

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

PRIVATE EQUITY CHALLENGE: GERHARD SCHUBERT GROUP –
A COMPREHENSIVE INVESTMENT TARGET ANALYSIS OF A
GERMAN PACKAGING MACHINERY MANUFACTURER WITH FOCUS ON DIGITIZATION

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Abstract

The following paper focuses on the development of an Investment Thesis for the potential LBO transaction of the Gerhard Schubert Group, a German packaging machinery manufacturer. A detailed analysis of the company, its positioning, products, value proposition, and historical financials is followed by an analysis of the global packaging machinery market. Based on this, an investment thesis is developed. Various value creation strategies from the areas of (1) Topline and Sales growth, (2) Mergers & Acquisitions (Carve-Out and Add-On), (3) Cost reduction measures, and (4) Sustainability are developed and financially analysed in a business plan before the returns and exit options from the investment are presented. An in-depth analysis of the relevance and influence of Digitization on the packaging industry concludes the paper. Overall, the practice-oriented work contributes to illustrating the attractiveness of packaging machinery manufacturers for the Private Equity industry using the example of a German SME and offers cause for thought for further developments of companies in this sector.

Keywords

Private Equity Challenge, Leveraged Buyout, Packaging Machinery, Family Business, Valuation, Value Creation, Add-On, Carve-Out, ESG, Digitization, Industry 4.0, Robotics

Disclaimer

This paper was developed in a group. This document contains the group part as well as the individual part. It was developed with an academic purpose, using publicly available information and information made available directly by the company or external experts. The experts/interview partners are listed in the Appendix. All information from the Company website was retrieved before 20.09.2021.



SCHUBERT

Packaging Machinery

Private Equity Challenge 2021 / 22
Investment Committee Presentation – Group Part
17th of December 2021

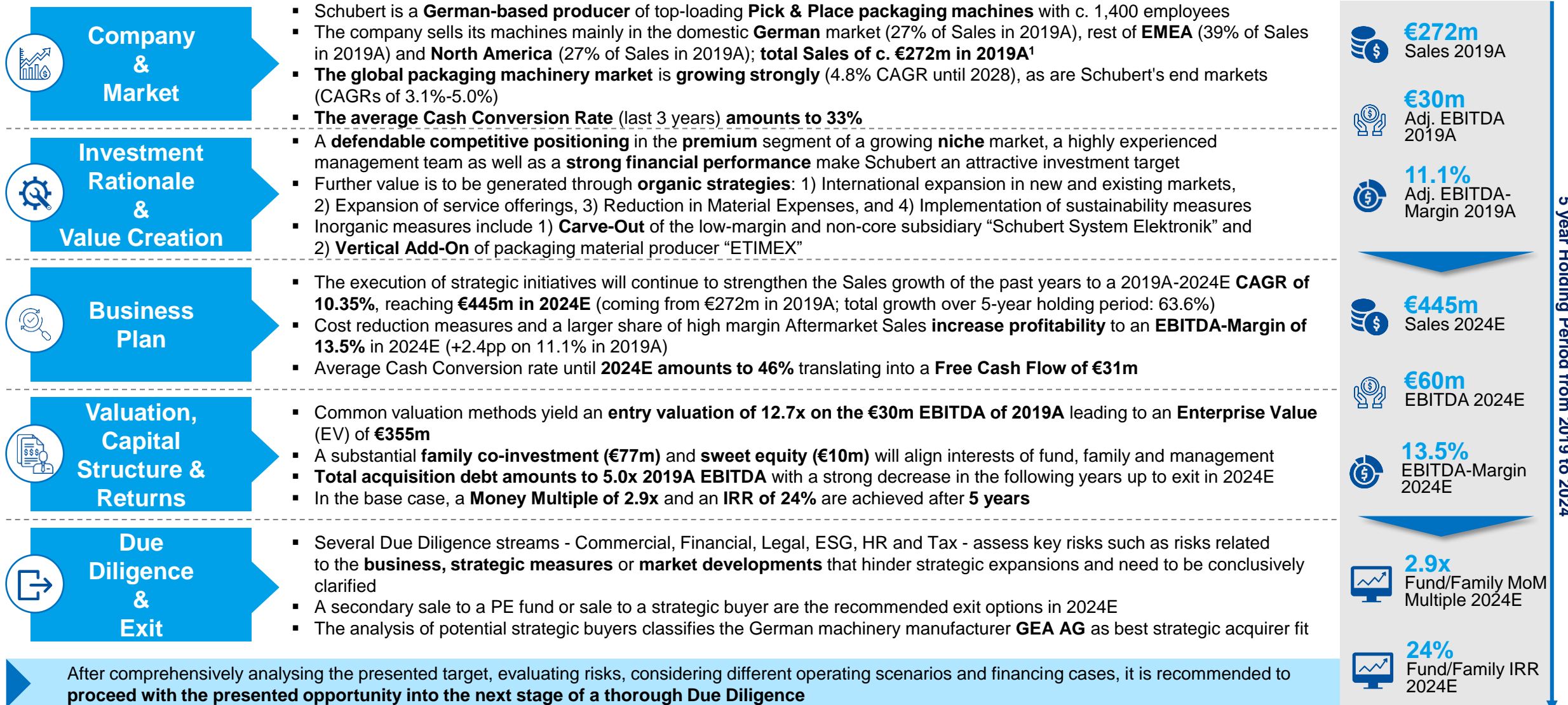
Disclaimer

- This paper was developed with an academic purpose, using publicly available information and information made available directly by the company or external experts.
- This paper evaluates Gerhard Schubert GmbH and its subsidiaries (following „Schubert“).
- The Experts / Interview partners are listed in the Appendix.
- Because, according to the German Publication Act, the filing deadline for accounting documents is no more than one year after the closing date of the financial year, Schubert did not have to file the documents for 2020 yet. These will probably not be published until January 2022.
- For this reason, a fictitious takeover date of the company of 01.01.2020 is assumed for the present work. All forecasts are based on the published reports for the 2019 financial year.
- The holding period of the company is assumed to be 5 years, which means that the company will be sold at the end of 2024. However, the business plan will be developed up to the end of 2027.
- The company takeover is to be assumed cash-and-debt-free. This means that apart from a certain amount of cash balance with the function of covering the liquidity requirements and strategic measures, the remaining cash will be distributed before the takeover.
- All information from the company website was retrieved before 20.09.2021.

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Schubert, a German packaging machinery producer, is an exceptional investment opportunity yielding a Money Multiple of 2.9x at an IRR of 24% over a 5-year holding period



Source(s): Company Information, Own Analysis; Note(s): RoW = Rest of World; 1) RoW accounts for 7% of sales in 2019A



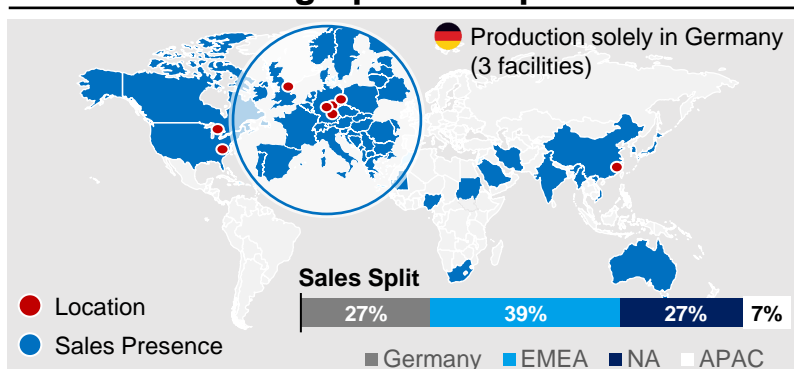
2. Company Overview

Since its foundation in 1966 Schubert is a pioneer in the development of modular packaging machines and custom-fit services with innovative digitization offerings for a wide range of industries

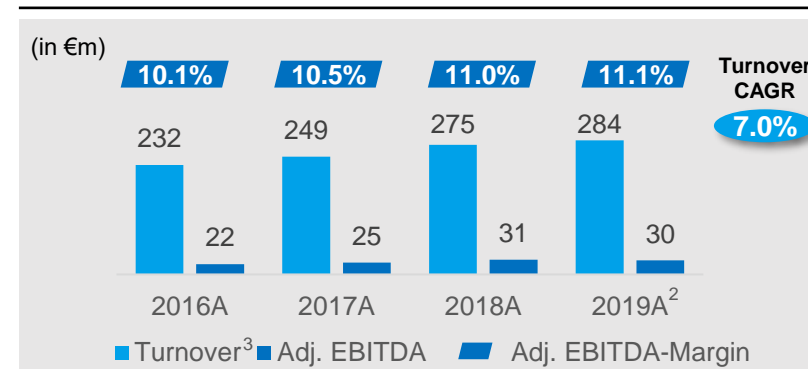
Key Facts

- German-based packaging machinery manufacturer („Schubert“) headquartered in Crailsheim, Germany
- The 100% family-owned group is an innovative market leader for top-loading Pick & Place¹ machines
- With ~1,400 employees the company reached Sales of €272m in 2019A²
- The group includes 6 German subsidiaries, 3 of them specialized in different key aspects such as electronics-, additive- and CNC contract manufacturing

Geographic Footprint



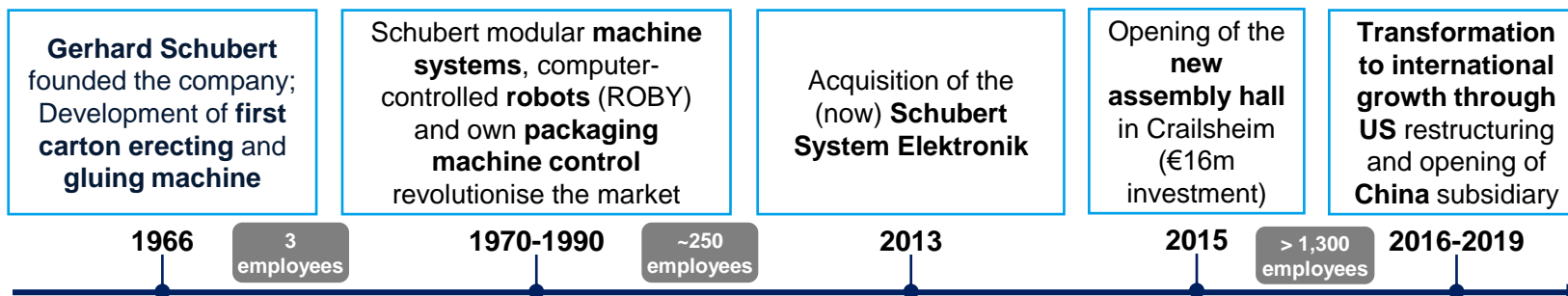
Historic Financials



Key Products

Modular products		Top-loading packaging machinery, flow-wrapper, CNC contract manufacturing and electronics
Turnkey solutions		Fully integrated turnkey packaging solutions
Aftersales services		Spare parts, modifications, remodeling

From an Idea to the World Market Leader in Digital Packaging Machines



End Markets and Customers

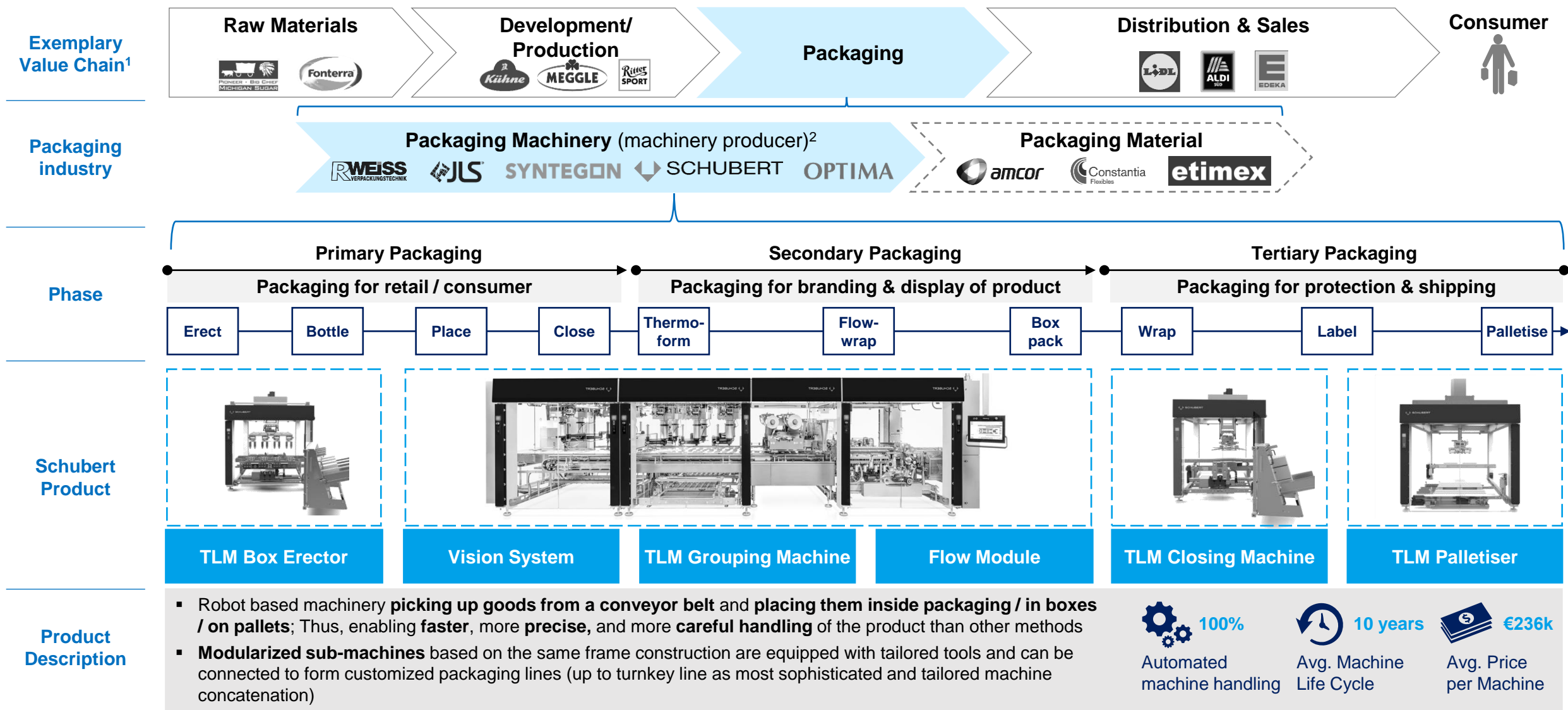
Food 	Pharma 	Beverages 	Pet Food
Confectionary 	Cosmetics 	Dairy 	Technical Articles

Source(s): Company Information; Note(s): 1) Robot based packaging of goods by picking goods up from a conveyor belt and placing them in the package, 2) Last audited results, 3) Turnover denotes the difference between Sales and Inventory produced

Schubert Key Industries

See Appendix Slide 45 for detailed Group Structure

Directly downstream of production, the Schubert machinery fulfils packaging tasks on a one-stop-shop basis, from picking up to placing in the packaging all the way to palletising



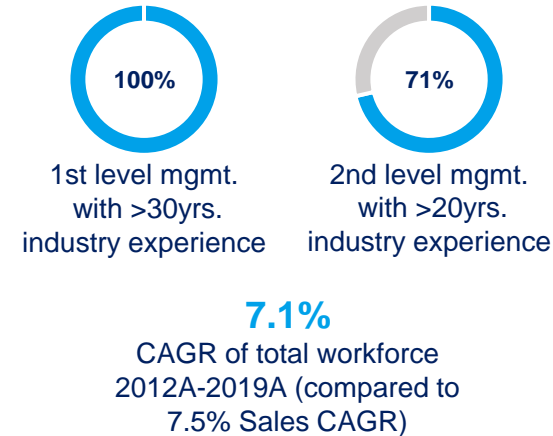
Source(s): Company Information, Own analysis; Note(s): 1) Exemplary for food production, 2) Schubert is only packaging machinery producer and no contract packager

The management team has long tenure, excellent industry experience and a strong track record in all defined key activities enabling it to drive further growth and capture new markets

Management Team

CEO	CTO	CSO	CFO
<p>Gerhard Schubert (83) Founder, Managing Director (MD) and Shareholder</p> <p>>60</p>	<p>Ralf Schubert (60) Son of founder, MD, and Shareholder; joined Schubert in 1985; diploma computer scientist</p> <p>36</p>	<p>Marcel Kiessling (59) Joined in 2016, prev: Radius 1 (Partner), Gerson Lehrman (Adv. Cncl), Heidelberg (MD)</p> <p>32</p>	<p>Peter Gabriel (61) Managing Director, joined in 2000, diploma economist</p> <p>30</p>

Employee Insights



- Schubert is a **family-run business** with the company founder and his son as MDs
- With Peter Gabriel Schubert built up a **strong CEO successor**
- A strong **second level management** team shows **long tenure** and high level of proficiency and management capabilities (see Appendix)
- Strong second level management team and internal training enable top level vacancies to be filled by “the next man up”
- **Blue collar workforce** historically grew less than sales (5.8% CAGR 2012A-2019A) and overall workforce leading to capacity issues

Business Model and Key Activities

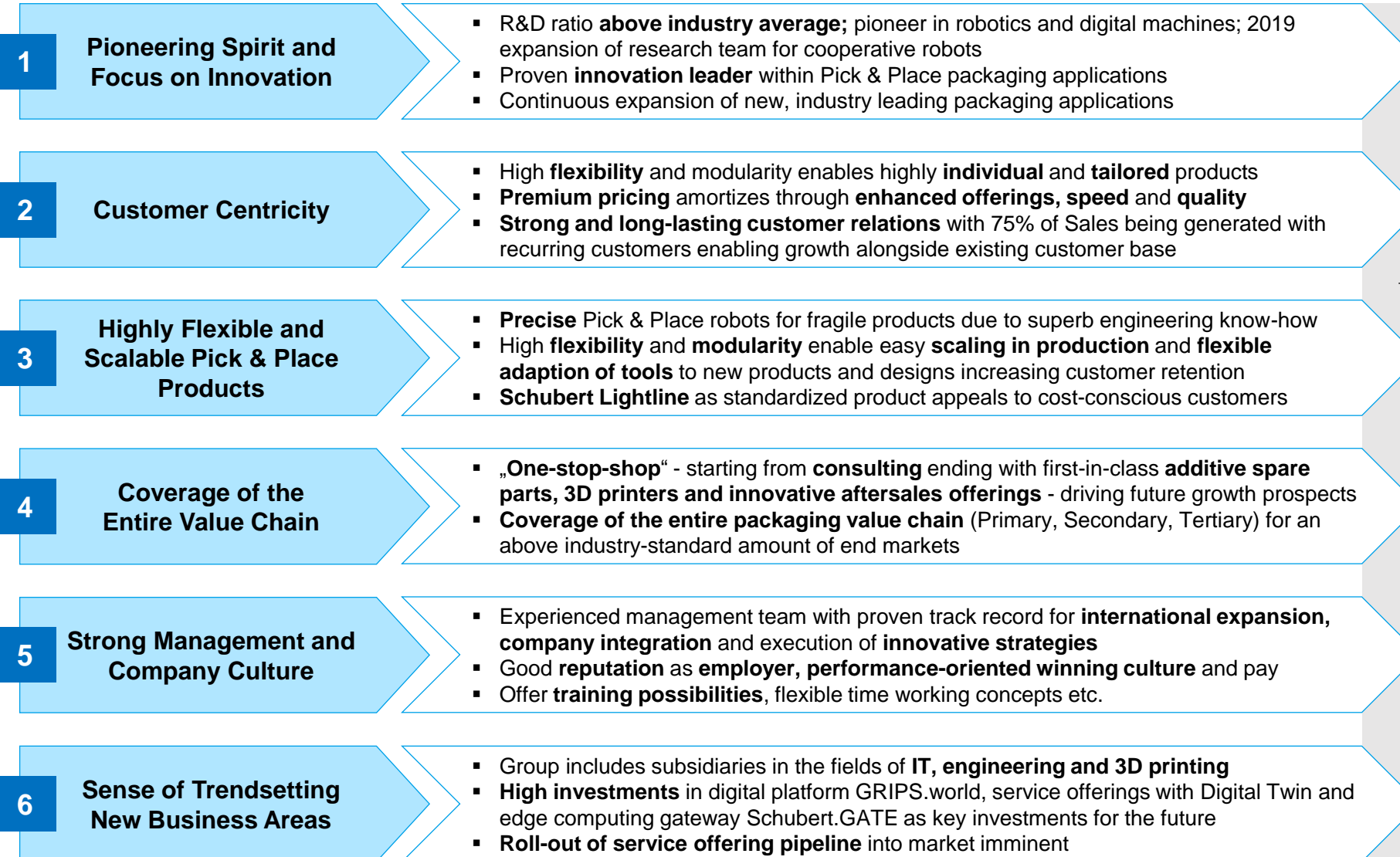
<p>Modularity and Flexibility of Machines</p> <p>8 standardized system components allow individualized tailoring of machines</p> <ul style="list-style-type: none"> ▪ Schubert machines have interchangeable (Pick & Place) tools leading to quick changeovers and short downtimes ▪ Justifying Schubert’s premium positioning, due to significant advantages for customers and differentiation towards competition 	<p>Digitization and Innovation</p> <p>20% faster robots with optimum control through Schubert Motion technology</p> <ul style="list-style-type: none"> ▪ 3D printing, streaming platform for spare parts („Partbox“) and self-developed customer communication interface („GRIPS.world“) enable outstanding customer experience ▪ Digital Twin in prototype-phase 	<p>Service and Aftersales</p> <p>16% share of services (in 2019A) far below industry average of >20% according to industry experts</p> <ul style="list-style-type: none"> ▪ Multi-level service approach (global, regional, local) ▪ Full technical and digital service throughout the machine life cycle, generating recurring revenues and boost customer retention ▪ Increased service focus in recent years must be continued and strengthened 	<p>Purchasing Criteria and Sales Approach</p> <p>75% of Sales with existing customers every year indicating high customer retention</p> <ul style="list-style-type: none"> ▪ Schubert performs excellently in the three most important purchasing criteria “machine reliability”, “throughput” and “application know-how/ track record” ▪ Direct sales team in Crailsheim and dedicated sales offices in e.g. UK, Canada, China and US 	<p>Sustainability and ESG</p> <p>89% CO₂ savings by using Partbox with 3D printing through transport reduction</p> <ul style="list-style-type: none"> ▪ Successfully working on six of the defined UN Sustainable Development Goals (7, 8, 9, 12, 13, 17) ▪ Since 2015 certified by Veritas in accordance with SMETA¹, adopting requirements of ethical action ▪ Five principles for waste prevention
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Source(s): LinkedIn, Xing, Company Website, Orbis; Note(s): 1) Sedex Members Ethical Trade

○ Years Industry Experience ● High Managing Capabilities

See Appendix Slides 46-51 for details on Management, Employees and Business Model

Schubert's competitive advantage is based on 6 pillars: the pioneering spirit and its focus on innovation are significantly responsible for the company's success



#1

Market leader in Pick & Place applications

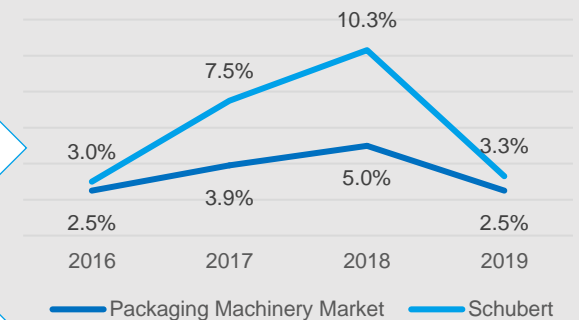


10%

Investment of annual revenue in R&D

The health of the company and the success of the strategy are reflected in the steady growth in turnover, which has been above industry average for years

Turnover Growth



3. Historic Financials

The growth of the last years (2012A-2019A) was mainly driven by Sales in North America (CAGR: 21%) and Aftermarket Sales (CAGR: 12.7%)

Historic Sales Development

in €k	2012A	2013A	2014A	2015A	2016A	2017A	2018A	2019A	CAGR
Machinery (Germany)	35,115	38,214	24,777	54,628	47,139	42,694	51,365	40,394	2.0%
Machinery (EMEA)	89,159	101,536	129,777	88,272	99,891	113,288	103,275	86,017	(0.5%)
Machinery (NA)	15,452	9,795	14,156	22,496	12,062	21,071	51,887	59,604	21.3%
Machinery (China)	0	0	0	0	0	0	3,243	14,498	n.a.
Aftermarket Sales	19,044	24,170	28,119	26,642	33,420	36,800	39,627	43,933	12.7%
Electronics	0	19,999	22,475	20,753	20,145	21,962	25,245	22,460	n.a.
Other	5,779	6,978	9,122	11,703	6,730	7,358	8,525	5,412	(0.9%)
Total Sales	164,550	200,691	228,426	224,495	219,387	243,173	283,167	272,319	7.5%
Delta Inventory	1,988	2	(431)	484	12,419	6,021	(8,315)	11,736	n.a.
Turnover	166,538	200,693	227,995	224,979	231,806	249,194	274,852	284,055	7.9%
YoY Growth	n.a.	20.5%	13.6%	(1.3%)	3.0%	7.5%	10.3%	3.3%	n.a.

Key Takeaways



International Expansion: Most important sales driver; Restructuring of North America sales operations resulted in nearly tripling of Sales from €20m up to €60m between 2017A and 2019A

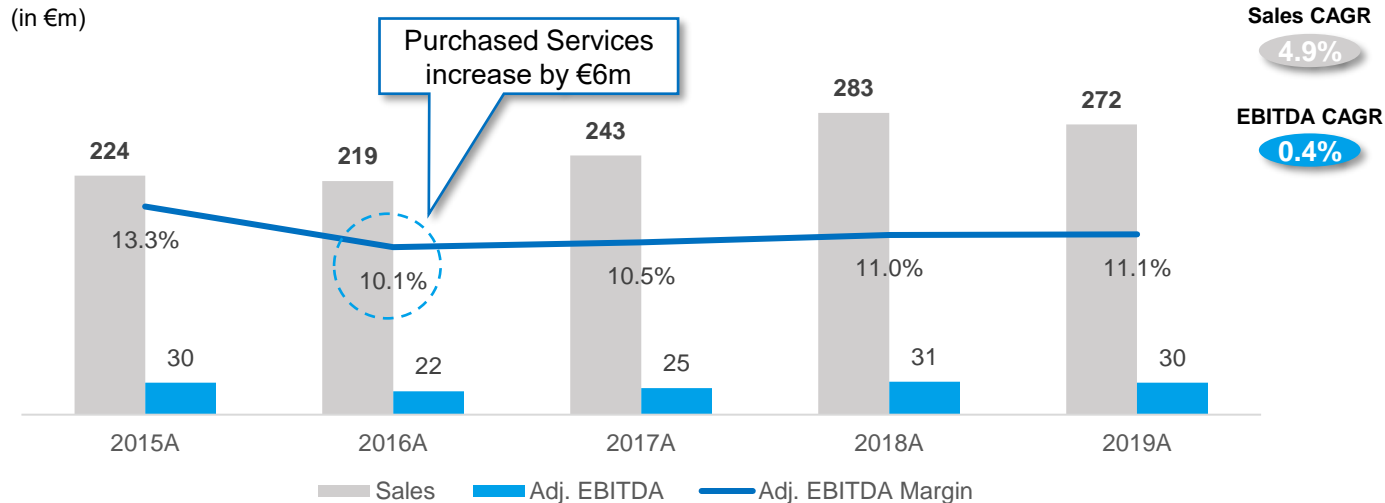


Aftermarket Sales: Strong CAGR (12.7%) as Schubert management is striving to increase Aftermarket / Service offerings with a focus on digitization to reach industry-standard level (>20% of sales)



Sales vs. Turnover: Turnover denotes the total output of the year (including Inventory changes), making it an important measure as it accounts for reporting date view shifts in large orders

Profitability Development



Profitability Assessment

- **Strong overall Sales growth;** Weak 2019A in Germany and EMEA caused by large orders shifting to 2020E (reflected in Inventory increase)
- Despite high Sales growth, **EBITDA remained flat in recent history with a CAGR of 0.4% since 2015A**
- **EBITDA-Margin** drop in 2016A following results from sales restructuring and aggressive growth in US and increase in Purchased Services due to capacity issues
- Despite that, Schubert shows an EBITDA margin recovery from 2016A onwards, reaching **11.1% in 2019A**

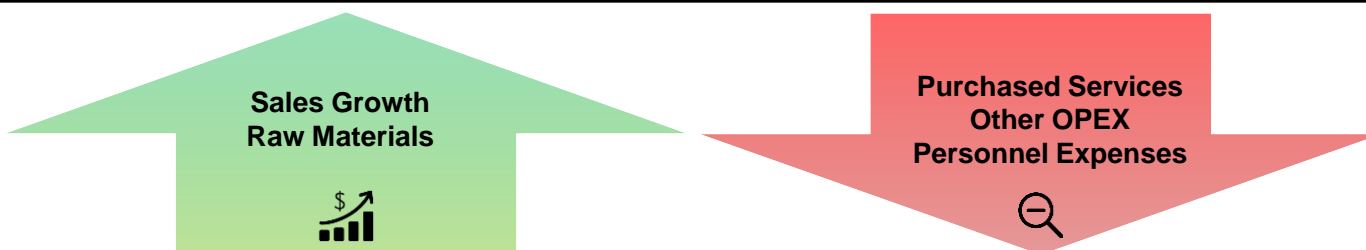
The finalisation of the production hall in 2022E as well as the targeted higher revenue share through Aftermarket Sales will have a positive impact on profitability and will strongly increase the previously flat development of EBITDA

Slight EBITDA margin pressure from 2016A to 2019A is explainable and manageable through future reduction in Purchased Services and Other OPEX

Profit & Loss Statement

in €k	2012A	2013A	2014A	2015A	2016A	2017A	2018A	2019A	CAGR
Sales	164,550	200,691	228,426	224,495	219,387	243,173	283,167	272,319	7.5%
Turnover	166,538	200,692	227,995	224,979	231,806	249,194	274,852	284,055	7.9%
YoY Growth		20.5%	13.6%	(1.3%)	3.0%	7.5%	10.3%	3.3%	
<i>Raw Materials</i>	(51,085)	(68,935)	(77,387)	(74,190)	(72,922)	(76,466)	(77,819)	(76,873)	6.0%
% Sales	(31.0%)	(34.3%)	(33.9%)	(33.0%)	(33.2%)	(31.4%)	(27.5%)	(28.2%)	
<i>Purchased Services</i>	(19,763)	(11,298)	(12,521)	(16,665)	(22,922)	(26,049)	(31,174)	(34,575)	8.3%
% Sales	(12.0%)	(5.6%)	(5.5%)	(7.4%)	(10.4%)	(10.7%)	(11.0%)	(12.7%)	
Material Expenses	(70,848)	(80,233)	(89,908)	(90,856)	(95,844)	(102,515)	(108,993)	(111,447)	6.7%
% Sales	(43.1%)	(40.0%)	(39.4%)	(40.5%)	(43.7%)	(42.2%)	(38.5%)	(40.9%)	
Gross Profit	95,690	120,460	138,087	134,123	135,962	146,679	165,859	172,608	8.8%
% Margin	58.2%	60.0%	60.5%	59.7%	62.0%	60.3%	58.6%	63.4%	
Personnel Expenses	(56,782)	(66,911)	(74,211)	(76,121)	(80,723)	(87,382)	(94,442)	(100,354)	8.5%
% Sales	(34.5%)	(33.3%)	(32.5%)	(33.9%)	(36.8%)	(35.9%)	(33.4%)	(36.9%)	
Other Operating Expenses	(25,921)	(28,859)	(31,273)	(31,310)	(35,864)	(37,481)	(42,505)	(45,588)	8.4%
% Sales	(15.8%)	(14.4%)	(13.7%)	(13.9%)	(16.3%)	(15.4%)	(15.0%)	(16.7%)	
OPEX	(82,703)	(95,770)	(105,484)	(107,430)	(116,587)	(124,863)	(136,947)	(145,942)	8.5%
% Sales	(50.3%)	(47.7%)	(46.2%)	(47.9%)	(53.1%)	(51.3%)	(48.4%)	(53.6%)	
Other Income	1,447	1,618	891	1,743	1,518	2,066	984	2,059	5.2%
EBITDA Adjusted	15,653	27,654	34,974	29,777	22,126	25,467	31,259	30,227	9.9%
YoY Growth		76.7%	26.5%	(14.9%)	(25.7%)	15.1%	22.7%	(3.3%)	
% Margin	9.5%	13.8%	15.3%	13.3%	10.1%	10.5%	11.0%	11.1%	

Key Profitability Drivers



Source(s): Expert Interviews, Annual Reports

27/01/2022

Profit & Loss Statement

- Shift of 1 major **turnkey** line order in amount of c. €11m from 2019A towards 2020E reduced Sales in 2019A; **Turnover depicts the Inventory increase** caused by the completed and not sold turnkey line
- Raw Materials ratio shows a decreasing trend due to **investments in production automation, internal process optimization and 3D-printing of parts**
- Strong **increase in Purchased Services caused by reaching 100% capacity**; Completion of new assembly hall in 2015A **shifts the bottleneck from assembly to production**; Missing infrastructure (production hall) and little personnel build up in 2014A to 2016A drive bottleneck
- Last three years show workforce capacity build up for production, R&D and service** as foundation for future Sales growth
- Other OPEX constitutes a **high portion of Schubert's costs**, including cost positions as e.g.: Marketing, Rent & Leasing and Shipping & Logistics; strong increase is driven by **Marketing Expenses and build-up of infrastructure for growth and internationalisation** (increase in 2016A: restructuring of US Sales and 2019A: new China office)
- Adjustments comprise normalisations for owners' salary of c. €1.2m p.a.

Manageability Assessment of Negative Drivers

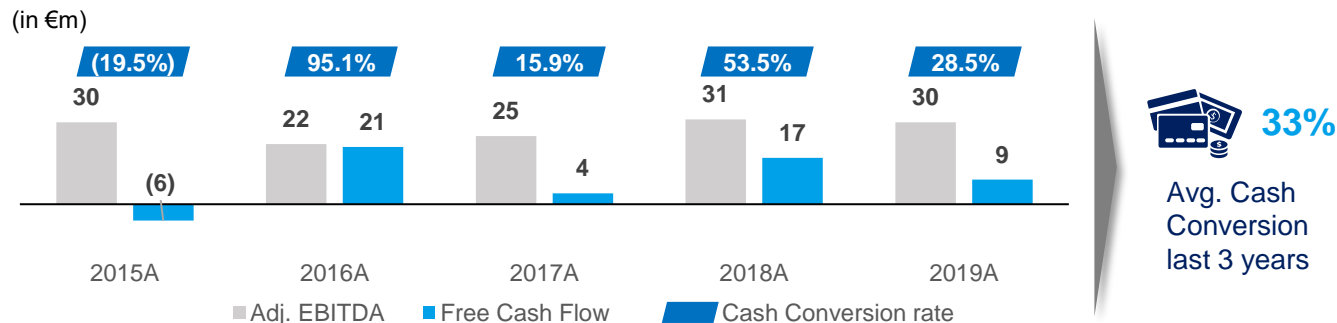
- Purchased Services**
 - Expected to decrease with ramp-up of new production facility in 2022E
- Other OPEX**
 - Decreasing cost base after finalization of internationalisation strategies and economies of scale
- Personnel**
 - Increase in service offerings requires more personnel
 - High wage country Germany with strict labour laws

● Good manageability going forward
 ● Medium manageability going forward
 ● Bad manageability going forward

See Appendix Slides 55-56 for detailed P&L Analysis

Cash Conversion volatility does not pose a problem as it is mitigatable through financial management; low Maintenance CAPEX suggest high future Cash generation potential

Free Cash Flow



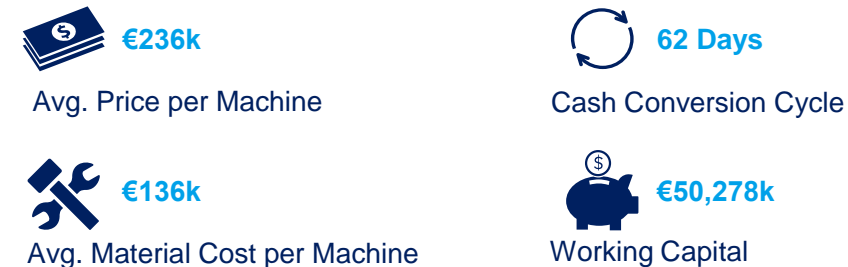
in €k	2012A	2013A	2014A	2015A	2016A	2017A	2018A	2019A
Adj. EBITDA	15,653	27,654	34,974	29,777	22,126	25,467	31,259	30,227
(-) Changes in NWC	n.a.	(9,217)	(8,365)	(3,466)	8,908	(11,483)	(4,805)	913
(-) Changes other WC	n.a.	(5,751)	12,106	(7,116)	4,689	14	2,214	(2,260)
(-) CAPEX	(4,697)	(17,282)	(16,408)	(17,714)	(10,256)	(4,926)	(4,870)	(13,903)
(-) Taxes	(3,137)	(7,020)	(8,242)	(7,289)	(4,426)	(5,015)	(7,059)	(6,366)
Free Cash Flow	7,819	(11,616)	14,064	(5,809)	21,041	4,056	16,739	8,611
Cash Conversion	50.0%	(42.0%)	40.2%	(19.5%)	95.1%	15.9%	53.5%	28.5%

- **High Cash Conversion volatility** due to expansion CAPEX and volatile Working Capital development
- Volatile Working Capital is based on **low prioritization of management** focus due to low relevance for long-established **family business structures**
- **Working Capital shifts changes** are mainly driven by shifts in Inventory as invoicing of large orders are shifted to next fiscal period

Cash Conversion volatility is explainable and mitigatable so that future Cash generation potential can be used for strategy implementation and deleveraging

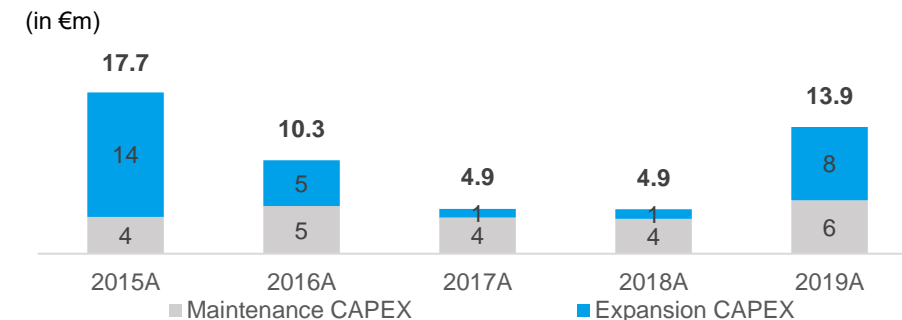
Source(s): Expert Interviews, Annual Reports, Company Information

Key Performance Indicators (2019A)



- Avg. of **€100k Gross Profit per machine**
- Relatively **low CCC** resulting from high amount of Advanced Payments received on orders
- **Working Capital** requirement of c. €50m in 2019A

CAPEX Development



- **Low levels of Maintenance CAPEX** as majority of equipment is leased
- **High Expansion CAPEX up to 2015A** to build new assembly hall reducing capacity bottleneck in assembly, shifting **focus towards production capacity constraints**

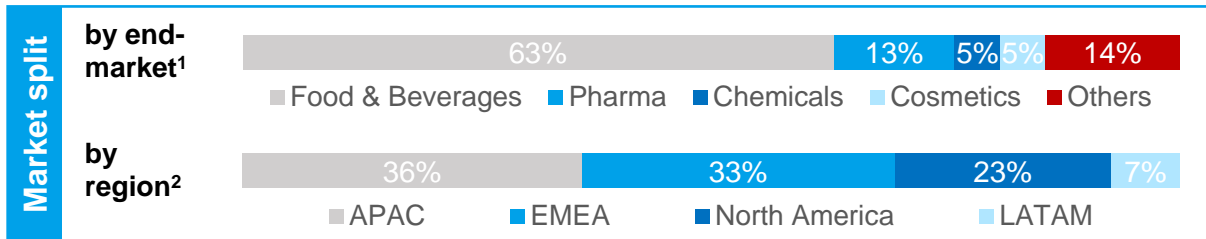


4. Market Overview

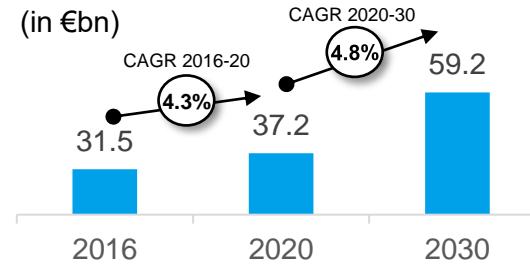
The global packaging machinery market is characterized by a high degree of fragmentation and continues a robust growth path of recent years with increasing automation demands from end markets

Global Packaging Machinery Market Overview

- The global packaging machinery market is estimated to be **€37.2bn** as of 2020 and is expected to grow at a **CAGR of 4.8%** through 2030
- Impact of Covid-19** was moderate (-5% order intake) with quick recovery due to crisis-independent end markets like Food & Beverages (F&B) and Pharma (see Appendix)



Market Size Global



Market Entry Barriers

Entry Barrier	Relevance
Application Know-how	●
Customer Relationships	●
Track Record & Reputation	●
Manufacturer Qualification	●
Local Customer Service	●

