging technologies
Regulatory Risk	1	Assay Reimbursment risk	Decrease of assays' price
Regulatory Risk	2	Not Obtaining a CLIA Waiver	Carefull planning
Regulatory Risk	3	Development of new assays	Acquisition of establish companies / Penetration of alternative markets
Regulatory Risk	4	Intelectual Property Risk	Creation of patents
Operational Risk	1	Production Risk	Enforcement of stringent control over production activities
Operational Risk	2	Supply Chain Risk	Diversification of suppliers
Competitive Risk	1	Product differentiation	Higher-than-industry R&D expenditure
Competitive Risk	2	Limited Assay Selection	Higher-than-industry R&D expenditure
Competitive Risk	3	New Entrants	Higher-than-industry R&D expenditure

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