A Work Project, presented as part of the requirements for the Award of
a Master's degree in International Finance from the Nova School of
Business and Economics.

Private Equity Challenge – DELO Financial and Strategic Analysis

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04.01.2021

Abstract

The “Private Equity Challenge” Field Lab Work Project simulates and outlines a real deal regularly conducted by private equity firms. The objective of this project is to analyze a target company, develop an investment strategy and model a leveraged buyout for the chosen company.

This group identified “DELO – Industrial Adhesives GmbH” as an attractive target company. The following analysis provides one part of the full analysis with special focus on the business plan and valuation.

Disclaimer

I hereby declare that this master thesis is my own and autonomous work. All sources and aids used have been indicated as such. All used information are publicly available and/or information made available directly by the company. Full bibliographic details are given in the footnotes which also contain internet sources. This work has not been submitted to any other examination authority.

San Jose, 04.01.2021

S. Bitsch

Sebastian Bitsch

Private Equity Challenge

DELO
INDUSTRIAL ADHESIVES

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Lisbon, January 4

Nova School of Business and Economics

Executive Summary

2018: Guinness World Record for heaviest lifted truck with DELO adhesive

Business Overview – DELO At A Glance

DELO is a manufacturer of high-tech adhesives generating more than € 160 million revenue in FY20

Company Overview

€ 163 m Revenue

100% Made in Germany

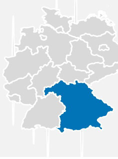
high-tech adhesives

>700 Adhesives

DELO

12% of revenues for R&D

800 Employees



Key Financials

(EURm)	Mar-16A	Mar-17A	Mar-18A	Mar-19A	CAGR 16-19
Revenue	79.8	94.1	158.2	155.6	24.9%
Total output	**80.6**	**96.2**	**162.1**	**158.7**	25.3%
yoy growth		*19.3%*	*68.5%*	*(2.1%)*	
EBITDA	**14.8**	**19.2**	**39.7**	**36.6**	35.2%
EBITDA margin	*18.5%*	*20.4%*	*25.1%*	*23.5%*	
FCF	**10.4**	**13.4**	**43.2**	**13.1**	7.7%
FCF conversion rate	*70.6%*	*69.6%*	*108.8%*	*35.7%*	
Total Capex	**(5.5)**	**(5.1)**	**(7.2)**	**(6.9)**	

Management Team

Dipl. Ing. Sabine Herold

Share 30%

Age 58

Dr. Ing. Wolf Herold

Share 70%

Age 77

Dipl. Ing. Robert Saller

Age 56

Key Characteristics

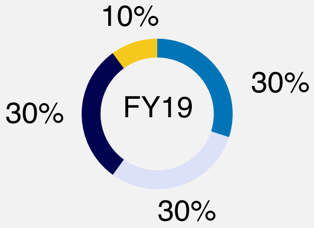
High-Tech Adhesives

- Special customized adhesives for **industry clients only (B2B)**
- World-market leader in **fast curing, innovative, adhesive** solutions

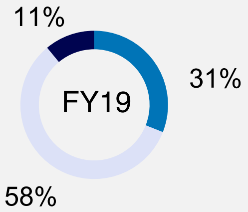
Equipment

- Offers fitting equipment to optimally make use of their adhesives. Examples include **LED Curing lamps** and dispensing systems

Sales Split by Industry & Region

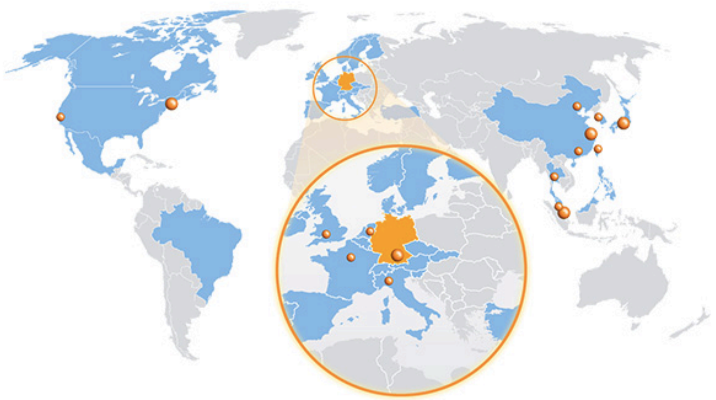


■ Consumer Electronics
■ Automotive
■ Mechanical Engineering
■ Others



■ Europe
■ Asia
■ America

Geographic Footprint



Source: Company Information

Customers

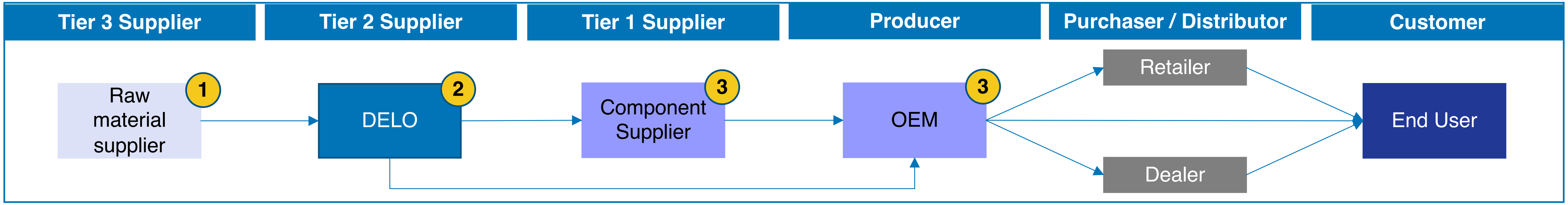
DELO has a diversified international customer base from three key industries

	Consumer Electronics	Automotive	Mechanical Engineering	Others
Customer Landscape	HUAWEI SONY FOXCONN PHILIPS	DAIMLER Continental The Future in Motion BMW GUARDIAN AUTOMOTIVE Solid Agility	BOSCH Honeywell SIEMENS Miele	infineon hansgrohe Fraunhofer OSRAM
% of Revenue	30%	30%	30%	10%
	Very fragmented revenue base due to DELO's Balanced Scorecard objective: keep a **balanced customer base**, **no client** should contribute **more than 10% of DELO's revenue**; 2018 was an exception which will be normalized over the following years			
Geographic Focus	customers are mainly based in Asia	customers are mainly based in Europe and the US	customers are mainly based in Germany	customers are mainly based in Germany
Application Areas	DELO adhesives are now present in more than 50% of all smartphones worldwide	electronic sensors and displays	range from bonding of electric motors to plant manufacturing	Other customers are from the smartcard, chip or photovoltaic sector
Product Cycle	**Low customer churn:** Customers are very **loyal to DELO**, some clients work with DELO since more than 15 years – new cooperation always aims on a long and **sustainable relationship**, while it happens rarely that the product cycle lasts only a few months The product cycle can last from 3 months, which is what it takes to develop a new product and launch it, up to more than 15 years			
Sales Approach	**Proactive Sales Approach**: Newly developed adhesives will be presented to existing customers in order to sell the latest innovations, thereby replacing old products and ensuring **recurring revenues** New Customers are approached by DELO's sales team or distributors and are offered an exclusive cooperation to develop a customized product			

Source: Company Information, Interview with Dr. Karl Bitzer

Value Chain

DELO is a Tier 2 Supplier, delivering industrial adhesives to OEM's or their component suppliers



Tier 3 Supplier | Tier 2 Supplier | Tier 1 Supplier | Producer | Purchaser / Distributor | Customer

Raw material supplier ①

DELO ②

Component Supplier ③

OEM ③

Retailer

Dealer

End User

Procurement ①

- DELO has optimized procurement structures over time. **Gross profit** has constantly **increased** over the years
- Reliable supply chain structure that takes precautions to store critical items on inventory (**avoid bullwhip effect)**
- Composition of adhesive and supplier structure are "well kept secrets"

R&D

- DELO currently invests **12% of its revenues back in R&D**, compared to a 3-6% industry average
- This investment yields up to **40 new innovative adhesive**s every year
- More than **30% of DELO's revenue** is subsequently generated with **products younger than 3 years**
- The speed of innovation is key for DELO's success

Production ②

- All products are **100% manufactured** in the **HQ**
- DELO involves customers from the first idea into the production process
- Customers can use the adhesive for **1/2 a year exclusively** before it is distributed openly
- **extensive stress testing** before products are distributed to the market

Marketing

- To increase awareness, DELO pursues an **active marketing strategy** (2018: Guinness World Record for heaviest lifted truck)
- DELO is actively promoting its position as a **hidden champion** in technical universities and schools to attract relevant talent
- Innovation & culture are presented on DELO's Youtube Channel

Sales ③

- Today more than **70% of revenue comes from sales outside of Europe**
- DELO has established an international distribution network - Less than 0.5% of Sales are revoked from clients
- Due to the customization, DELO can ask for elevated prices and additionally **cross-sell other product lines (equipment)** together with the actual product