Proxy

CAGR packaging machinery: 4.8%	CAGR Schubert key end markets: 4.0%-5.0%	→ Schubert's addressable market to grow ~4.5% CAGR for the next 5-8 years
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Market Characteristics

Fragmentation 	<ul style="list-style-type: none"> The global packaging machinery market is highly fragmented with only a few large and many small to mid-size players Top 5 players with c. 20% market share Schubert places with c. €270m among largest market players³
Market & Product Focus 	<ul style="list-style-type: none"> Many manufacturers focus on specific niche end markets and machine types due to strict certification requirements in highly regulated industries such as F&B and Pharma without covering the whole value chain Market player differentiate in generalists and specialists
Consolidation Pressure 	<ul style="list-style-type: none"> Increased consolidation pressure in recent years due to a growing demand for complete solutions and the fact that only a few companies can offer them (most are specialists) Increased M&A activity in small to mid-cap segment

Market Trends & Driver

Automation & Robotics 	<ul style="list-style-type: none"> Business needs for higher efficiency and productivity are driving demand for automated packaging lines with higher production speed and greater flexibility Modularity, throughput and versatility of machines gain in importance
Sustainability & Flexible Packaging 	<ul style="list-style-type: none"> Growing importance of sustainability drives replacement of old machines with new, energy efficient machines Material reduction and other sustainability initiatives increase need for flexible packaging machinery to run different size boxes and packaging materials
Food production 	<ul style="list-style-type: none"> Growing population requires higher food production to be packaged Regulatory changes towards greater food safety, especially in emerging markets

Source(s): Expert Interviews, PMMI, Statista, ARC Advisory Group, Allied Market Research; Note(s): 1) Based on 2016 figures; 2) Based on 2018 figures; 3) C. 1% market share

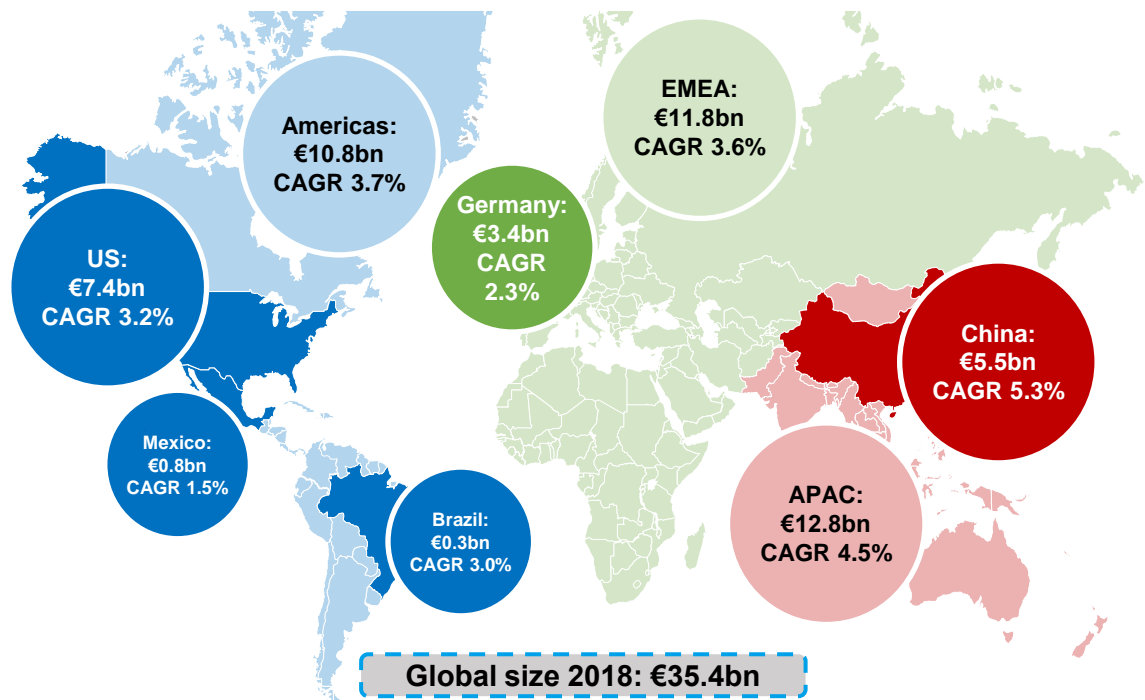
See Appendix Slides 58-61 for details on Market Driver, Entry Barriers and Covid Impact

High market volume and strong growth prospects in packaging machinery, evenly distributed across Americas, EMEA and APAC; Pick & Place application niche has a comfortable competitive environment

Global Packaging Machinery Market Size by Region

(As of 2018, CAGRs 2018-2024)

total region subregion



- **Asia-Pacific** was the **largest market** for packaging machinery, accounting for 36.3% (€12.8bn) in 2018 and is expected to be the **fastest growing** region with a **CAGR of 4.5%** to **€16.8bn in 2024**
- **China** is expected to grow the fastest with a **CAGR of 5.3%** (2018-2024)
- With a combined share of over 36.4%, the **US** and **China** are crucial markets for Schubert with promising growth opportunities

Important (Sub)Regional Markets for Schubert

1 European Packaging Machinery Market 48%

- Germany is the world's **largest manufacturer and exporter** of packaging machinery with €7.1bn and €5.9bn in 2018, respectively, while domestic market demand is €3.4bn in 2018
- **France, Italy, Poland** and **UK** are among Schubert's most important export markets
- Competition in Europe is limited, especially for Pick & Place applications
- **German manufacturers** are predominant alongside a few Italian manufacturers such as Coesia Group or Marchesini Group (no Pick & Place focus)

2 US Packaging Machinery Market 27%

- The **US** was the **largest sub-regional market** in 2018 at €7.4bn and the **most important** country for Schubert by making up for 27.2% of 2019 Sales
- The **US** is a **substantial importer** of packaging machinery with imports worth €2.2bn in 2019 of which **more than 30%** can be attributed to **German suppliers**
- **Key provider of Pick & Place packaging** solutions in the US are JLS and Douglas

3 Chinese Packaging Machinery Market 25%¹

- China was the **second largest sub-regional market** in 2018 at €5.5bn and the **fastest growing** market
- Schubert opened its first distribution and service subsidiary in China in 2018
- **Rising labour costs** in China are key **growth driver** for automated packaging machinery
- China has currently **no provider of Pick & Place** solutions up to Western standards, displaying a favourable competitive environment
- German, Italian, Japanese, US and Swedish suppliers share the bulk of Chinese demand for high-quality packaging machinery displaying no sole Chinese player being able to compete with western machine standards

Source(s): PMMI, VDMA, Euromonitor International, Bundesanzeiger, Company Information, Italian Trade Agency; Note(s): German CAGR based on historical development; 1) RoW including China



Market Share 2019A

See Appendix Slide 62 for details on German Market

High degree of diversification and stability in key end markets hedge risk, while strong growth outlook creates significant upside potential with existing as well as new customers

Industry	Growth Driver	CAGR (in €bn)	Industry	Growth Driver	CAGR (in €bn)
<p>Food</p>	<ul style="list-style-type: none"> Traditionally characterised by high volumes & low margins Growth driver: Out-of-home consumption, rising raw material prices, fair-trade and private label products, organic food 	<p>4.7%</p> <p>(in €bn)</p> <p>4,191 (2019) 5,533 (2025)</p>	<p>Pharma</p>	<ul style="list-style-type: none"> Characterised through high EBIT margins with avg. 25% Growth driver: Demographic change, technological advances, customization of products and health awareness, (Covid-19) 	<p>5.0%</p> <p>(in €bn)</p> <p>1,068 (2019) 1,364 (2024)</p>
<p>Confectionary & Snacks</p>	<ul style="list-style-type: none"> Characterised by price pressure from raw material suppliers and consumers Growth driver: Out-of-home consumption, healthy living trends and fair trade / organic products 	<p>4.0%</p> <p>(in €bn)</p> <p>1,038.46 (2019) 1,317.09 (2025)</p>	<p>Cosmetics</p>	<ul style="list-style-type: none"> Leading cosmetics companies EBITDA-Margin: 15.6%-23.3% (2021) Growth driver: Rising beauty consciousness, demand for natural ingredients, lifestyle change, innovations in display 	<p>4.8%</p> <p>(in €bn)</p> <p>77 (2019) 102 (2025)</p>
<p>Dairy</p>	<ul style="list-style-type: none"> Fluctuating EBIT margins (due to milk price) with average EBIT margin 2010-2016 being 3.6% Growth driver: Rising consumption in Emerging Markets, products and packaging innovation and infant nutrition 	<p>4.6%</p> <p>(in €bn)</p> <p>635 (2019) 832 (2025)</p>	<p>Pet Food</p>	<ul style="list-style-type: none"> Growth driver: Increased dog adoption as companion for families, lead by humanization of pets and urbanization as well as product innovation and focus on dry pet food 	<p>4.7%</p> <p>(in €bn)</p> <p>78.63 (2019) 103.42 (2025)</p>
<p>Beverages</p>	<ul style="list-style-type: none"> 30.7% of beverages globally packed in PET, 23.4% in glass bottles and 18.4% in cans Growth driver: Rising consumption of alcoholic beverages, increasing wealth and population 	<p>3.1%</p> <p>(in €bn)</p> <p>1,320.51 (2018) 1,585.47 (2024)</p>	<p>Technical Articles</p>	<ul style="list-style-type: none"> Different articles from different industries require a wide range of individualised packaging solutions Growth driver: Product innovation and rising commodity prices 	<p>4.1%</p> <p>(in €bn)</p> <p>71 (2018) 94 (2025)</p>

Source(s): Own Analysis, Annual Reports, Statista, Imaa Institute, MarketsAndMarkets

Schubert Key Industries

Schubert is absolute market leader in its field of application without any significant market risks, as market entry barriers are high, and the power of suppliers and customers is limited

Porter's Five Forces

Competition in the industry

- Highly fragmented industry with **limited competition** as most manufacturers focus on specific applications
- Differentiation to competition mainly based on satisfaction of key purchasing criteria and niche focus

Threat of new entrants

- Especially for the premium segment, there are **high market entry barriers**, which are **specific capabilities and know-how**, customer relationships, track record and customer service (see Appendix)

Power of suppliers

- Limited power of suppliers due to increasing **insourcing activities**, e.g. CNC manufacturing
- Raw material costs linked to commodity prices but can be passed through to customers

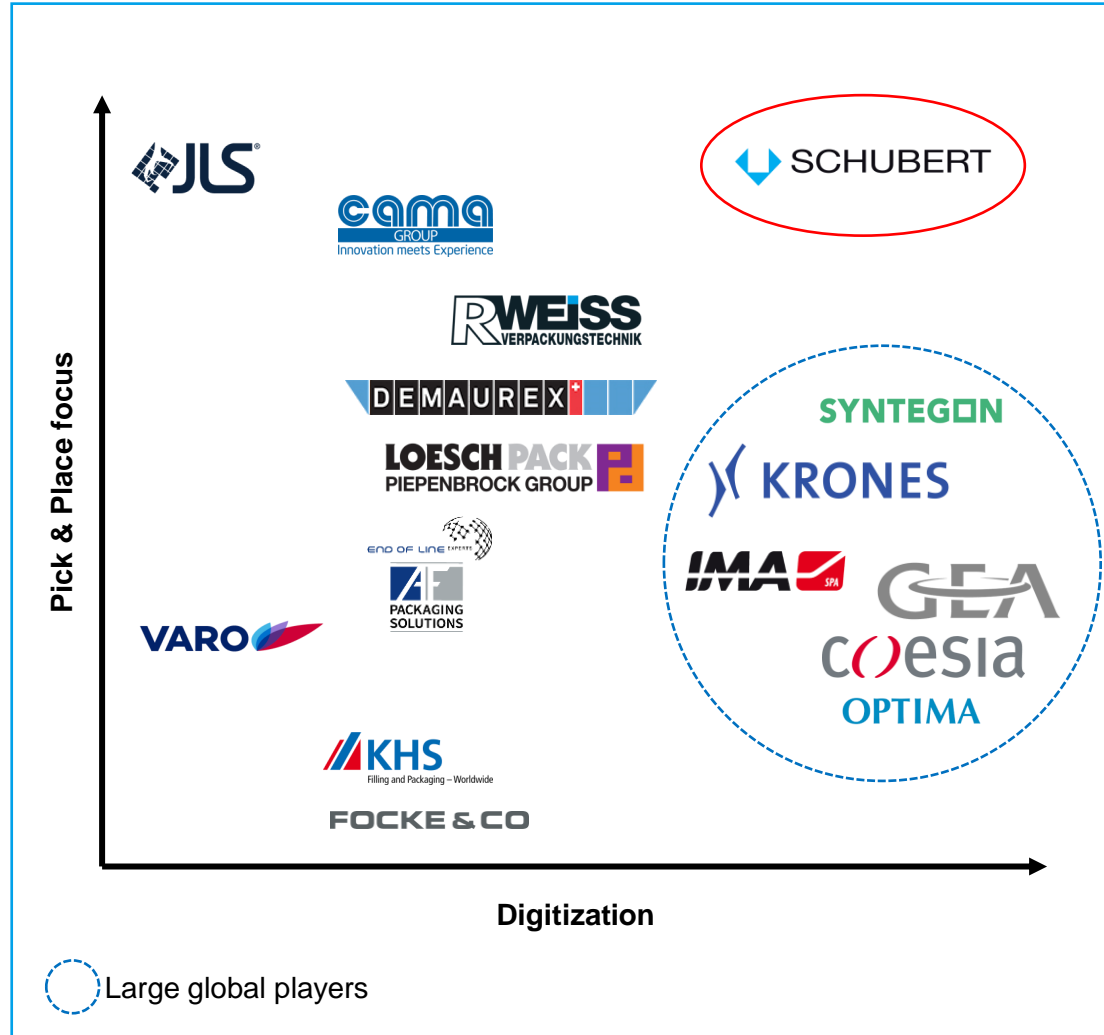
Power of customers

- Medium power** of customers as main switching barriers are relationship with manufacturer, trust into machinery, effort to integrate machinery and established service network

Threat of substitutes

- Low risk of substitution through new technologies
- Limited risk through substituting application technologies like **tray loaders** and **vertical loading machines** as these lack precision and speed

Competitive Positioning



Comments

- According to Schubert's most important differentiation criteria "Pick & Place" and "Digitization", **Schubert clearly emerges as the sole market leader within its niche application focus**
- Larger players showed less focus on Pick & Place** applications in the past and are now seeking to **become more generalist market players**
- Schubert can counter attempts by larger players to enter the Pick & Place market by virtue of its lead in precision technology and robotics, **as well as excellent customer relationships**
- Roll-out of service offering pipeline, as well as superior product offerings enables **Schubert to gain market share**

Schubert as sole, undisputed market leader in its application niche

Source(s): Own Analysis

● High market threat / power

See Appendix Slides 59 and 63-65 for Market Entry Barriers and detailed Competitor Analysis



5. Investment Rationale and Value Creation

The strong past of Schubert represented in the Deal Rationale, combined with strong Value Creation strategies, make Schubert a great target with high expected returns

Deal Rationale

Value Proposition in premium segment with best-in class product portfolio	Highly successful <u>export business</u> “made in Germany” with intl. <u>market share gain</u> potential	Important assets: Experienced <u>management team</u> and precious <u>human capital</u>	Strong and robust <u>financial profile</u>	Megatrend driven (<u>end-</u>) <u>market(s)</u> bearing enormous <u>growth potential</u>
<ul style="list-style-type: none"> Huge potential customer base due to coverage of the whole value-chain for several end markets Superior product portfolio creating defendable competitive advantage through digital innovations, modularity, high quality and great reputation 	<ul style="list-style-type: none"> High export quota of c. 70%, showcasing the perceived German machinery quality Low domestic market reliance Proven track record for successful international expansion (US) Fragmented global markets with no dominant players 	<ul style="list-style-type: none"> Longstanding management team with relevant track record (post acquisition integration, successful intl. expansion (US)) and internal CEO succession option Highly trained engineers & acquisition of young talent through the German dual system 	<ul style="list-style-type: none"> Strong historical CAGR of Sales (7.5%) and of Gross Profit (8.8%) from 2012 to 2019 Cash Conversion at 33% on avg. over the last three years despite high CAPEX (€23m) for new production facilities Leverageable Balance Sheet with strong asset positions 	<ul style="list-style-type: none"> Application leader in the Pick & Place niche: market expected to grow at a CAGR of 4.5% until 2030 Actionable megatrend driven market environment and opportunities in several segments Solutions in place to tackle high demand for sustainability

Value Creation Strategies

💰 Topline Growth / Sales increase		🤝 M&A		🏆 Cost decrease	🌱 ESG
1 International Expansion <ul style="list-style-type: none"> Expand operations into high potential growth market China Further penetrate entered markets US, France and Poland Leverage existing internationally operating customer base 	2 Expansion of Service Offerings <ul style="list-style-type: none"> Strengthen current focus on service through increased Aftersales to raise recurring revenues Enhance digital service offerings including predictive maintenance and “Software as a Service” modules Push long-term service contracts for Cash Flow stability 	3 Structural Realignment through Carve-Out <ul style="list-style-type: none"> Carve-Out low margin and non-core in-house electronic manufacturing¹ business unit Generate Cash and raise long term profitability margin through divestment Release management capacities 	4 Inorganic Growth through Add-On <ul style="list-style-type: none"> Expand vertically with acquisition of packaging material manufacturer ETIMEX to improve competitive position and double-digit growth Exploit synergies through holistic sales offering and R&D overlaps 	5 Reduction of Material Expenses <ul style="list-style-type: none"> Increase profitability margin through systematic cost management Reduce Purchased Services through efficient usage of newly won capacities 	6 Sustainability and Impact <ul style="list-style-type: none"> Set up ESG task force to reach best in class practice Carry out materiality analysis to (over)perform regulations

Strategic Measures within Business Plan Base Case and Holding Period; Additional strategies such as Retrofit and market entries to LATAM and India optional in the case of free management capacity / ready for implementation after Exit for buyer

1 International Expansion: High organic revenue growth potential of €60m through penetration of the Chinese market (€22m) and expansion in existing markets (€49m)

Status Quo

- Schubert's core markets are in **Europe** and the **US**; production is exclusively in **Germany**, exporting all machines from single production location
- Sales in Europe come mainly from Germany, Italy, France, Poland and UK
- **Sales office in Shanghai** (China) since 2018 (started with hiring of business developer in 2014)
- Schubert's **customer base** includes numerous companies that are already active in these markets

Geographic Attractiveness (for details see Appendix)

	US	Eur	China	India	LATAM
Market Size	High	High	High	Low	Low
Market Growth	Medium	Medium	High	Not in focus within Holding Period ¹	
Favorable Competition	Medium	Low	High	Medium	Low
Schubert Presence	Medium	Medium	Low	Low	Low
Target	High	High	High	Medium	Medium

From Q1 2020

● Feasibility
 ● Management resources
 3 years

Source(s): Own Analysis; Note(s): 1) Further Revenue potential from India: +€21m in mid-to long term; 2) Total EMEA Revenue +€29m



China



United States



France & Poland

Megatrends offer significant growth opportunities for Schubert by expanding current operations in relevant markets

Rationale

- China is **the fastest growing** market with 5.3% CAGR until 2024
- **Leasing options** are increasingly popular in China to win cost-averse customers and decrease customer churn through re-selling
- US market was and remains **top** priority due to size (€7.4bn 2018)
- Schubert's **US expansion** largely responsible for past growth
- **Favourable competition**
- **German** positioning and tense relationship with China enable further **market share gains**
- France is **large importer** with a **strong** YoY-growth rate of **6.5%**
- Poland is the **largest market** for F&B in Central-/Eastern Europe
- Polish **Pharma** industry invests heavily in new production facilities with packaging machinery

Objective

- **Gain knowledge market superiority** through innovations in the area of robots, patents, high-quality offerings and superior marketing spending
- Strengthen successful market entry through **leasing partnership**
- Broaden geographic reach to achieve **stronger foothold** in US
- Increase local **brand awareness** and gain **market superiority** through German high-quality reputation
- Gain access to further big US companies (e.g. Pfizer) through **cooperations**
- Increase market share at low level of effort (financially and regarding personnel) to realize **significant Sales increase** in (home-)markets
- **Exploit cross-selling** potential to existing intl. customers
- Expand and change **mindset** of sales team through trainings
- Enhance brand awareness

Investment

- Investment (€4m)**
 - Increased marketing spending
 - Leasing provision fees
 - Globally shared R&D investment
- Investment (€2.5m)**
 - Invest in local Partnerships
 - Expand sales team with 2 FTE for Business Development
- Investment (€3.5m)**
 - Expansion and training of sales teams for France and Poland (+3 FTE)

Outcome

2019A – 2024E: **APAC Revenue: +€22m**

2019A – 2024E: **US Revenue: +€20m**

2019A – 2024E: **FR & PL Revenue: +€18m²**

See Appendix Slides 68-71 for Assessment of Country Choice

● / ● / ● High / Medium / Low Feasibility
 ● High managerial demand
 High
 Medium
 Low

② Expansion of service network: Primarily, digital and thus future-oriented service offerings are to be expanded to strongly increase high margin business of Aftermarket Sales by €50m

Status Quo

Schubert offers the following service packages:

- Up to **24/7 service center** availability via Expert center
- Regular **on-site maintenance, software updates** and replacement robots
- Customer **training** in training centers (GER, US)
- **Digital offerings** such as **warehouse** via streaming platform Partbox enabling 3D printing of spare parts on site and **maintenance dashboards**
- Predictive maintenance, Digital Twin and VR maintenance to ensure low downtime are in the **roll-out phase**

Room for improvement

- **Share of Aftersales Service** revenues at **16% far below** industry average (>20%)
- Currently **low geographical service** subsidiary **coverage**, which could **jeopardize positioning** as a **premium supplier** in the context of international expansion if not fully compensated through digital offerings

Objectives



Increase share of service revenues above 20% of Sales to increase long term recurring revenues



Ensure constant high level of service quality through well trained and highly educated workers



Attract and retain customers through market superiority in digital service offerings



Further leverage 3D printing and Partbox for Aftermarket Sales increase through e.g.: spare parts



Build up on R&D and digital leadership to provide high quality service to ensure customer loyalty

Strategic Measures

- **Define and analyse installed base** to assess current Aftermarket Sales per machine
- Determine current service needs of customers and adapt service offering and sales strategy to address customer needs, providing **tailored service packages**
- **Enhance** digital service offerings including predictive maintenance and “Software as a Service” modules
- **Push long-term service contracts** for Cash Flow stability
- **Increase Software as a Service** (in addition to Updates) **offering** to increase recurring revenues and improve margins
- **Roll-out of predictive maintenance, Digital Twin and VR-maintenance** to increase digital service offering and improve customer loyalty

Projected Costs



- **No major CAPEX spending required**
- **Workforce:** High personnel intensity requires workforce build up -> Personnel Expenses for newly hired white collar worker account for approx. €16m p.a. by 2024E



Feasibility



Management resources

From Q2 2021

4 years

Projected Benefits



Aftermarket Sales: +€50m
Reaching €94m in 2024E

Share of Total Sales 2019A **16%**

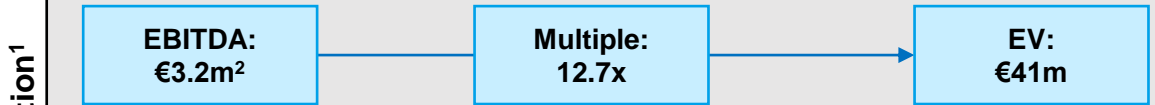
Share of Total Sales 2024E **21%**

③ & ④ M&A Activity: Carve-Out of non-core business unit “Schubert System Elektronik GmbH” and vertical integration of packaging material manufacturer “ETIMEX” aiming to further increase profitability

➔ Carve-Out of Schubert System Elektronik

- Status Quo**
- Schubert System Elektronik imposes **non-core business of Schubert group** while binding management capabilities
 - External **Sales impact** top-line with **c.€22m** and **EBITDA-Margin 2019A of 3.9%**
 - In-house electronic manufacturing is **considered unusual for packaging machinery manufacturers** according to industry experts

- Rationale**
- Win **management capacity**, reduce **Material Expenses**, cut **low-margin business**
 - Keep software lab** and part of the Schubert specific R&D personnel to retain key software development know-how (mainly robotics and software)
 - Maintain supplier relationships** with the carved-out business unit to **ensure smooth supply chain coverage** and **quality standard**



- Impact**
- Complete sale of business structured as share deal with date of economic transition as of 01.01.2020 preferably to a strategic buyer (e.g. ABB, Siemens, Rockwell Automation)

Immediate Multiple Arbitrage: +€3m as Schubert Group is bought at 11.7x and System Elektronik is sold at 12.7x

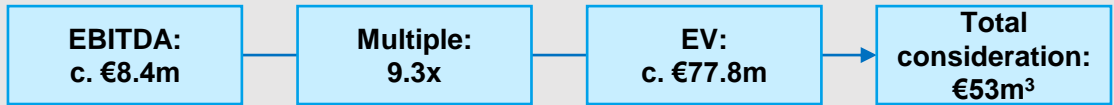
Cash Impact: +€39m post transaction cost of €800k and Net Debt of c. €800k

➔ Acquisition of Add-On ETIMEX



- Schubert offers packaging machinery **without subscription-model** for **packaging material**
- Recurring revenues** currently only come from Aftermarket Sales / Service
- Previous integration of Schubert System Electronics displays **M&A capabilities**

- Financially attractive target **improves profitability** and enables Schubert to extend its product / service portfolio
- Key focus on **sustainability** fits well with Schubert ESG strategy and current megatrends
- Megatrend driven market with **attractive verticals**



- Hold majority of shares and retain extensive minority with management to sustain standalone business and ensure alignment of interest

EBITDA-Margin uplift: +1ppt. (from 9.5% in 2020E to 10.5% in 2020PF)

EBITDA contribution: +€8m (from €21m in 2020E to €29m in 2020PF)

Feasibility (Green circle)

Management resources (Half blue circle)

Implementation time (Start: Q1 2020, 1 year)

Feasibility (Yellow circle)

Management resources (Quarter blue circle)

Implementation time (Start: Q1 2021, 2 years)

Source(s): CapitalIQ, Mergermarket, Own Analysis; Note(s): 1) Valuation based on comparable company and comparable transaction analysis; 2) Adjusted for employee transfer; 3) Includes Net Debt (€25m) mainly comprising Pension Provisions and transaction cost (€1m)

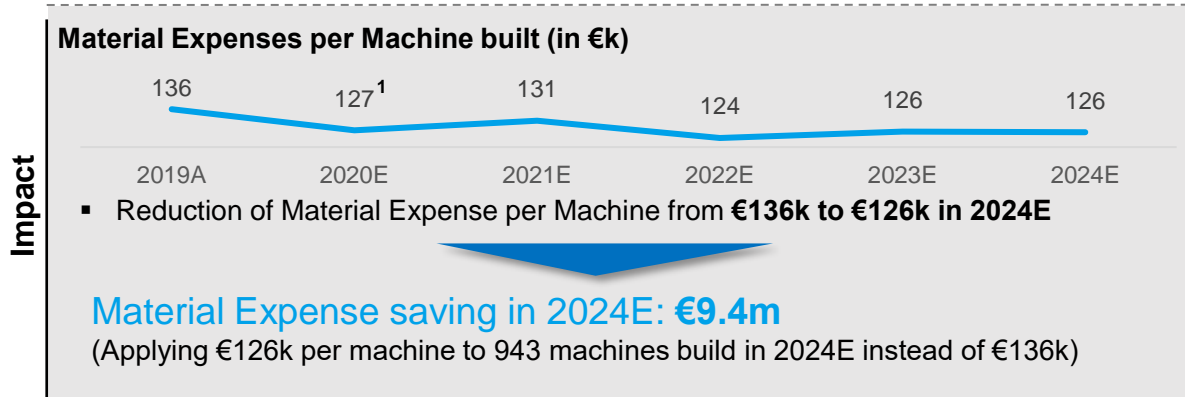
● / ● / ● High / Medium / Low Feasibility ● High managerial demand

See Appendix Slides 72-74 for details on Valuations

5 & 6 Profitability Measures: Exploiting newly created capacities leads to significant reduction of Material Expenses (€12m savings) while extensive ESG measures create a possible Multiple Arbitrage

Cost Reduction in Material Expenses

- Measures**
- Increased focus on inhouse manufacturing leads to significant reduction in Purchased Services which were necessary to bridge capacity constraints
 - Production automation and modularity leverages economies of scale and will lead to efficiency gains and reduce wasted material
 - 3D printing of machine parts reduces material costs and enhances supply chain
 - Ensure management alignment through sweet equity / co-investment
- Execution**
- Significant cost reduction by minimising Purchased Services through:
 - Investments in CAPEX, until completion of production building in 2022E, accumulating to €16m until 2022E
 - Hiring of c. 60 blue collar workers explicitly for insourcing of Purchased Services with an average wage of €65k until 2024E, translates into c. €4m p.a.
 - Purchased Services shift to in-house production upon factory completion in 2022E



Feasibility

Management resources

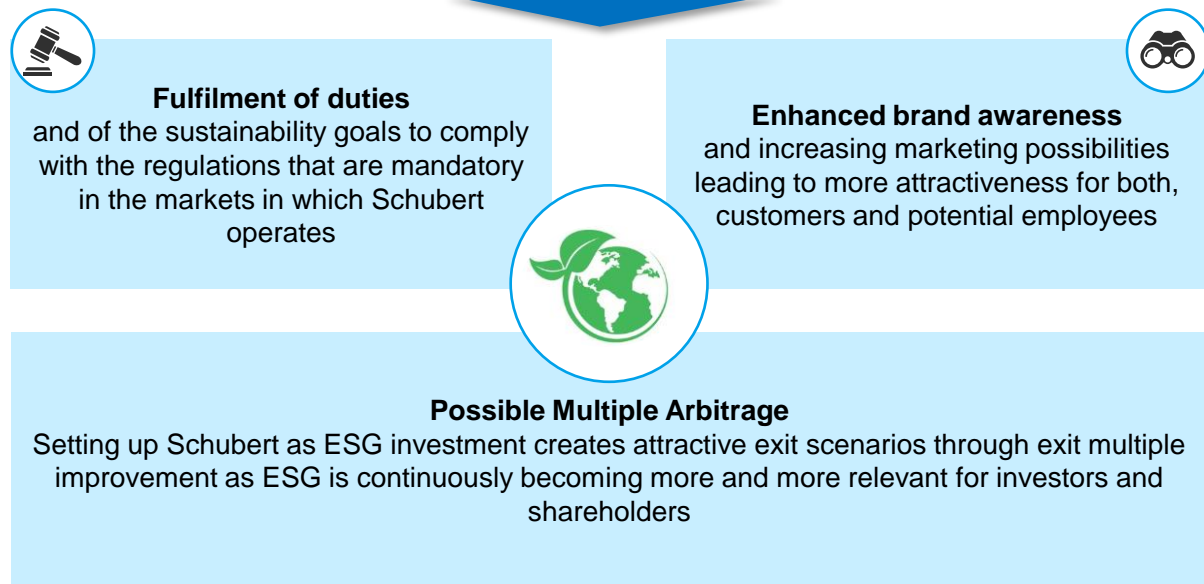
Start: Q1 2020

Ongoing

Implementation time

Enhancement of Sustainability Measures

- Status Quo**
- Schubert successfully works on six of the defined UN SDGs (7, 8, 9, 12, 13 and 17)
 - Promoting sustainability through “5 R’s” (Reduce, Refuse, Reuse, Recycle, Rethink)
 - Already implemented several social responsibility measures such as social support or equal payment of men and women across all levels
 - Untapped potential still exists in terms of sustainability and ESG and needs to be assessed through materiality analysis



Feasibility

Management resources

Start: Q1 2020

Ongoing

Implementation time

Source(s): Own Analysis Note(s): 1) Drop in 2020E because some production expenses were already incurred in 2019A and machines not sold (shift in large orders) ● / ● / ● High / Medium / Low Feasibility ● High managerial demand

Risks from various sources such as Covid-19, strategy and operations and from Private Equity ownership are identifiable and mitigable

Impacts of Covid-19 Pandemic



- Global GDP declined by 6.7% in 2020 as a result of the coronavirus pandemic outbreak
- Many supply chains have been disrupted by lockdowns
- Worldwide, machinery manufactured in 2020: -5% compared to pre-Covid level
 - China was only country to exceed its pre-crisis level
- In the German packaging machinery sector, order intake in 2019 was -5% on the previous year
- Demand is expected to increase rapidly again as there is the increasing global demand for hygienically packaged food and pharmaceutical products
- Schubert established a Covid-taskforce¹ to assess developments and to respond appropriately
- Increased demand for consumer goods in the areas of household cleaning supplies and food & drinks
 - Food, Beverages and Snacks: significant increases in Sales especially in Confectionary
 - Pharma: revenues grew steadily
 - Cosmetics: due to Covid, the new 2020 forecast is 7.2% lower than before

Schubert Operational and Strategic Risks & Mitigants

- | | | | |
|---|---|---|------------------|
| <p>Personnel structure must be adapted to future-needs and growth expansion plans; CEO succession necessary in short-term</p> | ▶ | <p>Put Peter Gabriel as succeeding CEO in place; set up future-proof personnel structure already</p> | <p>Relevance</p> |
| <p>Sales volatility could increase with increasing order size of key customers</p> | ▶ | <p>Increase recurring Sales through long-term Aftersales Service contracts</p> | |
| <p>Risk of over-ambitious plans so that existing structures are not properly set up; risk of culture dilution and process difficulties</p> | ▶ | <p>Introduce necessary structural adjustments right after takeover so that processes and culture do not suffer from the company's growth</p> | |
| <p>Efforts for waste reduction in terms of sustainability could lead to a disruption & overall lower demand for packaging solutions</p> | ▶ | <p>Maintain R&D leadership to capitalize trends and ensure to be an early adopter in sustainable packaging (ETIMEX)</p> | |

Risks of Private Equity Ownership

Since it is a **family business**, there are a lot of **emotions** and financial inefficiencies attached to it, which can initially be obstacles despite type of investor

The "**locust**" reputation of the PE industry, which is still partly anchored in the minds of entrepreneurs, could make takeover negotiations more difficult

The **prejudice** of PE funds collecting high management fees **without any improvement** of the company could make employees destructive

Governance and Organisation

- Competent, professional and friendly entry into the negotiations
- Alignment of incentives with stakeholders through sweet equity and family reinvestment, as well as direct expression of value alignment with family

Value Capture

- Clear investment thesis and strategy with prioritised key activities must be predefined
- Clear implementation plan needed, which executes low-hanging fruits immediately

Business Continuity

- Reassure staff, customers, suppliers and other potential stakeholders
- Create actionable implementation plans and a tool to track reporting, monitor progress and KPIs

Source(s): Statista, VDMA, PE class slides, Own Analysis; Note(s): 1) Consisting of the Schubert Group's management and leadership team

High probability / relevance

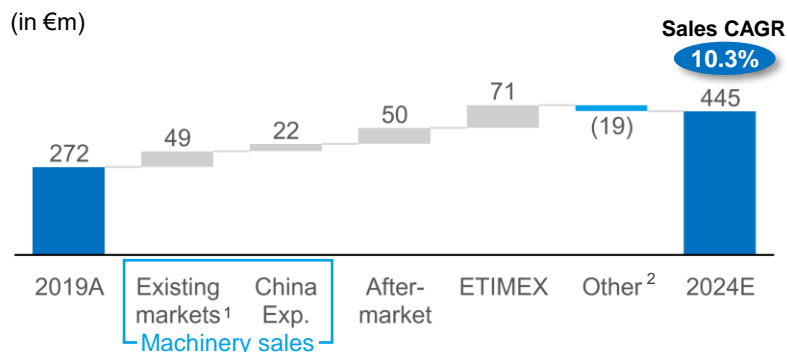
See Appendix Slide 75 for SWOT Analysis

6. Business Plan



Implementation of Value Creation strategies will result in Revenue growth at a CAGR of 10.3% (2019A-2024E) and an EBITDA-Margin improvement to 13.5% in 2024E (+2.4pp vs. 2019A)

Top Line Sales Development



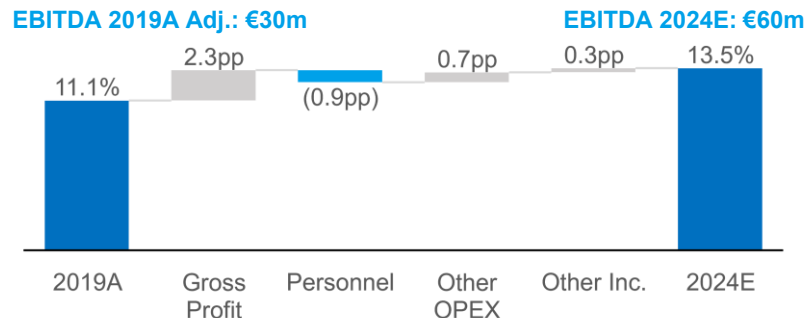
Organic Growth

- Continuous performance in existing markets, North America and Europe, contributes **€49m until 2024E**
- Sales in China rise following the expansion **by €22m to €40m in 2024E**
- Expansion of service network and offerings contribute **€50m**

Inorganic Growth

- ETIMEX acquisition in 2021E contributes **€71m in 2024E**, driven by sales synergies and growth of packaging material market
- €19m loss in Other Sales** mainly result from Carve-Out of Schubert System Elektronik

Bottom Line EBITDA-Margin Development



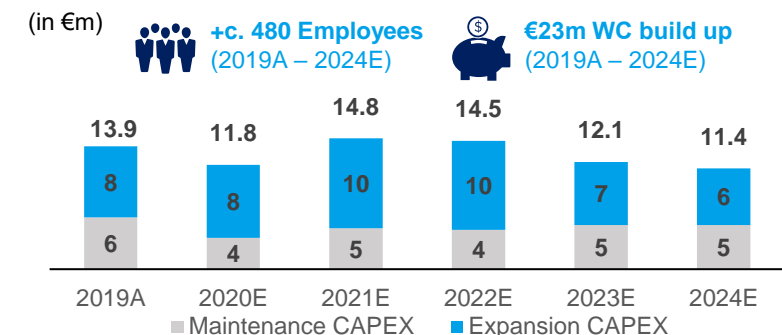
Gross Margin

- Reduction of Purchased Services following **capacity built up in 2022E** and continued increase in workforce
- Further reduction follows **increasing focus on less material heavy aftermarket business** and disposal of material heavy Schubert System Electronic business

OPEX

- Reduction in other **OPEX following increased economies of scale**
- Increased **Personnel Expenses** through built up of sales team for **international expansions**, service and shopfloor personnel to encounter capacity shortage and increase service coverage
- Transfer of R&D personnel of Schubert System Elektronik Carve-Out

Investment Needs



CAPEX

- CAPEX spending 2019A to 2022E driven through the **construction of new production hall**
- Decline of maintenance CAPEX in **2020E results from Carve-Out of Schubert System Elektronik**
- Going forward business **relies more on personnel built up** than on CAPEX spending to fuel growth

Workforce & Working Capital

- Strong personnel built up in blue and white collar departments to **execute strategies**
- Increase to c. 1,860 employees in 2024** (incl. apprentices) split into 218 blue and 237 white collar
- Targeted recruitment of **15 sales people p.a.** to execute market penetration strategies
- Working Capital increases with Sales, while optimizing CCC to **50 days in 2024E** (2019A: 62 days)

Source(s): Own Analysis, Annual Reports; Note(s): 1) Sales driven by continuous US (+€20m) and EMEA expansion accounts for €29m; 2) Comprises Carve-Out, CNC contract manufacturing and other sales

Top-line growth is fuelled by strong increase in Aftermarket Sales (+€50m) and by inorganic growth (ETIMEX, +€71m); Bottom line improvement is mainly caused by a reduction in Material Expenses