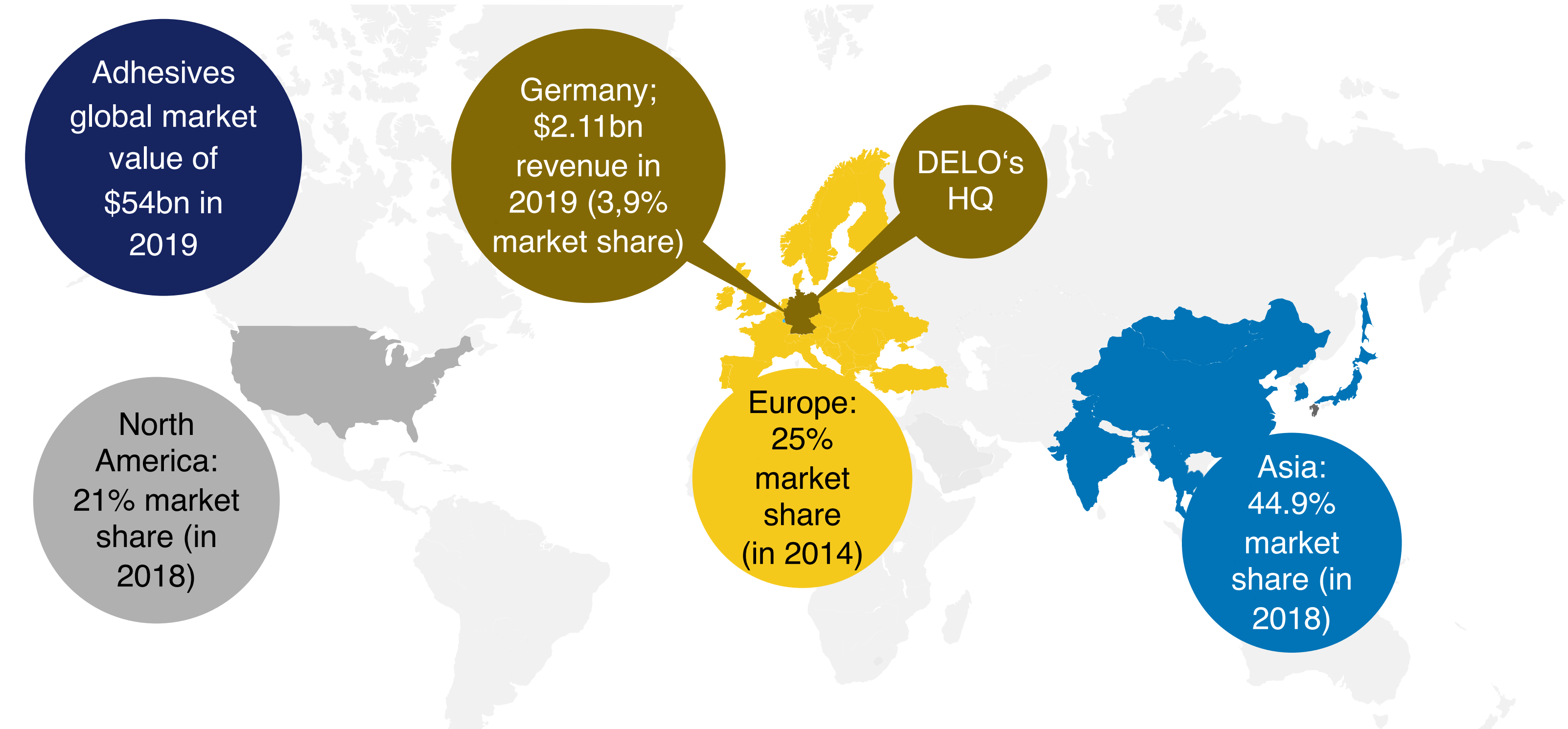
- DELO's customers are original equipment manufacturers or the OEM's component suppliers
- In part, DELO depends on its partner network along the value chain – from supplier to distributor – to keep its competitive advantage
- To stay ahead of the market, DELO constantly needs to **improve its adhesive composition and develop new innovations**

Source: Company Information

Market Overview (1/2): Regions

Asia-Pacific and Europe belong to the most attractive markets for adhesives manufacturer

Market share by region



Adhesives global market value of $54bn in 2019

Germany; $2.11bn revenue in 2019 (3,9% market share)

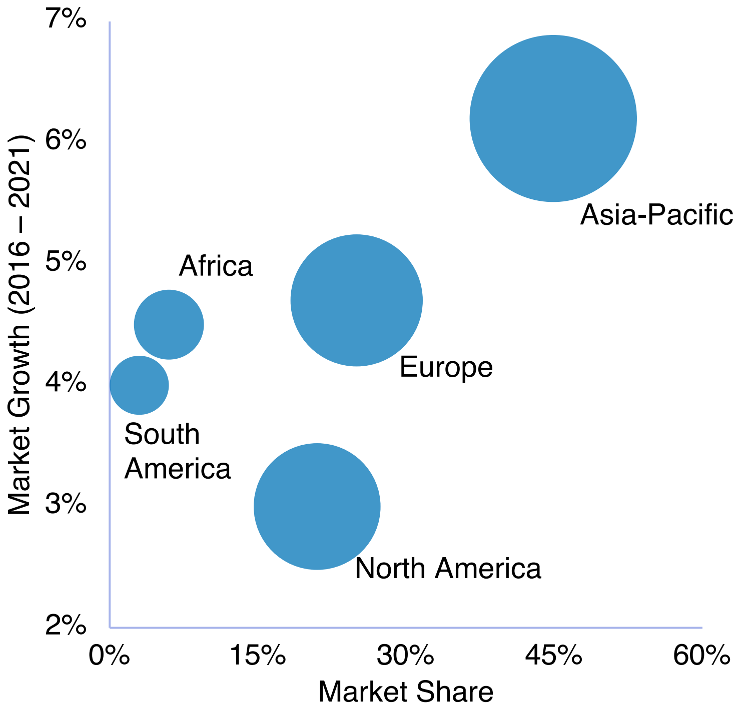
DELO‘s HQ

North America: 21% market share (in 2018)

Europe: 25% market share (in 2014)

Asia: 44.9% market share (in 2018)

Market size & growth by region



- Adhesives and sealants **"Made in Germany"** are enjoying increasing demand worldwide
- **DELO** stands out from its competitors as it **sells 80% abroad**, with **China as the largest market** (25%)
- **DELO’s automotive clients are rather based in Europe** (Bosch, BMW) **while its consumer electronics clients are based in Asia** (Huawei, Foxconn)

- **Asia-Pacific clearly outperforms** the rest of the market with the **highest market share (44%) & highest market growth (6.2%)**
- The European market is the second largest, expected to grow at a CAGR of 4.7%

Source: European Coatings (Statista), GrandviewResearch

Market Overview (2/2): Competitive Landscape

The market is fragmented with many local and a few global players holding high market shares

> ”There is no other company as good positioned as DELO. Of course, large adhesive manufacturers have divisions that cover similar business areas. However, I see the biggest competition in small, flexible companies in Asia, which have a knowledge and often offer our customers very good products.”

	DELO	DYMAX Adhesives and Light Curing Systems	Dexerials	Henkel	Pool of further Large Competitors
Public / Private	Private	Public	Public	Public (DAX 30)	3M Bostik smart adhesives
HQ	Germany	US	Japan	Germany	
Revenue	€ 163m (May 2020)	€ 97.9m (2018)	€ 492m (2019), expect a CAGR of 5.7% (2018-2023)	€ 9.46bn (2019);adhesives make 47% of total sales	H.B. Fuller Sika®
Growth	CAGR 2015 – 2018: 25%	n/a	CAGR 2015-2018: -1.1%	CAGR 2013 – 2018: 4.01%	
EBIT Margin	20.6% (2019)	n/a	n/a	16% (2019)	LINTEC Linking your dreams
# Employees	800 (May 2020)	370 (2018)	2005 (2019)	26,000 (in 2018)	
Application areas	Consumer electronics, automotive, engineering	Automotive (sensors) & Consumer Electronics	Consumer Electronics, Automotive, Medtech	Automotive, goods, electronics; B2B and B2C	Revenue ranges from Euro 1.9 billion to 2.89; Products are rather standardized
R&D	12% of Sales in 2019	n/a	6,1% in 2018	2.9% of Sales in 2018	

Direct medium-sized Competitors

Indirect large Competitors

- DELO offers customized solutions which are innovated and renewed frequently and are no attractive markets for large players such as Henkel and 3M
- Furthermore, DELOs **target markets** have a **revenue potential of € 5-50 m,** which is **not sufficient for larger players** – no economies of scale
- DELO never enters a business where no individual consulting and customization process is applied, these markets are dominated by larger competitors
- Within these niche markets, DELO aims a **market share of > 50% to create market entry barriers** for other competitors

Source: Company Information, Lintec Annual Report, Interview Dr. Karl Bitzer

Historic Financials: Cash Flow Statement

Strong FCF partially offset during growth phase as expansion capex and NWC ties up capital

Comments

① Largest change in operating cash flows result from changes in provisions for administrative expenses. DELO mainly uses provisions to best guess additional administrative expenses coming along with the high growth of the company

② Low interest expense, as the company carries effectively no bank debt

③ DELO's expansion activities resulted in **total capex investments significantly above D&A each year**, reducing the company's FCFs; Pro-Forma expansion capex equals all capex above D&A

④ Over the past periods, DELO was able to **increase its FCFs which currently are at around € 14m** (expansion capex affected)
- FCF adjustments include: 1) taxes to be paid and 2) deferred administrative expenses, both provision items

⑤ Spike in provisions in FY18 are a result of extensive hiring and are not expected to continue on the same high level in the next years and thus are considered as one-off items

⑥ High cash leakage in FY 18 is attributable to a **€ 18m payout to shareholders**, as a result of an extremely successful year

Free Cash Flow (EURm)	**Mar-16A**	**Mar-17A**	**Mar-18A**	**Mar-19A**	**CAGR 16-19**
EBITDA	**14.8**	**19.2**	**39.7**	**36.6**	35.2%
Corporate income Tax	(4.6)	(6.1)	(13.3)	(11.7)	
Δ NWC	(2.2)	(2.2)	(6.6)	(2.8)	
thereof Δ inventory	(1.6)	(1.1)	(4.9)	(2.9)	
thereof Δ receivables	(0.0)	(2.0)	(3.4)	0.5	
thereof Δ Advance payments received	(0.1)	0.1	0.1	0.0	
thereof Δ Payables	(0.5)	0.8	1.6	(0.4)	
Receivables from affiliated companies	5.7	--	(0.2)	0.1	
Other BS items	2.1	0.5	3.1	(0.5)	
Provisions	0.1	6.9	27.6	(1.8)	
thereof pension provisions and similar	0.1	0.2	0.2	0.3	
thereof tax provisions	0.2	2.5	2.9	4.9	
thereof personel expenses	(0.2)	1.4	3.4	(0.3)	
thereof deferred administrative expenses ⑤	(0.0)	2.6	21.0	(6.6)	
thereof other provisions	0.1	0.2	0.1	(0.0)	
Operating Cash Flow ①	**15.9**	**18.3**	**50.2**	**19.9**	7.8%
Maintanance Capex ③	(2.0)	(2.6)	(3.1)	(3.9)	
Expansion Capex	(3.4)	(2.5)	(4.1)	(2.9)	
Investing Cash Flow	**(5.5)**	**(5.1)**	**(7.2)**	**(6.9)**	7.7%
Free Cash Flow	**10.4**	**13.2**	**43.0**	**13.0**	7.8%
yoy growth		*26.7%*	*226.5%*	*(69.7%)*	
FCF conversion rate (EBITDA)	*70.2%*	*68.6%*	*108.5%*	*35.6%*	
Financial result ②	(0.0)	(0.0)	0.0	0.1	
Δ Equity	(0.1)	0.0	(0.4)	0.7	
Payouts ⑥	(10.0)	--	(18.0)	--	
Bank debt	--	--	0.2	0.3	
Financing Cash Flow ④	**(10.1)**	**0.0**	**(18.3)**	**1.1**	
Change in cash	**0.3**	**13.2**	**24.8**	**14.2**	