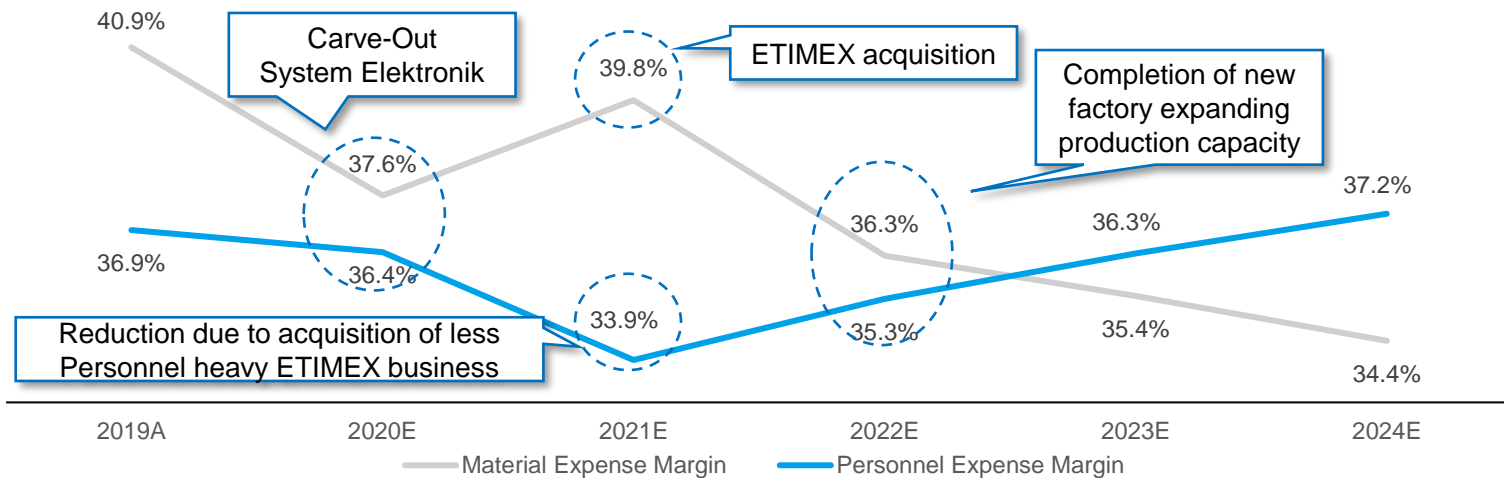
Sales Development

In €k	2019A	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	12-'19	19-'27
Machinery (existing markets)	182,930	181,027	193,305	208,110	219,722	232,148	249,322	262,622	280,951	3.9%	5.5%
Machinery (China)	17,580	17,421	21,066	27,089	33,327	39,676	46,432	50,747	56,291	n.a.	15.7%
Aftermarket Sales	43,933	45,445	52,287	68,017	82,950	93,579	101,157	108,160	115,420	12.7%	12.8%
ETIMEX	0	0	60,258	63,572	67,069	71,428	76,428	81,396	86,279	n.a.	n.a.
Other	27,872	8,136	8,245	8,359	8,479	8,604	8,736	8,875	9,020	n.a.	n.a.
Total	272,315	252,029	335,160	375,147	411,546	445,436	482,074	511,800	547,960	7.5%	9.1%
YoY Growth	-3.8%	-7.4%	33.0%	11.9%	9.7%	8.2%	8.2%	6.2%	7.1%		

Key Sales Driver

- International Expansion:** Continued strong NA¹ performance and significant Sales increase in China enhanced increased market penetration focus
- Aftermarket Sales:** Increase in industry leading digital service offerings and increasing local service presence drives Sales
- ETIMEX:** Acquisition fuels growth and above market growth level through sales synergies with Schubert

Cost Margin Development



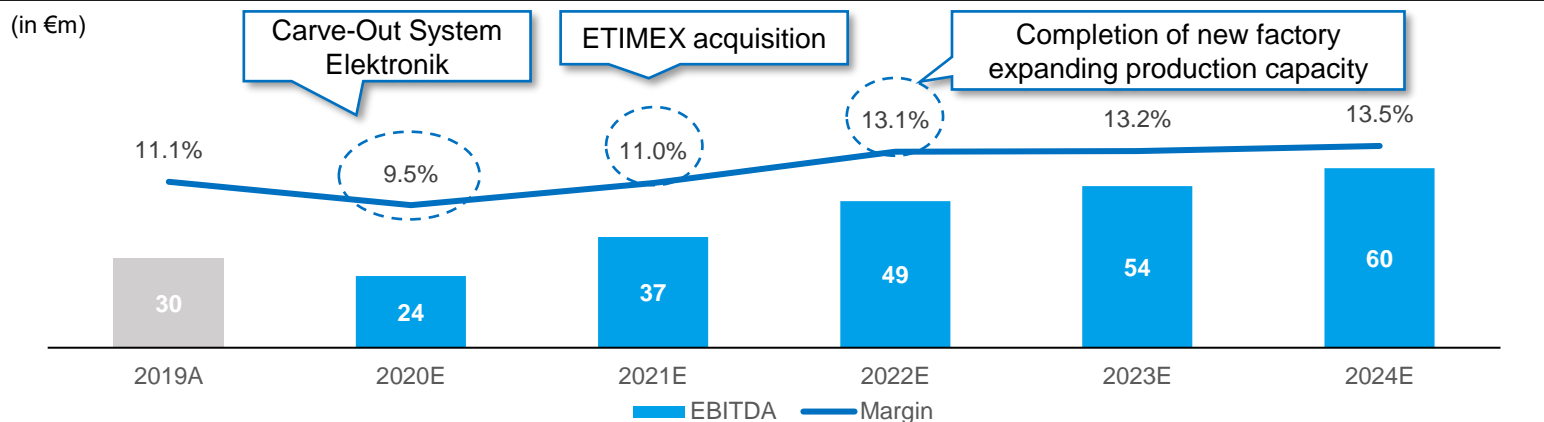
Key Cost Driver

- Inhouse manufacturing:** Purchased Services decrease and Raw Material Expenses reduction through increased focus on 3D manufacturing
- Efficiency:** Process optimization measures & increase CAPEX in production facilities to expand capacity and subsequent reduce Purchased Services
- High Wage & High Education:** Personnel built up of white collar and blue collar workers in high wage country leads to increasing Personnel Expenses

Source(s): Own Analysis, Annual Reports; Note(s): Shaded area of business plan denotes business plan beyond assumed investment horizon; 1) North America

Schubert's strong Material Expense margin decrease translates to an EBITDA-Margin uplift, resulting in an EBITDA of €60m in 2024E, constituting a 2.4pp margin increase up to 13.5%

EBITDA Development

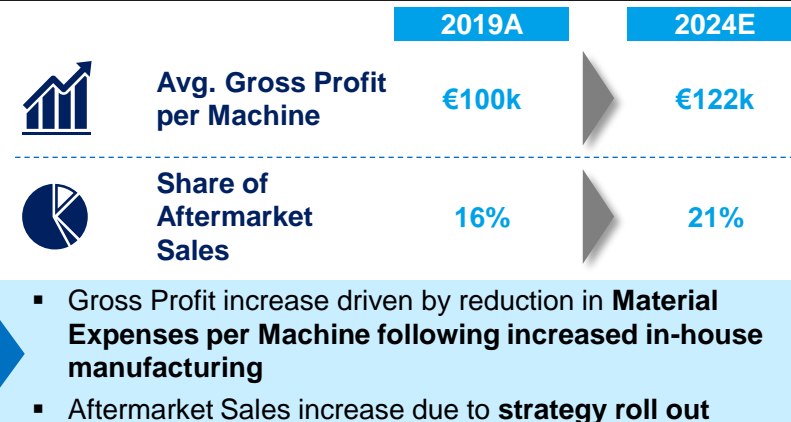


Income Statement

in €k	2019A	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	12-'19	19-'27
Sales	272,319	252,029	335,160	375,147	411,546	445,436	482,074	511,800	547,960	7.5%	9.1%
YoY Growth	(3.8%)	① (7.5%)	33.0%	11.9%	9.7%	8.2%	8.2%	6.2%	7.1%		
Turnover	284,055	250,574	333,096	375,056	411,310	445,494	480,973	510,746	546,460	7.9%	8.5%
Material Expenses	② (111,447)	(94,814)	(133,228)	(136,099)	(145,590)	(153,115)	(163,460)	(170,846)	(180,572)	6.7%	6.2%
% Sales	(40.9%)	(37.6%)	③ (39.8%)	(36.3%)	(35.4%)	(34.4%)	(33.9%)	(33.4%)	(33.0%)		
Gross Profit	172,608	155,760	199,868	238,957	265,721	292,380	317,512	339,900	365,889	8.8%	9.8%
% Margin	63.4%	61.8%	59.6%	63.7%	64.6%	65.6%	65.9%	66.4%	66.8%		
Personnel Expenses	(100,354)	(91,632)	(113,787)	(132,460)	(149,509)	(165,745)	(181,419)	(196,399)	(210,348)	8.5%	9.7%
% Sales	(36.9%)	(36.4%)	(33.9%)	(35.3%)	(36.3%)	(37.2%)	(37.6%)	(38.4%)	(38.4%)		
Other OPEX	(45,588)	(42,025)	(53,115)	(61,555)	(66,557)	(71,266)	(74,645)	(77,428)	(83,306)	8.4%	7.8%
% Sales	(16.7%)	(16.7%)	(15.8%)	④ (16.4%)	(16.2%)	(16.0%)	(15.5%)	(15.1%)	(15.2%)		
OPEX	(145,942)	(133,657)	(166,901)	(194,015)	(216,065)	(237,011)	(256,065)	(273,826)	(293,654)	8.5%	9.1%
% Sales	(53.6%)	(53.0%)	(49.8%)	(51.7%)	(52.5%)	(53.2%)	(53.1%)	(53.5%)	(53.6%)		
Other Income	2,059	⑤ 1,906	3,960	4,237	4,483	4,724	4,987	5,195	5,429	5.2%	12.9%
EBITDA Adjusted	30,227	24,009	36,927	49,179	54,138	60,092	66,435	71,269	77,664	9.9%	12.5%
% Margin	11.1%	⑥ 9.5%	11.0%	13.1%	13.2%	⑦ 13.5%	13.8%	13.9%	14.2%		

Source(s): Own Analysis, Annual Reports; Note(s): Shaded area of business plan denotes business plan beyond assumed investment horizon

Key Results



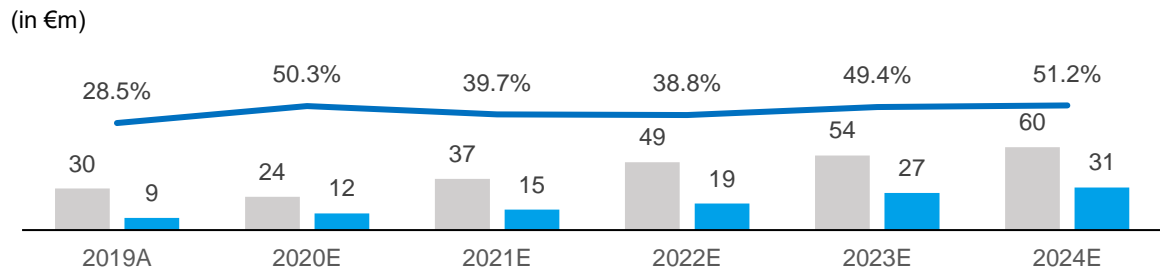
Comment

- Decline in 2020E due to **Carve-Out**, followed by a strong increase in 2021E **largely attributable to ETIMEX acquisition**
- Reduction is mainly driven by **Carve-Out of business unit with significant Material Expenses**
- ETIMEX acquisition **increases margin**; decrease in 2022E due to **factory ramp-up causing a decrease of Purchased Services**, starting a continuous downward trend
- Decrease follows omission of **international expansion related costs** upon finalization and beginning **economies of scale**
- Increase of c. €2m in 2021E due to the ETIMEX acquisition
- Margin decline in 2020E due to **one-off Covid-19 effects** and **Carve-Out dilution**; Uplift in 2021E following favorable ETIMEX acquisition
- Value creation strategies for cost reduction measures increase **EBITDA-Margin to 13.5% in 2024E**

See Appendix Slides 76-77 for further details on Income Statement

Schubert shows significant Cash generation, especially after completion of the new assembly hall in 2022E, resulting in a Free Cash Flow of €41m in 2024E

Cash Flow Analysis

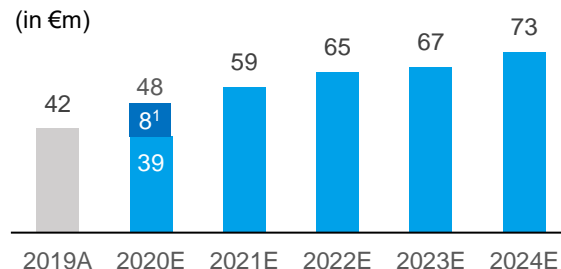


Adj. EBITDA Free Cash Flow Cash Conversion

in €k	2019A	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E
Adj. EBITDA	30,227	24,009	36,927	49,179	54,138	60,092	66,435	71,269	77,664
(-) Changes in NWC	913	(2,202)	(1,426)	(5,582)	(4,105)	(4,977)	(6,348)	(5,401)	(6,721)
(-) Changes other WC	(2,260)	5,822	1,367	855	1,266	1,201	514	295	1,523
(-) CAPEX	(13,903)	(11,823)	(14,813)	(14,542)	(12,137)	(11,429)	(11,492)	(10,910)	(10,801)
(-) Taxes	(6,366)	(3,731)	(7,390)	(10,841)	(12,422)	(14,125)	(15,740)	(16,916)	(19,788)
Free Cash Flow	8,611	12,075	14,666	19,069	26,740	30,763	33,369	38,336	41,877
Cash Conversion	28.5%	50.3%	39.7%	38.8%	49.4%	51.2%	50.2%	53.8%	53.9%

- High **CAPEX** reduces **Cash Conversion** until completion of **production facility in 2022E**
- Significant reduction in 2021E based on **first year post ETIMEX acquisition** and significant built up of Trade Receivables due to first time realization of sales synergies
- Significant improve of Cash Conversion from 2023E onwards as capacity constraints are lifted and ETIMEX is fully integrated into Schubert Group

Net Working Capital



- Net Working Capital build up is in line with Sales growth, **staying constant at 17% of Sales p.a.**
- Swings in Working Capital will be reduced** through increased **management attention** going forward

Cash Conversion Cycle

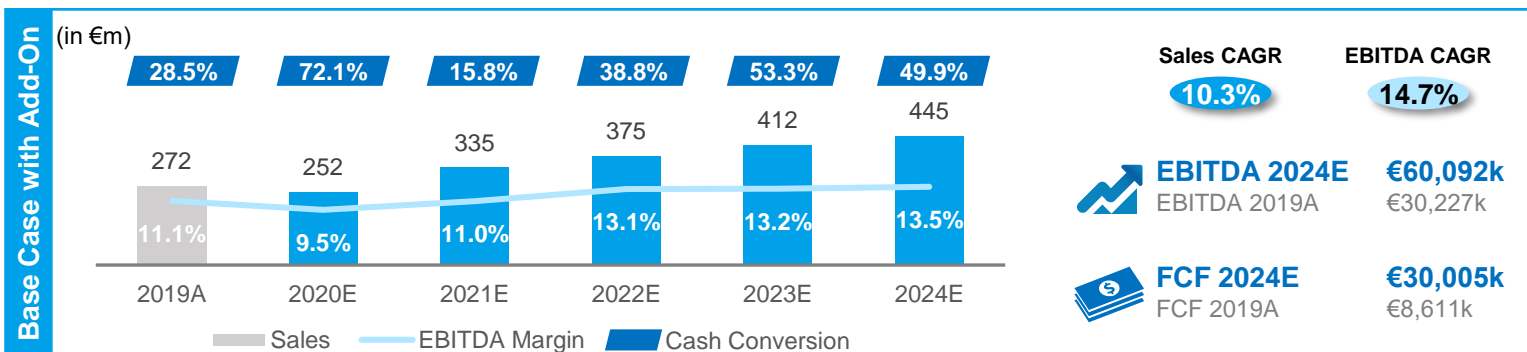


- 12 day reduction in the Cash Conversion Cycle** is reached through increased management attention to optimize DIO and DSO
- Biggest reduction is expected in DSO**, decreasing from 71 days in 2019A to 65 days in 2024E

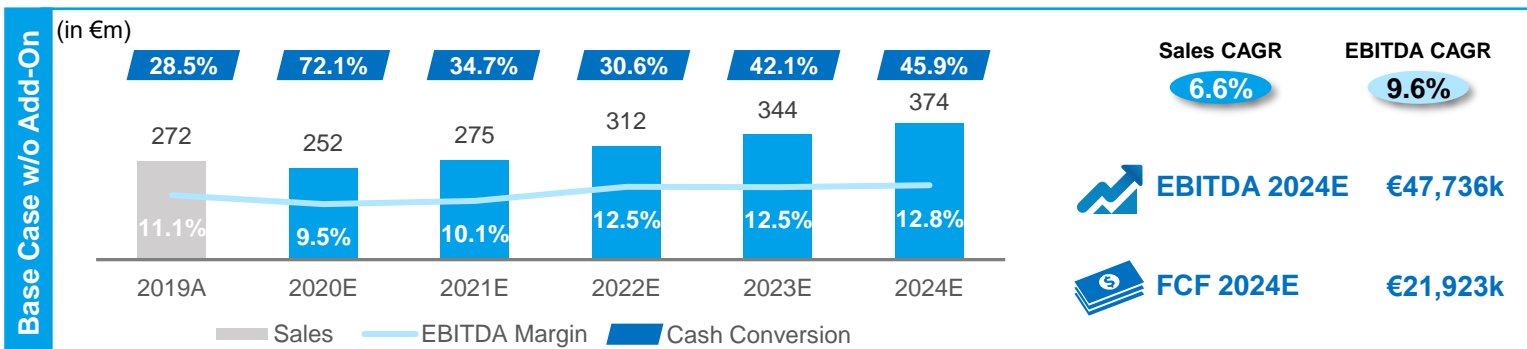
Covid Impact on Business Plan

- Business plan accounts for a **conservative assessment of the pandemic** even though research indicates limited effects on the packaging machinery industry
- No Sales growth expected for 2020E**, while existing business can be sustained
- Little hires are planned for 2020E
- One-off cost effects driving up other OPEX in 2020E (e.g.: safety measures)

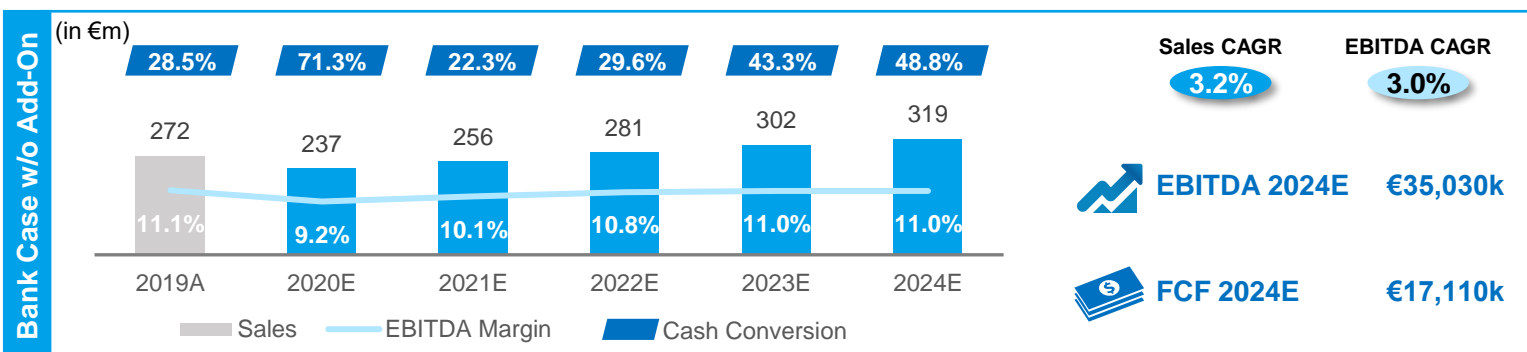
Also, without realizing the ETIMEX Add-On initiative, Schubert remains an attractive target with appealing financial metrics; A downside case shows flat Sales and EBITDA development



- Investment case shows **strong Sales and EBITDA growth** well above market growth of 4.5% within the same timeframe, driven by ETIMEX acquisition, contributing Sales of €60m in 2021E
- Implementation of Value Creation measures leads to an **EBITDA of €60,092k** in 2024E
- Schubert shows attractive Cash Conversion measures leading to a Free Cash Flow of **€30,005k in 2024E**, driven by **decreasing CAPEX needs** after finalization of production hall in 2022E



- Sales growth with a **CAGR of 6.6% without ETIMEX** acquisition is still above market level, driven by strategic **measures** such as service roll-out, international expansion etc.
- Despite lacking acquisition of ETIMEX business with high EBITDA-Margin, a significant **margin uplift can be realized leading to an EBITDA-Margin of 12.8% in 2024E**
- Case shows attractive Cash generation metrics, **lacking built up of Trade Receivables** due to synergy realization after vertical integration



- Bank Case depicts a **strongly conservative** view on the future development without the acquisition of ETIMEX
- Sales growth is **below market expectations** of 4.5% growth p.a., indicating **failure of Value Creation strategies**
- EBITDA growth is lower than Sales growth as **cost reduction measures fail**; Instead, costs continuously increase as a result of previous investments in workforce
- Cash Conversion is higher as **CAPEX will be lowered to react to lack of Value Creation strategies success**

Source(s): Own Analysis, Annual Reports

See Appendix Slides 78-79 for details on Income Statement in Base Case w/o Add-On and Bank Case

7. Valuation, Capital Structure and Returns



Schubert is valued based on a multiple analysis at 11.7x EV/EBITDA 2019A, corresponding to an entry Enterprise Value of €355m

Valuation Summary (EV/EBITDA)

Comparable Company ¹	9.3x	11.0x	13.9x
Transaction Comparables	11.3x	12.5x	13.7x
Through the Cycle Multiples	8.3x	9.5x	12.9x
DCF (Exit Multiple)	10.2x	11.9x	13.7x
DCF (Gordon Growth)	10.2x	11.8x	14.0x
Entry Valuation	11.7x EBITDA (€30.2m) yields an EV of €355m		

- **Comparable Company Analysis** and **Comparable Transaction Analysis** were assessed to reflect the most accurate result for valuing Schubert
- **Comparable companies** are based on listed peers within the **packaging machinery market** with **significant industry and geographic overlap**
- **Precedent transactions** were selected from **packaging machinery sector** with announcement date **within the last 5 years**
- Averaging both multiple analyses results in an Entry **EV/EBITDA multiple of 11.7x**, yielding an **EV of €355m** with a **sensitivity bandwidth of €281m - €420m**
- Through the cycle multiples **depict a lower multiple** because of an upswing in comparable company valuations **in recent history** which is expected to be **persistent throughout the future**
- To **sense check** the valuation, **two DCF analyses (Exit Multiple and Gordon Growth)** were conducted; With an average **EV/EBITDA of 11.9x (Exit Multiple)** and **11.8x (Gordon Growth)** the valuation level of the **relative valuation was confirmed**

Factors Influencing Cost of Acquisition Debt

Factor	Description	Impact
Firm Size	Mid-sized company upon entry with EV of €355m and EBITDA of €30m 2019A	↓
Leverage Level	Low current level of leverage changes post acquisition and increases default risk	↑
Governance	Proven track record and interest alignment with all parties due to equity participation	↓
Diversification	Geographical and end market diversification lowers risk of default	↓
Cash Flow Conversion/ Volatility	Volatile FCF in the past, as well as volatile Sales due to project business increases risk	↑

Source(s): Own Analysis; Expert interview; Note(s): 1) Incorporates illiquidity discount; 2) Interest assumed to be paid annually not semi-annually; 3) Revolving Credit Facility

27/01/2022

Types of Acquisition Debt

Debt Instrument	Interest p.a. ²	Repayment	Debt Provider
Senior Term "A"	4.0%	8 years Amortising	Bank
Senior Term "B"	4.5%	8 years Bullet	Bank (Club Deal)
Senior Term "C"	6.0%	8 years Bullet	Bank / Debt Fund (Club Deal)
Subordinated Debt	10.0%	10 years Bullet	Debt Fund
Vendor Loan	12.0%	10 years Bullet	Vendor

RCF³ to bridge liquidity gaps with interest of 7.0% p.a.



Increasing cost of acquisition debt



Chosen valuation method to value Schubert

See Appendix Slides 80-82 for details on Valuation Metrics

Total Sources and Uses add up to 13.8x 2019E EBITDA, financed with a mixture of Senior Debt, Equity Like Instruments, Ordinary Equity and Existing Cash On Balance Sheet, granting the fund 58% ownership

Sources	in €k	% of total	EBITDAx	Uses	in €k	% of total
Senior Bank Term "A"	60,000	14.4%	2.0x	Enterprise Value	354,585	87.8%
Senior Bank Term "B"	90,000	21.6%	3.0x	Financial Debt	(12,616)	(3.1%)
Total Debt	150,000	36.1%	5.0x	Cash & Cash Equivalents	36,500	9.0%
				Other Net Debt	(25,317)	(6.3%)
				Net Debt	(1,434)	(0.4%)
				Equity Purchase Price	353,151	87.5%
Shareholder Loan (Family)	46,813	11.3%	1.5x			
Shareholder Loan (Fund)	85,874	20.7%	2.8x	Repayment of Existing Debt	12,616	3.0%
Equity Like Instruments	132,687	31.9%	4.4x	Total consideration	365,768	88.0%
Equity Fund	56,000	13.5%	1.9x	Due Diligence Cost	5,319	1.3%
Equity Family	30,527	7.3%	1.0x	Bank Fees	1,500	0.4%
Sweet Equity	10,000	2.4%	0.3x	M&A Buyside Advisory	886	0.2%
Total Equity	96,527	23.2%	3.2x	Total Transaction Costs	7,705	1.9%
				Overfunding	1,500	0.4%
Cash On Balance Sheet	36,500	8.8%	1.2x	Future M&A Budget	35,000	8.4%
Total Sources	415,714	100.0%	13.8x	Locked Box Interest	5,742	1.4%
				Total Uses	415,714	100.0%

Analysed financing options (€k)	Base Case	Bear Case	All Equity
Total Debt	150,000	130,000	0
Total Equity Like Instruments	132,687	152,487	281,187
Total Equity	96,527	96,527	96,527
Cash On Balance Sheet	36,500	36,500	36,500
Total sources	415,714	415,514	414,214
Leverage	5.0x	4.3x	0.0x
IRR	24%	22%	20%
Money Multiple	2.9x	2.7x	2.4x

Uses

- Total Sources of c. €416m are to be paid for an Equity Purchase Price of c. €353m, Repayment of Existing Debt of c. €13m, Transaction Costs of c. €8m, c. €35m Future M&A Budget to finance the ETIMEX acquisition, c. €2m Overfunding and Locked Box Interest¹ to bridge the gap of date of economic transition (01.01.2020) and closing (31.03.2020)
- Prior to the transaction the family will receive an extraordinary cash dividend of c. €30m to reduce outstanding Cash on Balance Sheet

Sources

- Debt funding with **Senior Loan A tranche of €60m from a singular lender** and one Senior Loan Tranche B of **€90m structured as club deal** brings leverage to 5.0x 2019A EBITDA
- To enable a succession opportunity for the founding family, retain key knowledge, as well as cultural fit, they are expected to **reinvest 30% after-tax returns²** in ratios into a Shareholder Loan and Equity as the fund. thus participating as co-investors alongside the fund, **with 32% ownership of the firm's equity vs. 58% fund ownership**
- A Shareholder Loan, paying 12% PIK interest p.a., is used to enhance the equity contribution of the family and fund and to enable sweet equity
- To incentivize top-level management and second level management a Sweet Equity pool of €10m³, will be established to ensure all participants have "skin in the game"⁴
- Remaining Cash on Balance Sheet will fund future M&A (ETIMEX acquisition) and an Overfunding to ensure liquidity
- Sweet equity will have an Envy Ratio of **2.5**; the family's investment **1.0⁵**
- Acquisition will be structured with **structural subordination** measures

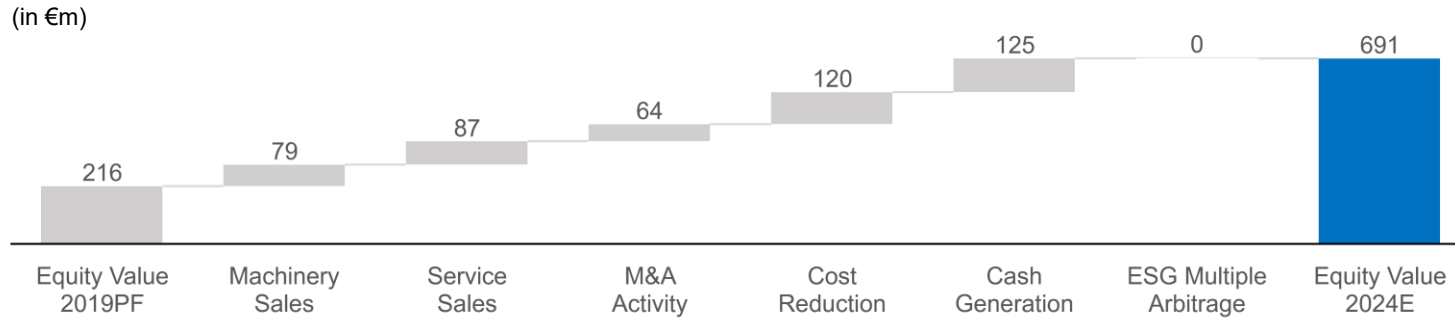
Other

- Bear Case** with 100% Subordinated debt funding (€130m) assumes sole debt fund financing as the only possibility
- All equity financing option shows downside protection with an equal sweet equity contribution as base case and same total family contribution
- No dividends will be paid out in course of the holding period⁶

Source(s): Own Analysis; Note(s): 1) 5% interest p.a.; 2) Tax structuring subject to Due Diligence; 3) 3 top level mgmt. with 4x ann. salary of c. €400k each (€4.8m) and €5.2m employee & second level mgmt. investment pool & interested family parties in mgmt. positions; 4) Drag-Along and Tag-Along clauses will be introduced in SPA; 5) Family invests with same conditions as fund; 6) Assumed to condition in acquisition finance doc.

Value Creation measures and deleveraging increase the Equity Value from acquisition in 2019A (€216m) to €691m in 2024E, yielding a 2.9x overall MoM Multiple for the fund

Return Analysis



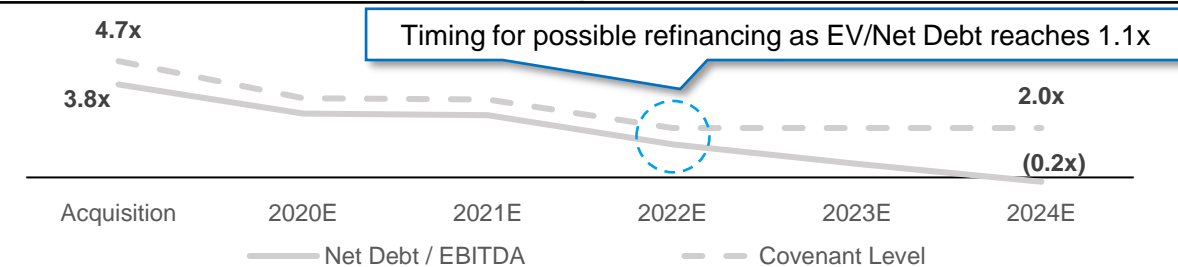
- Machinery Sales and Service Sales are the biggest EBITDA Value Creation levers aggregating to **€171m until 2024E**
- M&A Activity accounts for Add-On acquisition of ETIMEX amounting to **€102m EBITDA contribution** and Schubert System Elektronik **Carve-Out resulting in a negative EBITDA contribution of €38m; €41m upside of Carve-Out contribution is** accounted for in Cash generation (**Multiple Arbitrage**)
- Cost reduction measures mainly driven by Material Expense reduction contribute **€120m** to returns
- A **debt recapitalization and subsequent dividend payments are not taken into account**
- Even though a **Multiple Arbitrage on group level** could be argued through ESG measure implementation it is **neglected** to ensure conservative planning

Anticipated Exit Returns

	2024E
Sweet Equity Money Multiple	5.0x
Sweet Equity IRR	37.8%
Sweet Equity Total Proceeds	€49,643k
Fund / Family Money Multiple	2.9x
Fund / Family IRR	24.0%
Family Total Proceeds	€226,446k
Fund Total Proceeds	€425,399k

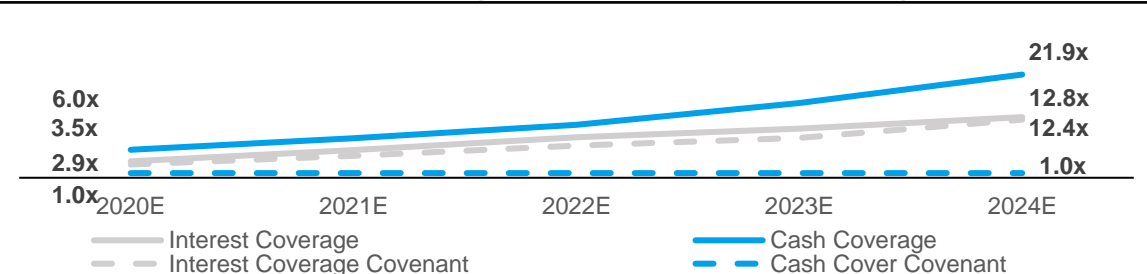
- The family and fund realise the same returns, a MoM Multiple of 2.9x and IRR of 24.0%, as they invest with the same conditions
- Sweet equity shows superior returns to other parties with MoM of 5.0x and IRR of 37.8%
- Although a later exit year would realize a **larger MoM return for all parties** an earlier exit is **desirable due to subsequent decline in IRR** with longer holding period
- Covenants are assumed to have **healthy headroom throughout the holding period**

Leverage Ratio



Source(s): Own Analysis

Interest Coverage Ratio & Cash Coverage



An investment in Gerhard Schubert will show attractive returns even without executing several Value Creation measures (Money Multiple of 2.0x without Add-On and weak cost reduction measures)



Fund Return Scenario Analysis

Base Case	
MoM: 2.9x	IRR: 24%
<ul style="list-style-type: none"> Returns based on planned base case and business plan which depicts current investment case presented All strategies are executed properly 	
Sales 9.1%	
EBITDA 14.7%	

Base Case w/o ETIMEX	
MoM: 2.5x	IRR: 20%
<ul style="list-style-type: none"> Omission of ETIMEX acquisition as a key driver Transaction uncertainty as the acquisition is dependent on other stakeholders and not only a company inherent decision 	
Sales 6.6%	
EBITDA 9.6%	

Base Case w/o ETIMEX & w/o cost reduction	
MoM: 2.0x	IRR: 15%
<ul style="list-style-type: none"> Additional omission of cost reduction measures are main EBITDA-Margin development driver Case includes omission of ETIMEX acquisition 	
Sales 6.6%	
EBITDA 2.8%	

Bank Case	
MoM: 1.8x	IRR: 13%
<ul style="list-style-type: none"> Case depicts a strong conservative company development Growth metrics far below historical rates 	
Sales 3.2%	
EBITDA 2.5%	

Exit Year Sensitivity Analysis (MoM Multiple / IRR)

		Exit Year				
		2022E	2023E	2024E	2025E	2026E
Exit Multiple	10.2x	1.8x / 21%	2.1x / 21%	2.6x / 21%	3.0x / 20%	3.4x / 19%
	11.0x	1.9x / 24%	2.3x / 23%	2.7x / 22%	3.2x / 22%	3.6x / 20%
	11.7x	2.1x / 27%	2.5x / 25%	2.9x / 24%	3.4x / 23%	3.9x / 21%
	12.5x	2.2x / 30%	2.6x / 27%	3.1x / 25%	3.6x / 24%	4.1x / 22%
	13.2x	2.4x / 33%	2.8x / 29%	3.3x / 27%	3.8x / 25%	4.3x / 23%

Exit/ Entry Multiple Sensitivity Analysis (MoM Multiple / IRR)

		Entry Multiple				
		10.2x	11.0x	11.7x	12.5x	13.2x
Exit Multiple	10.2x	2.7x / 22%	2.6x / 21%	2.6x / 21%	2.5x / 20%	2.5x / 20%
	11.0x	2.8x / 23%	2.8x / 23%	2.7x / 22%	2.7x / 22%	2.7x / 22%
	11.7x	3.0x / 25%	3.0x / 24%	2.9x / 24%	2.9x / 24%	2.8x / 23%
	12.5x	3.2x / 26%	3.2x / 26%	3.1x / 25%	3.1x / 25%	3.0x / 25%
	13.2x	3.4x / 28%	3.4x / 27%	3.3x / 27%	3.2x / 26%	3.2x / 26%

Source(s): Own Analysis; Note(s): 1) Shareholder Loan

Presented IC case
CAGR
See Appendix Slide 84 for detailed Sensitivity Analysis in selected cases



8. Due Diligence and Exit

Due Diligence: Validation of assumptions about market development, competitive positioning and Schubert's financial situation are crucial for a successful transaction

	Area	Description	Potential Red Flag	Strategic Impact
Commercial	Market	<ul style="list-style-type: none"> Analysis of key regional markets, especially China, to validate growth projections and expansion strategy Verification of future market trends for packaging machinery and for Schubert's end markets 	<ul style="list-style-type: none"> Top loading machinery substitutes like vertical loaders might become more important Rising competition in China and high entry barriers Rising political instability in important markets 	●●●●●
	Competitors	<ul style="list-style-type: none"> Competitor analysis per product line and region to verify competitive positioning and stability of competitive advantage 	<ul style="list-style-type: none"> Close competitors have better pricing strategy and service offering or introduce advanced machinery products 	●●●●●
	Customers	<ul style="list-style-type: none"> Analysis of top customers by Sales (ABC analysis) Deep dive in possible changes of purchasing criteria 	<ul style="list-style-type: none"> Dependency of expansion success might lie on few customers Price might become a more important purchasing criteria 	●●●●●
	M&A Target	<ul style="list-style-type: none"> In-depth analysis of M&A target ETIMEX 	<ul style="list-style-type: none"> ETIMEX is under price pressure or has poor growth prospects 	●●●●●
Financial	Historic Financials	<ul style="list-style-type: none"> Analysis of financial statements, focussing on Working Capital, CAPEX, Current Trading and Cash Conversion Cycle 	<ul style="list-style-type: none"> Verification of Working Capital needs, CAPEX assumptions and Current Trading, which are basis for future planning 	●●●●●
	Business Plan ¹	<ul style="list-style-type: none"> Validation of business plan with focus on top-line Sales growth, CAPEX and cost reduction assumptions including stress tests 	<ul style="list-style-type: none"> Overestimation of Aftermarket Sales growth or attainable prices Overestimation of reduction in Material Expenses 	●●●●●
Legal	Contracts	<ul style="list-style-type: none"> Analyse existing contracts with suppliers, customers and employees 	<ul style="list-style-type: none"> Short notice periods for employment contracts of key personnel Contracts with major suppliers or customers expire 	●●●●●
	IP	<ul style="list-style-type: none"> Review of patent durations and enforceability of IP protection 	<ul style="list-style-type: none"> Important patents expire or are not enforceable in some markets 	●●●●●
	Insurance	<ul style="list-style-type: none"> Review of insurance policy coverage 	<ul style="list-style-type: none"> High risks due to insufficient insurance policy coverage 	●●●●●
ESG	ESG	<ul style="list-style-type: none"> Carry out detailed materiality analysis to estimate carbon footprint and define optimization potential 	<ul style="list-style-type: none"> High emissions and rising carbon prices lead to excessive costs Large investments needed to achieve desired multiple arbitrage 	●●●●●
HR	Management	<ul style="list-style-type: none"> Examination of the succession options, especially Peter Gabriel 	<ul style="list-style-type: none"> No suitable successor candidate at Schubert 	●●●●●
	Personnel	<ul style="list-style-type: none"> Analysis of existing headcount, especially blue collar workers, examine engineering expertise and identify key personnel 	<ul style="list-style-type: none"> Key personnel about to leave the firm & key man risk (e.g. owners) Concentration of technical expertise among a few people 	●●●●●
Tax	Tax statements	<ul style="list-style-type: none"> Review of tax statements to identify tax risks and ensure tax-optimized structuring of transaction 	<ul style="list-style-type: none"> Non-compliance with tax law and resulting penalties High future tax obligations 	●●●●●

Source(s): Own Analysis; Note(s): 1) In close connection with Commercial Due Diligence stream

Exit options: Due to the strong M&A activity of peers and PE firms in the packaging machinery market, Schubert is well suited for a Sale to a Strategic Buyer as well as a Secondary Sale

Rationale for Buyer

Pros



Cons













Potential Buyers

	Sale to Strategic Buyer	Secondary Sale	Sale in Parts	Initial Public Offering
	<ul style="list-style-type: none"> Potential strategic investors are larger competitors in the packaging machinery sector Attractive opportunity from competitor perspective due to exploitations of synergies 	<ul style="list-style-type: none"> Further upside potential through market growth / expansion and additional Value Creation strategies such as Retrofit (de-prioritized in current investment period) High leveraging or Buy- and-Build potential 	<ul style="list-style-type: none"> Sale of company parts (Packaging machinery and ETIMEX) to strategic buyers or PE Fund Carve-Out of ETIMEX would be part of the sale process 	<ul style="list-style-type: none"> Possible listing on German stock exchange (SDAX)¹ Often preferred by management
	<ul style="list-style-type: none"> Large players in the industry with high financial resources and M&A activity Synergies might lead buyer to pay premium on price Complete exit possible 	<ul style="list-style-type: none"> Previous transactions show high interest in the sector Fast sales process with immediate full exit Aggressive financing structure can lead to higher price 	<ul style="list-style-type: none"> Due to the size of the company and its specialisation, companies might be more interested in buying ETIMEX separately from Schubert 	<ul style="list-style-type: none"> A listing gives the management more freedom, leading to greater motivation Going public attracts a lot of attention and increases credibility
	<ul style="list-style-type: none"> Complex and long process (high due diligence effort) 	<ul style="list-style-type: none"> Strong negotiator with a clear focus on price reduction 	<ul style="list-style-type: none"> Possibly difficulties to find two different buyers at one and the same time Valuation could be lower for both companies individually than as a group Carve-Out could consume many resources 	<ul style="list-style-type: none"> Uncertainty about future returns High dependency on market conditions High transaction costs Money might be tied up Full exit might not be possible
	<div style="border: 2px dashed red; padding: 5px;"> <p><i>Best fit</i></p> </div>		<div style="border: 2px dashed red; padding: 5px;"> <p><i>Preferred Exit</i></p> </div>	

Source(s): Finanzen.net; Note(s): 1) Market capitalization from €403.99m to €7,899.63m as of 17.11.2021