DELO's annual reports, retrieved from www.bundesanzeiger.de

Investment Thesis (1/2): Deal Rationale & Value Creation

DELO meets many criteria of an attractive target and offers several approaches for value creation

Deal Rationale

Robust Financials

- DELO has profit margins of up to 23.1%, thereby exceeding the industry
- Revenue is growing, doubling every five years
- Stable and high cashflows require low debt for CapEx investments

Diversified Business

- DELO supplies several industries – with major clients from automotive, consumer electronics and mechanical engineering to smartcards and RFID
- Relying on a fragmented customer base

Customer Centricity

- Consult & customize: DELO tailors the product to specific client needs
- Product innovation: 12% of revenues reinvested in R&D (industry avg. is 3-6%)
- Concentration on future-proof market niches

Human Talent

- DELO hires highly skilled engineers from renowned universities in Germany
- The management is reliable for a remarkable growth during the last 10 years – growing from €10m of revenues in 2000 to €156m in 2019

Prosperous Market

- DELO's target industries are growing due to ongoing trends such as E-Mobility, autonomous driving and miniaturizat. in consumer electronics
- Geographically, Asia-Pacific is and will be a strong growth driver

Value Creation Strategies

1. M&A

1.1 Strategic Acquisition

- Further diversify DELO's industry focus by acquiring a player from the med-tech industry – horizontal expansion

2. Organic Growth

2.1 Geographic Expansion

- Further strengthen Asia-Pacific business with focus on E-mobility and consumer electronics
- Expand DELO's US business

2.2. CRM Optimization

- Improve Customer Relationship Management: increase recurring revenues through constant product innovation

3. Operational Improvements

3.1. Product Optimization

- Margin expansion through cost cutting measures: clean up of DELO's product portfolio with focus on high margin & high revenue products

3.2. Brand Building

- Improve company branding and become well-known employer, with special focus on german schools and universities

Source: Own Analysis

Investment Thesis (2/2): Acquisition – Target Company

The optional acquisition of Panacol aims at a gain in market shares and further portfolio diversification by region & industry

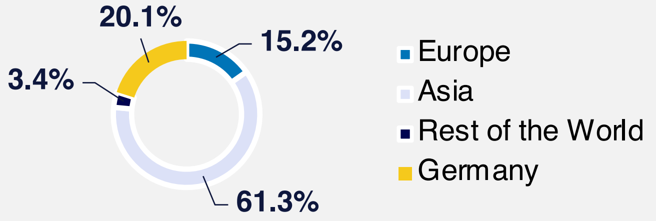
Key Characteristics

Revenue	€ 24.1m (FY 18/19)
Location	Steinbach, Germany
Employees	62 (38,7% in R&D)
Application Areas	MedTech, luxury packaging, consumer electronics, automotive

Company & Product

- **Panacol** is an **internationally diversified** producer of different adhesives, with focus on the **MedTech** and **luxury packaging** segment
- In addition, Panacol sells UV-curing equipment
- The company's production facilities are in Germany, while sales partners are spread around the globe
- Panacol Elosol is a 100% daughter of the Hönle group, which covers UV devices and systems, UV lamps, dosing devices, UV measuring technology and adhesives

Sales Split & Market Growth

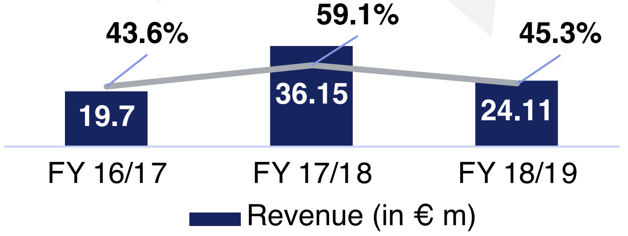


- Asia-Pacific with the highest market share (61.3%) & highest market growth (6.2%)
- Panacol's major industries **grow** at **6.8%** (**medical** adhesives market) **and 8.8%** (**luxury packaging**) from 2020 - 2025

Financials

Strong EBITDA-margin ranging from **43 to 59%**

Sales decline by **33.3%,** as Consumer Electronics struggles



Strategic Deal Rationale

Top-Line:

- Acquisition of customer base to further diversify DELO's portfolio by region and industry (MedTech & luxury packaging), but also gain market shares
- Revenue growth in new, fast-growing markets
- Expanding equipment segment (cross-selling)

Bottom-Line:

- Synergies through the consolidation of functions: R&D, administration, production, sales
- Increase bargaining power with suppliers

Entry Rationale

- Strong EBITDA margin of Panacol contributes to **margin improvement of the case**
- Despite extremely high margins, Panacol has been struggling with volatile revenue growth and high customer churn in recent years, which might allow for a **relatively cheap buy-in.**
- Intrinsically, we value the add-on at **10.8x EBITDA**, and adjust transaction and trading multiples for the fact that we view Panacol as **slightly less attractive**
- Buy-in envisaged for **one year after DELO acquisition** in order to mitigate risks

Source: Statista, Markets&Markets

Business Plan: Cash Flow Forecast

High cash conversion rate of avg. ~52.3% throughout the holding period FY22-26 makes the Group the ideal LBO candidate

COVID impact

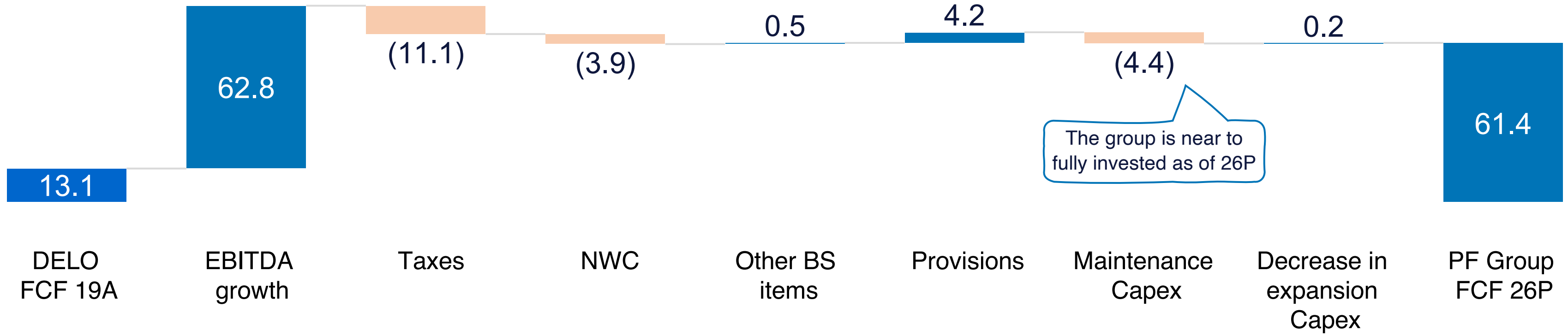
Consolidation of Panacol acquisition

Free Cash Flow PF consolidated (EURm)	Mar-19A	Mar-20P	Mar-21P	Mar-22P	Mar-23P	Mar-24P	Mar-25P	Mar-26P	CAGR 16-19	CAGR 19-26
EBITDA	**36.6**	**38.4**	① **36.7**	**42.6**	**66.3**	**75.8**	**86.9**	**99.4**	35.2%	15.3%
Taxes (LBO taxes from FY22)	(11.7)	(12.3)	(11.6)	(6.7)	(13.4)	(16.0)	(19.2)	(22.7)		
NWC	(2.7)	0.4	(4.2)	(1.5)	(2.4)	(5.2)	(5.9)	(6.6)		
thereof Inventory	(2.9)	1.1	(4.3)	(0.2)	0.0	(2.9)	(3.3)	(3.7)		
thereof Receivables	0.5	(0.9)	(0.8)	(1.3)	② (31.5)	(3.0)	(3.4)	(3.8)		
thereof Advance payments received	0.0	(0.0)	0.0	0.0	0.0	0.0	0.0	0.0		
thereof Payables	(0.4)	0.3	1.0	0.1	0.0	0.7	0.8	0.9		
thereof Receivables from affiliated companies	0.1	(0.0)	(0.0)	(0.0)	② 29.1	(0.0)	(0.0)	(0.0)		
Other BS items	(0.5)	(0.1)	0.0	0.0	(0.0)	0.0	0.0	0.0		
Provisions	(1.8)	0.3	0.6	1.0	1.5	1.9	2.2	2.4		
Operating Cash Flow	**19.9**	④ **26.7**	**21.5**	**35.4**	**52.0**	**56.5**	**64.0**	**72.5**	7.9%	20.3%
Maintanance Capex	(3.9)	③ (4.1)	(4.5)	(4.9)	(6.9)	(7.4)	(7.8)	(8.3)		
Expansion Capex	(2.9)	(1.8)	(2.1)	(2.1)	(2.7)	(2.7)	(2.7)	(2.8)		
Investing Cash Flow	**(6.9)**	**(5.9)**	**(6.6)**	**(7.0)**	**(9.6)**	**(10.1)**	**(10.6)**	**(11.1)**	7.7%	7.1%
FCF	**13.1**	**20.8**	**14.9**	**28.4**	**42.5**	**46.4**	**53.4**	**61.4**	8.0%	24.7%
FCF conversion rate (% of EBITDA)	*35.7%*	*54.3%*	*40.7%*	*66.6%*	*64.1%*	*61.2%*	*61.4%*	*61.8%*		

FCF 18A: €43 m

Higher future FCF mainly driven by higher tax shields

FCF Bridge in €m



The group is near to fully invested as of 26P

Comments

① DELO expects to significantly increase its growth in EBITDA through the drivers of **revenues growth, internal optimization and the acquisition of Panacol**

② The adjustments taken in the section of accounts receivables are caused by the consolidation of Panacol's A/R to affiliated companies and the **overall A/R of DELO and Panacol combined**

③ Maintenance capex tends to grow according to revenue over time as DELO expands its position as **market-leading producer of innovative high-tech adhesives,** which tends to be cost intense

④ Current provisions will decrease over time, driven by lowering advanced administrative expenses

Source: Own Analysis

LBO Scenario - Base Case (incl. Panacol)

Investor case, based on management outline, is yielding a 3.0x MoM or 25.8% IRR

COVID impact

Incl. Panacol

Holding period

Key Financials (EURm)	**Mar-19A**	**Mar-20P**	**Mar-21P**	**Mar-22P**	**Mar-23P**	**Mar-24P**	**Mar-25P**	**Mar-26P**	**CAGR 16-19**	**CAGR 19-26**
Total Output	**158.7**	**163.0**	**172.6**	**187.5**	**239.7**	**268.8**	**302.1**	**339.1**	25.3%	① 11.5%
y-o-y growth		*2.7%*	*5.9%*	*8.7%*	*27.8%*	*12.2%*	*12.4%*	*12.3%*		
EBITDA	**36.6**	**38.4**	**36.7**	**42.6**	**66.3**	**75.8**	**86.9**	**99.4**	35.2%	15.3%
EBITDA-margin ②	*23.1%*	*23.5%*	*21.3%*	*22.7%*	*27.7%*	*28.2%*	*28.8%*	*29.3%*		
Taxes (LBO taxes from FY22)	(11.7)	(12.3)	(11.6)	(6.7)	(13.4)	(16.0)	(19.2)	(22.7)		
NWC	(2.7)	0.4	(4.2)	(1.5)	(2.4)	(5.2)	(5.9)	(6.6)		
Other BS items	(0.5)	(0.1)	0.0	0.0	(0.0)	0.0	0.0	0.0		
Provisions	(1.8)	0.3	0.6	1.0	1.5	1.9	2.2	2.4		
Operating Cash Flow	**19.9**	**26.7**	**21.5**	**35.4**	**52.0**	**56.5**	**64.0**	**72.5**	7.9%	20.3%
Maintanance Capex	(3.9)	(4.1)	(4.5)	(4.9)	(6.9)	(7.4)	(7.8)	(8.3)		
Expansion Capex	(2.9)	(1.8)	(2.1)	(2.1)	(2.7)	(2.7)	(2.7)	(2.8)		
Total Capex	(6.9)	(5.9)	(6.6)	(7.0)	(9.6)	(10.1)	(10.6)	(11.1)		
Investing Cash Flow	**(6.9)**	**(5.9)**	**(6.6)**	**(7.0)**	**(9.6)**	**(10.1)**	**(10.6)**	**--**	7.7%	7.1%
FCF	**13.1**	**20.8**	**14.9**	**28.4**	**42.5**	**46.4**	**53.4**	**72.5**	8.0%	24.7%
FCF conversion rate (% of EBITDA) ③	*35.7%*	*54.3%*	*40.7%*	*66.6%*	*64.1%*	*61.2%*	*61.4%*	*61.8%*		
Cash Interest	--	--	--	(12.9)	(17.3)	(16.6)	(15.5)	(14.5)		
FCF available for debt repayment	**13.1**	**20.8**	**14.9**	**15.5**	**25.2**	**29.8**	**37.9**	**58.0**		

	Mar-21P	Mar-22P	Mar-23P	Mar-24P	Mar-25P	Mar-26P
Net Debt (bank view)	201.8	187.1	236.8	208.0	171.2	125.4
Cash Cover	--	1.6	1.4	1.1	1.3	1.6
Leverage Cover	5.5	4.4	3.6	2.7	2.0	1.3
Interest Cover	--	3.3	3.8	4.6	5.6	6.8

Cash Flows		**Mar-21P**	**Apr-22P**	**Mar-26P**			
	Share common equity	**Entry DELO**	**Entry Panacol**	**Exit**	**Cap gain**	**MoM**	**IRR**
Sponsor	95.8%	(307.7)	(85.2)	1,181.7	788.8	**3.0**	**25.8%**
Mr Saller & Mr Bitzer (DELO)	1.6%	(2.0)	--	12.6	10.6	6.3	44.5%
DELO 2nd level management	1.6%	(2.0)	--	12.6	10.6	6.3	44.5%
Panacol 1st level management	0.5%	--	(1.0)	3.7	2.7	3.7	39.1%
Panacol 2nd level management	0.5%	--	(1.0)	3.7	2.7	3.7	39.1%

④

Comments

① Target **to double revenues every 5** years seems too optimistic due to the ongoing COVID pandemic, nevertheless the management is confident to be able to **grow total output 11.5% per annum** as DELO proved to be **resilient** during the crisis of 2008 and is focusing on **future industries** (f.e. e-mobility)

② **EBITDA-Margin improvement** from 21-24% in FY19-21 **to 29.3% in FY26** mainly relates to margin expansion through Panacol and fix overhead cost

③ **Increasing FCF-conversion** rates from FY22 is mainly driven by **lower tax expenses** as DELO was not benefiting from interest rate deductibility historically

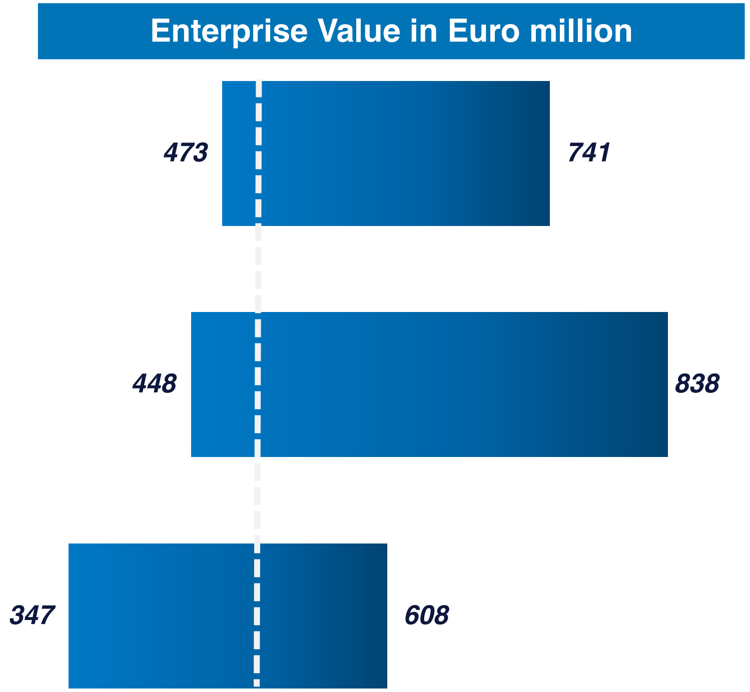
④ 3.0x or 26% IRR is in line with our return expectations and we thus view the deal as attractive

Source: Own Analysis

Exit and Returns (1/4): Entry Valuation

Different valuation methodologies combined suggest an entry multiple of 14.0x for the investment in DELO

Valuation methods and results



Method	Implied Multiple
DCF	**15.7x** 12.9x - 20.2x
Trading Comps	**13.8x** 12.2x - 23.1x
Transaction Comps	**12.4x** 9.5x - 16.6x

Enterprise Value at entry: € 512 million

Implied EV/EBITDA Entry Multiple at entry 2021P: 14.0x

Comments

DCF

- Intrinsically, DELO is valued at **15.7x EBITDA at 2021P** and primarily derives its value from strong growth prospects

Trading Comps

- Competitors were clustered into **pure adhesive players**, as well as **large diversified chemical conglomerates** and trade at a median of **13.8x EBITDA at 2020P**

Panacol with lower entry multiple at 12.8x

Transaction Comps

- Transactions were filtered for a closing date **after 2017** and included mostly transactions **within the last year**
- The median of conducted transactions from investors amounts to **12.4x**

Panacol with lower entry multiple at 11.4x

- All valuation methods yield robust enterprise values in the range of 12x-16x EBITDA 2021P. Consequently, the average of aforementioned valuation methods suggest an enterprise value of € 512 million at entry for DELO

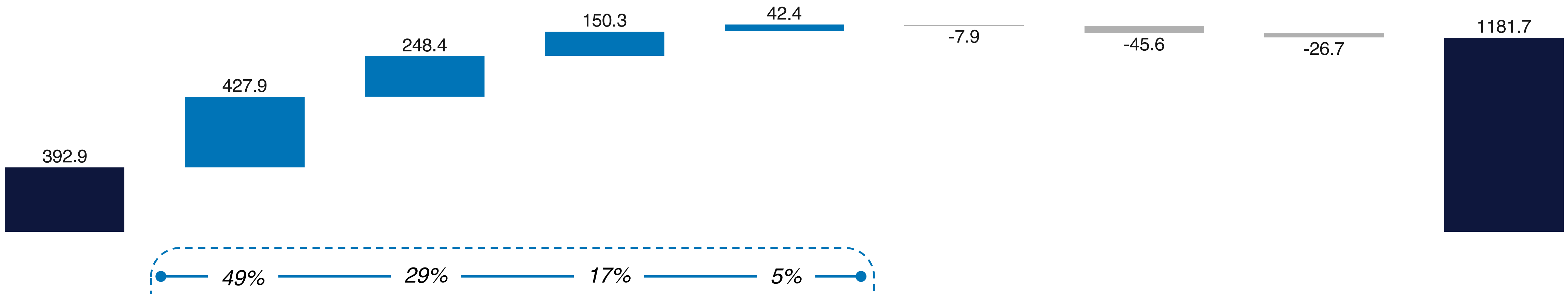
Source: CapitalIQ, Mergermarket

Detailed Valuation in the Appendix

Exit and Returns (2/4): Value Drivers

Extensive growth and significant margin expansion offer an opportunity to make > 25% IRR and MoM of 3.0