Preferred buyer universe: Five peers are expected to show particularly strong interest in Schubert out of which the German GEA AG is analysed to be the best fit

Company	Country	Financials	Business Description	Rationale
Best fit				
		<ul style="list-style-type: none"> Revenue 2020: €4,635m EBITDA 2020: €336m Net Debt 2020: (€284m) Firepower: €1,628m 	<ul style="list-style-type: none"> Global automatic machinery manufacturer for a wide range of industries including Food, Beverages, Pharma and Chemicals The company offers various packaging machines including filling, thermoforming, vertical form, fill & seal, palletizing and depalletizing machines 	<ul style="list-style-type: none"> Strong overlap in end markets Expansion of product portfolio by Pick & Place packaging machinery would complement offerings Follows active M&A strategy with 16 acquisitions in the last 10 years
		<ul style="list-style-type: none"> Revenue 2019: €1,596m EBITDA 2019: €273m Net Debt 2019: €637m Firepower: €457m 	<ul style="list-style-type: none"> Global manufacturer of packaging and processing machinery for Pharma, Cosmetics, Food, Tea, Coffee and Tobacco The company has 45 manufacturing facilities worldwide and is backed by BC Partners and SOFIMA 	<ul style="list-style-type: none"> Strong M&A appetite with 12 acquisitions in the past 4 years and strong overlap in end markets Strengthen product portfolio through modularity and expertise in Pick & Place machines
		<ul style="list-style-type: none"> Revenue 2019: €1,130m EBITDA 2019 : €354m¹⁾ Net Debt 2019: €140m¹⁾ Firepower: €1,416m¹⁾ 	<ul style="list-style-type: none"> Global manufacturer of packaging machinery for filling and packaging of Beverages, liquid Food and Chemicals The company has 11 manufacturing facilities worldwide and is a wholly owned subsidiary of Salzgitter AG 	<ul style="list-style-type: none"> Existing partnership with Schubert in the development of filling / packaging systems for beverage bottles Expand product portfolio and industry coverage
		<ul style="list-style-type: none"> Revenue 2020: €3,359m EBITDA 2020: €157m Net Debt 2020: (€241m) Firepower: €870m 	<ul style="list-style-type: none"> Global manufacturer of machinery for production, filling and packaging of Beverages and liquid Food The company has 20 manufacturing facilities worldwide 	<ul style="list-style-type: none"> Expand product offering by Pick & Place machinery and coverage of packaging value chain by tertiary packaging Expand industry coverage and improve margins
		<ul style="list-style-type: none"> Revenue 2019: €1,300m EBITDA : N/A Net Debt: N/A Firepower: N/A 	<ul style="list-style-type: none"> Global manufacturer of packaging and processing machinery for the Food and Pharma industries The company is PE-backed by CVC Capital Partners 	<ul style="list-style-type: none"> Strong overlap in end markets and product portfolio enables increasing market penetration Expand capabilities by modularity and coverage of packaging value chain by Tertiary Packaging

Source(s): Company Information, CapitalIQ; Note(s): Firepower based on 4x EBITDA Leverage, 1) Financial data of parent company Salzgitter AG



SCHUBERT

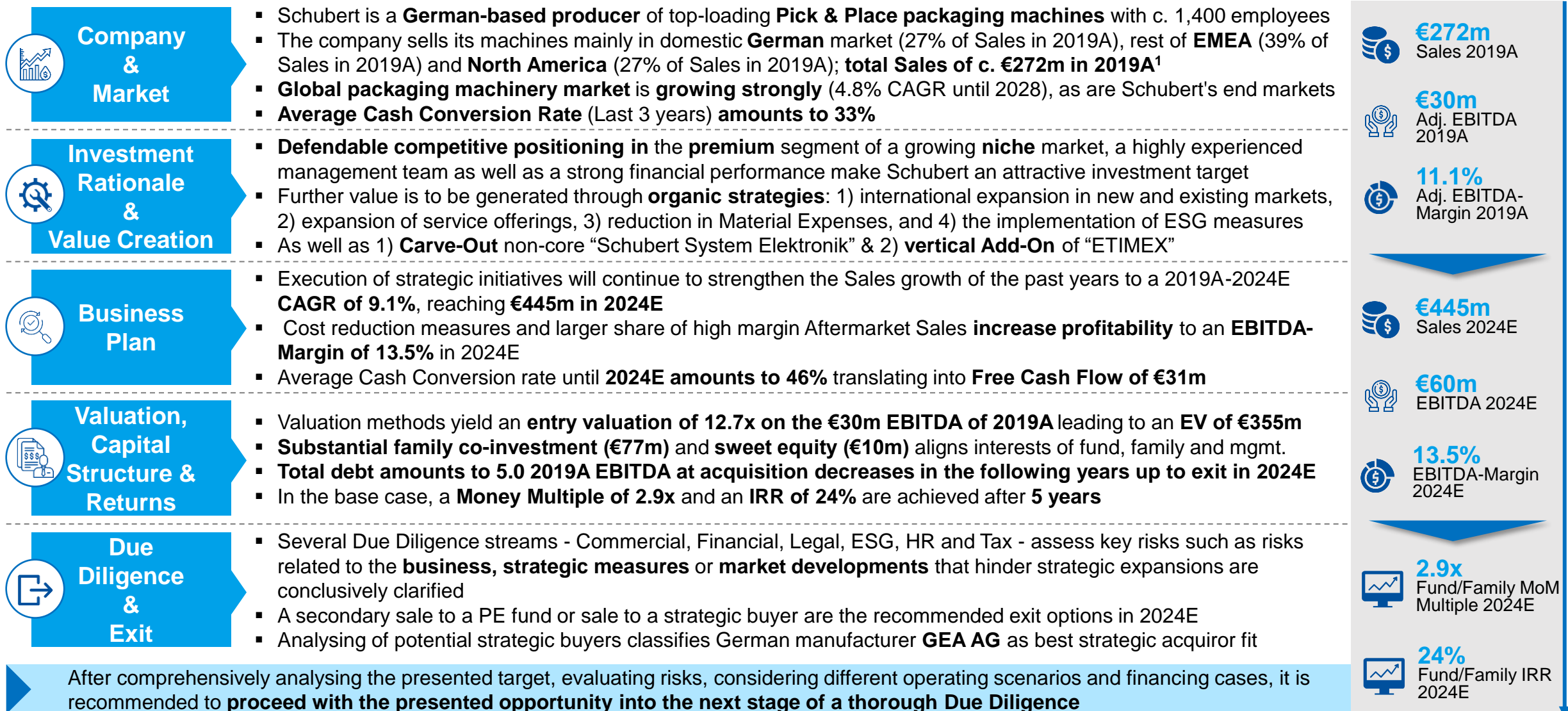
Packaging Machinery

Private Equity Challenge 2021 / 22
Investment Committee Presentation – Individual Part
17th of December 2021

Content Structure Individual Part

1.	Executive Summary	p. 6
2.	Company Overview	p. 7
3.	Historic Financials	p. 18
4.	Market Overview	p. 22
5.	Investment Rationale and Value Creation	p. 26
6.	Business Plan	p. 30
7.	Valuation, Capital Structure and Returns	p. 32
8.	Due Diligence and Exit	p. 34
9.	Digitization in the packaging machinery Industry	p. 36
10.	References	p. 39

Schubert, a German packaging machinery producer, is an exceptional investment opportunity yielding a Money Multiple of 2.9x at an IRR of 24% over a 5-year holding period



Source(s): Company Information, Own Analysis; Note(s): RoW = Rest of World; 1) RoW accounts for 7% of sales in 2019A



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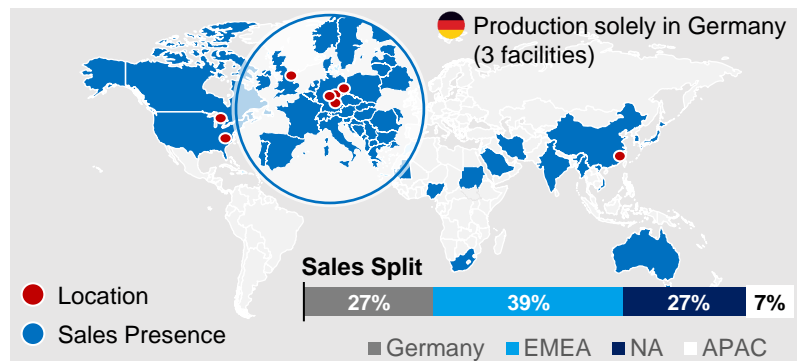
2. Company Overview

Since its foundation in 1966 Schubert is a pioneer in the development of modular packaging machines and custom-fit services with innovative digitalisation offerings for a wide range of industries

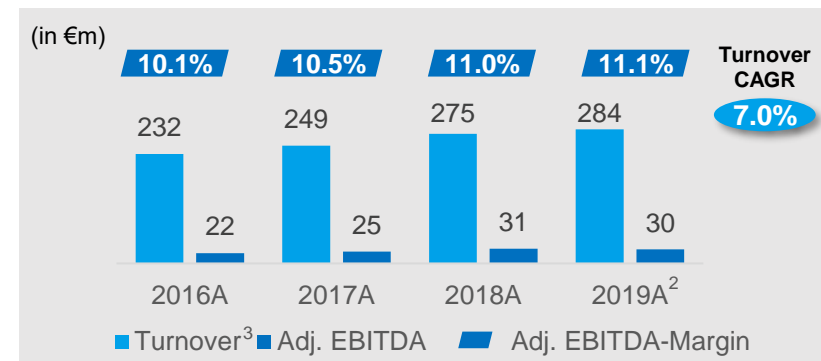
Key Facts

- German-based packaging machinery manufacturer („Schubert“) headquartered in Crailsheim, Germany
- The 100% family-owned group is an innovative market leader for top-loading Pick & Place machines
- With ~1,400 employees the company reached sales of €272m in 2019A¹




Geographic Footprint



Historic Financials



Key Products

Modular products		Top-loading packaging machinery, flow-wrapper, CNC contract manufacturing and electronics
Turnkey solutions		Fully integrated turnkey packaging solutions
Aftersales services		Spare parts, modifications, remodeling

From an Idea to the World Market Leader in Digital Packaging Machines

Gerhard Schubert founded the company; Development of first carton erecting and gluing machine 1966 3 employees	Schubert modular machine systems, computer-controlled robots (ROBY) and own packaging machine control revolutionise the market 1970-1990 ~250 employees	Acquisition of the (now) Schubert System Elektronik 2013	Opening of the new assembly hall in Crailsheim (€16m investment) 2015 > 1,300 employees	Transformation to international growth through US restructuring and opening of China subsidiary 2016-2019
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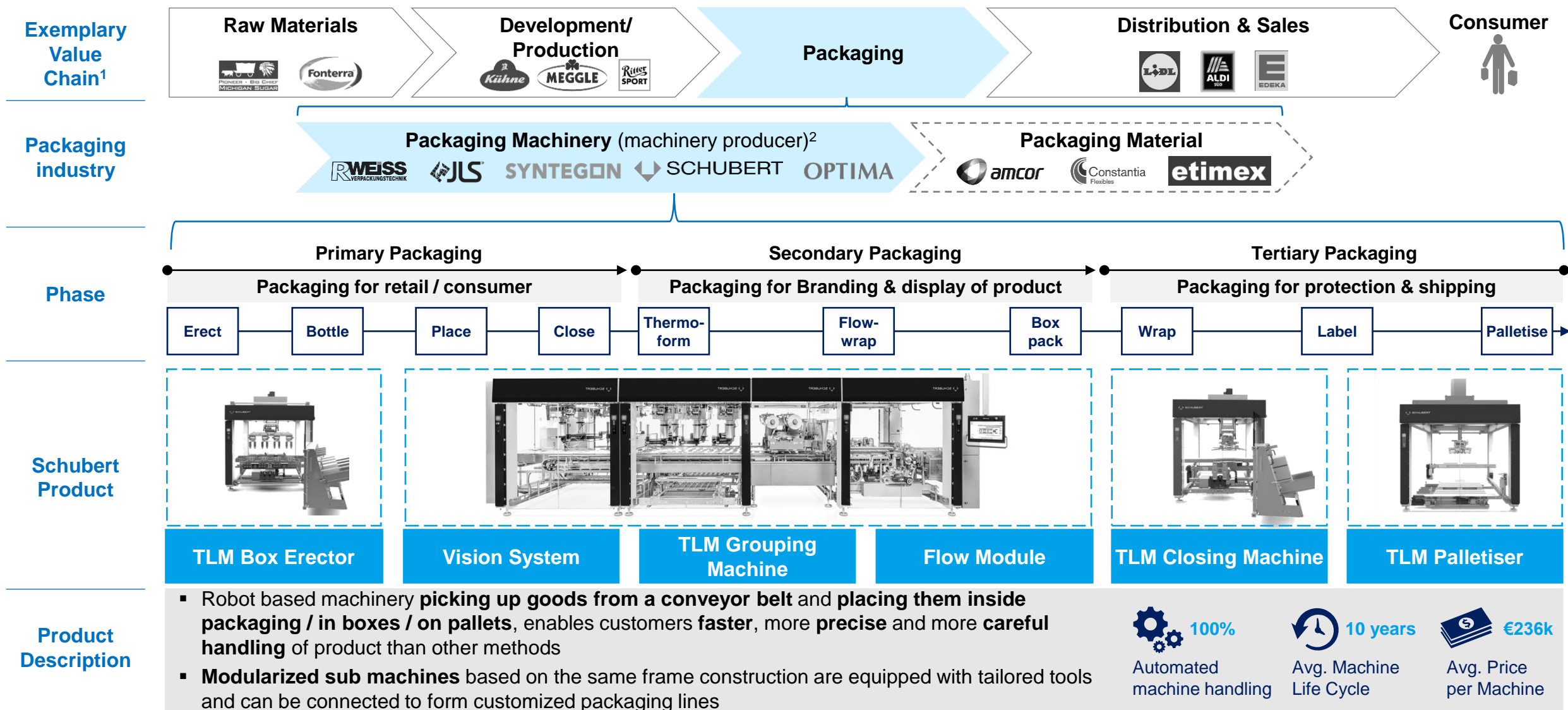
End Markets and Customers

Food 	Pharma 	Beverages 	Pet Food 
Confectionary 	Cosmetics 	Dairy 	Technical Articles 

Source(s): Company Information; Note(s): 1) Robot based packaging of goods by picking goods up from a conveyor belt and placing them in the package, 2) Last audited results, 3) Turnover denotes the difference between Sales and Inventory produced

 Schubert Key Industries

Directly downstream of production, the Schubert machinery fulfils packaging tasks on a one-stop basis, from picking up to placing in the packaging all the way to palletising



Source(s): Company Information, Own analysis; Note(s): 1) Exemplary for food production, 2) Schubert is only packaging machinery producer

 Steps covered by Schubert

With constant investments into production capacities and into R&D, Schubert seeks to maintain an industry leading position

Production overview

- Crailsheim, Germany**
Headquarter of Schubert
(50,000 sqm production area)
- Bartholomä, Germany**
Headquarter of Schubert Fertigungs-Technik (4,000 sqm production area)
- Neuhausen ob Eck, Germany**
Headquarter of Schubert System Elektronik (7,200 sqm production area)

Planned expansion of production capacities

Headquarter expansion in Crailsheim, Germany:
€30m expansion started in 2019 by relocating the nearby country road to expand the production facilities expected to be fully finalised in 2022 adding 9,900sqm

Certification

- Currently running on **100% capacity** thus **needing the expansion** of production facilities to reduce the need of purchasing external services
- All relevant production processes are done **in-house**

R&D and Sourcing strategy

Sourcing strategy

- 10% of Sales invested in R&D
- Averagely 1 patent every month
- All main machines secured by patents
- Develops own IOT, Cloud and AI-Solutions¹

Software Lab in Deggendorf

- Supported by “EDV-Schule Plattling”, the team focusses on development of LINUX-based automation and client applications
- Aim to develop software solutions within AI-environment**

Sourcing strategy

- Continuous **make-or-buy assessment** results in the in-house production and insourcing of certain products, also through subsidiaries
- Decisions are dependant on **price, quality, and lead times** for products
- Increased **in-house manufacturing** of parts through 3D-Printing to decrease raw material expenses
- In-house CNC part and electronic component manufacturing through **subsidiaries**
- In-house production strategy leads to **higher production utilization** which increases need the for the purchase of external services
- Low dependency** on steel price development:









Year	Raw Material Ratio	Steel Price
2015A	461.1	33.0%
2016A	-	-
2017A	-	-
2018A	603.5	-
2019A	-	28.2%

Source(s): Company Information; Pressebox; Expert Interviews; Note(s): 1) Dedicated research center Schubert Motion in Dresden, Germany








Modularity & Flexibility of Schubert's machinery due to intelligent design leads to efficiency advantages in production and provides high degree of individualization for customers




Management Team

CEO ★	CTO ★	CSO ★	CFO ★
			
Gerhard Schubert (83)	Ralf Schubert (60)	Marcel Kiessling (59)	Peter Gabriel (61)
Founder, Managing Director (MD) and Shareholder	Son of founder (MD), Shareholder; joined in 1985; diploma computer scientist	Joined in 2016, prev: Radius 1, Gerson Lehrman, Heidelberg	Managing Director, joined in 2000, diploma economist
			

Second Level Management Information

★ Jörg Brenner	Commercial Director (since 2000); previously with P&G		Reiner Weidmann	Procurement & Facility Management (since 2014)	
Karl-Heinz Gaukler	Head of Assemblies		★ Jens Stoll	Manager Technical Organization (since 2014)	
★ Martin Sautner	Manager Sales (since 2018); previously with OPTIMA		★ Uwe Galm	Manager Customer Service (since 2020); previously with Heidelberger Druck	
Marcus Schindler	Manager Supply Chain (since 2014); previously Grässlin Präzisionstechnik				

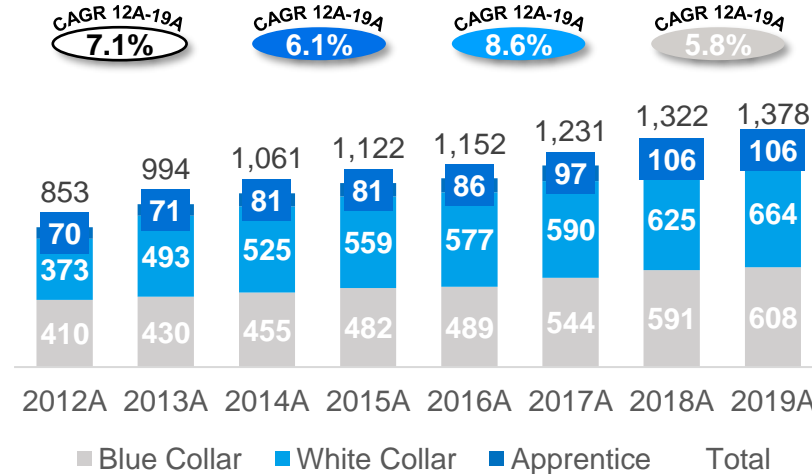
Source(s): LinkedIn, Xing, Company Website, Orbis; Note(s): 1) Excluding apprentices

 Years Industry Experience

 High Managing Capabilities

★ Identified Key Personnel (TBC in Due Diligence)

Employee Structure and Development



65 open jobs in 7 locations underline the growth ambition of Schubert

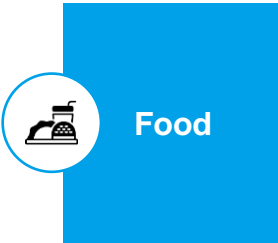
Comment

- **Schubert is a family-run business** with the founder and his son as MDs
- Second level management team with an average of 20 years of industry experience, thus showing **high level of proficiency and proven track record**
- **C. 1,380 employees** (CAGR of 7.1% since 2012A) are generating **c. €272m** of sales (2019A) leading to sales of €214k per employee¹
- Strong increase in **blue collar working recruitment** beginning in 2016 to counteract full utilization of workforce
- **Overall good happiness** with working conditions according to Google reviews; training opportunities within Schubert Academy upskill workforce enhance **employer attractiveness** and decrease churn rates
- Recent hiring **focus on engineers** to foster growth within **robot technology**

Eight standardised system components are combined according to the modular principle to form a robot-assisted packaging system - Schubert packaging machines can package any product

Key Industries

Schubert Product



- **Automation** of packaging processes
- **Flowpacker with robot technology** ensuring highest flexibility with **interchangeable** and **adjustable** tools
- **Integration of primary and secondary packaging processes**



- Fully automatic packaging of **chocolate bars, pralines, biscuits, cakes** etc. in flowpacks and top loaded machines
- **2D&3D** image processing guarantee precise performance during Pick & Place operation and **quality control**



- High-performance **secondary packaging** machines
- **F4 Pick & Place robots**, innovative solutions for dairy products already packed in trays, cups, flowpacks, etc.
- **High format and product diversity**



- **Robotics** and **software** solutions guarantee product **safety, quality** and **traceability**
- Transmodul for seamless **track & trace**
- **Serialisation and validation** offerings to cope with regulations

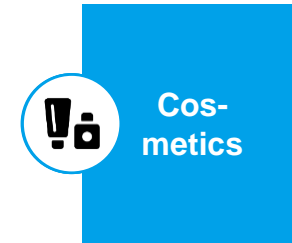


Others

Schubert Product



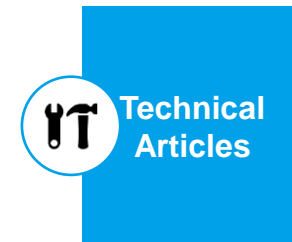
- Packed into **different cartons/containers** fully automatically; **quick size changes** with varying batch sizes
- Picking up products directly from the **bottling machine** or conveyor belt, **de-palletizing** and **unpacking** from crates



- **Filling and packaging** of cosmetic products – from **single machines** to **entire systems**
- Fast **format changes** and low costs
- Seamless **combination of packaging processes**



- **Final packaging** of pet food into shipping boxes or in eye-catching display boxes (aluminium trays or bags)
- **Flowmodul** also executes **primary packaging** tasks, such as packing dog treats like chew sticks or chew bones



- Packaging machines for **screws, wall plugs, furniture fittings** or **computer accessories**
- **Compact automation solutions** stand out with high **line availability, efficiency** and **vision control systems**



Schubert increases customer loyalty and differentiation through comprehensive Service and Aftermarket offerings – Accounting for 16% of sales



Schubert Expert Center

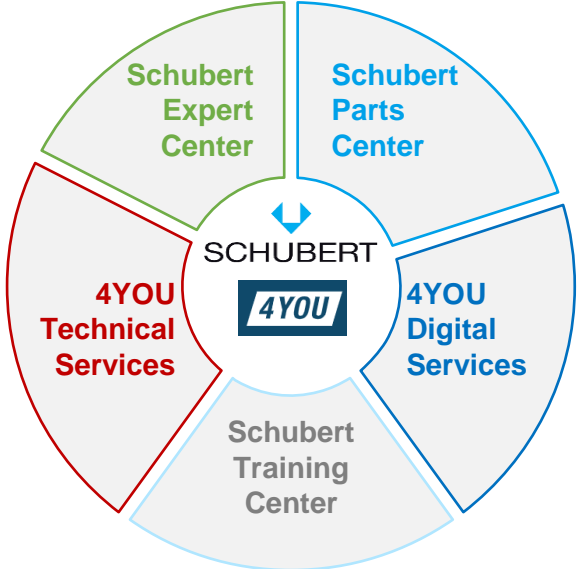
- Telephone Support Hotline

Schubert Parts Center

- Spare parts (also 3D printed)
- Consumables

4 YOU Technical Services

- Component refurbishment
- Inspection & Maintenance
- Modifications & Retrofits
- System Troubleshooting



4YOU Digital Services

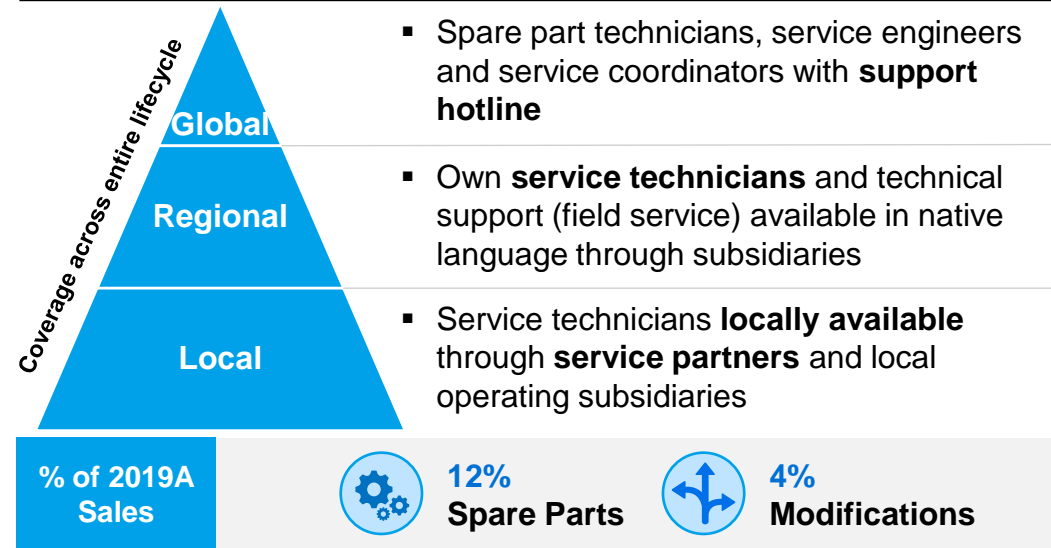
- CARE (Connection for Analytics, Reporting and Efficiency) service portfolio has multiple service offerings
- Software Maintenance
- Etc.

Schubert Training Center

- At the training centers in Crailsheim (Germany) and Charlotte (USA), Schubert offers their customers an opportunity to familiarise themselves with the Schubert TLM technology

- Comprehensive **service offering** reduces downtime of machinery, increases ease of use and **flexibility**
- Schubert **benefits from recurring revenues and increased customer retention**

Multi-Level Service Approach



Comment

- **4YOU Services**, offers support throughout the entire machine life cycle – during conversions, machine relocations and end-of-life management
- Comprehensive aftermarket offerings comprising **spare parts, aftermarket and assembly offerings**
- Integrated, fast inhouse **3D-parts manufacturing** through Schubert Additive solutions, enabling affordable and **fast replacement** of parts
- Technical capabilities enable **predictive maintenance** and **comprehensive machine layout** through digital twin “TITAN” reducing down-times

Source(s): Annual Report; Company Information; Expert Interviews

Gerhard Schubert is a premium supplier of packaging machinery driven by a comprehensive sales structure

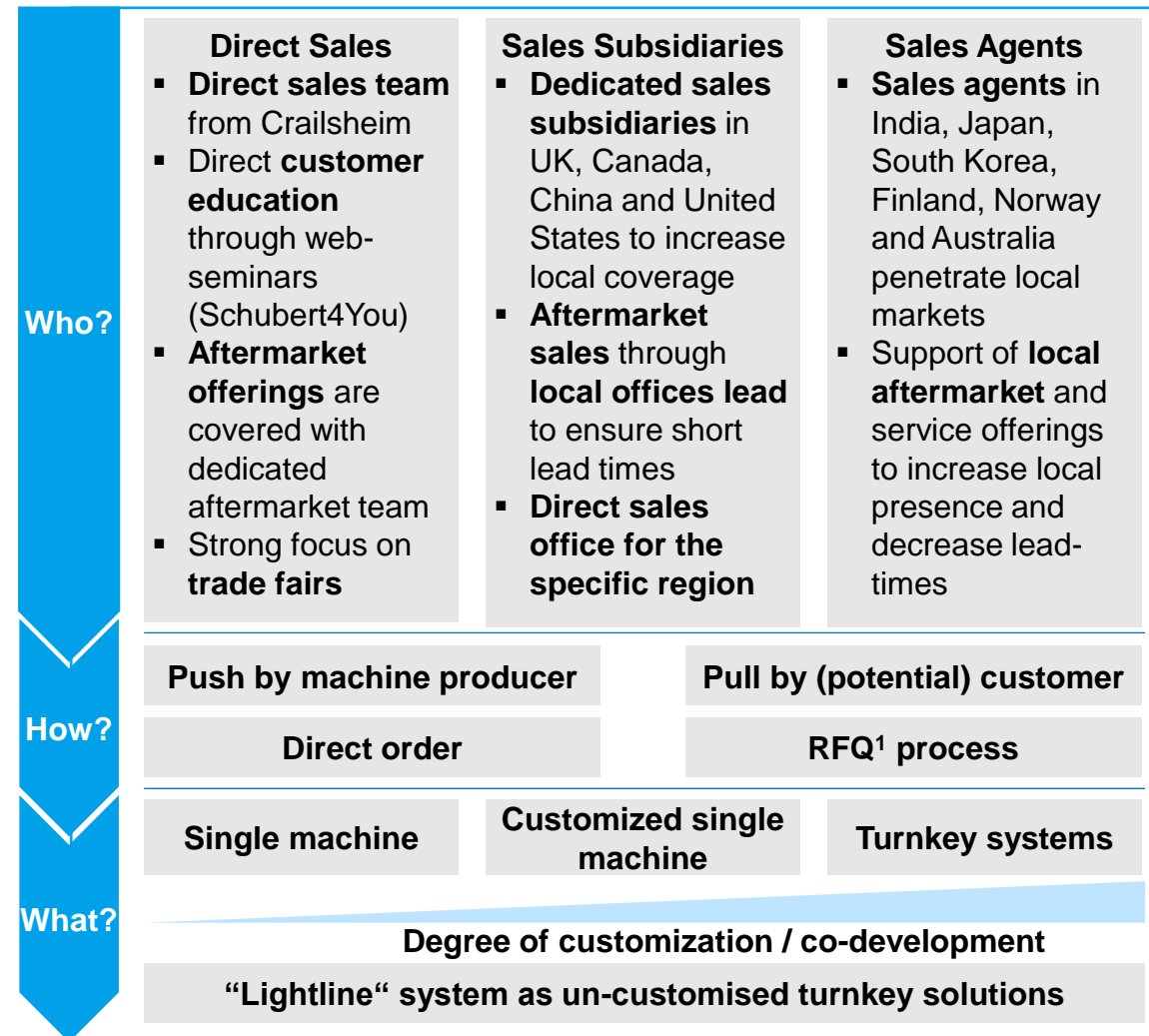


Key Purchasing Criteria

Importance	Selection Criteria	SCHUBERT
	1 Machine reliability	
	2 Throughput	
	3 Application know-how/ Track record	
	4 Service offering & Service proximity	
	5 Machine flexibility	
	6 Digital solutions	
	7 Customization capabilities	
	8 Price	
	9 Brand	

- Gerhard Schubert classifies as premium supplier for machinery, fulfilling all important key purchasing criteria
- Comprehensive fulfilment of purchasing criteria and sales structure leads to generating c. 75% of sales with new customers every year enabling low customer dependency

Route to Market



Source(s): Company Information; Own Analysis; Expert Interviews; Note(s): 1) Request for Quote

High performance

As a partner for sustainability, Schubert is able to optimise customers' processes throughout the entire chain from raw materials, packaging and logistics to recycling



Schubert has five principles for waste prevention: Reduce, Refuse, Reuse, Recycle, Rethink

Strong team effort at all levels

- Already successfully working on six of the defined **UN Sustainable Development Goals** (Goals 7, 8, 9, 12, 13 and 17)
- Use **geothermal energy** to air-condition offices and generate own electricity using photovoltaics
- Concept of **sustainability** is practiced at all **hierarchical levels** and in all facets, from **purchasing** through the entire **production** process and **training** to **cooperation** with service providers and partners



Future-proof packaging technology

- **Recycling** of **waste material** produced during the machining of metal and raw materials
- Machine design as **simple and sustainable** as possible thus saving **resources** and **raw materials** in production
- **Materials** and **technology** have been harmonized in such a way that new **sustainable materials** can be used in an **automated packaging process**
- Schubert's modular system allows that packaging machines can be **tailored precisely** to the desired customer requirements **without redundant components**
- **New formats** can be implemented in the machines later



Sustainability Consulting

- **Manufacturer-independent** consulting services help customers make the switch to **sustainable packaging materials**
- Pay attention to the **perfect interplay of materials, technology** and **know-how**, from cardboard trays to paper-based films
- Concepts convince with **flexibility, quality** and **efficiency** and thus **set standards** throughout the industry

Social Responsibility

- Since 2015 certified by the **Veritas** office in accordance with **SMETA** (Sedex Members Ethical Trade), thus adopting the requirements of **ethical action** in production and infrastructure
- Offer many **training possibilities** as well as **social support** such as a **Kindergarden** for employee's children
- Schubert promotes the **representation of women** at all **management levels** as well as **equal pay** for women and men



306 tonnes of plastic saves a Schubert customer per year by replacing film with cardboard packaging



89% CO2 savings can be achieved by using the Partbox in combination with 3D printing, resulting in savings of transport distances for delivered parts



25% packaging material are saved at a Schubert customer due to tightly dimensioned flat blanks for cardboard boxes

Industry 4.0 and Digitization are more than buzzwords: with state-of-the-art tools, Schubert drives the development of the packaging industry worldwide and sets trend-setting standards

Internal

ERP System



- **Enterprise-Resource-Planning system “Saturn”** used throughout the company is a proprietary development
- Optimally adapted to **internal** requirements and interfaces
- The system enables all data to be retrieved in **real-time** from every workstation

GRIPS



- Internal **management system**
- **Defines processes** of all departments and continuously enhances and **optimizes** them
- The abbreviation stands for "Together towards innovation, processes and standard" (in the German language)

Schubert retrieves competitive advantages of the consequent digitization along the complete value chain through e.g., a high level of integration and short lead times

External

3D Print and Partbox Platform



- **3D printing** is revolutionizing not only machines but also warehousing by reducing costs while increasing customer benefits
- With the new **part streaming platform** from Schubert Additive Solutions, digitally stored parts are available everywhere, reducing waiting and delivery times
- Wide variety of **3D format parts** for robot tools can be printed via the same platform

GRIPS.world



- Improved **communication** with customers through a single user interface enabling virtual factory visits and remote service offerings
- In the future, measures for **preventive maintenance** can be derived from the status and performance data transmitted by the machine
- A **special service benefit**: separate spare part lists, will be superfluous in the future since the current machine status as well as its spare part requirements will be available directly via a browser

Pick & Place Vision System



- **Quality control** through 2D and 3D vision systems: only products that meet the customer's programmed specifications are recognized and then packaged
- Leads to **fewer rejects, fewer complaints, lower costs**, and a guarantee of consistently high **product quality**
- As image processing has limits, Schubert will rely on **neuronal networks** and **artificial intelligence** for its vision system in the future

Through digital innovations, customers can be served faster and more reliably; In the future, customers will be able to visualize any changes to the product to be packaged or adjustments to the formats via "digital twin"¹ of their packaging machine or already incorporate them directly into the production process of their machine

Schubert is convincing all along the line and creates valuable output for all stakeholders through well designed and continuously optimised processes

Key Resources

Partners & Customers

- Broad and long standing **customer base** from different segments
- **Good supplier network** for raw materials etc.
- Connected to peers through (Qesar) **network**

Employees

- **Highly skilled workforce** with great educational background
- High degree of loyalty towards company
- Own training center „Schubert Academy“

Finances

- **Finance-driven** company culture with focus on **profitability** and **growth**
- **Low leverage** leading to independency and negotiation power as well as room for investments

Innovations

- Well financed and big **R&D department** with focus on innovation (e.g. Schubert Motion focusing on Robotics) with huge amount of patents
- **Pioneering spirit** spread across company

Facilities

- Modern and **innovative production facilities**
- Appealing **office buildings** with services for employees such as Kindergarden (new buildings to be constructed)

Core Activities

Premium & Needs-based products

Close collaboration with clients allow for tailored and individualised machines with specific functions

Established Corporate Values

Sustainability is focused on all levels (economic, ecological, social) and implemented through innovative ideas



High Quality
Relentless focus on precision, speed and high quality ensures customer satisfaction and excellent reputation

Demand-driven Pioneering spirit
Constant strive to improve internal and customer performance and processes

Efficient Production
Modular and flexible machine parts allow cost-efficient production and assembly

Created Value

Through its activities Schubert creates great value for all its stakeholders:

- Reliable partnerships towards **suppliers** and **customers**
- Innovative, cost-effective and highest quality products with long product lifecycle and simple interchangeability of spare parts
- Offerings for **employees** regarding trainings, attractive and secure jobs, wage models and social support to enhance a **winning culture**
- Investments in state-of-the-art facilities, innovation and digitization lead to **environmentally** friendly and sustainable operations regarding emissions and energy consumption

3. Historic Financials

The growth of the last years was mainly driven by Sales in North America (CAGR: 21%) and Aftermarket Sales (CAGR: 12.7%)

Historic Sales Development

in €k	2012A	2013A	2014A	2015A	2016A	2017A	2018A	2019A	CAGR
Machinery (Germany)	35,115	38,214	24,777	54,628	47,139	42,694	51,365	40,394	2.0%
Machinery (EMEA)	89,159	101,536	129,777	88,272	99,891	113,288	103,275	86,017	(0.5%)
Machinery (NA)	15,452	9,795	14,156	22,496	12,062	21,071	51,887	59,604	21.3%
Machinery (China)	0	0	0	0	0	0	3,243	14,498	n.a.
Aftermarket Sales	19,044	24,170	28,119	26,642	33,420	36,800	39,627	43,933	12.7%
Electronics	0	19,999	22,475	20,753	20,145	21,962	25,245	22,460	n.a.
Other	5,779	6,978	9,122	11,703	6,730	7,358	8,525	5,412	(0.9%)
Total Sales	164,550	200,691	228,426	224,495	219,387	243,173	283,167	272,319	7.5%
Delta Inventory	1,988	2	(431)	484	12,419	6,021	(8,315)	11,736	n.a.
Turnover	166,538	200,693	227,995	224,979	231,806	249,194	274,852	284,055	7.9%
YoY Growth	n.a.	20.5%	13.6%	(1.3%)	3.0%	7.5%	10.3%	3.3%	n.a.