Value Driver



Equity Sponsor	**Output Growth**	**EBITDA Margin**	**Deleveraging**	**Multiple Arbitrage**	**Net Debt unfunded**	**Trans. Cost**	**Sweet Equity**	**Exit Sponsor**
Based on a **14.0x** entry for DELO in **2021P** and **11.6x** entry for Panacol in **2022P**	Majorly driven by DELO **YoY growth of 9.5%** p.a. for FY_{19-26} and Panacol **YoY growth for FY_{19-26} of 7.0%** p.a.	Main drivers of growth are DELO **margin expansion** from **23.1%** to **27.1%** and high margin **contribution of ~47% of add-on case**	**High cash conversion rate** (~63%) enables debt repayment of ~€92 million during HPR and **excess cash** of €63 **million at exit**	Panacol's **smaller size, lower growth and volatility** allows a lower entry multiple of 11.6x, while the combined is expected to sell at **14.0x**	Relates to **personnel provisions** of €10.8 million for DELO and €0.2 million for Panacol, as employees **are paid out in the future**	Envisaged to be 2% of EV of the total group and used to compensate i.e. M&A, VDD, CDD and legal advisors	Is based on an **envy ratio of 4.** Lever will be activated if returns of the **loan exceed 8%.** Sweet equity for the 1st and 2nd lvl. management	Based on the assumption that **entry multiple=exit multiple** and equal net debt assumptions for entry and exit

Source: Own Analysis

Exit and Returns (3/4): Management Incentive and Rationale

The LBO offers an attractive opportunity for DELO's existing management

Executive Management

Age

56

Years with DELO

30

Dipl.-Ing. Mr Robert Saller
CEO with focus on strategy, sales and IT

Age

49

Years with DELO

13

Ph.D., Mr Karl Bitzer
Co-CEO with focus on R&D and product

New specialized CFO will be implemented after the LBO

Former role of Mr. Herold

n/a
CFO (preferably sourced internal)

Strategic Incentives for the Deal

- Once in a lifetime deal and gain additional responsibilities
- Shape DELO's future through strong growth and expansion
- Attractive cash compensation of 44.5% IRR in the base case

Panacol Management with similar return incentives if the add-on proves to be strategically relevant in DD-phase

IRR achieved based on entry=exit multiple

Base Case

Exit Multiple

Entry Multiple

	12.0x	13.0x	14.0x	15.0x	16.0x
12.0x	45.3%	49.3%	52.9%	56.2%	59.3%
13.0x	40.7%	44.8%	48.5%	51.9%	54.9%
14.0x	36.4%	40.7%	**44.5%**	47.9%	51.0%
15.0x	32.4%	36.8%	40.7%	44.2%	47.4%
16.0x	28.5%	33.1%	37.1%	40.7%	44.0%

Herolds transition to the advisory board

Strategic incentives for the new role

- The couple is eyeing **retirement** with Sabine turning 58 and Wolf Herold 77 years in 2021
- Option to **continue to advise DELO** through two board seats
- Offer to make use of **rollover** option to re-participate with **minority stake**

- Additionally, comprehensive performance-based equity and bonus options for employees in management positions planned to achieve involvement with personnel in place

Source: Own Analysis

Exit and Returns (4/4): Sensitivities

Extremely attractive investment case with additional upside stemming from Panacol acquisition

MoM and IRR including Panacol acquisition(1)

MOM

Exit Multiple

Entry Multiple

	12.0x	13.0x	14.0x	15.0x	16.0x
12.0x	3.1x	3.4x	3.7x	3.9x	4.2x
13.0x	2.8x	3.0x	3.3x	3.6x	3.8x
14.0x	2.5x	2.8x	**3.0x**	3.2x	3.5x
15.0x	2.3x	2.5x	2.8x	3.0x	3.2x
16.0x	2.1x	2.3x	2.5x	2.7x	2.9x

IRR

Exit Multiple

Entry Multiple

	12.0x	13.0x	14.0x	15.0x	16.0x
12.0x	26.7%	29.0%	31.3%	33.4%	35.4%
13.0x	23.8%	26.1%	28.3%	30.3%	32.3%
14.0x	21.3%	23.6%	**25.7%**	27.7%	29.6%
15.0x	19.1%	21.3%	23.4%	25.3%	27.2%
16.0x	17.1%	19.3%	21.3%	23.2%	25.0%

MoM and IRR DELO standalone

MOM

Exit Multiple

Entry Multiple

	12.0x	13.0x	14.0x	15.0x	16.0x
12.0x	3.5x	3.8x	4.1x	4.4x	4.8x
13.0x	3.1x	3.3x	3.6x	3.9x	4.2x
14.0x	2.7x	3.0x	**3.2x**	3.4x	3.7x
15.0x	2.4x	2.7x	2.9x	3.1x	3.3x
16.0x	2.2x	2.4x	2.6x	2.8x	3.0x

IRR

Exit Multiple

Entry Multiple

	12.0x	13.0x	14.0x	15.0x	16.0x
12.0x	28.4%	30.7%	32.8%	34.7%	36.6%
13.0x	25.0%	27.2%	29.2%	31.1%	32.9%
14.0x	22.1%	24.2%	**26.2%**	28.0%	29.8%
15.0x	19.5%	21.6%	23.5%	25.3%	27.1%
16.0x	17.2%	19.2%	21.2%	23.0%	24.7%

- While the standalone case of DELO already offers a lucrative investment opportunity, the acquisition of Panacol adds another option to efficiently deploy capital and increase potential upside from strategic diversification in attractive end-markets of med-tech and luxury packaging

Source: Own Analysis; Note (1): assuming a fixed entry multiple of 11.6x EBITDA for Panacol

Exit Strategy: Options

A strategic Sale is the preferred exit strategy – but high interest is expected from all fields

I. Strategic Investor

Potential **strategic investors** comprise larger competitors from the **industrial adhesives** sector

✓ Strategic buyers will probably pay a higher acquisiton price due to synergy effects

✗ Potentially slower acquisiton process
Full integration of DELO in the acquirer‘s portfolio might lead to slower future growth than as a stand-alone company

Henkel
3M
Bostik smart adhesives
H.B. Fuller
LINTEC Linking your dreams
Sika

Highest return potential due to synergy possibilities 🟢

II. Public Listing

DELO could be **listed** on the **German stock exchange** through the sale of shares to several investors

✓ A public listing is a good source for future equity – no obstacles to find a potential buyer

✗ Long and cost-intense process with no guarantee of success
New burdens, f.e. through guidelines for the publication of company information

DEUTSCHE BÖRSE GROUP

High costs and uncertainty of returns on the exit – dependency on capital market conditions 🟡

III. Private Equity Investor

DELO could be of interest for a **secondary buyout**. Leading PE firms can be seen as possible acquirers

✓ Attractive target for Private Equity firms with plenty of dry powder, PE firms have shown strong interest in the sector lately

✗ Usually achieves lower multiples than the other options

EQT
KKR
CVC CAPITAL PARTNERS
Blackstone
BainCapital
Advent International GLOBAL PRIVATE EQUITY

Limited return potential except strategic add on case 🟡

Source: Own Analysis

Individual Part: Business Plan & Valuation

Business Plan (1/4): Impact of COVID-19 on DELO

DELO's business will suffer due to a dropping demand in some industries, but is expected to recover fast

COVID-related business plan adjustments for FY 21

Automotive ↘

- Overall decline in the automotive industry is offset by DELO's focus on sensor-based driving assistance systems and e-mobility
- Assumption: ~**30% less revenue** from automotive customers, but strong recovery

Consumer Electronics ↗

- Little to no demand decrease from mostly Asian customers, strong long-term outlook
- Assumption: ~**10% revenue plunge** due to increased uncertainty

Mechanical Engineering →

- Mostly German customers have been recovering better than expected due to increased governmental subsidiary
- **~20% decrease** in revenue expected

Geographic Adjustments →

- America: Substantial, decrease of demand in FY 21
- Europe: First, high decrease, then better than expected recovery
- Asia: Constantly high demand

Relevant Strategies & Measures during the Pandemic

Short-Term:

- Gain benefits from fiscal funds which are made to subsidize German businesses
- Most common forms of support reported by firms are tax deferrals or reductions, cuts in utility costs, deferment of loan obligations, concessional financing for firms that do not lay off workers and other types of financial assistance
- Customers want to be safe and in stock – will demand higher volumes of adhesives in pre-crisis, therefore reducing demand during the crisis
- Make remote work for administrative staff possible

Medium-Term:

- Implement long-term contracts with customers and sales partners to secure a stable revenue stream during a recession or crisis
- Model different scenarios to be prepared for a variety of events
- Optimize cost-structure: shift from fixed to variable costs; working capital management
- Offer same products & services through an online channel

Long-Term:

- Diversify Revenue Streams: diversify DELO's product portfolio, industry coverage and geographical footprint through a add-on acquisition or inhouse product development
- Financial: build a financial buffer and cash holdings for crisis to remain liquidity

Source: OECD, International Monetary Fund, Worldbank, DELO expert interviews

Business Plan (2/4): Revenue forecast methodic – DELO

The revenue forecast is based on actual existing customers and new customers acquired

Existing Customers

Clustering of customers

- Detailed list of 80 current customers provided by DELO
- Segmentation in geographic and industry buckets
- Analysis of past operational performance of all customers
- Research of growth rates of customers' industries

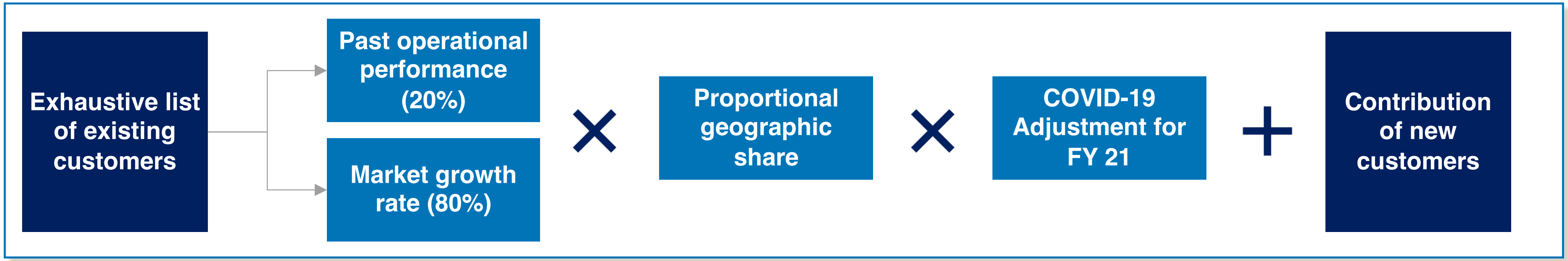
Allocation of revenue share per customer

- Allocation of revenue proportionally based on target geographic revenue share (55% Asia, 25% Europe, 20% America)
- Future contribution of customers is forecasted based on 80% market research and 20% on past operational performance, as we assume the market growth rate to be more indicative of future performance
- FY 21 and FY22 forecasts are adjusted for COVID, according to input from DELO management.

New Customers

New customer acquisition

- New customers are forecasted based on the relevant industry segmentation
- During FY21 and FY22 considerably less new customers acquired due to the repercussions of the global pandemic



Total Revenue DELO

Source: Own analysis

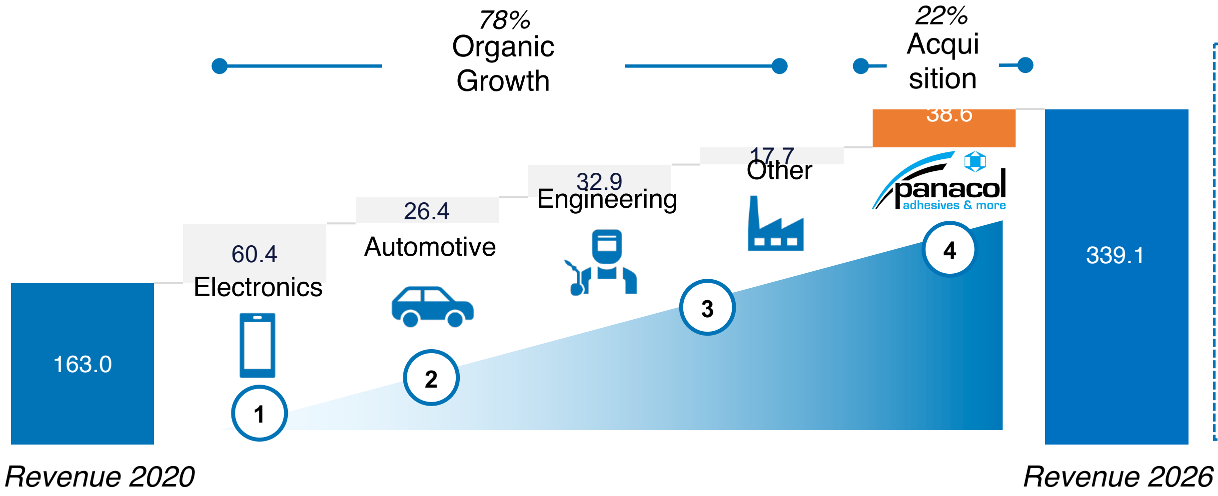
Business Plan (3/4): Revenue

78% of growth is driven by organic expansion, while 22% comes from the acquisition of Panacol

Revenue split by end markets

		COVID impact		Consolidated Group				CAGR
(EURm)	**Mar-20P**	**Mar-21P**	**Mar-22P**	**Mar-23P**	**Mar-24P**	**Mar-25P**	**Mar-26P**	**20-26**
Consumer electronics	50.6	54.2	61.1	70.4	82.3	94.8	111.0	14%
Automotive	52.3	55.0	58.6	62.9	67.6	73.0	78.7	7%
Mechanical engineering	50.4	53.2	56.8	61.8	68.7	76.0	83.4	9%
Other	9.7	10.2	11.1	13.0	16.5	22.1	27.4	19%
Total DELO	*163.0*	*172.6*	*187.5*	*208.2*	*235.1*	*266.0*	*300.5*	11%
Incremental revenues from acquisition	25.8	27.6	29.5	31.5	33.7	36.1	38.6	7%
Total Revenue	**188.8**	**200.1**	**217.0**	**239.7**	**268.8**	**302.1**	**339.1**	10%

Revenues are forecasted by estimating the **revenue share of existing DELO customers** and **new additional customers**. DELO provided an exhaustive list of its current customers. **For each customers we defined their specific growth rate and their respective impact from COVID-19.**



Discussion with DELO management revealed that high **COVID-related revenue adjustments for FY21 and FY22** had to be made in

- ✓ the automotive sector and
- ✓ for end customers located in America

Revenue and Growth Driver

① Consumer electronics market in Asia remains the **powerhouse** of DELO's revenues with further upside potential through **multiplication effects** for existing customers and **additional market** penetration through **long term distribution** partner contracts in Asia

② Global shift to electric mobility opens up a large revenue channel for adhesives. Within traditional automotive DELO will exclusively focus on innovative. niche adhesive applications, such as **sensor, camera, and entertainment applications**

③ Sales share of **mechanical engineering and other** customers is **driven through sustainable partnerships with many small to medium sized enterprises,** especially in Europe. A large driver of growth in this area constitutes the performance of the German "Mittelstand" (Medium sized enterprises)

④ Growth will also be accelerated through the **acquisition of adhesive player Panacol**. This acquisition will open up the **attractive market of med tech and luxury packaging products**

Source: Own analysis

Detailed revenue assumptions in appendix

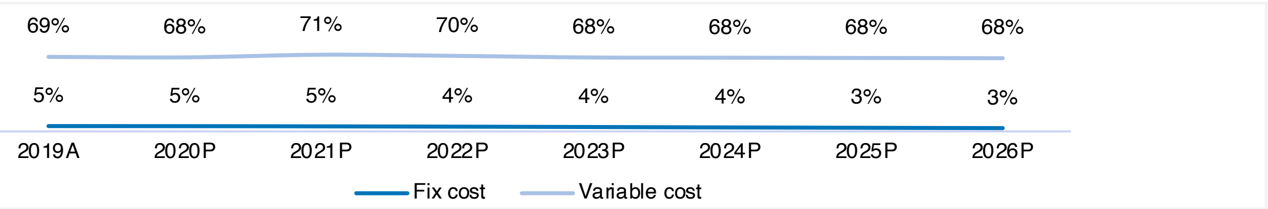
Business Plan (4/4): EBITDA

15.3% EBITDA growth and margin expansion rooted in Panacol acquisition, revenue build-up and fixed-cost scalability

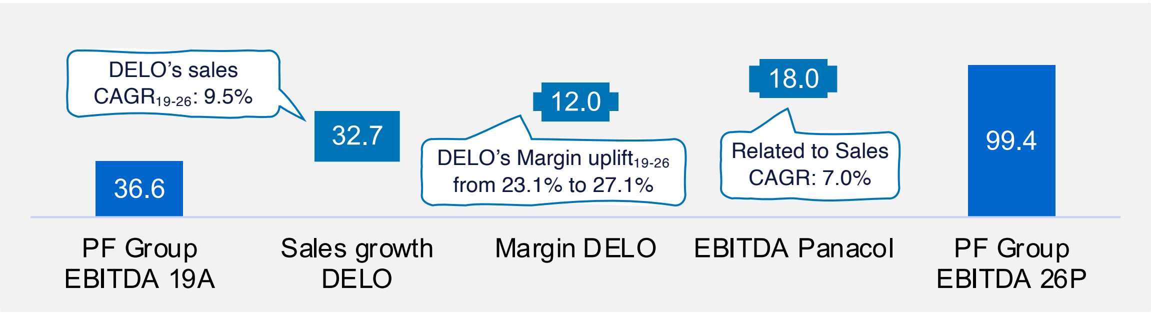
Profit & Loss PF consolidated			COVID impact		Consolidation of Panacol acquisition				CAGR	CAGR
(EURm)	**Mar-19A**	**Mar-20P**	**Mar-21P**	**Mar-22P**	**Mar-23P**	**Mar-24P**	**Mar-25P**	**Mar-26P**	**16-19**	**19-26**
Total output	**158.7**	**163.0**	**172.6**	**187.5**	**239.7**	**268.8**	**302.1**	**339.1**	25.3%	11.5%
% growth	*(2.1%)*	*2.7%*	① *5.9%*	*8.7%*	*27.8%*	*12.2%*	*12.4%*	*12.3%*		
COGS	(19.2)	(19.7)	(25.1)	(25.4)	(33.3)	(37.1)	(41.5)	(46.3)		
% of total output	*12.1%*	*12.1%*	② *14.6%*	*13.6%*	*13.9%*	*13.8%*	*13.7%*	*13.7%*		
Personel expenses	(51.0)	(52.4)	(55.2)	(59.4)	(70.8)	(78.7)	(87.6)	(97.5)		
% of total output	*32.1%*	*32.1%*	③ *32.0%*	*31.7%*	*29.5%*	*29.3%*	*29.0%*	*28.8%*		
Other operating expenses	(51.9)	(52.2)	(54.9)	(59.1)	(67.8)	(75.3)	(83.9)	(93.5)		
% of total output	*32.7%*	④ *32.0%*	*31.8%*	*31.5%*	*28.3%*	*28.0%*	*27.8%*	*27.6%*		
Change in provisions	--	(0.3)	(0.6)	(1.0)	(1.5)	(1.9)	(2.2)	(2.4)		
% of total output	--	⑤ *0.2%*	*0.4%*	*0.5%*	*0.6%*	*0.7%*	*0.7%*	*0.7%*		
EBITDA adj.	**36.6**	**38.4**	**36.7**	**42.6**	**66.3**	**75.8**	**86.9**	**99.4**	35.2%	15.3%
Margin	*23.1%*	*23.5%*	*21.3%*	*22.7%*	*27.7%*	*28.2%*	*28.8%*	*29.3%*		

Fix and variable cost in % of output

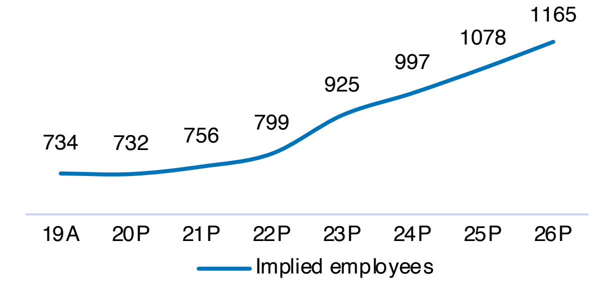
- Variable cost increase in FY21/22 as they mostly relate to material price increases due to COVID; fix cost relative decline as the Group's top line grows



EBITDA Bridge in €m



Employees



Comments

① COVID mainly affects Group's sales in FY21/22, thereafter its growth path is continuous

② Material expenses increase in FY21/22 due to increasing prices **related to supply chain interruptions**; post COVID from FY23 **cost decline** over the BP-period supported by the Group's **stronger negotiation power over suppliers**