Key Takeaways



International Expansion: Important Sales driver; Restructuring of North America Sales operations resulted in nearly tripling of Sales to €60m from 2017A to 2019A

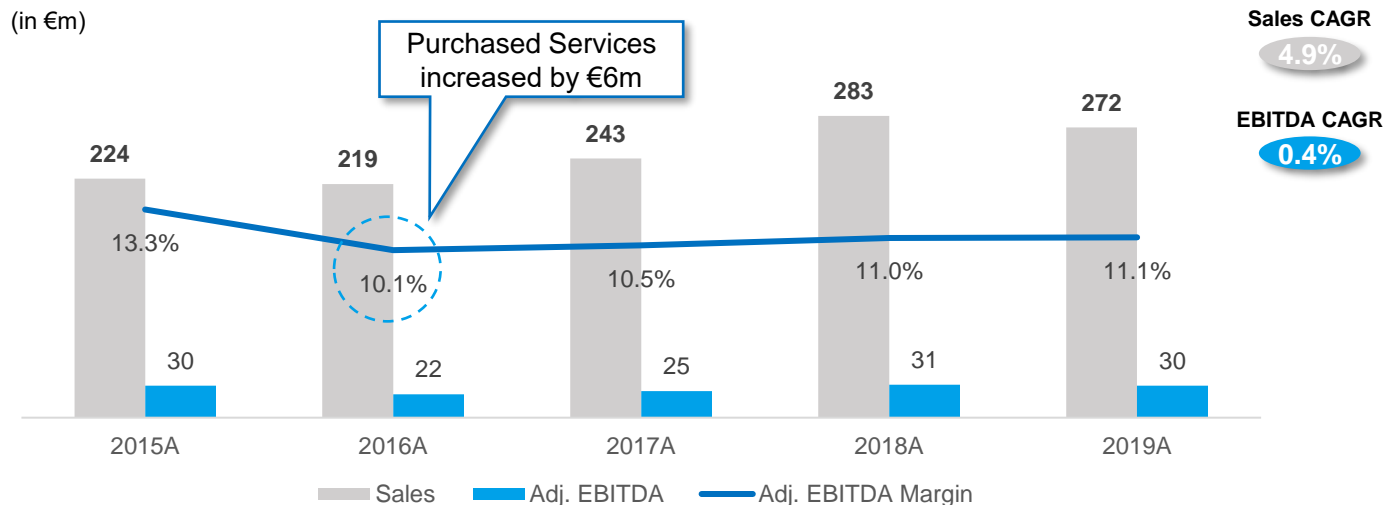


Aftermarket Sales: Strong CAGR (12.7%) as Schubert management is striving to increase Aftermarket / Service offerings with a focus on digitization



Sales vs. Turnover: Turnover denotes the total yearly output (including inventory changes), making it an important measure as it accounts for reporting date view shifts in large orders

Profitability Development



Profitability Assessment

- **Strong overall Sales growth;** Weak 2019A in Germany and EMEA caused by large orders shifting to 2020E
- Despite high Sales growth, **EBITDA remained flat in recent history with a CAGR of 0.4% since 2015A**
- **EBITDA-Margin** drop in 2016A following results from sales restructuring and aggressive growth in US and increase in Purchased Services due to capacity issues
- Despite that, Schubert shows an EBITDA margin recovery from 2016A onwards, reaching **11.1% in 2019A**

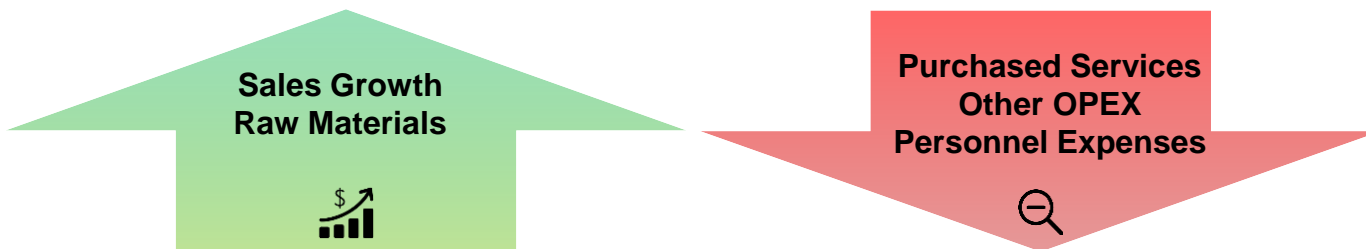
The finalisation of the production hall in 2022E as well as the targeted higher revenue share through Aftermarket Sales will have a positive impact on profitability and will strongly increase the previously flat development of EBITDA

After EBITDA-Margin declined in 2016A due to a steep increase of Purchased Services, from 2017A onward Schubert again has shown an upward Margin trend

Profit & Loss Statement

in €k	2012A	2013A	2014A	2015A	2016A	2017A	2018A	2019A	12-'19
Sales	164,550	200,691	228,426	224,495	219,387	243,173	283,167	272,319	7.5%
Turnover	166,538	200,692	227,995	224,979	231,806	249,194	274,852	284,055	7.9%
YoY Growth		20.5%	13.6%	(1.3%)	3.0%	7.5%	10.3%	3.3%	
<i>Raw Materials</i>	(51,085)	(68,935)	(77,387)	(74,190)	(72,922)	(76,466)	(77,819)	(76,873)	6.0%
<i>% Margin</i>	(31.0%)	(34.3%)	(33.9%)	(33.0%)	(33.2%)	(31.4%)	(27.5%)	(28.2%)	
<i>Purchased Services</i>	(19,763)	(11,298)	(12,521)	(16,665)	(22,922)	(26,049)	(31,174)	(34,575)	8.3%
<i>% Margin</i>	(12.0%)	(5.6%)	(5.5%)	(7.4%)	(10.4%)	(10.7%)	(11.0%)	(12.7%)	
Material Expenses	(70,848)	(80,233)	(89,908)	(90,856)	(95,844)	(102,515)	(108,993)	(111,447)	6.7%
<i>% Margin</i>	(43.1%)	(40.0%)	(39.4%)	(40.5%)	(43.7%)	(42.2%)	(38.5%)	(40.9%)	
Gross Profit	95,690	120,460	138,087	134,123	135,962	146,679	165,859	172,608	8.8%
<i>% Margin</i>	58.2%	60.0%	60.5%	59.7%	62.0%	60.3%	58.6%	63.4%	
Personnel Expenses	(56,782)	(66,911)	(74,211)	(76,121)	(80,723)	(87,382)	(94,442)	(100,354)	8.5%
<i>% Margin</i>	(34.5%)	(33.3%)	(32.5%)	(33.9%)	(36.8%)	(35.9%)	(33.4%)	(36.9%)	
Other Operating Expenses	(25,921)	(28,859)	(31,273)	(31,310)	(35,864)	(37,481)	(42,505)	(45,588)	8.4%
<i>% Margin</i>	(15.8%)	(14.4%)	(13.7%)	(13.9%)	(16.3%)	(15.4%)	(15.0%)	(16.7%)	
OPEX	(82,703)	(95,770)	(105,484)	(107,430)	(116,587)	(124,863)	(136,947)	(145,942)	8.5%
<i>% Margin</i>	(50.3%)	(47.7%)	(46.2%)	(47.9%)	(53.1%)	(51.3%)	(48.4%)	(53.6%)	
Other Income	1,447	1,618	891	1,743	1,518	2,066	984	2,059	5.2%
EBITDA Adjusted	15,653	27,654	34,974	29,777	22,126	25,467	31,259	30,227	9.9%
YoY Growth		76.7%	26.5%	(14.9%)	(25.7%)	15.1%	22.7%	(3.3%)	
<i>% Margin</i>	9.5%	13.8%	15.3%	13.3%	10.1%	10.5%	11.0%	11.1%	

Key Profitability Drivers



Source(s): Expert Interview; Annual Reports

27/01/2022

Profit & Loss Statement

- Shift of 1 Turnkey line order of c. €11m from 2019A towards 2020E dampened Sales growth in 2019A; **Turnover depicts the inventory increase** caused by the completed and not sold Turnkey line
- Raw Materials margin shows a decreasing trend due to **investments in production automation, internal process optimization and 3D-printing of parts**
- Increase in Purchased Services caused by reaching 100% capacity**; completion of new assembly hall in 2015A **shifts the bottleneck from assembly to production**; missing infrastructure and little personnel build up in 2014A to 2016A drive bottleneck
- Workforce capacity build up for production, R&D and service** as foundation for **future sales growth**
- Other OPEX constitutes a **high portion of Schubert's costs**, including cost positions as e.g.: Marketing, Rent & Leasing; strong increase is driven by **Marketing Expenses and build-up of infrastructure for growth and internationalisation**
- Adjustments are normalisations for owners' salary of c. €1.2m p.a.

Manageability assessment of negative drivers

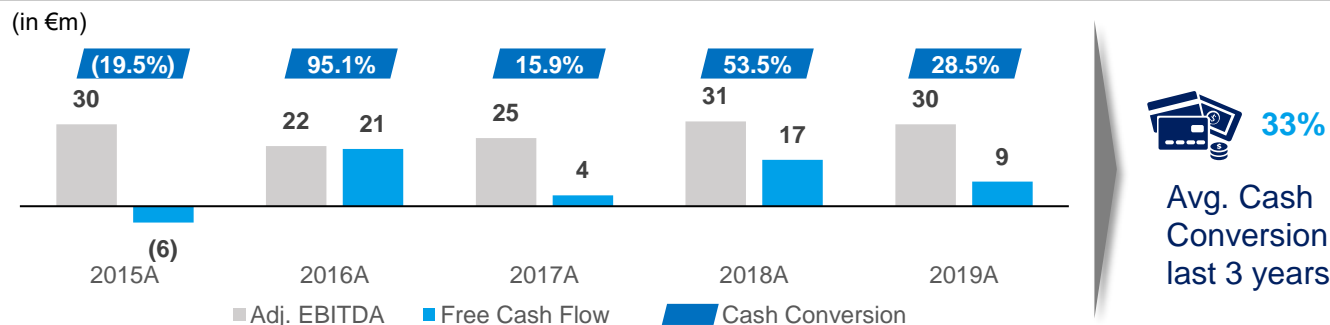
- Purchased Services**
 - Decrease with ramp-up of production facility in 2022E
- Other OPEX**
 - Decreasing cost base after finalization of internationalisation strategies
- Personnel**
 - Increase in service requires more personnel
 - High wage country GER with strict labour laws

● Good manageability going forward
 ● Medium manageability going forward
 ● Bad manageability going forward

See Appendix Slides 55-56

Cash Conversion volatility does not pose a problem as it is mitigatable; low Maintenance CAPEX suggest high future Cash generation potential

Free Cash Flow



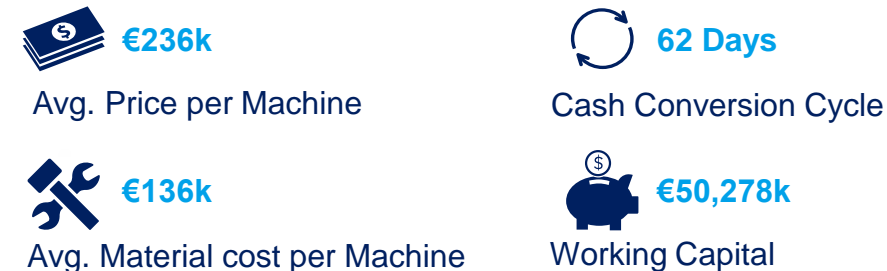
in €k	2012A	2013A	2014A	2015A	2016A	2017A	2018A	2019E
Adj. EBITDA	15,653	27,654	34,974	29,777	22,126	25,467	31,259	30,227
(-) Changes in NWC	n.a.	(9,217)	(8,365)	(3,466)	8,908	(11,483)	(4,805)	913
(-) Changes other WC	n.a.	(5,751)	12,106	(7,116)	4,689	14	2,214	(2,260)
(-) CAPEX	(4,697)	(17,282)	(16,408)	(17,714)	(10,256)	(4,926)	(4,870)	(13,903)
(-) Taxes	(3,137)	(7,020)	(8,242)	(7,289)	(4,426)	(5,015)	(7,059)	(6,366)
Free Cash Flow	7,819	(11,616)	14,064	(5,809)	21,041	4,056	16,739	8,611
Cash Conversion	50.0%	(42.0%)	40.2%	(19.5%)	95.1%	15.9%	53.5%	28.5%

- **High Cash Conversion volatility** due to expansion CAPEX and working capital development
- Volatile Working Capital is based on **low prioritization of management** focus due to low relevance for long-established **family business structures**
- **Working Capital changes** are mainly driven by shifts in Inventory as invoicing of large orders are shifted to the next fiscal period

Cash Conversion volatility is explainable and mitigatable; So, future Cash generation potential can be used for strategy implementation and deleveraging

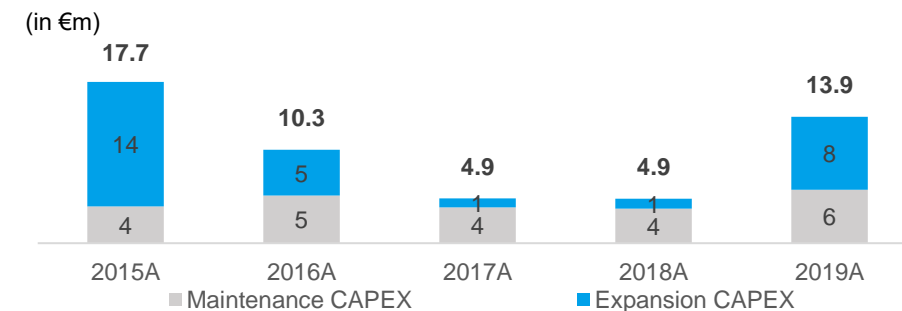
Source(s): Expert Interviews, Annual Reports, Company Information

Key Performance Indicators (2019A)



- Avg. of **€100k Gross Profit per machine**
- Relatively **low CCC** resulting from high amount of Advanced Payments received on orders
- **Working Capital** requirement of c. €50m in 2019A

CAPEX Development



- **Low levels of Maintenance CAPEX** as majority of equipment is leased
- **High Expansion CAPEX up to 2015A** to build new assembly hall reducing capacity bottleneck in assembly, shifting **focus towards production capacity constraints**

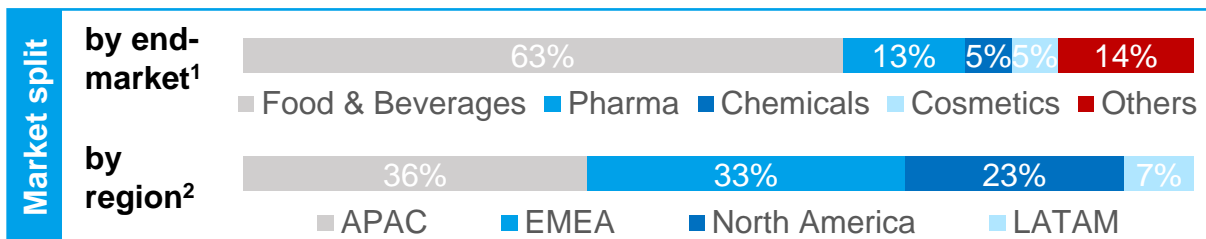


4. Market Overview

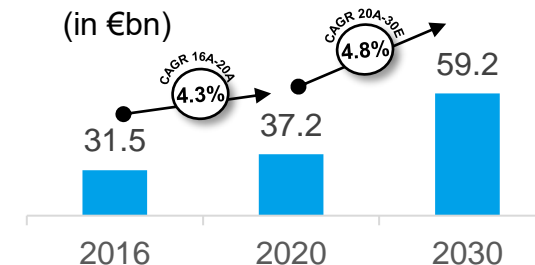
The global packaging machinery market is characterized by a high degree of fragmentation and continues a robust growth path of recent years with increasing automation demands from end markets

Global Packaging Machinery Market Overview

- The global packaging machinery market is estimated to be **€37.2bn** as of 2020 and is expected to grow at a **CAGR of 4.8%** through 2030
- The **impact of Covid** on the industry is **minor** (see Appendix)



Market Size Global



Market Entry Barriers

Entry Barrier	Relevance
Application Know-how	●
Customer Relationships	●
Track Record & Reputation	●
Manufacturer Qualification	●
Local Customer Service	●

Proxy

CAGR packaging machinery: **4.8%** | CAGR key end markets: **4.0%-5.0%** → **Schubert's addressable market to grow ~4.5% CAGR for the next 5-8 years**

Market Characteristics

Fragmentation	<ul style="list-style-type: none"> ▪ The global packaging machinery market is highly fragmented with only a few large players ▪ Top 5 players with 20% market share and 5th largest player generating c. €490m Sales annually ▪ Schubert places among largest market players³
Market & Product Focus	<ul style="list-style-type: none"> ▪ Many manufacturers focus on specific niche end markets and machine types due to strict certification requirements in highly regulated industries such as F&B and Pharma without covering the whole value chain
Consolidation Pressure	<ul style="list-style-type: none"> ▪ Increased consolidation pressure in recent years due to a growing demand for complete solutions and the fact that only a few companies can offer them (most are specialists) ▪ Increased M&A activity in small to mid-cap segment

Market Driver

Automation & Robotics	<ul style="list-style-type: none"> ▪ Business needs for higher efficiency and productivity drive demand for automated packaging lines with higher production speed and greater flexibility ▪ Modularity and versatility gain in importance
Sustainability & Flexible Packaging	<ul style="list-style-type: none"> ▪ Growing importance of sustainability drives demand for more energy-efficient and flexible packaging machines that can handle different sizes and packaging materials
Food production	<ul style="list-style-type: none"> ▪ Growing population requires higher food production to be packaged ▪ Regulatory changes towards greater food safety, especially in emerging markets

Source(s): Expert Interviews, PMMI, Statista, ARC Advisory Group, eMarketer, Allied Market Research; Note(s): 1) Based on 2016 figures; 2) Based on 2018 figures; 3) C. 1% market share with c. €270m Sales 2019A

Schubert acts in a megatrend driven market and shows significant growth potentials with little obstacles imposing growth threats

S

- High degree of **innovation** through own, well-funded research and development department (several patents, etc.)
- Representative typical German mechanical engineering manufacturers characteristics such as **quality** and **precision**
- **Modular design** of the machines enables **coverage of the entire packaging line** as well as high **flexibility** and **in-house manufacturing**
- **High expertise & long track record** in key industries
- **Strong employer brand** through good networks with educational institutions as well as social offers for employees
- **Large, addressable, fragmented, growing market**

- **Volatile sales development** due to dependencies on big orders
- **Upgradable service offering** & service proximity
- **Low share of aftersales services** in overall sales structure with only **16% of 2019A sales**
- **Multitude of group companies** tie up management attention; Especially System Elektronik seems not to be totally core business
- Weak investment management due to CAPEX backlog during 2016A as investments were made after **100% production capacity** was reached

W

O

- High **growth potential** in **China** as **fastest growing market**, in which German manufacturers lead the **premium segment**
- Schubert management already showed that they are capable of an **aggressive geographical expansion** (USA)
- Highly **fragmented market**, especially in China, offers great **potential for inorganic growth**
- Increased **demand for flexible and sustainable packaging machines**, e.g. with **interchangeable tools** to handle new materials and different sizes and to strengthen market position
- **Management change** could pose new opportunities due to rejuvenation of the current management age structure

- The so-called '**Made in China 2025**' strategy, which aims to strengthen domestic players and challenge the dominance of international players in its home market **inhibits import volumes**
- Current **fast-paced market** environment requires **steady innovation** to stay ahead of competition
- **Substitute technologies** such as vertical loading or tray loading machinery
- **Focus of larger players** towards **Pick & Place** technology with larger customer base

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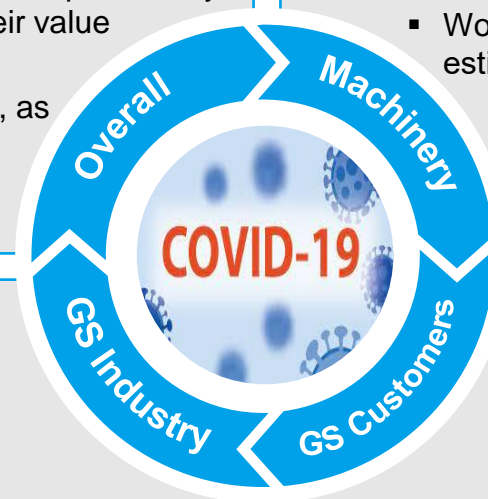
Covid-19 - a crisis with far-reaching effects; however, the effect on Schubert and the packaging industry are manageable

- In 2020, global GDP declined by **6.7%** as a result of the Covid-19 outbreak
- Out of the world's 7 largest economies, **UK** was the most negatively affected (-9.6%); **Germany: -4%**; only China experienced a **positive GDP growth rate of 4.9%**
- Global stock indices posted **substantial losses**; March 6 to 18 was particularly dramatic, with several stock indices losing more than 20% of their value (NASDAQ: -12.4%, Mar 6-18, 2020)
- Distortions caused by Covid-19 were also weighing on **demand**, as potential investors were holding back on orders and **consumer expenditures shrank**
- Many **supply chains** have been disrupted by lockdowns

- European mechanical engineering fell into a **deep recession** in 2020
- Crisis led to **high export losses** (2020 exports -9.7%; imports -9.4% compared to 2019)
- Production in Mechanical Engineering dropped between **3% and 17%** in different EU countries (Germany: -8%; EU-27: -13% in real terms)
 - Worldwide, machinery and equipment were manufactured for an estimated €2,585 bn in 2020 (**-5% compared to pre-Covid-19 level**)
 - **China** was the only country among TOP 10 manufacturing countries to **exceed its pre-crisis level**
 - Germany reaffirmed its position as **third largest machinery producer** with estimated sales of €271 bn

- In the German packaging machinery sector, order intake in 2019 was down **sharply by -5%** on the previous year
- **Optimism** is given by the fact that the packaging machinery sector is **not expected to decline** to the same extent as the entire machinery and plant sector and that demand will also increase **rapidly again**
- Schubert directly established a **task force** consisting of the Schubert Group's management and leadership team to **assess the current development and its impact** and to **respond appropriately**

- During the first half of 2020, most countries measured **negative business confidence indices**; only China and India positive had growth rates of 1.6% and 1.2%, respectively
- Pharma: **revenues grew steadily**; Market capitalization changed in key Covid-19 firms
 - Food, beverages and snacks: most categories have seen **significant increases** in sales (baking mixes were fastest growing with +106.5% in the US)
 - Cosmetics: due to Covid-19, the new 2020 forecast for the Cosmetics segment is **7.2% lower** than the original forecast








- Overall, the **global economy was or is enormously affected** by the Covid-19 pandemic
- The mechanical engineering industry had to cope with **severe downturns** in some cases (though less than other industries such as tourism)
- The **packaging industry was less affected**, as were **most of the industries in which Schubert customers** are operating














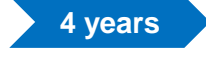



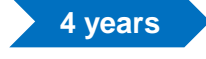
5. Investment Rationale and Value Creation

Schubert represents an extremely attractive and reliable investment with very positive development opportunities on many levels





Thesis					
Thesis	Value Proposition in premium segment with best-in class <u>product portfolio</u>	Highly successful <u>export business</u> “made in Germany” with intl. <u>market share gain potential</u>	Important Assets: Experienced <u>management team</u> and precious <u>human capital</u>	Strong and robust <u>financial profile</u> with proven growth trajectory	Megatrend driven (<u>end-market(s)</u>) bearing enormous <u>growth potential</u>
Status Quo Deal Rationale	<ul style="list-style-type: none"> ▪ Covering the whole packaging machinery value-chain for several end markets ▪ Providing premium one-stop-shop solutions through flexible, modular, customizable and scalable product offerings ▪ Ability to retain loyal and attract new customers through positioning as quality and industry innovation leader for 55 years 	<ul style="list-style-type: none"> ▪ Schubert has a high export quota of c. 70%, showcasing the perceived German machinery quality ▪ Relatively low dependency on domestic market counteracts customer investment cyclicalities ▪ Strong US expansion with sales growing from €15m in '16A - €74m in '19A (374%) ▪ Fragmented global markets with no dominant players 	<ul style="list-style-type: none"> ▪ Longstanding management team with relevant strategic track record (post acquisition integration, successful intl. expansion (US)) ▪ Historical built up of strong (second level) management also allows smooth internal CEO transition ▪ Highly trained employees & acquisition of young talent through the German dual system 	<ul style="list-style-type: none"> ▪ Strong historical CAGR of Sales (7.5%) and of Gross Profit (8.8%) since 2012 evince high profitability & scalability ▪ Cash conversion despite significant CAPEX, at 32.8% on average over the last three years ▪ Healthy balance sheet structure makes Schubert an attractive LBO target 	<ul style="list-style-type: none"> ▪ Schubert is application leader in the Pick & Place niche of the packaging machinery market which is expected to grow at a CAGR of 4.5% until 2030 ▪ The packaging machinery and Schubert’s end markets are megatrend driven and continuously develop towards more sustainable solutions as well as increased service offerings
Base for Future	<ul style="list-style-type: none"> ▪ High quality and great reputation creates defendable competitive advantage allowing for premium pricing and growth of market share ▪ Expanding deep technical know-how and continuing high R&D spending secure market position 	<ul style="list-style-type: none"> ▪ The results of the US Sales restructuring in 2016A indicate that Schubert is capable of showing similar expansions in other not yet focused markets (e.g. Asia) ▪ Management lessons learned will support further intl. market share gains 	<ul style="list-style-type: none"> ▪ Experienced management team enables rapid and successful implementation of future strategies ▪ Ability to secure well-trained and motivated personnel with Schubert Academy becomes a competitive advantage 	<ul style="list-style-type: none"> ▪ Significant EBITDA upside potential, as Gross Profit increase does not translate to EBITDA yet as production and R&D capacity had to be built up ▪ Healthy balance sheet and cashflow allow for high leverage 	<ul style="list-style-type: none"> ▪ Non-cyclical focus end markets Food and Confectionary show significant growth potential at an expected CAGR of 4.0%-4.7% until 2025; combining to addressable market growth of 4.5%

Source(s): Own Analysis

















Overview of Strategic Measures (1/2): Prioritising the different value creation strategies results in 4 measures to increase Schubert's sales growth

Strategic Measure	Description	Strategic Impact	Financial Impact	Feasibility	Management Resources	Implementation Time
 International Expansion China	<ul style="list-style-type: none"> Expansion to China Strengthen successful market entry through leasing partnership 	<ul style="list-style-type: none"> High organic sales growth Improved sales and service offering and cross-selling potential for existing clients in new markets Acquisition of new clients 	<ul style="list-style-type: none"> APAC Revenue +€22m thereof €15m attribute able to strategy 			<i>Start: Q1 2020</i>  3 years
 International Expansion United States	<ul style="list-style-type: none"> Market penetration United States Expansion of presence at key trade fairs Expansion of sales and service workforce 	<ul style="list-style-type: none"> Organic sales growth Increased brand awareness and service availability Broaden geographic reach to achieve stronger foothold in US 	<ul style="list-style-type: none"> United States Revenue +€20m thereof €8m attributable to strategy 			<i>Start: Q1 2020</i>  3 years
 International Expansion France & Poland	<ul style="list-style-type: none"> Increase market share at low level of effort (financially and regarding personnel) to realize significant sales increase in 	<ul style="list-style-type: none"> Strengthen (home) markets Expand and change mindset of sales team through trainings 	<ul style="list-style-type: none"> EMEA Revenue +€18m thereof €15m attributable to strategy 			<i>Start: Q2 2021</i>  4 years
 Expansion of Service Network	<ul style="list-style-type: none"> Enhance digital service offerings including predictive maintenance and software as a service modules 	<ul style="list-style-type: none"> Increase recurring service revenues Increased customer satisfaction through reduced downtimes 	<ul style="list-style-type: none"> Aftermarket Revenue +€49m Profitability increase 			<i>Start: Q2 2021</i>  4 years



Source(s): Own Analysis

 /  /  High / Medium / Low Feasibility  High managerial demand

Overview of Strategic Measures (2/2): Prioritising the different value creation strategies results in 4 further measures targeting costs and efficiency, a buy-and-build initiative as well as ESG objectives

	Strategic Measure	Description	Strategic Impact	Financial Impact	Feasibility	Management Resources	Implementation Time
Cost decrease	 Reduction of Material Expenses	<ul style="list-style-type: none"> Expansion of production capacities to reduce purchased services Process optimization 	<ul style="list-style-type: none"> Lower direct cost per machinery and increase gross profit Reversal of capacity issues 	<ul style="list-style-type: none"> Margin improvement Cost reduction of c. €10k per machine 			<i>Start: Q1 2020</i> 
M&A	 Structural Realignment through Carve-Out	<ul style="list-style-type: none"> Carve-Out of non-core in-house electronic manufacturing business Schubert System Elektronik 	<ul style="list-style-type: none"> Cash generation and future margin improvement through divestment of low-margin business unit Release of management capacities 	<ul style="list-style-type: none"> Cash generation of c. €30m in 2020 Multiple arbitrage +€3m 			<i>Start: Q1 2020</i> 
	 Inorganic Growth through Add-On	<ul style="list-style-type: none"> Vertical expansion through acquisition of packaging material manufacturer ETIMEX Primary packaging 	<ul style="list-style-type: none"> Significant sales and EBITDA impact Sales synergies through holistic offering of packaging machinery and packaging material 	<ul style="list-style-type: none"> Cash outflow of c. €54m in 2021 EBITDA contribution +€8m 			<i>Start: Q1 2021</i> 
ESG	 Sustainability and Impact	<ul style="list-style-type: none"> Set up of ESG task force to reach best in class practices Include impact and ESG measures in decision making 	<ul style="list-style-type: none"> Attractive exit scenarios through exit multiple improvements Improved brand awareness and perception for customers and employees 	<ul style="list-style-type: none"> Slight upfront cost Possibility of higher exit multiple 			<i>Start: Q1 2020</i> 

Source(s): Own Analysis

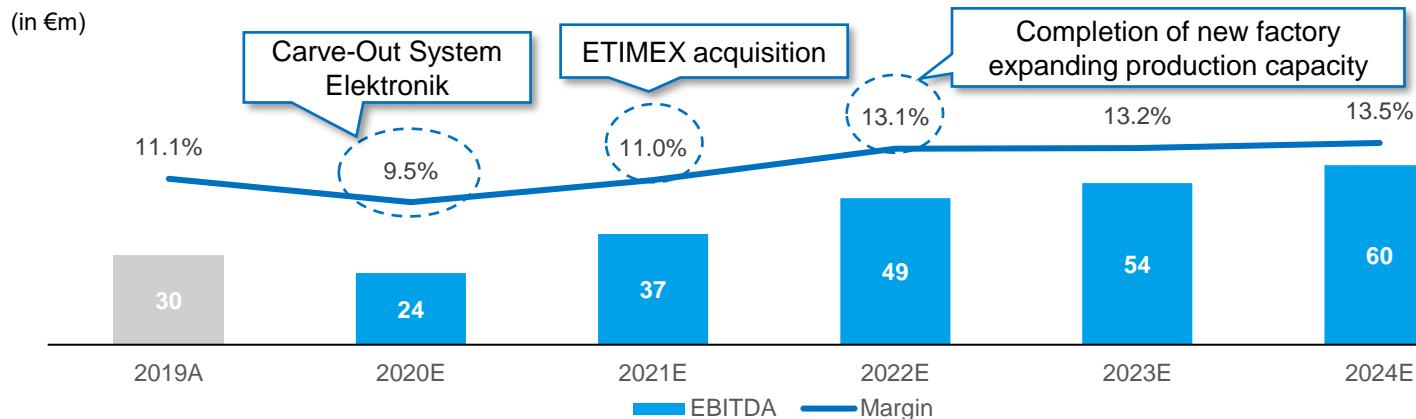

 High / Medium / Low Feasibility  High managerial demand

6. Business Plan



Schubert's strong Material Expense margin decrease translates to an EBITDA margin uplift, resulting in an EBITDA of €60m in 2024E, constituting a 2.4pp margin increase

EBITDA Development

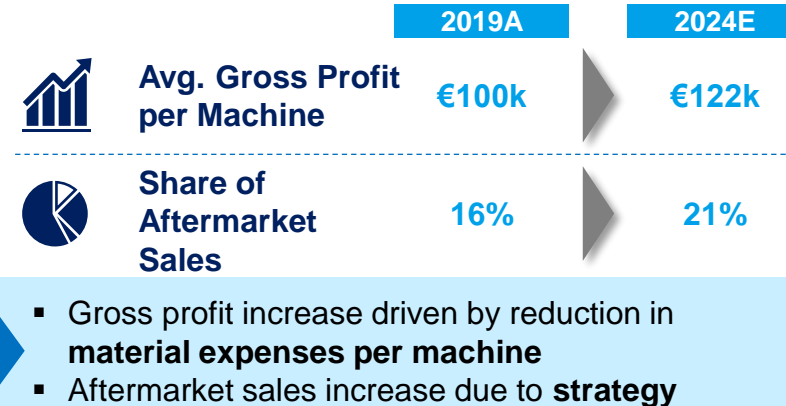


Income Statement

in €k	2019A	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	12-'19	19-'27
Sales	272,319	252,029	335,160	375,147	411,546	445,436	482,074	511,800	547,960	7.5%	9.1%
YoY Growth	(3.8%)	① (7.5%)	33.0%	11.9%	9.7%	8.2%	8.2%	6.2%	7.1%		
Turnover	284,055	250,574	333,096	375,056	411,310	445,494	480,973	510,746	546,460	7.9%	8.5%
Material Expenses	② (111,447)	(94,814)	(133,228)	(136,099)	(145,590)	(153,115)	(163,460)	(170,846)	(180,572)	6.7%	6.2%
% Margin	(40.9%)	(37.6%)	③ (39.8%)	(36.3%)	(35.4%)	(34.4%)	(33.9%)	(33.4%)	(33.0%)		
Gross Profit	172,608	155,760	199,868	238,957	265,721	292,380	317,512	339,900	365,889	8.8%	9.8%
% Margin	63.4%	61.8%	59.6%	63.7%	64.6%	65.6%	65.9%	66.4%	66.8%		
Personnel Expenses	(100,354)	(91,632)	(113,787)	(132,460)	(149,509)	(165,745)	(181,419)	(196,399)	(210,348)	8.5%	9.7%
% Margin	(36.9%)	(36.4%)	(33.9%)	(35.3%)	(36.3%)	(37.2%)	(37.6%)	(38.4%)	(38.4%)		
Other OPEX	(45,588)	(42,025)	(53,115)	(61,555)	(66,557)	(71,266)	(74,645)	(77,428)	(83,306)	8.4%	7.8%
% Margin	(16.7%)	(16.7%)	(15.8%)	④ (16.4%)	(16.2%)	(16.0%)	(15.5%)	(15.1%)	(15.2%)		
OPEX	(145,942)	(133,657)	(166,901)	(194,015)	(216,065)	(237,011)	(256,065)	(273,826)	(293,654)	8.5%	9.1%
% Margin	(53.6%)	(53.0%)	(49.8%)	(51.7%)	(52.5%)	(53.2%)	(53.1%)	(53.5%)	(53.6%)		
Other Income	2,059	⑤ 1,906	3,960	4,237	4,483	4,724	4,987	5,195	5,429	5.2%	12.9%
EBITDA Adjusted	30,227	24,009	36,927	49,179	54,138	60,092	66,435	71,269	77,664	9.9%	12.5%
% Margin	11.1%	⑥ 9.5%	11.0%	13.1%	13.2%	⑦ 13.5%	13.8%	13.9%	14.2%		

Source(s): Own Analysis, Annual Reports; Note(s): Shaded area of business plan denotes business plan beyond assumed investment horizon

Key Results



Comment

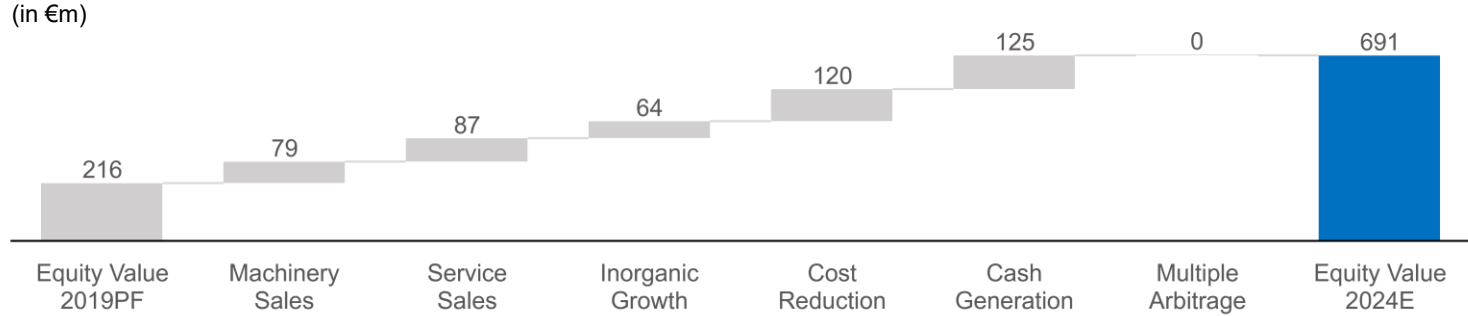
- Decline in 2020E due to **Carve-Out**, followed by strong increase in 2021E largely attributable to **ETIMEX**
- Reduction mainly driven by **Carve-Out of business unit with significant material expenses**
- ETIMEX acquisition **increases margin**; decrease in 2022E due to **factory ramp-up**
- Decrease follows omission of **international expansion related costs** upon finalisation
- Increase of c. €2m in 2021E due to the ETIMEX acquisition
- Margin decline in 2020E due to **one-off Covid-19 effects** and **Carve-Out dilution**
- Value creation strategies for cost reduction measures increase **EBITDA margin to 13.5% in 2024E**

7. Valuation, Capital Structure and Returns



Value Creation measures and deleveraging increase the Equity Value from acquisition in 2019A (€216m) to €691m in 2024E, yielding a 2.9x overall MoM Multiple for the fund

Return Analysis



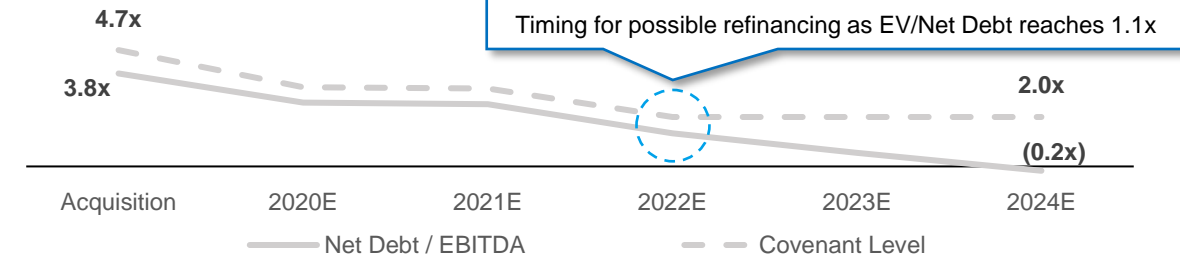
- Machinery Sales and Services Sales are the biggest EBITDA Value Creation levers
- Inorganic growth accounts for Add-On acquisition of ETIMEX amounting to **€102m EBITDA contribution** and Schubert System Elektronik **Carve-Out resulting in a negative EBITDA contribution of €38m; €41m upside of Carve-Out contribution** is accounted for in cash generation
- Cost reduction measures mainly driven by Material Expense reduction contribute **€120m** to returns
- Even though a **Multiple Arbitrage on group level** could be argued through ESG measure implementation it is **neglected** to ensure conservative planning
- A **debt recapitalization and subsequent dividend payments** are **not taken into account**

Anticipated Exit Returns

	2024E
Sweet Equity Money Multiple	5.0x
Sweet Equity IRR	37.8%
Sweet Equity Total Proceeds	€49,643k
Fund / Family Money Multiple	2.9x
Fund / Family IRR	24.0%
Family Total Proceeds	€226,446k
Fund Total Proceeds	€425,399k

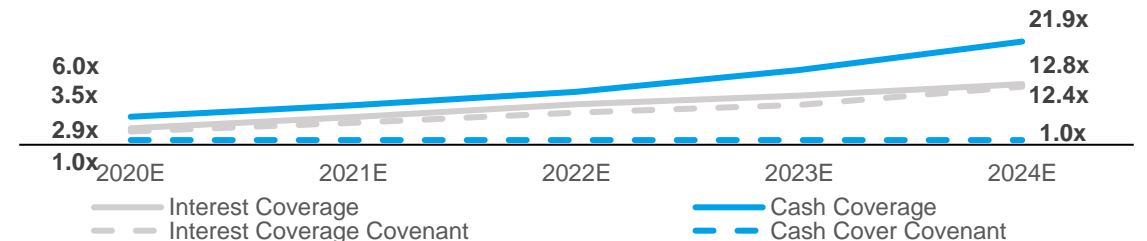
- Family and fund realise the same returns, a MoM Multiple of 2.9x and IRR of 24.0%, investing at same conditions
- Sweet equity shows superior returns to other parties with MoM of 5.0x and IRR of 37.8%
- Although a later exit year would realize a **larger MoM return for all parties** an earlier exit is **desirable due to subsequent decline in IRR** with longer holding period
- Covenants are assumed to have **healthy headroom** throughout the holding period

Leverage Ratio



Source(s): Own Analysis





Interest Coverage Ratio & Cash Coverage





8. Due Diligence and Exit

Exit options: Due to the strong M&A activity of peers and PE firms in the packaging machinery market, Schubert is well suited for a Sale to a Strategic Buyer as well as a Secondary Sale

	Sale to Strategic Buyer	Secondary Sale	Sale in Parts	Initial Public Offering
Rationale for buyer	<ul style="list-style-type: none"> Potential strategic investors are larger competitors in the packaging machinery sector Attractive opportunity from competitor perspective due to exploitations of synergies 	<ul style="list-style-type: none"> Further upside potential through market growth / expansion and additional value creation strategies such as Retrofit¹ High leveraging or Buy- and-Build potential 	<ul style="list-style-type: none"> Sale of company parts (packaging machinery and ETIMEX) to strategic buyers or PE Fund Carve-Out of ETIMEX would be part of the sale process 	<ul style="list-style-type: none"> Possible listing on German stock exchange (SDAX)² Often preferred by management
Pros	<ul style="list-style-type: none"> Large players in the industry with high financial resources and M&A activity Synergies might lead buyer to pay premium on price Complete exit possible 	<ul style="list-style-type: none"> Previous transactions show high interest in the sector Fast sales process with immediate full exit Aggressive financing structure can lead to higher price 	<ul style="list-style-type: none"> Due to the size of the company and its specialisation, companies might be more interested in buying ETIMEX separately from Schubert 	<ul style="list-style-type: none"> A listing gives the management more freedom, leading to greater motivation Going public attracts a lot of attention and increases credibility
Cons	<ul style="list-style-type: none"> Complex and long process (high Due Diligence effort) 	<ul style="list-style-type: none"> Strong negotiator with a clear focus on price reduction 	<ul style="list-style-type: none"> Possibly difficulties to find two different buyers at one and the same time Potential lower individual valuation than group valuation Carve-Out could consume many resources 	<ul style="list-style-type: none"> Uncertainty about future returns High dependency on market conditions High transaction costs Money might be tied up Full exit might not be possible
Potential Buyers	<p><i>Best fit</i></p> 			

Preferred Exit

Source(s): Finanzen.net; Note(s): 1) De-prioritized in current investment period; 2) Market capitalization from €403.99m to €7,899.63m as of 17.11.2021.

9. Digitization in the packaging machinery Industry



Digitization is putting the packaging industry to the test; Industry 4.0 has already fully arrived

Introduction and context

Many industries, such as retail, media, and banking have lately been disrupted in a relatively short period. Digitization is not just about implementing digital technologies into existing business architectures, but also about challenging existing business logic in the light of new opportunities offered by the latest digital technologies. The packaging industry is also undergoing profound change as entire value chains are being reshaped. Companies are under pressure from the competition, market expectations, and new brands to shorten cycle times for new products - from packaging design to arrival on the shelves. (Joker, 2020)

Digital trends are especially changing the dynamics of the packaging value chain. All stakeholders, from brand owners and packaging designers to printers and converters, as well as tool and machine manufacturers, need to adapt while identifying additional growth opportunities. *Industry 4.0*, *IoT*, and *Digital Factory* have become much more than buzzwords: Industry 4.0's intelligent networking of machines, plants, and manufacturing processes makes data available for a variety of purposes. Typical fields of application are flexible production, for example, to optimize machine utilization, the convertible factory to be able to produce individualized products in small quantities at competitive prices, or intelligent maintenance to avoid unplanned production downtimes. (Technische Hochschule Ingolstadt, n.d.)