③ Until FY26 the Group still focuses on its key differentiator, its R&D know-how; nevertheless the Group will leverage on its scalable cost structure and personnel expenses related to R&D and production decline as output per R&D project increases and production fully automates

④ Mainly relates to variable expenses, however declines gradually since in FY19 5% of op. expenses relate to fix cost

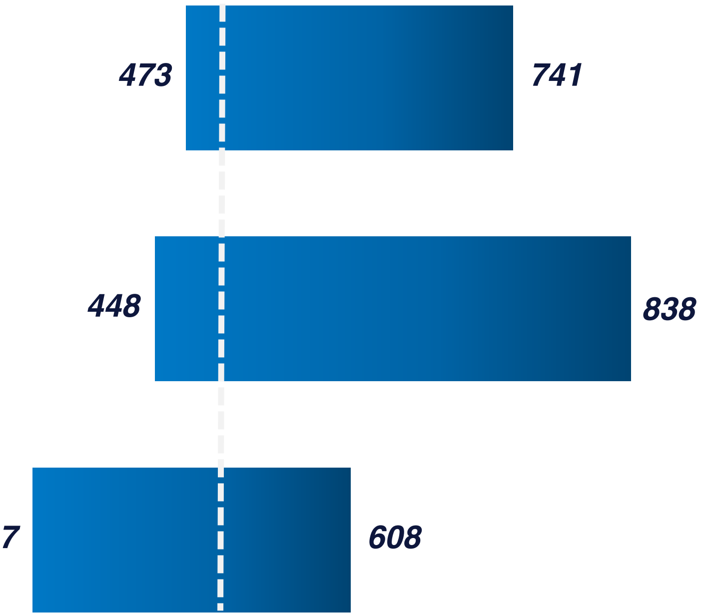
⑤ Changes in provisions mainly relate to pensions and personnel expenses

Source: Own analysis

Valuation Overview

Different valuation methodologies combined suggest an entry multiple of 14.0x for the investment in DELO

Valuation methods and results



Method	Enterprise Value in Euro million	Implied Multiple
DCF	*473* *741*	**15.7x** 12.9x - 20.2x
Trading Comps	*448* *838*	**13.8x** 12.2x - 23.1x
Transaction Comps	*347* *608*	**12.4x** 9.5x - 16.6x

Enterprise Value at entry: € 512 million
Implied EV/EBITDA Entry Multiple at entry 2021P: 14.0x

Comments

DCF

- Intrinsically, DELO is valued at **15.7x EBITDA at 2021P** and primarily derives its value from strong growth prospects

Trading Comps

- Competitors were clustered into **pure adhesive players**, as well as **large diversified chemical conglomerates** and trade at a median of **13.8x EBITDA at 2020P**

Panacol with lower entry multiple at 12.8x

Transaction Comps

- Transactions were filtered for a closing date **after 2017** and included mostly transactions **within the last year**
- The median of conducted transactions from strategic and financial investors amounts to **12.4x**

Panacol with lower entry multiple at 11.4x

- **All valuation methods yield robust enterprise values in the range of 12x-16x EBITDA 2021P. Consequently, the average of aforementioned valuation methods suggest an enterprise value of € 512 million at entry for DELO**

Source: CapitalIQ, Mergermarket

Detailed Valuation in the Appendix

Valuation (1/4): DCF - DELO

The DCF suggests an entry multiple of 15.7x for DELO

Free Cash Flow

Euro million	2022P	2023P	2024P	2025P	2026P
Sales	187.5	208.2	235.1	266.0	300.5
Adjusted EBITDA	***42.6***	***51.6***	***60.1***	***70.1***	***81.3***
Adjusted EBIT	37.5	46.1	54.2	63.8	74.6
- Taxes on EBIT	***(13.6)***	***(16.7)***	***(19.6)***	***(23.0)***	***(26.9)***
= NOPLAT	***23.8***	***29.4***	***34.6***	***40.7***	***47.7***
+ Depreciation	*5.1*	*5.5*	*5.9*	*6.3*	*6.7*
-/+ Change in working capital	*(1.5)*	*(1.7)*	*(4.4)*	*(5.0)*	*(5.6)*
-/+ Other BS Items	*0.0*	*0.1*	*0.1*	*0.1*	*0.1*
-/+ Change in provisions	*1.0*	*1.4*	*1.8*	*2.0*	*2.3*
- Total Capex	*(7.0)*	*(7.5)*	*(7.9)*	*(8.3)*	*(8.8)*
Free cash flow to firm	***21.5***	***27.2***	***30.0***	***35.8***	***42.3***

Assumptions

- Valuation Date: 30 March 2021 (FY21) reflecting all pre tax-cash flows from 31 March (FY22) onwards
- Projection period: 2022e-2026e
- WACC: **8.6%**, based on a target D/(E+P) structure of **28.9%** derived from more mature comparable peers. This capital structure is deemed appropriate, as it reflects the mid – to long term target capital structure of similar peers
- Terminal value growth rate: 2%

Enterprise Value Range

Euro million	Mid	Min	Max
Terminal value	452.1	351.7	613.3
Present value of cash flows	125.1	122.1	128.2
Enterprise value	**577.2**	**473.7**	**741.4**
Terminal value in % of EV	*78.3%*	*74.2%*	*82.7%*
Implied EV multiple:			
EV / EBITDA 2021e	15.7x	12.9x	20.2x

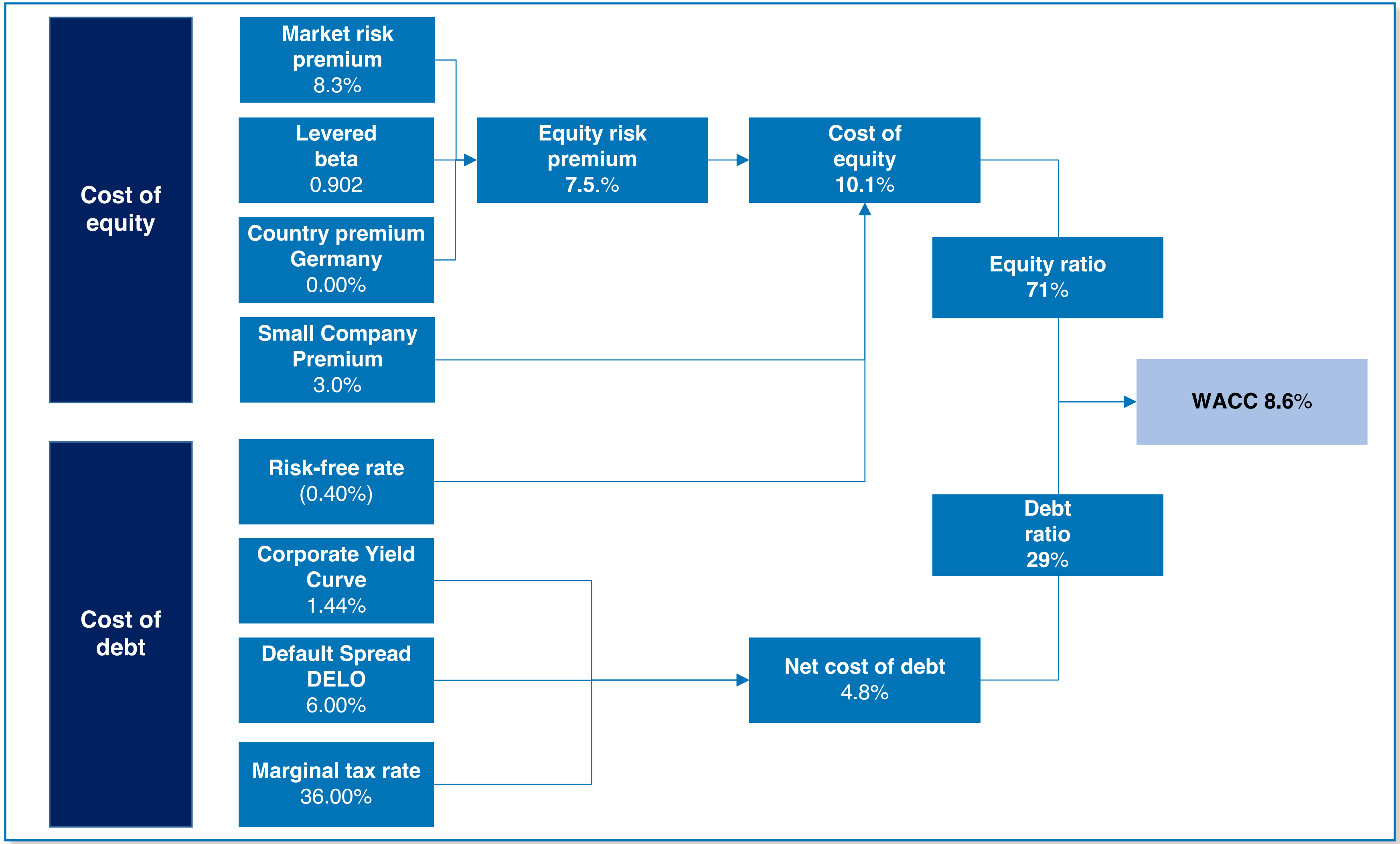
Implied Entry Multiple Sensitivities

	Weighted Average Cost of Capital (WACC)				
Terminal value growth rate	7.6%	8.1%	8.6%	9.1%	9.6%
1.50%	17.3x	16.0x	14.8x	13.8x	12.9x
1.75%	17.9x	16.5x	15.2x	14.2x	13.2x
2.00%	18.6x	17.1x	**15.7x**	14.6x	13.6x
2.25%	19.4x	17.7x	16.2x	15.0x	14.0x
2.50%	20.2x	18.4x	16.8x	15.5x	14.4x

Source: CapitalIQ, Mergermarket

Valuation (2/4): WACC – DELO

The appropriate Weighted Average Cost of Capital (WACC) for an investment in DELO amounts to 8.6%



Cost of equity

Market risk premium
8.3%

Levered beta
0.902

Country premium Germany
0.00%

Small Company Premium
3.0%

Equity risk premium
7.5.%

Cost of equity
10.1%

Equity ratio
71%

WACC 8.6%

Cost of debt

Risk-free rate
(0.40%)

Corporate Yield Curve
1.44%

Default Spread DELO
6.00%

Marginal tax rate
36.00%

Net cost of debt
4.8%

Debt ratio
29%

Cost of equity assumptions

- Market Risk Premium: MSCI World **annual return average last 10 years**
- Levered Beta: Based on peer group beta over the **last 5 years**
- Country Premium: **0% for Germany**
- Small company premium: **3% premium assumed** for not being listed
- Target D/E ratio based on **average capital structure of peer group**

Cost of debt assumptions

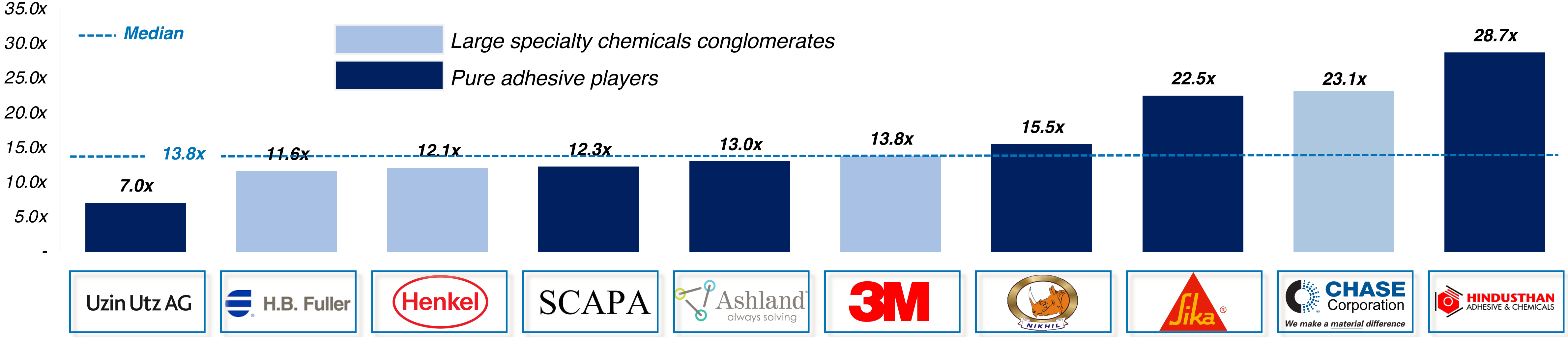
- Risk-free rate based on **15 year German treasury bond**
- Corporate Yield curve is based on chemical companies with a **tenor of 15 years and a credit rating of BBB**
- **Default Spread:** 6% idiosyncratic default spread assumed
- Marginal tax rate: **36% equals the average tax rate over the last 3 years for DELO**

Source: CapitalIQ, Mergermarket, Damodoran Website

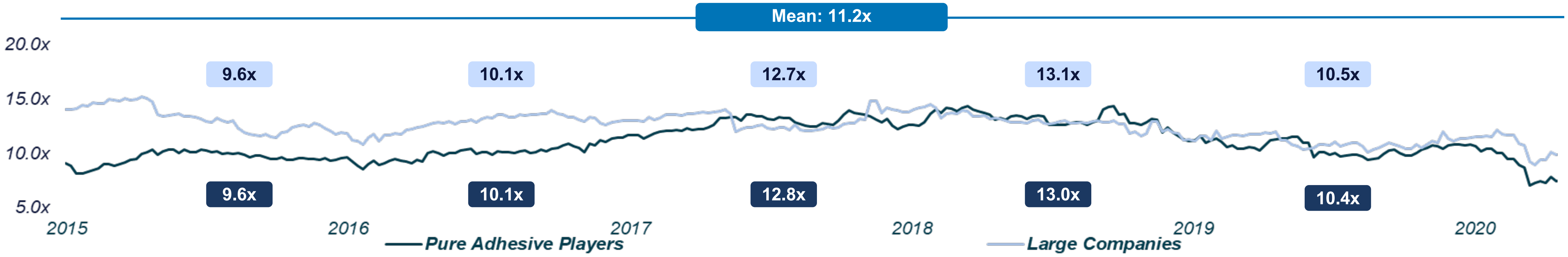
Valuation (3/4): Comparable Companies – DELO

Comparable companies trade for 13.8x EBITDA, with a growing 5 year trend

EV/EBITDA 2020P



5-year average EV/EBITDA multiples



Source: CapitalIQ

Valuation (4/4): Precedent Transactions

Transactions are conducted at a median of 12.4x

Date	Target	Target description	Buyer	EV (EURm)	EV / Sales	EV/ EBITDA	EV/ EBIT
Mar-20	🇨🇭 Clariant AG	Manufacturer of specialty chemicals	🇸🇦 Saudi Basic Industries Corporation	8,362.3	1.67x	8.6x	-
Dec-19	🇯🇵 Showa Denko Materials Co., Ltd.	Manufacturer of functional and advanced material	🇯🇵 Showa Denko K.K.	8,277.4	1.20x	6.4x	8.7x
Dec-19	🇨🇭 Color and Additive Masterbatches Business of Clariant	Manufacturer of color and additive concentrates	🇺🇸 Avient Corporation	1,315.3	1.20x	-	-
Oct-19	🇮🇹 Ritrama S.p.A.	Manufacturer of commodity and specialty self-adhesive materials	🇮🇹 Fedrigoni S.p.A.	255.0	1.53x	12.4x	21.3x
Oct-19	🇨🇳 Shanghai Phichem Material Co., Ltd.	Manufacturer of specialty chemicals	🇨🇳 Gongqingcheng Shengheng Investment Management Co., Ltd.	886.0	1.19x	8.5x	-
Oct-19	🇮🇳 Nan Pao Resins Chemical Co., Ltd.	Manufacturer of synthetic resins, plastics, adhesives, resin coatings, dyes, and pigments	🇹🇼 Yue Dean Technology Corporation	541.4	1.51x	12.5x	25.9x
Sep-19	🇫🇷 Robertet SA	Producer of perfumes, aromas and natural ingredients	🇨🇭 Firmenich SA	1,566.7	0.64x	-	-
Mar-19	🇩🇪 Methacrylates Business of Evonik Industries AG	Methyl methacrytlate and polymethyl methaclate manufacturer	🇺🇸 Advent International Corporation	3,000.0	4.71x	20.8x	28.3x
Mar-18	🇮🇳 Waaree Technologies Limited	Self-adhesive and adhesive tapes and labels	🇨🇳 Inner Mongolia MengDian HuaNeng Thermal Power Corporation Limited	0.7	1.09x	9.8x	12.1x
Sep-17	🇩🇪 Covestro AG	Manufacturer of polymer materials	🇨🇳 Inner Mongolia MengDian HuaNeng Thermal Power Corporation Limited	15,690.8	0.88x	24.9x	29.6x
Jul-17	🇨🇭 Clariant AG	Manufacturer of specialty chemicals	🇫🇷 Parameter Length Limit Exceeded	8,386.4	2.89x	16.8x	21.2x
Sep-16	🇨🇭 Looser Holding AG	Coatings, Industrial Buildings and Doors	🇨🇭 Arbonia AG	470.3	2.05x	16.5x	41.9x
Oct-13	🇩🇪 OQ Chemicals GmbH	Manufacturer of oxo intermediates and derivatives	🇴🇲 OQ SAOC	1,800.0	1.24x	-	18.0x
Feb-11	🇩🇪 Süd Chemie AG	Manufacturer of specialty chemicals	🇨🇭 Clariant AG	1,996.4	1.53x	10.3x	14.8x
Jun-10	🇩🇪 Cognis Holding GmbH	Manufacturer of specialty chemiclas	🇩🇪 BASF SE	3,083.0	1.17x	12.3x	37.3x
Mean				**4,389.3**	**1.76x**	**14.1x**	**22.3x**
Median				**1,800.0**	**8.2x**	**12.4x**	**21.3x**

Source: CapitalIQ

▨ *Not included in the mean and median calculation*

Private Equity Challenge – Personal Reflection

Project DELO – Innovation as the key driver for value creation

The question of whether private equity firms spur innovation has been discussed extensively in the academic literature. Whilst private equity firms are sometimes accused of exploiting firms for the sake of selfishly generating high returns for the respective fund, many empirical papers on the other hand have concluded that private equity activity promotes industrial innovation and increases patent applications and grants of acquired companies for as much as 12%.(1) As our group analyzed DELO's business model, it became obvious that in this particular case the scalability of the business is largely dependent on the target's ability to constantly innovate and not be afraid to reposition if necessary. The business plan forecast through the holding period diligently considers that the envisaged growth is only realistic, if the company defends its position as innovation leader.

The results of our analysis in the frame of Project DELO has revealed that the extraordinary high R&D spending of ~12% of revenue (3-6% industry standard) of the target DELO is the prevailing factor that shapes its competitive advantage in the "niche-in-niche" segments it is operating in. Whilst competitors in the field are either too large to constantly allocate resources in the innovation process of new products or are simply underestimating the sunk costs associated with staying in one particular market that is simply not profitable anymore, i.e. due to increased competition. To survive as a small player in the market for high-tech adhesives, this skill of finding the niche and being able to quickly adapting to a new one if necessary, is essential. If nothing else, it allows DELO to dictate and arbitrarily set prices that allow for a gross margin in regions beyond 80%.

A key area of focus to consider from a PE perspective is how to sustain exactly this strategic success rooted in constant innovation rather than simply engineering the numbers to create the returns needed. One key finding and important consideration during this project was that the PE fund will have to promote - through actual hands-on operational and strategic support - innovation within the company, instead of suppressing it by drying up cash needed to explore new innovative adhesives. In DELO's case, this doesn't necessarily mean to hand in a bunch of patents, but rather ensuring that qualified personnel will be hired and existing personnel is adequately incentivized to continue producing the best adhesive for the niche applications the company is targeting.

My main contribution to this paper comes from my previous interdisciplinary practical experience. I have seen how constant innovation drives the success of a business in the tech startup. Additionally, I worked on a number of PE sell side projects in investment banking, where I prepared business plans and sell side documents. I was able to leverage this experience to contribute to the investment thesis and the business plan forecast during this project. Finally, I would like to say that I have thoroughly enjoyed this project, especially as we had a group consisting of members from different backgrounds and equipped with different strengths. I also believe, I was able to learn a lot from my fellow team members and the advisors of the PE class.

Note (1): "Does Private Equity Investment Spur Innovation"; 2009 Working Paper ECB