Relevant technologies for packaging machinery

Businesses may save up to 50% on maintenance and machine downtime while increasing productivity by up to 55%. However, in practice, this frequently fails due to a lack of interdisciplinary expertise in picking the appropriate technologies and integrating them into a holistic strategy. The most relevant innovation areas for packaging machine manufacturers are currently the following: optimization of production processes, predictive maintenance, adapting warehousing, and occupational safety. (Feeß & Freund, 2017)

For the former, two technologies are leading the way: (1) *Robotics*: Intrinsically flexible robots use visually controlled line tracking to handle infinitely variable product shapes and sizes. (2) *Independent Cart Technology (ICT)*: Conventional conveyor systems move products along a pre-configured path at a fixed speed. ICT increases flexibility and throughput by intelligently moving carts depending on where other carts are in the system. Also, *3D printing* combined with *streaming platforms for spare parts* is a great way to reduce costs and delivery times for manufacturers and customers. In addition, the *digital twin* is becoming increasingly important. This simulation software is at the center of every development process and opens the way for predictive maintenance. However, if something does need to be repaired, virtual and augmented reality provide guidance without the need for a service employee to leave the house. (Packaging Europe, 2021)

Agile working, speed of adaptation, and a pioneering mindset can help packaging machinery Manufacturers gain relevant competitive advantages

The benefits of digital in packaging and how to approach them

The digitization of the packaging industry holds enormous potential for companies to save costs and create new sources of income through product innovations. The highly reputed management consultancy Bain & Company identifies three areas in which potential can be leveraged in order to create competitive advantages:

1. **Digital customer relationships:** Customers' expectations are rising; they want more transparency and better control over their orders. The analysis of customer data delivers a better perspective and understanding of their needs and preferences and digital customer experiences become more important.
2. **Digital products and services:** The integration of RFID, QR and other unique identification technologies into packaging plays an increasing role for a rising number of products. Tetra Pak and SIG Combibloc for example, both suppliers of liquid packaging technology and materials, have substantial experience in the dairy business, which is important to their customers all over the world. These equipment makers will be able to supply the technology platform to enable dairies make the connection from online marketing and other areas of customer involvement to their goods.
3. **Digital value chains:** In factories, digital technology enables more efficient monitoring and operation of equipment - even remotely. Digital sensors, wireless networks and apps on tablets can free technicians from the control room and allow them to carry out inspections or repairs while staying in touch

with the central controller. Connected assets and better data about their condition can also help operators plan preventive maintenance more efficiently, avoiding costly downtime and damaged assets or products. So how can companies develop in this digital direction and what does it take? Investments in own product innovations are of utmost relevance especially for machine manufacturers. Therefore, the war for talent, which is already intensifying in other industries, will become even greater. Agile approaches to product, service and process innovations are important to increase the speed of developments. (Leppävuori, Poindexter & Straehle, 2017)

However, just as important as own innovations are the development of infrastructure and, above all, a network of partnerships with technology companies. A McKinsey study proves that in most end markets, customers are not interested in closed, manufacturer-specific solutions, as these create a lock-in effect. (McKinsey & VDMA, n.d.)

In addition, business models, revenue sources and organizational structures must be continuously questioned and rethought in order to withstand the major challenges. All in all, however, the big word "digitization" conceals an enormous mountain of untapped potential in the packaging machinery industry that can lead to a sustainable competitive advantage with forward-looking thinking and action. (Leppävuori, Poindexter & Straehle, 2017)

Source(s): Technische Hochschule Ingolstadt, Packaging Europe, Fachpack Newsroom, Flexible Packaging, Bain & Company.

References & Appendix



SCHUBERT



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In order to better understand and validate important contexts, assumptions were challenged in expert interviews through which important insights into the company and the market could be gained (1/3)

Matthias Welge

Principal Consultant at INVENSITY

Matthias Welge is Principal Consultant at INVENSITY for more than 14 years. INVENSITY is an international technology and innovation consulting company. Prior to that Mr. Welge was working for Eurospace and in a Controlling / M&A position at ThyssenKrupp. He is an absolute expert in the field of machinery and knows the market and its drivers very well.



Johannes Paschmanns

Project Manager Finance IT at Aroundhome

Johannes Paschmanns is currently Project Manager Finance IT at Aroundhome for 2 years. Prior to that he was Senior Investment Analyst at Franz Haniel & Cie., specifically responsible for the development of packaging machinery manufacturer ROVEMA, as well as focussed on Franz Haniel's efforts expanding within the packaging machinery sector, thus providing significant market and company specific insights.



Dr. Ludwig Erl

Manager at Bain&Company

Dr. Ludwig Erl is Manager at the strategy consulting company Bain&Company for which he works since 2016. His focus areas are Advanced Manufacturing & Services and Private Equity. Dr. Erl has relevant experience in the field of packaging machinery from several consulting projects at Bain&Company, mainly in the areas of procurement and machine manufacturing.



Violetta Sulzbach

ESG Analyst at Quadriga Capital

Violetta Sulzbach advises companies on the implementation of sustainability programs with a focus on impact as well as environmental, social and governance (ESG) factors. Additionally, she is researching her PhD in Sustainable Finance at the Impact Institute of the European Business School in Oestrich-Winkel. She has relevant experience and insights in the field of ESG and Impact analysis and their strategic impact on Private Equity investments.



In order to better understand and validate important contexts, assumptions were challenged in expert interviews through which important insights into the company and the market could be gained (2/3)

Roland Kuhn

Head of Sales at Rovema

Roland Kuhn is head of Sales at Rovema, a mid-sized packaging machinery developer from Germany. Mr. Kuhn has more than 35 years of industry experience and knows a multitude of companies. He is an absolute expert in the field of machinery and knows the market and its drivers very well.



Leonie Hölbe

Head of Corporate Development at Rovema

Leonie Hölbe is Head of Corporate Development at Rovema, a mid-sized packaging machinery developer from Germany. Prior to that she was Senior Manager for Corporate Development/ M&A at Franz Haniel & Cie. Mrs. Hölbe is experienced within the packaging machinery sector, an investor perspective, also focussing on financial aspects of a packaging machinery producer.



Erkul Basaran

CFO FT Division at GEA Group

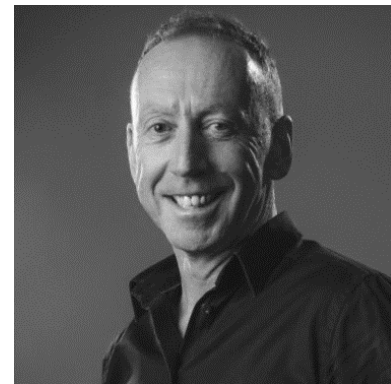
Erkul Basaran is Chief Financial Officer of the Farm Technologies Division of the GEA AG. GEA is one of the world's largest systems suppliers for the food, beverage and pharmaceutical sectors also offering packaging technology. Prior to that he was Head of Group Finance and Head of M&A of the GEA AG as well as Manager for Transaction Services at KPMG.



Fritz Kipfer

Former CEO of Gerhard Schubert North America

Fritz Kipfer was at numerous positions within Schubert since 2001 and was heading its North America division until June 2018. He was responsible for the market entry in North America, the sales restructuring and the massive growth. He has a deep understanding of Schubert and its group constituents, as well as its geographical expansion procedures, sales structure and USPs.



In order to better understand and validate important contexts, assumptions were challenged in expert interviews through which important insights into the company and the market could be gained (3/3)

Thomas Krämer

Business Development Manager at R. Weiss

Thomas Krämer is a Business Development Manager at R. Weiss Verpackungstechnik. After completion of his studies in Management he started a career at R. Weiss in 2018. R. Weiss is a competitor to Gerhard Schubert as it also is a packaging machinery producer with a focus on Pick & Place applications with the headquarter in the same town as Gerhard Schubert.



Maximilian Vogel

Investment Director at Arcus Capital AG

Maximilian Vogel is Investment Director at Arcus Capital AG, a German-based Family Equity investor. Prior to that, he gained relevant Private Equity experience in the PE practice of L.E.K. Consulting for more than three years. Since 2018 he is part of the investment team at Arcus Capital and has major experience in Deal Structuring and Sourcing.



Vera Fritsche

Advisor packaging machinery at VDMA

Vera Fritsche is an advisor for packaging machinery at the VDMA Food Processing and packaging machinery Association, which is one of 39 industry-specific associations within the Mechanical Engineering Industry Association (VDMA). With more than 3,300 members, VDMA is the largest network organization for mechanical engineering in Germany and Europe.



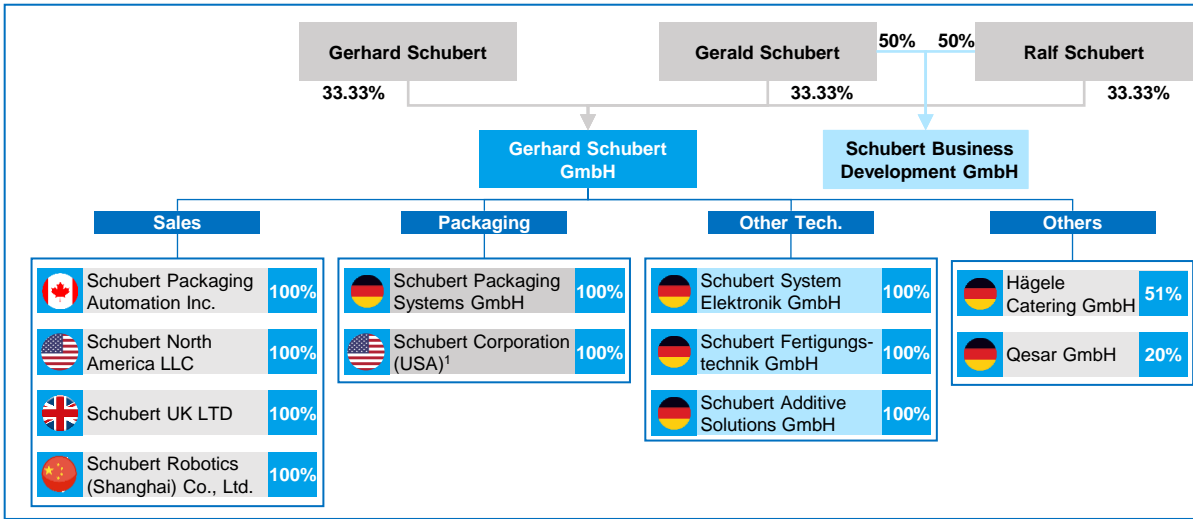
Philipp Heisig

Investment Director at Astorius Capital

Philipp Heisig is Investment Director at Astorius Capital, a leading German small and mid cap fund of funds. Currently, he is also PhD Candidate at the chair of Management and Private Equity at the HHL with the topic of value creation of German small and mid cap Private Equity funds.



The Schubert Group comprises 13 companies - 4 of them are wholly owned German operating subsidiaries, specialised in different key aspects to offer sophisticated packaging solutions



€33.1M
 51
Schubert Packaging Systems

- Competence center for **turnkey solutions**
- Packaging **Consulting Services**
- One business unit that is solely producing **Pharma & Cosmetics customised** packaging systems with focus on process integration and product safety

€30.6M
 165
Schubert System Elektronik

- Supplies **Hardware and Software** for **monitoring** and controlling packaging machines
- **Data interface** between Schubert and client through Ilot gateway
- Tool monitoring via sensors & predictive maintenance with 33% of Sales invested in R&D

€60.3k
Schubert Business Development

- Consulting entity **capturing market trends** and **consultancy services**
- Also offering **strategic partnerships, founding, investments, development services**
- Focus on **start-ups** and on **investments** in **existing companies**

€11.5M
 80
Schubert Fertigungs-technik

- Manufacturing of **precision components within turning, drilling, grinding, milling, testing** areas
- Supplying mainly the **packaging machinery** industry (82% of Sales are intercompany)
- Other customers are **plant engineering, aircraft construction and optical industry**

27 partners
Qesar - Minority (20%)

- **Network of world-leading special machinery** and plant manufacturers and their main suppliers
- Pool of **27 partners with 29 subsidiaries** for the exchange of **knowledge** and **experience** from the packaging machinery industry and **131 suppliers** for the member companies from 86 countries

120k parts p.a.
Schubert Additive Solutions

- **3D printing solutions, including spare parts & tools** for packaging machinery
- **Offering PARTBOX** as a streaming platform acting as virtual **warehouse** for digitally stored spare parts, tools and equipment

Source(s): Company Information; Note(s): 1) Service entity covering North America and Holding company for country activities; 2) Includes group internal and external sales

Modularity & Flexibility of Schubert's machinery due to intelligent design leads to efficiency advantages in production and provides high degree of individualization for customers

Machine Modularity

- Offering of **modular system design** for the top loading machines
- This allows a **tailoring to customer needs** without changing the whole production in different sizes, accustomed to production space specifics
- **8 standardised system components** to be **combined into sub-machines**, which can be **combined with other sub-machines to a packaging line**

System components

- Robots, Vision System, Transmodul, Flowmodul, VMS machine control system

Sub-machines

- Self-contained, fully functional machines incorporating one function of a complex packaging plant

Packaging line

- Sub-machines connected electrically, pneumatically and mechanically
- Average machine consists of 5.5 submachines

Use cases

1. Allows customers to **combine machinery from different suppliers**; e.g., a cheaper flow module from competitor could be combined with Schubert Pick & Place solution if the customer cannot afford a whole (premium) Schubert line
2. Using **standardised components lowers Schubert's production costs** and ensures Schubert's competitiveness through economics of scale

Machine Flexibility

- Schubert machines allow for **interchangeable tools** for different applications
- **Quick changeover times** between tools to avoid downtime
- Often only tools need to be changed to pack a complete new product
- **Enhances customer convenience** as they can react to market changes easily
- Tools allow the robots to **fulfil different functions**

Tools

- Robots are equipped with specially constructed, or 3D printed, format specific tools

Functions

- Assemble, fill, seal, label, palletise, thermoform, box pack, wrap and perform other special functions



Use cases

1. Products are often **seasonal**; e.g., the same machine can pack different chocolate figures depending on the occasion (Christmas vs. Easter)
2. Bakery products might need **different product sizes depending on the market**; A Schubert machine can pack multiple sizes of the same product through changing the tool

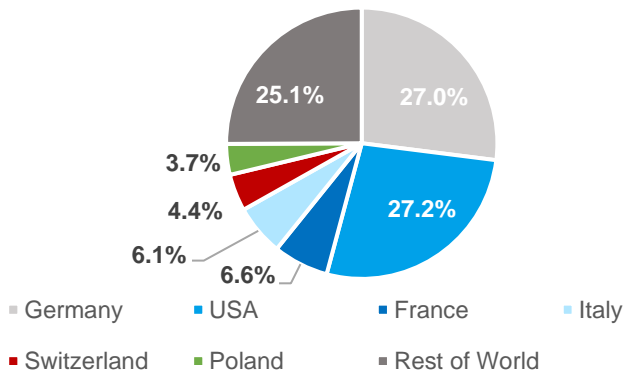
Advantages: Flexibility & Modularity justify Schubert's premium positioning and offer significant advantages for customers as well as differentiation towards competition

From 2016A onwards, Sales increase is mainly driven by expansion of North America Modular Machinery Sales, whereas the rest of the divisions moderately support the growth trend (1/2)

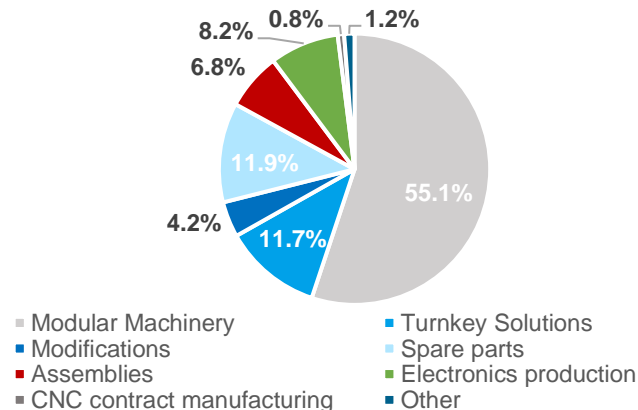
in €k	2012A	2013A	2014A	2015A	2016A	2017A	2018A	2019A	12-'19
Modular Machinery	84,802	101,945	111,844	114,448	101,000 ³	116,331 ⁵	149,054 ⁶	150,083 ⁷	8.5%
Turnkey Solutions	18,876	37,109	46,103	38,244 ²	42,830 ⁴	42,609	42,200	31,900	(5.0%)
Assemblies	9,281	10,490	10,764	12,705	15,262	18,113	18,517	18,531	10.4%
Aftermarket Sales	19,044	24,170	28,119	26,642	33,420	36,800	39,627	43,933	12.7%
Electronics	0	19,999	22,475	20,753	20,145	21,962	25,245	22,460	n.a.
CNC Contract Manufacturing	1,283	1,277	1,686	1,615	1,620	1,994	2,337	2,067	7.1%
Other	4,496	5,701	7,436	10,088	5,110	5,364	6,188	3,345	(4.1%)
Sales	164,550¹	200,691	228,426	224,495	219,387	243,173	283,167	272,319	7.5%
YoY Growth	n.a.	22.0%	13.8%	(1.7%)	(2.3%)	10.8%	16.4%	(3.8%)	
Delta Inventory	1,988	2	(431)	484	12,419	6,021	(8,315)	11,736	
Turnover	166,538	200,692	227,995	224,979	231,806	249,194	274,852	284,055	7.9%
YoY Growth	n.a.	20.5%	13.6%	(1.3%)	3.0%	7.5%	10.3%	3.3%	

	Comment
1	Strong growth fueled by acquisition of electronics production unit in 2013A and increase of turnkey offerings
2	Reduction in exports were not fully offset by increase in domestic Sales, main driver was the shortfall of 2 turnkey systems (11 instead of 13) with an average value of c.€3m as well as full production capacity reached end of 2014A
3	Decrease of modular machinery due to ramp up of production personnel to be able to cope with order intake of €182.9m in 2016A whilst having 100% capacity across all production processing and reduction in Sales in domestic revenues
4	Strong growth mainly attributable to 2 turnkey solutions for coffee capsules with an average value of €2.3m, paired with general increase in turnkey systems from 11 in 2015A to 15 in 2016A
5	Increase mainly driven by full-ramped up reorganization of North America sales structure (47% YoY-growth) representing a growth of c.€10m paired with full roll-out of the Flowmodul as well as increasing digital offerings; mainly driven by increasing brand awareness and increased trade fair presence
6	North American restructuring yields further results, more than doubling the revenue to €64m; domestic revenue increased by €13m; France and Italy showed strong Sales growth
7	Decrease in domestic demand following decreasing demand to increased uncertainty with political uncertainty ² was offset by increase in exports, mainly in US (+€10m), Italy (€6.7m) and Italy (+€4.5m)

Sales by Geography (2019A)¹



Sales by Product (2019A)



Source(s): Annual Reports; Note(s): 1) CAGR from 2013A-2019A; 2) Approximated through growth and absolute value information from annual reports; 2) Trackable by Index Of Economic Uncertainty (EPU)



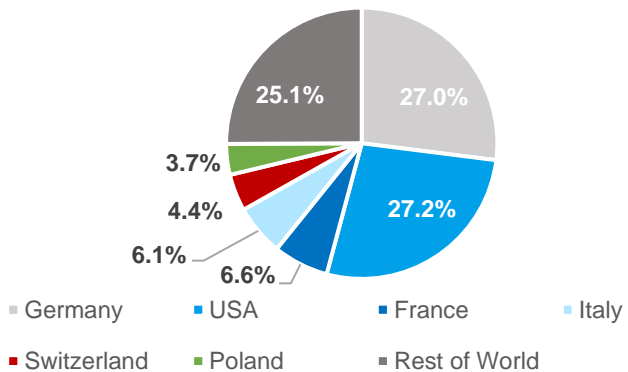
Despite overall Sales volatility inherited through project business, Turnover is continuously growing (2/2)

in €k	2012A	2013A	2014A	2015A	2016A	2017A	2018A	2019A	12-'19
Modular Machinery	84,802	101,945	111,844	114,448	101,000	116,331	149,054	150,083	8.5%
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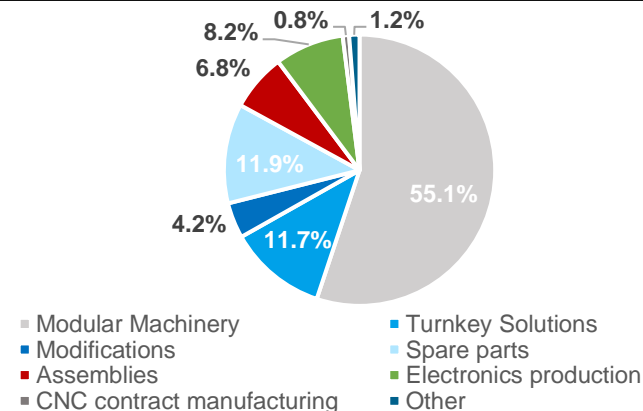
Comment

- 8 Shift of 1 major **turnkey** in amount of c. €11m from 2019A towards 2020E dampened growth in 2019A
- 9 **Assembly services** for integration of modular machinery into connected lines (difference from complete turnkey lines) results in **constant growth** of assemblies even with declining machinery sales. Increase is due to continuous expansion of assembly personnel
- 10 Constant development of **customer base** and installed base drives growth of aftermarket services. Further expansion of service offering with applications such as 3D-printing solutions and digital offerings such as **predictive maintenance**
- 11 Acquired in 2013, the division focusses on **software development** and **grows moderately** with existing customers but is not focus of Schubert growth strategy at the moment, thus only showing a moderate **CAGR of 2.0%**
- 12 Focus is **in-house part manufacturing** (only 20% are external) but expansion of machine park and customer centered sales displays significant growth
- 13 Includes **non-core** elements like e.g., Hägele Catering (catering service)
- 14 Turnover denotes the total output of the year (including Inventory changes), making it an important measure as it accounts for reporting date view shifts in large orders
- 14 Even through the company imposes **volatile Sales growth**, the turnover is continuously growing throughout the historical period, driven by **shifts of orders** into the next financial period leading to Inventory build up

Sales by Geography (2019A)²



Sales by Product (2019A)



Source(s): Annual Reports; Note(s): 1) CAGR from 2013A-2019A; 2) Approximated through growth and absolute value information from annual reports

After EBITDA-Margin declined in 2016A due to a steep increase of Purchased Services, Schubert again shows an upward margin trend (1/2)

in €k	2012A	2013A	2014A	2015A	2016A	2017A	2018A	2019A	CAGR
Sales	164,550	200,691	228,426	224,495	219,387	243,173	283,167	272,319	7.5%
Turnover	166,538	200,692	227,995	224,979	231,806	249,194	274,852	284,055	7.9%
Raw Materials	(51,085)	① (68,935)	(77,387)	(74,190)	(72,922)	(76,466)	(77,819)	(76,873)	6.0%
Purchased Services	(19,763)	(11,298)	(12,521)	② (16,665)	(22,922)	(26,049)	(31,174)	(34,575)	8.3%
Material Expenses	(70,848)	(80,233)	(89,908)	(90,856)	(95,844)	(102,516)	(108,993)	(111,447)	6.7%
% Sales	(43.1%)	(40.0%)	③ (39.4%)	(40.5%)	(43.7%)	(42.2%)	(38.5%)	(40.9%)	
Gross Profit	95,690	120,459	138,087	134,123	135,962	146,679	165,859	172,607	8.8%
% Margin	58.2%	60.0%	60.5%	59.7%	62.0%	60.3%	58.6%	63.4%	
Personnel Expenses	(56,782)	(66,911)	(74,211)	(76,121)	(80,723)	(87,382)	(94,442)	(100,354)	8.5%
% Sales	(34.5%)	(33.3%)	④ (32.5%)	(33.9%)	⑤ (36.8%)	(35.9%)	(33.4%)	(36.9%)	
Rent & Leasing	(2,649)	(2,269)	(3,000)	(2,765)	(3,008)	(3,079)	(4,634)	(5,587)	11.2%
Shipping & Logistics	(6,192)	(5,652)	(6,709)	(6,242)	(6,295)	(7,634)	(10,143)	(10,817)	8.3%
Marketing Expenses	(2,174)	(2,309)	(2,815)	(3,757)	(5,304)	(4,123)	(4,676)	(6,243)	16.3%
Maintenance	(2,346)	(2,107)	(2,284)	(2,245)	(2,994)	(3,961)	(4,481)	(4,740)	10.6%
IT & Licenses	(1,296)	(1,443)	(1,564)	(1,565)	(1,793)	(1,874)	(2,125)	(2,279)	8.4%
Other	(11,264)	(15,080)	(14,901)	(14,735)	(16,470)	(16,810)	(16,446)	(15,922)	5.1%
⑥ Other Expenses	(25,921)	(28,859)	(31,273)	(31,310)	(35,864)	(37,481)	(42,505)	(45,588)	8.4%
% Sales	(15.8%)	(14.4%)	(13.7%)	(13.9%)	(16.3%)	(15.4%)	(15.0%)	(16.7%)	
OPEX	(82,703)	(95,770)	(105,484)	(107,430)	(116,587)	(124,863)	(136,947)	(145,942)	8.5%
% Sales	(50.3%)	(47.7%)	(46.2%)	(47.9%)	(53.1%)	(51.3%)	(48.4%)	(53.6%)	
Other Income	1,447	1,618	891	1,743	1,518	2,066	984	2,059	5.2%
% Sales	0.9%	0.8%	0.4%	0.8%	0.7%	0.8%	0.3%	0.8%	
EBITDA Reported	14,434	26,307	33,494	28,436	20,893	23,882	29,896	28,724	10.3%
YoY Growth		82.3%	27.3%	(15.1%)	(26.5%)	14.3%	25.2%	(3.9%)	
% Margin	8.8%	13.1%	14.7%	12.7%	9.5%	9.8%	10.6%	10.5%	
Normalisation	1,219	1,346	1,480	1,341	1,233	1,584	1,363	1,502	
EBITDA Adjusted	15,652	27,653	34,974	29,777	22,126	25,466	31,259	30,226	9.9%
YoY Growth		76.7%	26.5%	(14.9%)	(25.7%)	15.1%	22.7%	(3.3%)	
% Margin	9.5%	13.8%	15.3%	13.3%	10.1%	10.5%	11.0%	11.1%	
D&A	(3,101)	(5,995)	(6,471)	(6,972)	(8,056)	(8,314)	(6,045)	(5,938)	9.7%
EBIT Adjusted	12,551	21,658	28,502	22,805	14,070	17,152	25,214	24,288	9.9%
YoY Growth		72.6%	31.6%	(20.0%)	(38.3%)	21.9%	47.0%	(3.7%)	
% Margin	7.6%	10.8%	12.5%	10.2%	6.4%	7.1%	8.9%	8.9%	
Net Interest Expense	333	(447)	(383)	(408)	(476)	(557)	(498)	(325)	
Taxes	(3,137)	(7,020)	(8,242)	(7,290)	(4,426)	(5,016)	(7,059)	(6,367)	10.6%
Net Income Adjusted	9,747	14,192	19,877	15,107	9,168	11,580	17,657	17,597	8.8%
% Margin	5.9%	7.1%	8.7%	6.7%	4.2%	4.8%	6.2%	6.5%	

Source(s): Annual Reports

Comment

- ① Decreasing trend due to **investments in production automation, internal process optimization and 3D-printing of parts**; slight increase in 2016A caused by adaption of new technologies within product portfolio and technical advanced projects
- ② Strong increase in demand for external services due to **100% capacity in assembly and manufacturing**; going forward an ease is expected as new production facility is ramping up in 2022; long lead time due to relocation issues of nearby road in order to start construction
- ③ **Implementation of standard modules** for sub-machines, as well as flow assembly decreased margin in 2014A; In 2015A the margin is driven up by Purchased Services while Raw Materials show a further decrease
- ④ **Higher automation and efficiency lead to stronger increase in Sales than in Personnel Expenses**, resulting in a higher per capita Sales and therefore a lower cost ratio
- ⑤ **Continuous increase in workforce**, both in white collar and blue collar workers drive the cost increase as Schubert builds up capacity in assembly, R&D and especially service as **foundation for future Sales growth**; A decrease is expected in the near future due to **accelerating Sales growth**
- ⑥ Constitutes a **high portion of Schubert's costs**, driven by high **Shipping Costs** due to the export nature of Schubert's business & the strong increase in **Marketing Expenses** that drive brand awareness; Further costs that are included in *Other* are for example **energy costs, legal expenses & general expenses** like office materials

After EBITDA-Margin declined in 2016A due to a steep increase of Purchased Services, Schubert again shows an upward margin trend (2/2)

in €k	2012A	2013A	2014A	2015A	2016A	2017A	2018A	2019A	CAGR
Sales	164,550	200,691	228,426	224,495	219,387	243,173	283,167	272,319	7.5%
Turnover	166,538	200,692	227,995	224,979	231,806	249,194	274,852	284,055	7.9%
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% Margin	5.9%	7.1%	8.7%	6.7%	4.2%	4.8%	6.2%	6.5%	

Source(s): Annual Reports; Own Analysis; Expert Interview

Comment

- 7 Strong increase in Other Expenses mainly attributable to geographic expansions and **building up of infrastructure for growth**, strong increases can be seen in the Rent and Leasing of machinery as well as in Shipping costs which are both driven by Sales expansion
- 8 Increase in **2016A to 2019A** are attributable to **costs associated with an aggressive international growth strategy** and restructuring of sales subsidiary in the US in 2016A and opening a new local sales and service office in China in 2019A leading to an increase in Rent & Leasing and Marketing Expenses
- 9 **Despite strong Sales growth EBITDA just increased slightly since 2013A**, which is due to **prior outlined cost drivers** and especially due to a **margin drop in 2016A caused by NA Sales restructuring** and aggressive growth strategy; Volatility is due to customer investment cyclicality
- 10 Includes normalization of owner salaries which amounted to c. €2.7m across all years; so, a normalised salary for managing directors of €300k p.a. was assumed to reach an **adjusted salary for the managing directors of €1.2m**, leading to approx. €1,5m increase in adjusted EBITDA
- 11 Adjusted EBITDA-Margin steadily improves from 2016A onwards reaching 11.1% in 2019A, **showing that the continuous cost structure improvements of Schubert are paying off**, and this trend is expected to continue in the future
- 12 Tax rate of Schubert is around 30%; a **debt interest tax shield is not heavily used** as Schubert maintains low leverage (see next slide)

Balance Sheet expansion is mainly driven by investments into Land, Land rights and buildings in order to increase production capacity

in €k	2012A	2013A	2014A	2015A	2016A	2017A	2018A	2019A
Non-Current Assets	38,540	48,221	57,129	67,772	69,767	66,245	64,412	71,874
① Intangible Assets	399	② 10,223	8,042	5,698	3,233	567	416	400
Tangible Assets	36,131	37,998	49,087	62,074	66,373	65,518	63,835	71,192
Land, land rights and buildings	25,054	25,351	26,363	③ 39,536	52,316	50,602	48,617	50,164
Technical equipment and machinery	④ 6,795	6,449	7,338	7,734	7,736	8,519	7,918	7,723
Other equipment	4,151	4,485	4,589	4,732	6,256	6,246	6,213	6,067
⑤ Assets under construction	131	1,713	10,795	10,071	66	150	1,087	7,238
Financial Assets	2,010	0	0	0	⑥ 161	161	161	282
Current Assets	75,729	76,035	108,525	99,584	102,821	109,205	127,204	130,348
Inventory	⑦ 855	6,977	228	5,293	1	7,677	7,091	5,741
Raw Materials and supplies	5,805	9,495	9,694	9,280	10,052	12,250	15,102	16,690
⑧ Work in Progress (incompleted goods)	24,324	25,462	25,181	25,177	37,971	43,806	34,781	47,011
Work in Progress (completed goods)	221	668	588	1,075	700	886	1,596	1,801
Advance payments payed on orders	4,578	700	673	389	2,971	4,688	1,309	1,529
⑨ Advance payments received on orders	(34,073)	(29,348)	(35,908)	(30,629)	(51,693)	(53,953)	(45,697)	(61,290)
Receivables and other assets	28,188	32,675	46,499	46,160	43,414	44,686	51,760	53,033
Trade receivables	⑩ 26,598	31,208	45,053	45,746	43,414	44,684	51,757	52,980
Receivables from affiliates	534	0	0	0	0	0	0	8
Receivables from shareholders	1,056	1,467	1,445	414	0	2	3	44
Other Assets	4,106	3,975	2,891	5,107	3,857	2,915	2,717	3,681
Cash and Cash Equivalents	41,831	31,930	57,966	42,275	54,738	52,847	65,328	66,946
Accruals	214	469	941	749	618	676	308	947
Deferred Tax	535	8	0	0	193	405	0	0
Assets	114,269	124,256	165,654	167,356	172,588	175,450	191,616	202,222
Equity	71,041	83,518	97,926	101,838	106,918	116,608	132,038	148,333
⑪ Provisions	25,971	23,979	30,473	25,038	25,315	27,680	29,052	28,432
Liabilities	17,214	16,718	36,066	39,707	39,796	30,921	30,383	25,458
Liabilities to Banks	7,841	6,539	⑫ 26,509	23,711	19,095	15,456	14,078	11,655
Trade account payable	⑬ 4,690	6,205	4,936	7,228	8,512	5,975	7,657	8,444
Liabilities to Shareholders	0	3,573	397	4,818	5,214	5,219	4,406	962
Other liabilities	⑭ 4,683	401	4,224	3,949	6,975	4,271	4,242	4,398
Accruals	44	42	1,189	774	559	241	143	0
Equity & Liabilities	114,269	124,256	165,654	167,356	172,588	175,450	191,616	202,222

Source(s): Annual Reports

27/01/2022

Private Equity Challenge - ICP

Comment


- ① No capitalization of **patents** at Schubert as annual reports are based on German GAAAP where this is optional
- ② Increase in **Goodwill** due to acquisition of Schubert System Elektronik GmbH in 2013A and subsequent amortization
- ③ Accounting booking from Assets Under Construction to Land & Buildings upon finalizing new assembly building
- ④ Despite company growth the position is barely increasing due to **operating leasing** (possible under German GAAP)
- ⑤ Displays PP&E **expansions** (see next slide)
- ⑥ Increase due to participation in **joint venture** Qesar in 2016
- ⑦ Low overall Inventory due to **high upfront payments**
- ⑧ Rise **according to company growth** as higher production results in higher materials & goods in Inventory; Completed Goods are sold fast, so the position is relatively small
- ⑨ Represent down payments on ordered machines via a **down payment structure typical for the machinery market; close correlation to Work in Progress goods** can be observed
- ⑩ Trade Receivables grow **alongside with Sales growth**
- ⑪ Includes Provisions for **tax, pensions and others**, which **mainly include warranties** for profit participations and employee benefits
- ⑫ Financing of **new assembly building** expansion in Crailsheim, Germany with subsequent repayment
- ⑬ Trade Payables grow **alongside with Sales growth**
- ⑭ Comprises **Liabilities** from **rent and leasing contracts**

90











The global packaging machinery market is mainly driven by increasing automation, Industry 4.0, health and food safety and demand for more sophisticated packaging

	Market Driver	Description	Importance	Trend
General driver	Packaged food production	Packaged food production positively influencing the demand for packaging machinery		
	Relevant applications	Influence of packaged food applications (e.g. E-commerce, baby food, ingredients) especially relevant for primary packaging applications		
	Turnkey systems	Increasing importance of turnkey systems in the premium/ mid-range segment is influencing the addressable market		
	Automation	Automation of machinery is a global megatrend also affecting the market for packaging machinery		
	Prices	Price development by product segment is influencing the market value		
Machinery related	Output speed	Food producers increasingly ask for packaging machinery with high output speed to improve economic efficiency; Increasing demand for premium/ mid-range high-speed machinery		
	Versatile machines	Customers require versatility regarding package styles, dimensions and products to react to changing consumer preferences which packaging machinery needs to address		
	Internet of things / Industry 4.0	Machines will be able to communicate with the operator, leading to quicker problem identification and solving; Increasing demand for services performed by machine suppliers		
Packaging related	Sophisticated packaging	Product differentiation by packaging with rising demand for premium packaging and premium appearance (not only for premium products)		
	Health/ food safety	Emerging markets are increasing their food supply chain's quality and standards, where packaging is an important lever for food safety and shelf life extension		
	Mobility/ convenience	Increasing demand for mobility as a result of social/ cultural, economical and technological changes with increased need for on-the-go packaged products and convenience food		
	Increasing environmental awareness/ sustainability	Increasing environmental awareness leading to reduction in plastic packaging volumes and alternative materials, where premium products tend to be more energy efficient and versatile		

Source(s): Expert Interviews, PMMI, Statista, ARC Advisory Group, eMarketer, Allied Market Research, VDMA

 High importance Positive impact

Customer industry specific capabilities, customer relationships and supplier qualification are the strongest barriers for new entrants

	Entry Barrier	Relevance	Description	Schubert Assessment
<div style="display: flex; flex-direction: column; align-items: center;"> <div style="background-color: #0070C0; color: white; padding: 5px; margin-bottom: 10px;">High</div> <div style="background-color: #D9E1F2; padding: 10px; margin-bottom: 10px;"> Premium segment <ul style="list-style-type: none"> Industry/ application-specific capabilities (high output speed at premium quality) Customer relationships Track record and reputation Manufacturer qualification Local customer service </div> <div style="background-color: #A6A6A6; padding: 10px; margin-bottom: 10px;"> Mid-range segment <ul style="list-style-type: none"> Industry/ application-specific capabilities (medium output speed and packaging quality) Local customer service to a certain degree </div> <div style="background-color: #A6A6A6; padding: 10px; margin-bottom: 10px;"> Low-end segment <ul style="list-style-type: none"> No significant entry barriers Differentiation largely by price </div> <div style="background-color: #A6A6A6; padding: 10px;"> Low </div> </div>	 <div style="background-color: #0070C0; color: white; padding: 5px; text-align: center;">Application Know-how</div>		<ul style="list-style-type: none"> Premium customers prefer suppliers with proven strong application know-how for their specific industry High output speeds and ease of use are of particular importance for the premium segment 	<p>Schubert recognised as technology leader with significant technological experience</p>
	 <div style="background-color: #0070C0; color: white; padding: 5px; text-align: center;">Customer Relationships</div>		<ul style="list-style-type: none"> Customers prefer to rely on well-known and trusted suppliers: competitors need to be significantly cheaper at similar quality to trigger customer switching 	<p>Deep customer entrenchment based on long-term relationships</p>
	 <div style="background-color: #0070C0; color: white; padding: 5px; text-align: center;">Track Record & Reputation</div>		<ul style="list-style-type: none"> Manufacturers must show proven capabilities of premium machines to the relevant industry application Track record is preferred with a given customer itself (strong customer relationships) or with direct competitors (proven industry/ application specific capabilities) 	<p>More than 50 years of industry experience</p>
	 <div style="background-color: #0070C0; color: white; padding: 5px; text-align: center;">Manufacturer Qualification</div>		<ul style="list-style-type: none"> In particular large, multinational customers have a list of preferred and qualified manufacturers The process of getting listed takes several years and a proven track record is application-specific 	<p>Blue chip customer base with positive feedback</p>
	 <div style="background-color: #0070C0; color: white; padding: 5px; text-align: center;">Local Customer Service</div>		<ul style="list-style-type: none"> Premium suppliers need to be able to provide technical on-site support within a short time frame Some players rely on external service contractors in certain regions 	<p>Global sales and service coverage via subsidiaries and network of sales agents</p>

Source(s): Expert Interviews, Roland Berger

All influencing market environments are developing very positively showing strong growth paths – Schubert can benefit from different drivers through Innovation and Expertise

Packaging Machinery Market

Global



€37.2 billion
in 2020



CAGR of 4.8%
through 2030

Regional



APAC
CAGR 4.5%



Americas
CAGR 3.3%

Drivers



Industry 4.0



Automation



Health

End Markets

Global



Enormous
market
sizes



CAGR between
3.1% to 5.5%

Industry



Food



Cosmetics



Pharma

...show strongest growth rates

Drivers

Globali-
zationSustain-
abilityDemographic
change

- For Schubert, the packaging machinery market is as important as its customer industries (end markets)
- Overall, both, the packaging machinery market and the end markets are very big in size, well established and show very positive forecasted growth rates
- A combined market growth proxy can be defined around 4.5% CAGR for the next 5-8 years
- End Markets are dominated by megatrends such as globalization and digitization by which also the machinery market in general is influenced

With a combined share of over 20%, the USA and China are the largest and most important export markets for German packaging machinery manufacturers

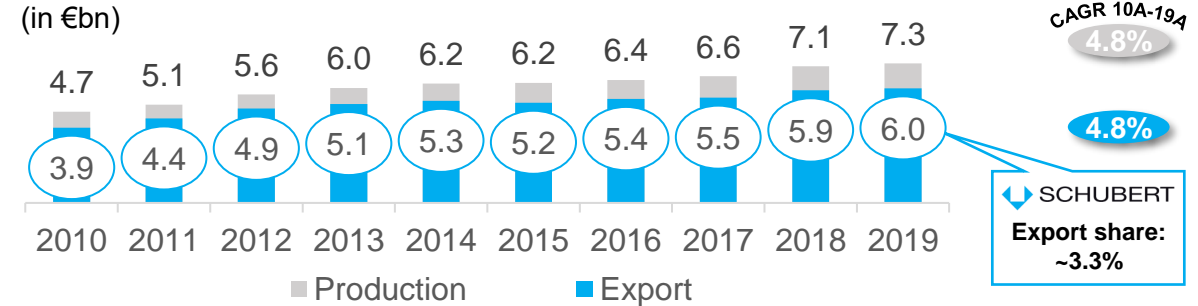
Market Description

- Germany's approx. **250 mainly medium-sized packaging machinery manufacturers** produced and sold packaging machinery worth **€7.3bn in 2019**, of which 82.0% was exported
- Europe** remains the most important export region in 2019 with exports worth €3.0bn, followed by **Asia** €1.1bn and **North America** €0.9bn
- The highest export **growth** region was **Asia** with YoY-growth of **15.6%**, followed by North America with 7.8% and Europe 3.2%
- The two most important export markets for German packaging machinery manufacturers are **US** (export share 13.2%), followed by **China** (share 7.6%)
- In the US, German packaging machines are **highly renowned** and account for more than 30% of packaging machinery imports
- Among Chinese packaging machinery imports, Germany leads in the **premium segment** and is among the top three suppliers overall, along with Italy and Japan

Key Player



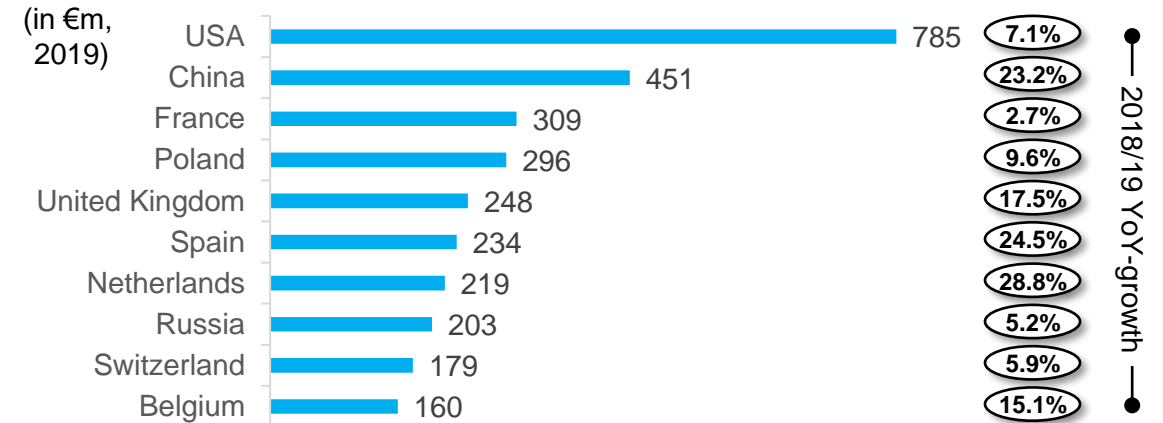
German Packaging Machinery Production & Export



German Packaging Machinery Export Split 2019



Germany's Top 10 Export Markets for Packaging Machinery



Source(s): VDMA, PMMI, Interpack, Italien Trade Agency; Note(s): 1) Formerly Bosch Packaging Technology

Schubert places among the largest packaging manufacturers with Pick & Place applications and is the only one who covers the entire packaging value chain with its specific application focus (1/3)



Competitor	Country	Sales in €m	EBITDA in €m	Margin	Employees	Pick & Place focus	Own Robots	Coverage Packaging Value chain	Industry overlap with Schubert	Modularity	Turn-key	Application Range	Digitization
SCHUBERT		272	29	10.5%	1,380				Food, Confectionary, Beverages, Pharma, Cosmetics, Others				
KRONES		3,387	182	5.4%	16,500				Food, Beverages, Confectionary, Dairy				
Sidel		1,445	16	1.1%	5,527				Beverages, Dairy				
SYNTEGON		1,300	n.a.	n.a.	6,000				Food, Pharma				
KHS <small>Filling and Packaging – Worldwide</small>		1,130	n.a.	n.a.	5,000				Beverages, Dairy, Food				
MULTIVAC		541	86	15.9%	6,700				Food, Pharma, Cosmetics				
FOCKE & CO		492	n.a.	n.a.	1,900				Food, Confectionary and Snacks				

Source(s): Company Information, Company Webpages, Bundesanzeiger

Key competitor

Primary/Secondary/Tertiary Packaging

Schubert places among the largest packaging manufacturers with Pick & Place applications and is the only one who covers the entire packaging value chain with its specific application focus (2/3)



Competitor	Coun-try	Sales in €m	EBITDA in €m	Margin	Empl-o-ees	Pick & Place focus	Own Robots	Coverage Packaging Value chain	Industry overlap with Schubert	Modularity	Turn-key	Applica-tion Range	Digitization
blueprint automation		94	9	9.6%	400				Food, Dairy, Pharma				
IWK an company		86	8	9.2%	450				Food, Pharma, Cosmetics				
CAMA GROUP Innovation meets Experience		78	5.8	7.4%	200				Confectionary, Food				
LOESCH PACK PIEPENBROCK GROUP		44	n.a.	n.a.	250				Confectionary, Food				
end of Line PACKAGING SOLUTIONS		31	0	0.3%	170				Dairy, Food, Pharma, Dairy, Confectionary, Cosmetics, Other				
transnova RUF VERPACKUNGS-PALETTIER-ROBOTTECHNIK		27	n.a.	n.a.	250				Pharma, Confectionary, Food, Non-Food				
MASSMAN Automation Designs, LLC		16	n.a.	n.a.	100				Food, Dairy, Pharma				

Source(s): Company Information, Company Webpages, Bundesanzeiger

Key competitor

Primary/Secondary/Tertiary Packaging

Schubert places among the largest packaging manufacturers with Pick & Place applications and is the only one who covers the entire packaging value chain with its specific application focus (3/3)

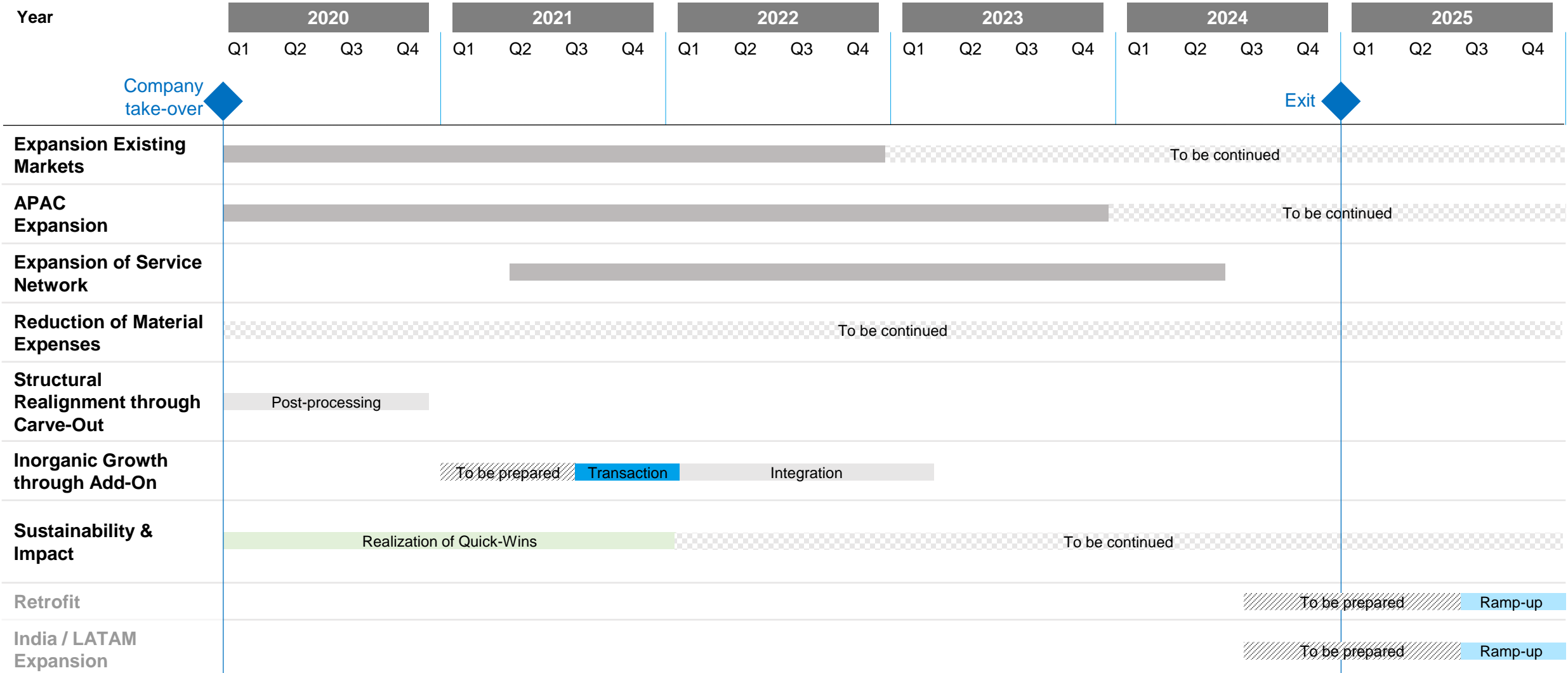


Competitor	Coun-try	Sales in €m	EBITDA in €m	Margin	Emplo-ees	Pick & Place focus	Own Robots	Coverage Packaging Value chain	Industry overlap with Schubert	Modularity	Turn-key	Applica-tion Range	Digitization
		13	n.a.	n.a.	100				Food, Pharma, Technical Articles				
		n.a.	n.a.	n.a.	70				Food, Pharma, Cosmetics				
		n.a.	n.a.	n.a.	1,000				Food, Pharma, Cosmetics, Confectionary, Beverages				
		n.a.	n.a.	n.a.	n.a.				Pharma, Confectionary				
		n.a.	n.a.	n.a.	50				Pharma, Confectionary, Food, Non-Food				
		n.a.	n.a.	n.a.	600				Food, Beverages, Confectionary, Cosmetics				
		n.a.	n.a.	n.a.	n.a.				Food, Dairy				

Source(s): Company Information, Company Webpages, Bundesanzeiger

Key competitor Primary/Secondary/Tertiary Packaging

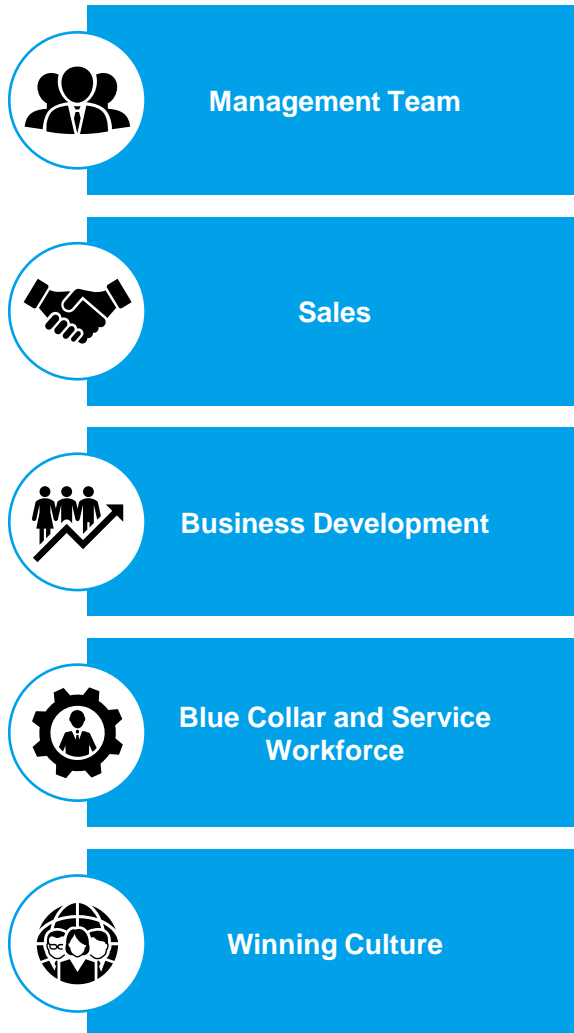
The timeline shows the progress of the strategic initiatives and proves the feasibility of all measures during the investment period



Source(s): Own Analysis; Note(s): Retrofit and India/LATAM Expansion beyond base case business plan

Although changes in senior management are imminent, Schubert's growth can be executed with clear personnel strategy which bases on recent developments

Workforce



Strategic Development

- Due to Gerhard Schubert's high age (83) a succession is imminent and can be transferred to his son Ralf Schubert (60) and move Gerhard Schubert to the advisory board to retain key knowledge, as well as retain family identity within management
 - Long term management a new CEO needs to be built up (possibly Peter Gabriel due to 21 company tenure and culture fit)
 - Key personnel needs to be analysed during a HR due diligence and CEO capabilities need to be assessed
 - Recruit outside CSO to complement management team or move up Jörg Brenner (commercial director)
- Continue built up of direct sales workforce to execute strategy
 - Recruit 15 people p.a. With focus on Chinese, US and European markets
 - Set up salesforce to prepare market entry in LATAM and India for 2023+
- Leverage personnel business development subsidiary to include learnings of historic geographical expansions into new market penetrations
 - Enhance operational realignment and implementation of strategic measures, as well as implementing new strategies
 - Locate Carve-Out and post acquisition implementation responsibilities, as well as ESG strategy implementation
 - Support M&A activity with PE fund resources to enhance knowledge transfer
- Continuous recruiting to expand production capacity to be able to execute product portfolio expansion
 - Recruit service workers alongside enhancing connections to service partners to enhance service structure globally
 - Enhance apprenticeship program to attract talent and retain them at young age, leading to advanced hiring
- Implement programs to enhance working atmosphere and trust to be able to meet growth targets and create an agile culture enhancing passion for Schubert as well as increasing employee satisfaction
 - Enhance further education offering for all types of employees as this is one of the major pain points of employee dissatisfaction

Source(s): Own Analysis

27/01/2022

Schubert is well established in both the highly competitive Italian market, boosted by government tax incentives, and the moderately fragmented French market, which is heavily dependent on imports

Market Situation Italy

Developments

- The packaging machinery market in Italy is estimated to be **€2.9bn in 2020** and continuous a **positive trend** with Sales up 1.9% year-on-year
- Food (38.6%) remains the largest segment, followed by beverages (22.2%), Pharma (17.2%), Chemicals (4.4%), Cosmetics (4.3%) and Others (13.3%)
- The government's **Industry 4.0 incentive scheme** with large tax incentives, increasing adoption of **small pack sizes** and **new packaging materials** are key **growth drivers** for packaging machinery demand

Competitive Landscape

- The packaging machinery market in Italy is **fragmented** with **~635 domestic manufacturers**, of which **~79%** are small companies with Sales below €10 million, accounting for 17% of total Sales and **8% of manufacturers** are larger companies with Sales above €25m, accounting for **68% of total turnover**
- The market is **highly competitive** as Italy is the second largest supplier of packaging machinery in the world with **strong domestic players**, such as Coesia Group or Marchesini Group, that are known for high quality machinery in the premium segment and compete for the global leadership with Germany
- **Schubert** generated **6.1% of 2019 Sales** in Italy and was able to strongly **increase its direct sales** activities by €6.7m

Market Situation France

Developments

- The packaging machinery market in France is estimated to be **€1.4bn in 2020**
- France is a **large importer** of packaging machinery with imports worth **€1.1bn in 2019** and a YoY-growth rate of 6.5%
- There is an **increased demand** on the French market for **flexible and agile** packaging machines and **sustainable** packaging solutions
- In the food industry, **smaller batch sizes** are playing an increasingly important role

Competitive Landscape

- The packaging machinery industry in France is **moderately fragmented**, with **~150 domestic manufacturers**
- **German manufacturers** are among the **top suppliers** for packaging machinery, accounting for **€0.3bn of French imports** in 2019
- **Schubert** opened a French sales and service location in 2008, generated **6.6% of 2019 Sales** in France and was able to strongly **increase direct sales** activities in **recent years**

Expansion of production plants in Pharma and Cosmetics offers major growth opportunities in Poland while labour shortages due to Brexit drive demand for packaging machines in the UK

Market Situation Poland

Developments

- The packaging machinery market in Poland is estimated to be **€0.6bn in 2019**
- Poland is the **largest market** for **Food and Beverages** in Central and Eastern Europe with meat, dairy, beverages and confectionary baking as largest subsegments
- The **Pharma** and **Cosmetics sectors** are heavily investing in **new production plants** due to increased demand for over-the-counter medications and skin care products which **drives demand** for packaging machines

Competitive Landscape

- The Polish market is **consolidated** and **dominated by foreign players**, as domestic players are mainly perceived as lower quality
- As **large multinationals** with high quality standards including Coca Cola, Nestle or Unilever are the major customers for packaging machinery in Poland, there is **high demand** in the **premium segment**
- As a result, **German manufacturers** are among the **top suppliers** for packaging machinery, accounting for €0.3bn of Polish imports in 2019
- **Schubert** generated **3.7% of 2019 Sales** in Poland and was able to strongly **increase its direct sales** activities by €4.5m

Market Situation UK

Developments

- The packaging machinery market in the UK is estimated to be **€0.5bn in 2020** with Food and Beverages (60-70%) and Pharma (10%) as its largest segments
- Market **growth** is mainly driven by **rising e-commerce** sales with demand for more efficient logistics, **smaller pack sizes** and new and **greener packaging materials**
- **Brexit** further **drives market demand** for packaging machines as **labour shortages** pushes companies to automate
- However, Brexit has also caused **logistics issues** for many spheres of industry and a new complex **'rules of origin' system** between the UK and mainland Europe could lead customers to **more localised solutions**

Competitive Landscape

- The market is **moderately consolidated**, with the presence of a few major companies, including Adephi Group and Bradman Lake
- **German manufacturers** are among the **top suppliers** for packaging machinery, accounting for €0.2bn of UK imports in 2019
- **Schubert** opened its **UK subsidiary** in 2008 to serve the UK and Irish markets and has major customers in the Confectionery, Beverage and Pharma industries, including Coca Cola and Premier Foods
- However, **small to medium-sized** companies are its **largest growing** market segment in recent years

Key: local companies are not represented in the premium segment; Germany is one of the largest exporters to China; rising wages squeeze local margins; customers demand high-quality solutions

Market Situation Asia (focus: China)

Developments

- The total market size of China's packaging machinery grew rapidly to Euro 5.0 billion in 2018, almost close to **tripling** the 2009 market size of Euro 2.2 billion
- From the perspective of the market demand, **forming/filling/sealing** machinery remains the most widely used product category in China, and it is forecasted to remain the top category in 2021
- Consumer products such as **F&B, Pharmaceutical, Tobacco accounts** for more than 70% of total packaging market demand; F&B downstream market is and will continue to pose the largest demand for packaging in China
- From 2019 onwards, packaging machinery **imports are expected to keep steady**, more in line with the overall global economic situations; **Germany among the top 3 exporters** to China

Competitive Landscape

- The China packaging machinery sector is fragmented with around 7,916 domestic enterprises in 2019; domestic production is mainly concentrated in the **low to mid-end packaging machinery segment**
- About 60 established domestic enterprises, such as Guangzhou Tech-Long, dominates the low and mid-end segments, catering to more **price sensitive domestic customers** and key export markets
- Most of the **high-end segments** in the forming/filling/sealing, wrapping/bundling/palletizing and labelling & coding machinery categories are dominated by **well-known foreign brands and corporations** including Krones (Germany), Bosch (Germany), KHS (Germany), Coesia Group (Italy) and Tetra Pak (Sweden)

Key Market Trends and Dynamics

- International players value more for the benefits of enterprise value in the long term while the domestic players highly rely on the government subsidies
- German, Italian, Japanese, U.S. and Swedish players **shared the majority of domestic demand for high-end packaging machinery** due to a **lack of viable alternatives from the domestic players**
- **Consolidation of small domestic manufacturers** is expected to be most evident from 2020 onwards because of a **technological gap**
- Automated **large-scale packaging machinery lines** will see robust growth as **rising labour costs** in China becomes one of the key impediments for manufacturing enterprises in boosting profit margins

Demand Analysis

- The largest market for packaging machinery will continue to be the **F&B packaging sector**; consumption for pre-packaged F&B products are expected to increase quickly
- Main **customers include OEM packaging service providers**, large integrated logistics companies, **large F&B enterprises like Wahaha, Yili**, household product manufacturers like **P&G, Unilever** etc.
- Large retailers with significant control over their private label/own-brand products production will also be customers **with the need for high quality packaging machinery**; these retailers usually developed **integrated supply chain and logistic networks** that involves the use of primary and secondary packaging in the process

India is extremely strong in growth, LATAM shows an open competitive field with few suppliers of comparable machines like Schubert



Market Situation India

Developments

- The packaging industry in India is expected to register a CAGR of approximately **26.7% during the period (2021-2026)**
- Further, the demand for packaging is growing due to the **rising population**, increasing income levels, **changing lifestyles**, increased media penetration through the internet, television, and growing economy
- According to the Indian Institute of Packaging (IIP), the packaging consumption in India has **increased by 200% in the past decade**, rising from 4.3 kg per person p.a. to 8.6 kg p.a.

Competitive Landscape

- The packaging industry in India is **moderately fragmented** with several players competing for their market share
- Due to increasing demand for packaging applications and technological advancements in the Indian economy, **many companies are increasing their market presence** by expanding their business footprint in various end-user markets
- Major Players are WestRock India Pvt. Ltd., Kapco Packaging and OJI India Packaging Pvt. Ltd., all of them focusing on **tertiary packaging rather than primary packaging** as technological knowledge regarding robotics and precision is lacking



Market Situation LATAM

Developments

- The Latin America packaging machinery market is expected to register a **CAGR of 3.9% over the forecast period 2021 to 2026**
- Covid-19 outbreak has raised hygiene awareness among consumers, motivating them to increase their spending on **home care and hygiene**
- The overall packaging market is **significantly growing**
- **Plastic** still dominates the market, but due to the growing environmental **sustainability** concerns, the market is expected to shift to options like paper
- Due to the rising incomes, urban lifestyle changes, and modern retail trade, the food packaging market is expanding significantly in categories, such as **bakery products, canned, processed food, frozen processed foods**

Competitive Landscape

- The market is **moderately consolidated**, with the presence of a few major companies, which are continuously investing in making **strategic partnerships** and product developments to gain more market share
- Major players are Tetra Laval, MeadWestvaco Corporation and Ranpack Corp, focussing heavily on packaging of **less fragile products** or on tertiary packaging than Schubert
- Ranpak Holdings Corp. recently announced its investment in **Pickle Robot** Company, a leader in robots for automated sorting, loading, and unloading of packaged goods within logistical lines

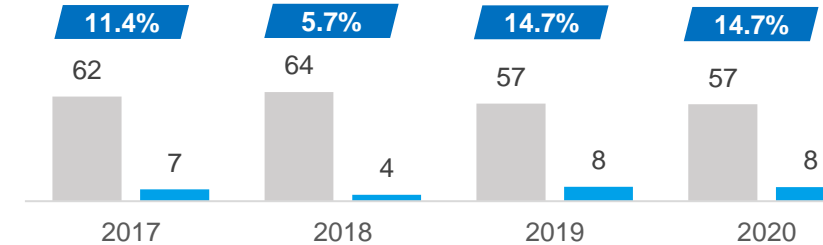
Add-On ETIMEX: Company Overview - ETIMEX shows robust financials, experienced management and products that fit Gerhard Schubert's profile



- ETIMEX Primary Packaging (Part of the ETIMEX Group) is a **German family owned producer of primary packaging solutions**
- The company **offers films and containers** made of various **plastics for applications in packaging solutions** for the Food and Pharmaceutical industries as well as films for technical applications

(in €m)

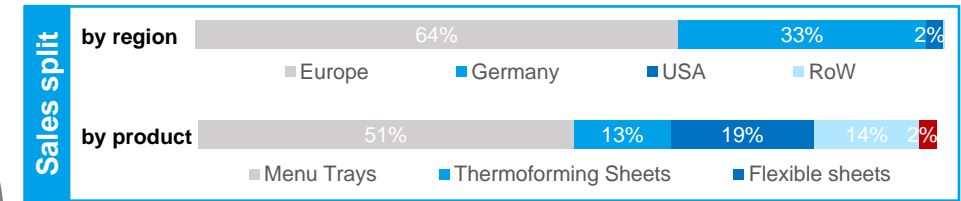
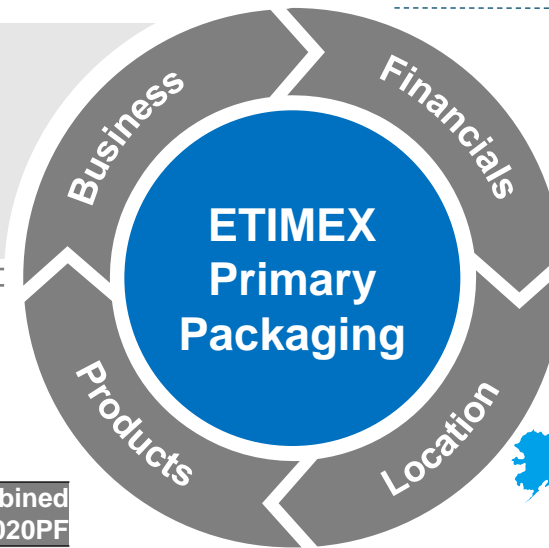
■ Sales
■ EBITDA
■ EBITDA-Margin



Management:
(since 2018)



- 50 years old
- CEO since January 2018
- Previously ETIMEX USA, Soutlia, BP Chemicals Plastec



Valuation

Comparable Company Analysis
8.4x¹

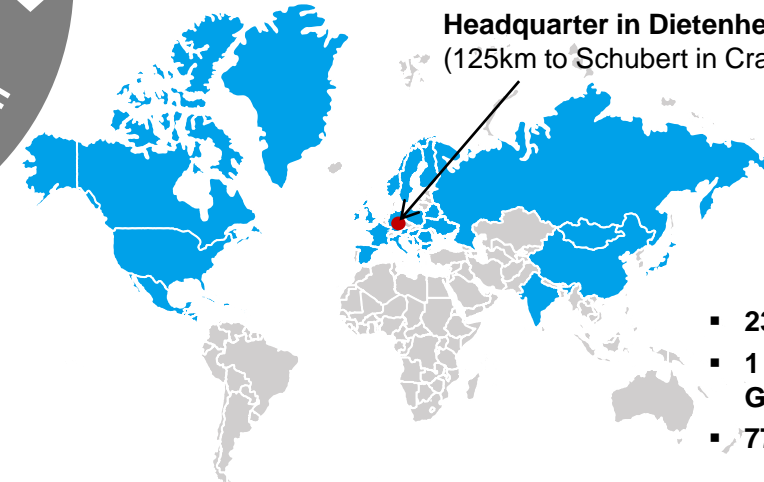
Comparable Transaction Analysis
10.2x

Valuation Multiple: **9.3x** leading to an EV of €77.8m

Margin Impact

in €k	Schubert 2020	ETIMEX 2020A	Combined 2020PF
Sales	259,085	57,116	316,202
Turnover	255,713	57,421	313,134
Gross Profit	156,034	28,999	185,033
<i>% Margin</i>	<i>60.2%</i>	<i>50.8%</i>	<i>58.5%</i>
EBITDA Reported	21,324	8,375	26,699
<i>% Margin</i>	<i>8.2%</i>	<i>14.7%</i>	<i>9.4%</i>

Headquarter in Dietenheim, Germany (125km to Schubert in Crailsheim)



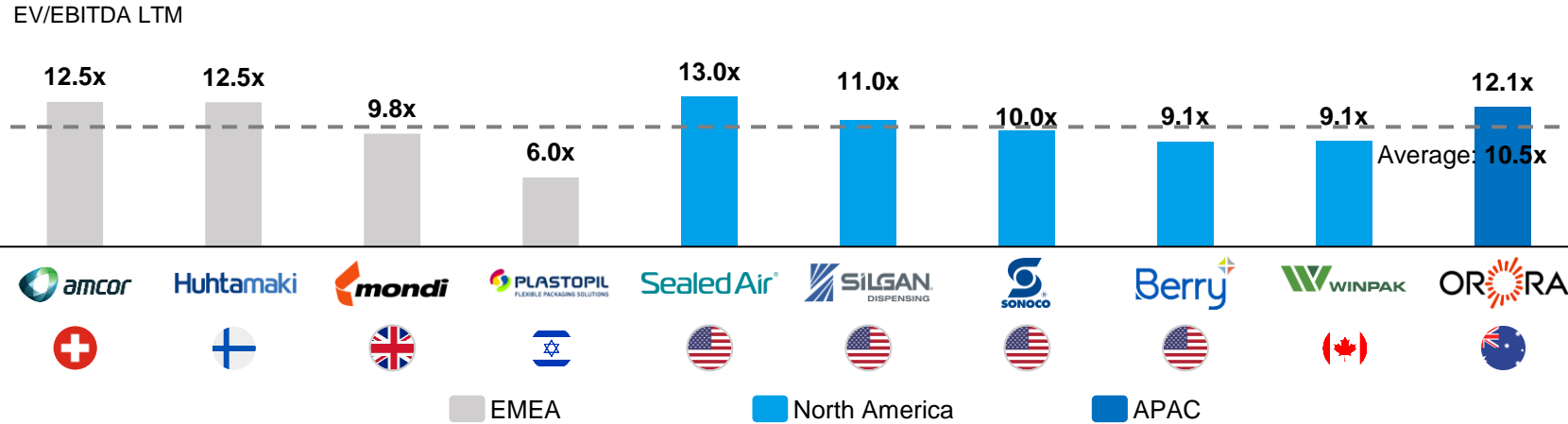
- 230 employees**
- 1 plant in Dietenheim, Germany**
- 77% export ratio**

Source(s): Annual Report, Company Information

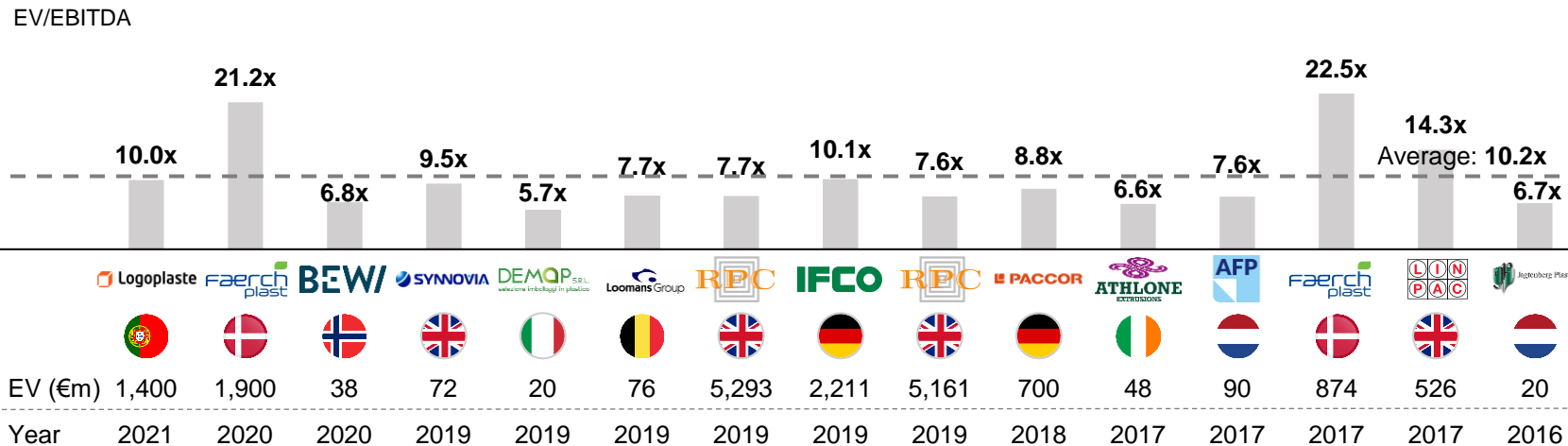
● Production Location ○ Years Industry Experience ● High Managing Capabilities

Relative valuation of Trading and Transaction Multiples within the packaging material industry leading to a blended valuation multiple of 9.3x

Trading Multiples



Transaction Multiples



Comment

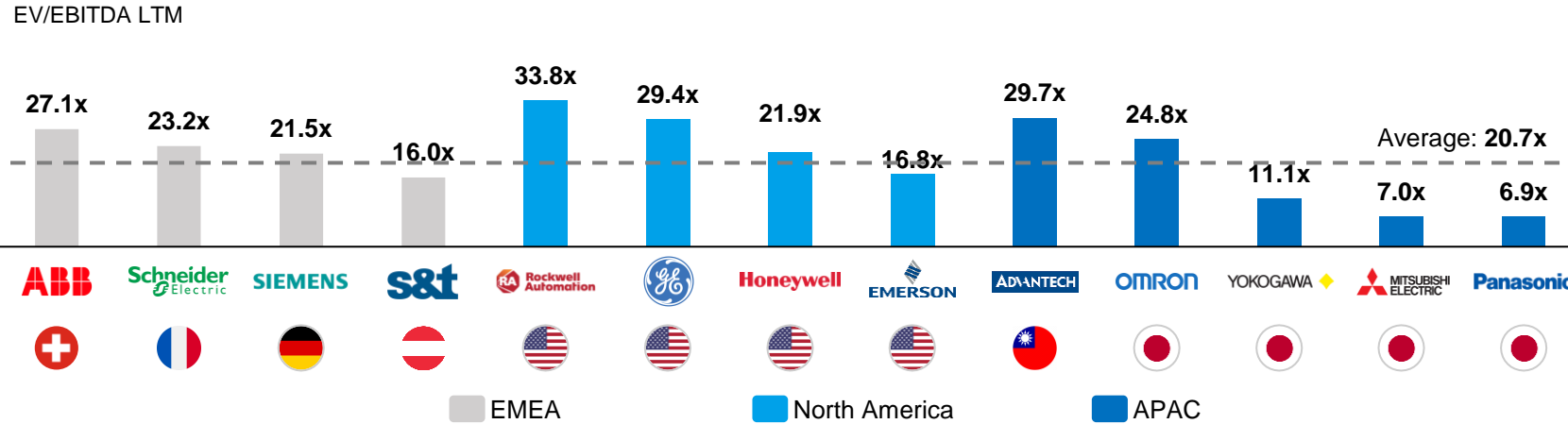
- Comparable peers comprise international packaging material manufacturers with a **focus on flexible packaging**
- To account for illiquidity of ETIMEX's business and smaller size than its **trading comparables** an **illiquidity discount** of 20% was assumed leading to an **average valuation multiple of 8.4x**
- To evaluate past transactions in the sector, multiple transactions were analyzed based on their target business segments and geographical region
- Trading and Transaction Multiples are at similar levels with 10.5x and 10.2x respectively**

	Trading Multiples	Transaction Multiples
Average	8.4x ¹	10.2x
EBITDA 2020A	€8,375k	
Enterprise Value	€70,463k	€85,289k

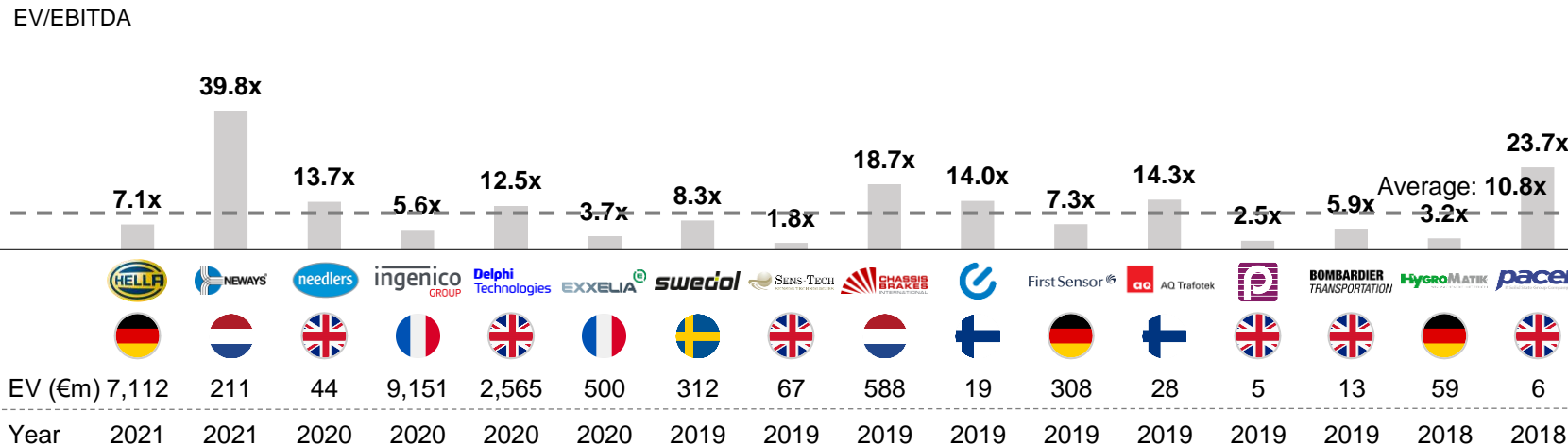
Source(s): Mergermarket, Annual Report, Capital IQ; Note(s): 1) Includes illiquidity discount of 20%

Relative valuation of Trading and Transaction Multiples within the industrial automation industry leading to a blended valuation multiple of 12.7x

Trading Multiples



Transaction Multiples



Comment

- Comparable peers comprise international industrial automation companies with a focus on industrial computers and system controls
- To account for illiquidity of Schubert System Elektronik's business and smaller size than its comparables an **illiquidity discount** of 20% and discount for semiconductor crisis of 10% was assumed leading **multiple of 14.5x**
- To evaluate past transactions in the sector, multiple transactions were analyzed based on their target business segments and geographical region
- Due to recent market upswings and increasing importance of safety automation **Trading Multiples are higher than historical Transaction Multiples**

	Trading Multiples	Transaction Multiples
Average	14.5x ¹	10.8x
EBITDA 2019PF	€3,218k	
Enterprise Value	€46,665k	€34,865k

Source(s): Mergermarket, Annual Report, Capital IQ; Note(s): 1) Includes illiquidity discount of 20% and semi conductor crisis adjustment of 10%

EBITDA-Margin is expected to increase to 15.3% in 2027E after margin decline in 2020E, while showing strong Top-Line growth (1/2)

in €k	2019A	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	12-'19	19-'27
Sales	272,319	252,029	335,160	375,147	411,546	445,436	482,074	511,800	547,960	7.5%	9.1%
Turnover	284,055	250,574	333,096	375,056	411,310	445,494	480,973	510,746	546,460	7.9%	8.5%
YoY Growth	3.3%	(11.8%)	32.9%	12.6%	9.7%	8.3%	8.0%	6.2%	7.0%		
<i>Raw Materials</i>	① (76,873)	(62,697)	② (68,201)	(80,787)	(87,580)	(91,578)	(97,429)	(100,946)	(106,234)	6.0%	4.1%
% Sales	(28.2%)	(24.9%)	(20.3%)	(21.5%)	(21.3%)	(20.6%)	(20.2%)	(19.7%)	(19.4%)		
<i>Purchased Services</i>	(34,575)	(32,117)	③ (35,342)	(24,307)	(25,627)	(27,394)	(29,864)	(31,767)	(34,321)	8.3%	(0.1%)
% Sales	(12.7%)	(12.7%)	(10.5%)	(6.5%)	(6.2%)	(6.1%)	(6.2%)	(6.2%)	(6.3%)		
<i>ETIMEX expenses</i>	0	0	(29,685)	(31,005)	(32,383)	(34,143)	(36,167)	(38,133)	(40,017)	n.a.	n.a.
% Sales	0.0%	0.0%	④ (8.9%)	(8.3%)	(7.9%)	(7.7%)	(7.5%)	(7.5%)	(7.3%)		
Material Expenses	(111,447)	(94,814)	(133,228)	(136,099)	(145,590)	(153,115)	(163,460)	(170,846)	(180,572)	6.7%	6.2%
% Sales	(40.9%)	⑤ (37.6%)	(39.8%)	(36.3%)	(35.4%)	(34.4%)	(33.9%)	(33.4%)	(33.0%)		
Gross Profit	172,608	155,760	199,868	238,957	265,721	292,380	317,512	339,900	365,889	8.8%	9.8%
% Margin	63.4%	61.8%	59.6%	63.7%	64.6%	65.6%	65.9%	66.4%	66.8%		
Personnel Expenses	⑥ 100,354	(91,632)	(113,787)	(132,460)	(149,509)	(165,745)	(181,419)	(196,399)	(210,348)	8.5%	9.7%
% Sales	(36.9%)	(36.4%)	(33.9%)	(35.3%)	(36.3%)	(37.2%)	(37.6%)	(38.4%)	(38.4%)		
Rent & Leasing	(5,587)	(5,587)	(6,034)	(6,999)	(8,049)	(9,257)	(10,368)	(11,612)	(13,005)	11.2%	11.1%
Shipping / Logistics	(10,817)	(10,081)	(10,144)	(12,072)	(13,747)	(14,627)	(15,236)	(15,681)	(16,649)	8.3%	5.5%
Marketing Expenses	(6,243)	(3,780)	(7,147)	(9,970)	(9,921)	(10,098)	(9,127)	(7,747)	(8,310)	16.3%	3.6%
Maintenance	(4,740)	(5,041)	(5,498)	(6,232)	(6,890)	(7,480)	(8,113)	(8,608)	(9,234)	10.6%	8.7%
IT & Licenses	(2,279)	(1,910)	(2,084)	(2,362)	(2,611)	(2,835)	(3,075)	(3,263)	(3,500)	8.4%	5.5%
Other Expenses	(15,922)	(15,626)	(14,845)	(16,152)	(17,143)	(18,241)	(19,388)	(20,571)	(22,066)	5.1%	4.2%
<i>Other Expenses (ETIMEX)</i>	0	0	(7,363)	(7,768)	(8,195)	(8,728)	(9,339)	(9,946)	(10,542)		
Other Operating Expenses	(45,588)	(42,025)	(53,115)	(61,555)	(66,557)	(71,266)	(74,645)	(77,428)	(83,306)	8.4%	7.8%
% Sales	(16.7%)	(16.7%)	(15.8%)	(16.4%)	(16.2%)	(16.0%)	(15.5%)	(15.1%)	(15.2%)		
Other Income	2,059	1,906	3,960	4,237	4,483	4,724	4,987	5,195	5,429	5.2%	12.9%
EBITDA Adjusted	30,227	24,009	36,927	49,179	54,138	60,092	66,435	71,269	77,664	9.9%	12.5%
YoY Growth	(3.3%)	(20.6%)	53.8%	33.2%	10.1%	11.0%	10.6%	7.3%	9.0%		
% Margin	11.1%	9.5%	11.0%	13.1%	13.2%	13.5%	13.8%	13.9%	14.2%		

Comment

- Reduction due to **Carve-Out of business unit with high Raw Materials Expenses**
- Margin drops due to higher Sales resulting from the **ETIMEX acquisition**, whose Material Expense impact can be seen in the ETIMEX expenses line
- Strong decrease in Purchased Services due to **factory ramp-up; Purchased Services stay at a low margin**, which is ensured through **consistent capacity build up** reflected in CAPEX
- ETIMEX Material margin** stay in line with historical development
- Material Expense margin** is influenced by many factors but is expected to **sink** over the forecasted time to 33% in 2027E; **key drivers are the higher service share, more capacity and a more efficient production**; this leads to a steadily increasing Gross Profit margin starting in 2022E
- Personnel is steadily built up**, except the decrease through the Carve-Out in 2020E, with a spike in 2021E due to the acquisition which does not translate to the Personnel margin; Until 2027E a steady and slight increase in the margin can be seen as the business **focuses more on service**

Source(s): Own Analysis, Annual Report

EBITDA-Margin is expected to increase to 15.3% in 2027E after margin decline in 2020E, while showing strong Top-Line growth (2/2)

in €k	2019A	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	12-'19	19-'27
Sales	272,319	252,029	335,160	375,147	411,546	445,436	482,074	511,800	547,960	7.5%	9.1%
Turnover	284,055	250,574	333,096	375,056	411,310	445,494	480,973	510,746	546,460	7.9%	8.5%
YoY Growth	3.3%	(11.8%)	32.9%	12.6%	9.7%	8.3%	8.0%	6.2%	7.0%		
<i>Raw Materials</i>	(76,873)	(62,697)	(68,201)	(80,787)	(87,580)	(91,578)	(97,429)	(100,946)	(106,234)	6.0%	4.1%
% Sales	(28.2%)	(24.9%)	(20.3%)	(21.5%)	(21.3%)	(20.6%)	(20.2%)	(19.7%)	(19.4%)		
<i>Purchased Services</i>	(34,575)	(32,117)	(35,342)	(24,307)	(25,627)	(27,394)	(29,864)	(31,767)	(34,321)	8.3%	(0.1%)
% Sales	(12.7%)	(12.7%)	(10.5%)	(6.5%)	(6.2%)	(6.1%)	(6.2%)	(6.2%)	(6.3%)		
<i>ETIMEX expenses</i>	0	0	(29,685)	(31,005)	(32,383)	(34,143)	(36,167)	(38,133)	(40,017)	n.a.	n.a.
% Sales	0.0%	0.0%	(8.9%)	(8.3%)	(7.9%)	(7.7%)	(7.5%)	(7.5%)	(7.3%)		
Material Expenses	(111,447)	(94,814)	(133,228)	(136,099)	(145,590)	(153,115)	(163,460)	(170,846)	(180,572)	6.7%	6.2%
% Sales	(40.9%)	(37.6%)	(39.8%)	(36.3%)	(35.4%)	(34.4%)	(33.9%)	(33.4%)	(33.0%)		
Gross Profit	172,608	155,760	199,868	238,957	265,721	292,380	317,512	339,900	365,889	8.8%	9.8%
% Margin	63.4%	61.8%	59.6%	63.7%	64.6%	65.6%	65.9%	66.4%	66.8%		
Personnel Expenses	(100,354)	(91,632)	(113,787)	(132,460)	(149,509)	(165,745)	(181,419)	(196,399)	(210,348)	8.5%	9.7%
% Sales	(36.9%)	(36.4%)	⁸ 33.9%	(35.3%)	(36.3%)	(37.2%)	(37.6%)	(38.4%)	(38.4%)		
Rent & Leasing	(5,587)	(5,587)	(6,034)	(6,999)	(8,049)	(9,257)	(10,368)	(11,612)	(13,005)	⁹ 11.2%	11.1%
Shipping / Logistics	(10,817)	(10,081)	(10,144)	(12,072)	(13,747)	(14,627)	¹⁰ 15,236	(15,681)	(16,649)	8.3%	5.5%
Marketing Expenses	(6,243)	(3,780)	¹¹ (7,147)	(9,970)	(9,921)	(10,098)	(9,127)	(7,747)	(8,310)	16.3%	3.6%
Maintenance	(4,740)	(5,041)	(5,498)	(6,232)	(6,890)	(7,480)	(8,113)	(8,608)	(9,234)	10.6%	8.7%
IT & Licenses	(2,279)	(1,910)	(2,084)	(2,362)	(2,611)	(2,835)	(3,075)	(3,263)	(3,500)	¹² 8.4%	5.5%
Other Expenses	(15,922)	(15,626)	(14,845)	(16,152)	(17,143)	(18,241)	(19,388)	(20,571)	(22,066)	5.1%	4.2%
<i>Other Expenses (ETIMEX)</i>	0	0	(7,363)	(7,768)	(8,195)	(8,728)	(9,339)	(9,946)	(10,542)		
Other Operating Expenses	(45,588)	(42,025)	(53,115)	(61,555)	(66,557)	(71,266)	(74,645)	(77,428)	(83,306)	8.4%	7.8%
% Sales	(16.7%)	¹³ (16.7%)	(15.8%)	(16.4%)	(16.2%)	(16.0%)	(15.5%)	(15.1%)	(15.2%)		
Other Income	2,059	¹⁴ 1,906	3,960	4,237	4,483	4,724	4,987	5,195	5,429	5.2%	12.9%
EBITDA Adjusted	30,227	24,009	36,927	49,179	54,138	60,092	66,435	71,269	77,664	9.9%	12.5%
YoY Growth	(3.3%)	(20.6%)	53.8%	33.2%	10.1%	11.0%	10.6%	7.3%	9.0%		
% Margin	11.1%	¹⁵ 9.5%	11.0%	¹⁶ 13.1%	13.2%	13.5%	13.8%	13.9%	14.2%		

Comment

- ⁸ **Personnel Expenses** is expected to show double digit growth from 2021E to 2025E, making it the biggest cost item in 2027E, which is in line with the plan of a more **service intensive strategy and international sales force build up**
- ⁹ Rent & Leasing is growing in historical rates driven by new **service and sales offices globally**
- ¹⁰ Shipping & Logistics is **driven by internationalisation** and is expected to reach €16m in 2027E
- ¹¹ Increase in Marketing Expenses are based on **aggressive international growth strategy and increasing trade fair presence**
- ¹² Maintenance, IT & Licenses and Other Expenses are expected to grow in line with **continuous growth of the company to reflect an increasing cost base**
- ¹³ In 2020E **Other Operating Expenses margin reaches 16.7% due to one-off effects for Covid**, thereafter decline driven through economies of scale
- ¹⁴ **Other Income rises by c. €2m in 2021E due to the ETIMEX acquisition** and follows moderately Sales growth thereafter
- ¹⁵ **Margin decline in 2020E due to one-off Covid effects and Carve-Out dilution**; Uplift in 2021E based on favourable ETIMEX acquisition
- ¹⁶ **Margin increase following 2021E** due to factory ramp-up and more cost effective production, as well as higher share of profitable service business

Source(s): Own Analysis

Without the ETIMEX acquisition Schubert still shows a strong EBITDA-Margin of 15.1% in 2027E but shows less strong Sales growth

in €k	2019A	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	12-'19	19-'27
Sales	272,319	252,029	274,903	311,575	344,477	374,008	405,646	430,404	461,681	7.5%	6.8%
Turnover	284,055	250,574	272,604	311,031	343,615	373,263	404,746	429,511	460,610	7.9%	6.2%
YoY Growth	3.3%	(11.8%)	8.8%	14.1%	10.5%	8.6%	8.4%	6.1%	7.2%		
<i>Raw Materials</i>	(76,873)	(62,697)	(68,201)	(80,787)	(87,580)	(91,578)	(97,429)	(100,946)	(106,234)	6.0%	4.1%
% Sales	(28.2%)	(24.9%)	(24.8%)	(25.9%)	(25.4%)	(24.5%)	(24.0%)	(23.5%)	(23.0%)		
<i>Purchased Services</i>	(34,575)	(32,117)	(35,342)	(24,307)	(25,627)	(27,394)	(29,864)	(31,767)	(34,321)	8.3%	(0.1%)
% Sales	(12.7%)	(12.7%)	(12.9%)	(7.8%)	(7.4%)	(7.3%)	(7.4%)	(7.4%)	(7.4%)		
<i>ETIMEX expenses</i>	0	0	0	0	0	0	0	0	0	n.a.	n.a.
% Sales	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Material Expenses	(111,447)	(94,814)	(103,543)	(105,095)	(113,207)	(118,972)	(127,293)	(132,712)	(140,555)	6.7%	2.9%
% Sales	(40.9%)	(37.6%)	(37.7%)	(33.7%)	(32.9%)	(31.8%)	(31.4%)	(30.8%)	(30.4%)		
Gross Profit	172,608	155,760	169,061	205,936	230,408	254,291	277,453	296,798	320,055	8.8%	8.0%
% Margin	63.4%	61.8%	61.5%	66.1%	66.9%	68.0%	68.4%	69.0%	69.3%		
Personnel Expenses	(100,354)	(91,632)	(97,457)	(115,232)	(131,333)	(146,388)	(160,707)	(174,340)	(186,966)	8.5%	8.1%
% Sales	(36.9%)	(36.4%)	(35.5%)	(37.0%)	(38.1%)	(39.1%)	(39.6%)	(40.5%)	(40.5%)		
Rent & Leasing	(5,587)	(5,587)	(6,034)	(6,999)	(8,049)	(9,257)	(10,368)	(11,612)	(13,005)	11.2%	11.1%
Shipping / Logistics	(10,817)	(10,081)	(10,144)	(12,072)	(13,747)	(14,627)	(15,236)	(15,681)	(16,649)	8.3%	5.5%
Marketing Expenses	(6,243)	(3,780)	(7,147)	(9,970)	(9,921)	(10,098)	(9,127)	(7,747)	(8,310)	16.3%	3.6%
Maintenance	(4,740)	(5,041)	(5,498)	(6,232)	(6,890)	(7,480)	(8,113)	(8,608)	(9,234)	10.6%	8.7%
IT & Licenses	(2,279)	(1,910)	(2,084)	(2,362)	(2,611)	(2,835)	(3,075)	(3,263)	(3,500)	8.4%	5.5%
Other Expenses	(15,922)	(15,626)	(14,845)	(16,152)	(17,143)	(18,241)	(19,388)	(20,571)	(22,066)	5.1%	4.2%
<i>Other Expenses (ETIMEX)</i>	0	0	0	0	0	0	0	0	0		
Other Operating Expenses	(45,588)	(42,025)	(45,752)	(53,787)	(58,362)	(62,538)	(65,307)	(67,482)	(72,764)	8.4%	6.0%
% Sales	(16.7%)	(16.7%)	(16.6%)	(17.3%)	(16.9%)	(16.7%)	(16.1%)	(15.7%)	(15.8%)		
Other Income	2,059	1,906	1,851	2,056	2,228	2,371	2,520	2,620	2,754	5.2%	3.7%
EBITDA Adjusted	30,227	24,009	27,704	38,973	42,942	47,736	53,959	57,596	63,079	9.9%	9.6%
YoY Growth	(3.3%)	(20.6%)	15.4%	40.7%	10.2%	11.2%	13.0%	6.7%	9.5%		
% Margin	11.1%	9.5%	10.1%	12.5%	12.5%	12.8%	13.3%	13.4%	13.7%		

Comment

- Weaker Sales growth** with a CAGR of 6.8% compared to the 9.1% in the Add-On scenario
- Lower Material Expense margin** compared to the Add-On case as the packaging material business has higher Raw Material Expenses than packaging machinery manufacturers, therefore this case shows a higher Gross Margin
- Personnel Expenses rise to c. €189m compared to c. €210m** showing a less moderate growth compared to ETIMEX acquisition as sudden personnel increase following personnel takeover¹
- Other Income is missing ETIMEX contributions and thus having a more moderate influence on EBITDA as with the ETIMEX transaction, but follows moderate Sales growth
- Without the acquisition Schubert is **expected to reach an EBITDA of c. €63m in 2027E which lies c. €15m below the Add-On Case**
- Schubert still manages to reach an **EBITDA-Margin uplift to 13.7%** without the acquiring profitable ETIMEX business, with a reasonable assumption that acquiring ETIMEX as standalone company, and assuming margin increases are realised within Schubert's packaging machinery business

Source(s): Annual Reports, Own Analysis; Note(s): 1) Following §613a German Civil Code

In the bank case Schubert realizes very small Sales growth and a flat EBITDA-Margin

in €k	2019A	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	12-'19	19-'27
Sales	272,319	237,244	256,470	280,683	302,061	318,703	333,601	348,754	364,298	① 7.5%	3.7%
Turnover	284,055	235,166	255,097	280,025	301,161	317,922	332,722	347,773	363,207	7.9%	3.1%
YoY Growth	3.3%	(17.2%)	8.5%	9.8%	7.5%	5.6%	4.7%	4.5%	4.4%		
<i>Raw Materials</i>	(76,873)	(59,243)	(64,164)	(77,396)	(82,993)	(86,868)	(91,359)	(96,121)	(101,171)	6.0%	3.5%
% Sales	(28.2%)	(25.0%)	(25.0%)	(27.6%)	(27.5%)	(27.3%)	(27.4%)	(27.6%)	(27.8%)		
<i>Purchased Services</i>	(34,575)	(29,050)	(30,950)	(27,676)	(29,181)	(30,559)	(32,077)	(33,750)	(35,524)	8.3%	0.3%
% Sales	(12.7%)	(12.2%)	(12.1%)	(9.9%)	(9.7%)	(9.6%)	(9.6%)	(9.7%)	(9.8%)		
<i>ETIMEX expenses</i>	0	0	0	0	0	0	0	0	0	n.a.	n.a.
% Sales	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Material Expenses	(111,447)	(88,292)	(95,114)	(105,072)	(112,175)	(117,427)	(123,436)	(129,870)	(136,694)	6.7%	2.6%
% Sales	(40.9%)	(37.2%)	② (37.1%)	(37.4%)	(37.1%)	(36.8%)	(37.0%)	(37.2%)	(37.5%)		
Gross Profit	172,608	146,874	159,983	174,952	188,986	200,495	209,285	217,903	226,513	8.8%	3.5%
% Margin	63.4%	61.9%	62.4%	62.3%	62.6%	62.9%	62.7%	62.5%	62.2%		
Personnel Expenses	(100,354)	(88,229)	(92,244)	(99,855)	(109,268)	(116,662)	(122,538)	(125,437)	(129,963)	8.5%	3.3%
% Sales	(36.9%)	(37.2%)	③ (36.0%)	(35.6%)	(36.2%)	(36.6%)	(36.7%)	(36.0%)	(35.7%)		
Rent & Leasing	(5,587)	(5,196)	(5,716)	(6,001)	(6,301)	(6,679)	(7,214)	(7,791)	(8,414)	11.2%	5.3%
Shipping / Logistics	(10,817)	(9,490)	(9,464)	(10,875)	(12,054)	(12,464)	(12,530)	(14,648)	(14,572)	8.3%	3.8%
Marketing Expenses	(6,243)	(3,203)	(6,001)	(8,084)	(8,264)	(8,175)	(7,131)	(8,021)	(8,015)	16.3%	3.2%
Maintenance	(4,740)	(4,130)	(4,464)	(4,886)	(5,258)	(6,374)	(6,672)	(6,975)	(7,286)	10.6%	5.5%
IT & Licenses	(2,279)	(1,798)	(1,944)	(2,128)	(2,290)	(2,416)	(2,529)	(2,644)	(2,761)	8.4%	2.4%
Other Expenses	(15,922)	(14,709)	(13,849)	(14,551)	(15,033)	(15,543)	(15,945)	(16,669)	(17,412)	5.1%	1.1%
<i>Other Expenses (ETIMEX)</i>	0	0	0	0	0	0	0	0	0		
Other Operating Expenses	(45,588)	(38,526)	(41,438)	(46,524)	(49,200)	(51,652)	(52,020)	(56,748)	(58,460)	8.4%	3.2%
% Sales	(16.7%)	(16.2%)	④ (16.2%)	(16.6%)	(16.3%)	(16.2%)	(15.6%)	(16.3%)	(16.0%)		
Other Income	2,059	1,630	1,727	1,853	1,954	2,020	2,072	2,123	2,173	5.2%	0.7%
EBITDA Adjusted	30,227	21,750	28,028	30,426	32,472	34,201	36,799	37,842	40,264	9.9%	3.6%
YoY Growth	(3.3%)	(28.0%)	⑤ 28.9%	8.6%	6.7%	5.3%	7.6%	2.8%	6.4%		
% Margin	11.1%	9.2%	⑥ 10.9%	10.8%	10.8%	10.7%	11.0%	10.9%	11.1%		

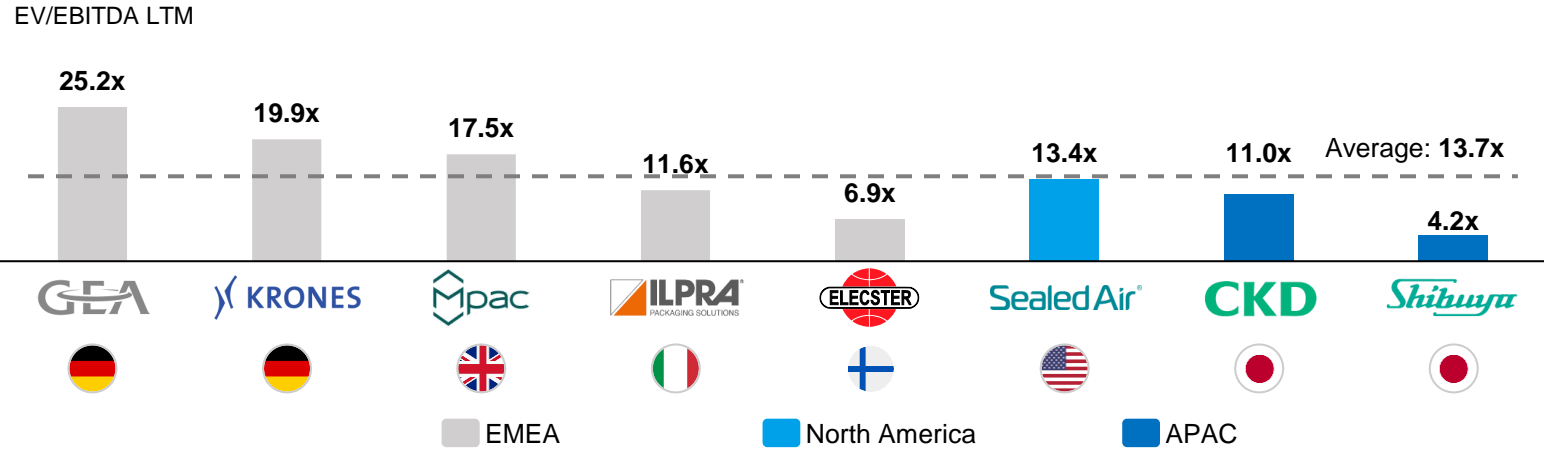
Comment

- ① Sales are expected to grow lower than historically at a CAGR of 3.7% as it is expected that the planned international expansions, the acquisition and the Retrofit strategy will not be executed, therefore, Sales are expected to reach c. €364m by 2027E
- ② Material Expense reductions are expected to be less successful in the bank case and it is conservatively assumed to reach 37.5% in 2027E, therefore, this case also shows a significantly lower Gross Profit margin
- ③ Hiring is expected to be slower than assumed in the base case as Schubert is expected to quickly notice the missing demand and will react in lower hiring, however, this is subject to a time lag resulting in higher Personnel margins in 2020E and 2021E
- ④ Other Operating Expenses are expected to develop accordingly with Sales and without significant improvement but still cash outflow from strategy anticipation
- ⑤ EBITDA is expected to grow with a CAGR of 4.9% to c. €42m in 2027E
- ⑥ In 2020E and 2021E the margin drops below 10% due to the before mentioned Personnel Expenses but it recovers to a Level of c. 11% quickly where it remains flat

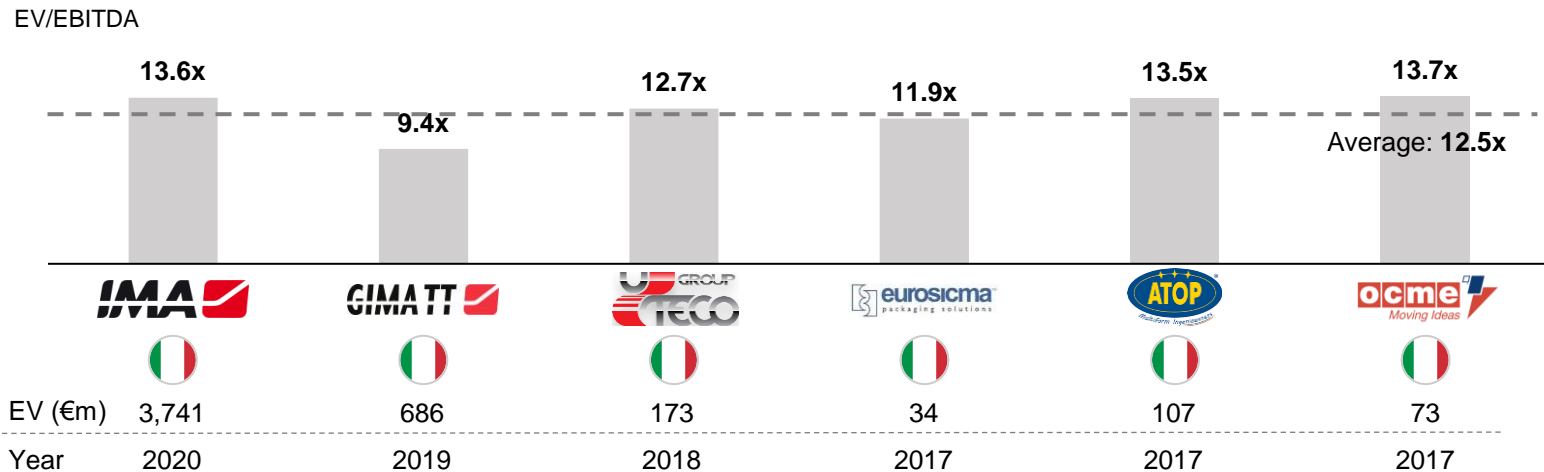
Source(s): Annual Reports, Own Analysis

Relative valuation of Trading and Transaction Multiples within the packaging machinery manufacturer are showing average EBITDA Multiples of 11.0x and 12.5x, respectively

Trading Multiples



Transaction Multiples



Source(s): Mergermarket, Annual Report, Capital IQ; Note(s): 1) Includes illiquidity discount of 20%

Comment

- Comparable peers comprise listed international packaging machinery player with Pick & Place top loading machinery applications
- To account for illiquidity of Schubert's business and smaller size than its comparables an illiquidity discount of 20% was assumed leading to an **average valuation multiple of 11.0x**
- To evaluate past transactions in the sector, multiple transactions were analyzed based on their target business segments and geographical region
- Due to recent market upswings **Trading Multiples are higher than historical Transaction Multiples** which gets encountered after applying the illiquidity discount

	Trading Multiples	Transaction Multiples
Average	11.0x ¹	12.5x
EBITDA 2019A	€30,227k	
Enterprise Value	€331,905k	€377,265k

WACC is mainly derived from public peers with an unlevered beta of 0.78, whereas cost of debt denotes an average between historical rates and market metrics

Weighted Average Cost of Capital (WACC)

Debt / Equity 0.31	Debt / Equity	
	D/V	23.90%
	E/V	76.10%
	Debt / Equity 0.31	
Cost of Debt 1.62%	Cost of Debt	
	Tax Rate	30.00%
	Historical After-tax Cost of Debt	2.88%
	Coverage Ratio	46.72
	Implied Credit Rating	AA
	Implied Spread	0.78%
	Implied After-tax Cost of Debt	0.36%
	Average After-tax Cost of Debt 1.62%	
Cost of Equity 11.17%	Cost of Equity	
	Risk free Rate	(0.26%)
	Market rate of return	11.72%
	Market Risk Premium	11.98%
WACC 8.89%	Unlevered Beta	0.78
	Levered Beta	0.95
	Beta Premium	0.00
	Adjusted Levered Beta	0.95
	Cost of Equity 11.17%	

Discounted Cash Flow Valuation

in €k	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	TV
EBITDA	28,512	28,314	35,242	38,232	41,959	44,594	49,229	53,688	
D&A	(5,171)	(6,005)	(6,789)	(7,434)	(8,148)	(8,906)	(9,628)	(10,304)	
EBIT	23,341	22,309	28,453	30,798	33,811	35,688	39,601	43,383	
Tax	(7,002)	(6,693)	(8,536)	(9,239)	(10,143)	(10,706)	(11,880)	(13,015)	
NOPAT	16,338	15,616	19,917	21,559	23,667	24,981	27,720	30,368	
FCFF Calculation									
NOPAT	16,338	15,616	19,917	21,559	23,667	24,981	27,720	30,368	
D&A	5,171	6,005	6,789	7,434	8,148	8,906	9,628	10,304	
Change in NWC	(1,358)	1,410	(3,481)	(2,139)	(3,696)	(3,956)	(3,910)	(4,581)	
CAPEX	(9,012)	(10,663)	(9,543)	(7,331)	(8,036)	(7,790)	(7,515)	(7,181)	
FCFF	11,140	12,368	13,682	19,522	20,083	22,142	25,924	28,911	505,358
Discounted CF	10,230	10,430	10,596	13,885	13,117	13,281	14,279	14,624	255,633
Discount Factor	0.92	0.84	0.77	0.71	0.65	0.60	0.55	0.51	0.51
	Gordon Growth		Exit Multiple						
Sum of Discounted Cash Flows	100,444	100,444							
Terminal Value	255,633	259,245							
EV	356,077	359,689							

Assumptions

- Cost of Debt is calculated based of average of **historical after-tax cost of debt and implied after-tax cost of debt based on debt ratios**
- Implied after-cost of debt is based on **NYU Stern rating grid of comparable companies**, being rated AA
- Assumed **tax rate** for all valuation measures is **30%**, following KPMG German tax grid
- 5-year return of **German SDAX** suits as market return rate as being most comparable in terms of size
- Perpetual growth is assumed to be 3.0%, following historic patterns of strong growth of Schubert
- Unlevered Beta was calculated based on listed peer group**
- Assumed exit multiple for **DCF purposes** denotes **long term multiple average of 9.5x EBITDA**

Source(s): Bloomberg, Annual Report, CapitalIQ, NYU Stern, KPMG

An analysis of the multiples through a 10-year cycle suggests an EV/EBITDA multiple of 9.5x

Sensitivity Analysis DCF (Gordon Growth Approach)

(In €k)		WACC				
		8.4%	8.6%	8.9%	9.1%	9.4%
G	2.5%	366,619	350,123	334,938	320,915	307,928
	2.8%	378,985	361,301	345,077	330,142	316,350
	3.0%	392,498	373,470	356,077	340,120	325,430
	3.3%	407,325	386,767	368,051	350,944	335,249
	3.5%	423,667	401,356	381,136	362,728	345,901

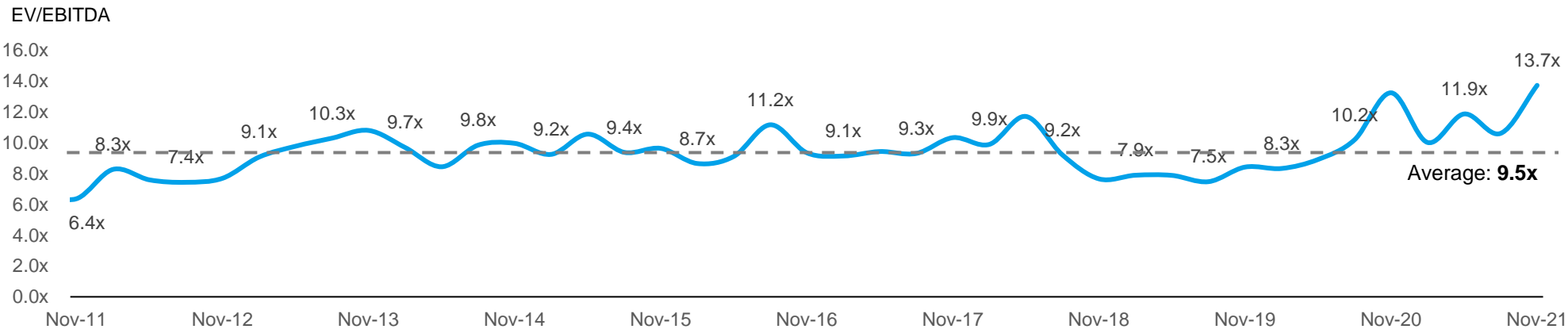
		WACC				
		8.4%	8.6%	8.9%	9.1%	9.4%
G	2.5%	12.1x	11.6x	11.1x	10.6x	10.2x
	2.8%	12.5x	12.0x	11.4x	10.9x	10.5x
	3.0%	13.0x	12.4x	11.8x	11.3x	10.8x
	3.3%	13.5x	12.8x	12.2x	11.6x	11.1x
	3.5%	14.0x	13.3x	12.6x	12.0x	11.4x

Sensitivity Analysis DCF (Exit Multiple Approach)

(In €k)		Exit Multiple				
		8.0x	8.8x	9.5x	10.3x	11.0x
WACC	8.4%	329,390	350,522	371,654	392,786	413,918
	8.6%	324,120	344,866	365,612	386,359	407,105
	8.9%	318,953	339,321	359,689	380,057	400,426
	9.1%	313,886	333,884	353,882	373,880	393,878
	9.4%	308,917	328,552	348,187	367,823	387,458

		WACC				
		8.0x	8.8x	9.5x	10.3x	11.0x
WACC	8.4%	10.9x	11.6x	12.3x	13.0x	13.7x
	8.6%	10.7x	11.4x	12.1x	12.8x	13.5x
	8.9%	10.6x	11.2x	11.9x	12.6x	13.2x
	9.1%	10.4x	11.0x	11.7x	12.4x	13.0x
	9.4%	10.2x	10.9x	11.5x	12.2x	12.8x

Through the Cycle Multiple Valuation



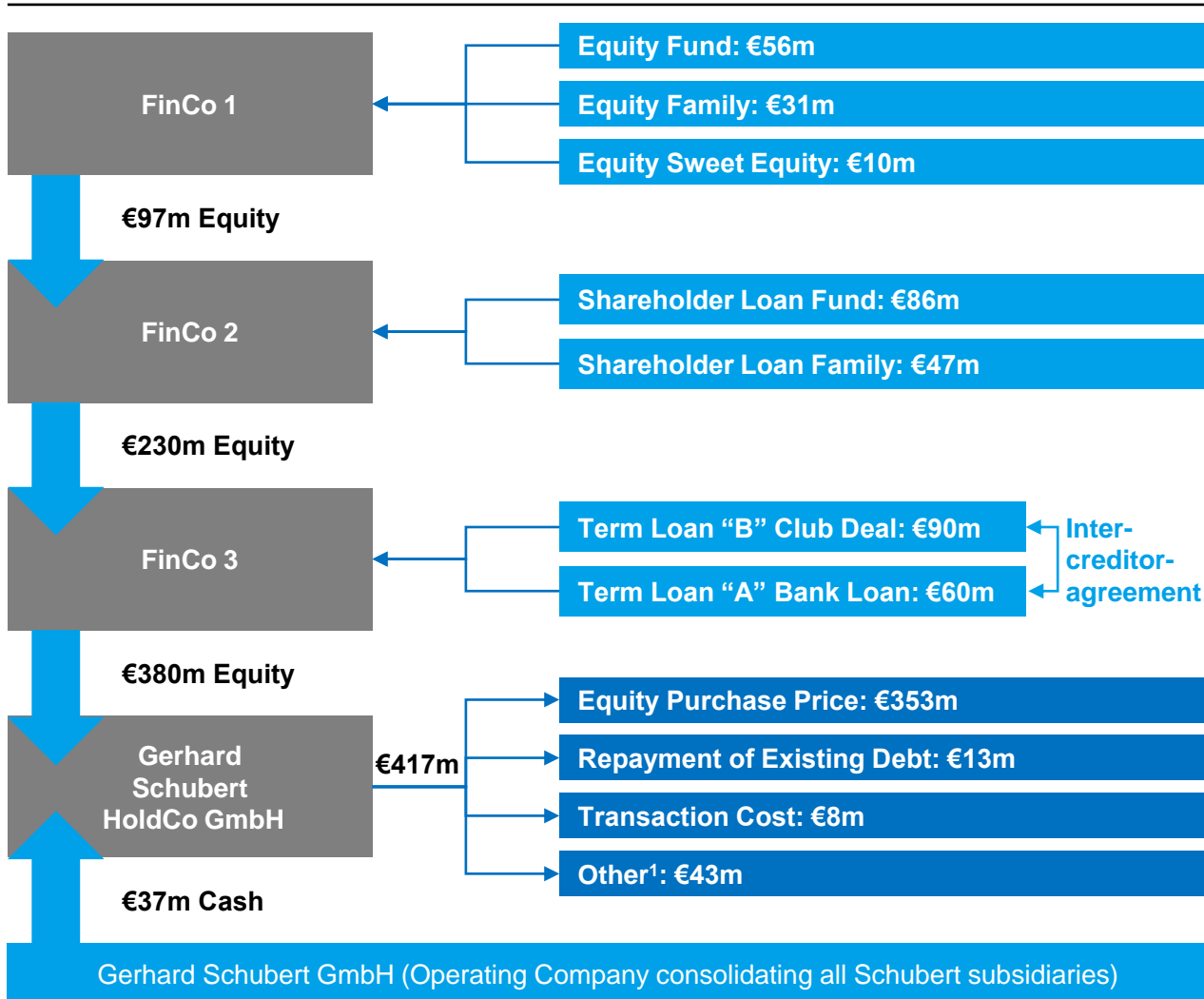
Peer Group



Source(s): CapitalIQ

Gerhard Schubert transaction will be structured with structural subordination measures through multiple financing companies

Structural Subordination¹



Commentary

- To ensure structural subordination a legal structure **with multiple newly structured Financing Companies (FinCo's) and one new Holding Company** was chosen
- It is assumed that all companies founded are legally incorporated as **German limited liability companies "GmbH"** ("Gesellschaft mit beschränkter Haftung")
- Equity injections by the separate parties are also assumed to be made **through German limited liability companies to ensure ringfencing**, especially important to the fund to secure other investments from bankruptcy of a singular portfolio company
- The family invests **€78m alongside the fund**, thus having the **same split between Shareholder Loan and Equity as the Fund**
- In terms of flow of funds, the most subordinate instrument is equity, where all parties are equally treated in terms of default, i.e., no contractual subordination
- FinCo 1 injects €97m of Equity in FinCo 2, in which the Shareholder Loans are injected with no contractual subordination but are structured more senior than Equity with the nature of Equity Like Instruments
- A cash injection of €230m is to be made by FinCo2 into FinCo 3, were €150m debt will be injected
- Between Term Loan "A" and Term Loan "B" will be an **inter-creditor agreement, determining a contractual subordination of Term Loan "B"**
- €380m of equity injection will be made by the financing parties and €37m of cash injection of Gerhard Schubert GmbH, utilizing Cash on Balance Sheet
- Complete equity injection into final acquisition company - Gerhard Schubert HoldCo GmbH - in amount of €417m will be distributed into uses of Equity Purchase Price, Repayment of Existing Debt, Transaction Cost, and Other
- The Uses item Other includes **Locked-Box Interest (€6m)**, which will be distributed to the **former owners** and **Future M&A Budget and Overfunding (aggregates to €37m)**, which will be included as **Cash On Balance Sheet for later usage**, thus directly repaying €36m to Gerhard Schubert GmbH
- Acquisitions will be **consolidated** within the target company Gerhard Schubert GmbH

Source(s): Own Analysis; Note(s): 1) Rounding errors might occur, leading to slight different numbers than on slide 34 (Sources & uses)

Throughout different scenarios, the transaction shows attractive return structures, which enables the case to be sensitive to external influences and to defer or pull forward the exit

Investment Case

		Entry Multiple				
		10.2x	11.0x	11.7x	12.5x	13.2x
Exit Multiple	10.2x	2.7x	2.6x	2.6x	2.5x	2.5x
	11.0x	2.8x	2.8x	2.7x	2.7x	2.7x
	11.7x	3.0x	3.0x	2.9x	2.9x	2.8x
	12.5x	3.2x	3.2x	3.1x	3.1x	3.0x
	13.2x	3.4x	3.4x	3.3x	3.2x	3.2x

		Entry Multiple				
		10.2x	11.0x	11.7x	12.5x	13.2x
Exit Multiple	10.2x	22%	21%	21%	20%	20%
	11.0x	23%	23%	22%	22%	22%
	11.7x	25%	24%	24%	24%	23%
	12.5x	26%	26%	25%	25%	25%
	13.2x	28%	27%	27%	26%	26%

		Exit Year				
		2022E	2023E	2024E	2025E	2026E
Exit Multiple	10.2x	1.8x	2.1x	2.6x	3.0x	3.4x
	11.0x	1.9x	2.3x	2.7x	3.2x	3.6x
	11.7x	2.1x	2.5x	2.9x	3.4x	3.9x
	12.5x	2.2x	2.6x	3.1x	3.6x	4.1x
	13.2x	2.4x	2.8x	3.3x	3.8x	4.3x

Bank Case

		Entry Multiple				
		10.2x	11.0x	11.7x	12.5x	13.2x
Exit Multiple	10.2x	1.7x	1.6x	1.6x	1.6x	1.6x
	11.0x	1.8x	1.7x	1.7x	1.7x	1.7x
	11.7x	1.9x	1.9x	1.8x	1.8x	1.8x
	12.5x	2.0x	2.0x	1.9x	1.9x	1.9x
	13.2x	2.1x	2.1x	2.0x	2.0x	2.0x

		Entry Multiple				
		10.2x	11.0x	11.7x	12.5x	13.2x
Exit Multiple	10.2x	11%	10%	10%	10%	9%
	11.0x	12%	12%	11%	11%	11%
	11.7x	14%	13%	13%	12%	12%
	12.5x	15%	15%	14%	14%	13%
	13.2x	16%	16%	15%	15%	15%

		Exit Year				
		2022E	2023E	2024E	2025E	2026E
Exit Multiple	10.2x	1.2x	1.4x	1.6x	1.8x	2.0x
	11.0x	1.3x	1.5x	1.7x	1.9x	2.1x
	11.7x	1.4x	1.6x	1.8x	2.0x	2.2x
	12.5x	1.5x	1.7x	1.9x	2.2x	2.4x
	13.2x	1.5x	1.8x	2.0x	2.3x	2.5x

Base Case Without ETIMEX Acquisition

		Entry Multiple				
		10.2x	11.0x	11.7x	12.5x	13.2x
Exit Multiple	10.2x	2.3x	2.3x	2.2x	2.2x	2.2x
	11.0x	2.5x	2.4x	2.4x	2.3x	2.3x
	11.7x	2.6x	2.6x	2.5x	2.5x	2.4x
	12.5x	2.8x	2.7x	2.7x	2.6x	2.6x
	13.2x	2.9x	2.9x	2.8x	2.8x	2.7x

		Entry Multiple				
		10.2x	11.0x	11.7x	12.5x	13.2x
Exit Multiple	10.2x	18%	18%	17%	17%	17%
	11.0x	20%	19%	19%	19%	18%
	11.7x	21%	21%	20%	20%	20%
	12.5x	23%	22%	22%	21%	21%
	13.2x	24%	23%	23%	23%	22%

		Exit Year				
		2022E	2023E	2024E	2025E	2026E
Exit Multiple	10.2x	1.6x	1.9x	2.2x	2.7x	3.0x
	11.0x	1.7x	2.0x	2.4x	2.8x	3.2x
	11.7x	1.8x	2.1x	2.5x	3.0x	3.3x
	12.5x	2.0x	2.3x	2.7x	3.2x	3.5x
	13.2x	2.1x	2.4x	2.8x	3.3x	3.7x

- Schubert offers attractive returns throughout all scenarios within the Base Case, even without the acquisition of ETIMEX as of 01.01.2021
- If Schubert develops according to the Bank Case, a longer holding period still offers an attractive return profile, thus providing downwards protection for an earlier assumed exit