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PASSION.PRECISION.PURITY.

# VAT – We change the world with vacuum solutions

## Capital Markets Day 2022

December 2, 2022

[www.vatvalve.com](http://www.vatvalve.com)

# Agenda



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Capital Markets Day 2022

|   |   |                      |               |
|---|---|----------------------|---------------|
| 1 | VAT – We change the world with vacuum solutions                       | Mike Allison, CEO    | 10:30 – 11:30 |
| 2 | Semiconductor Solutions Group (SSG) – More than valves                | Urs Gantner, EVP     | 11:30 – 12:00 |
|   | Buffet lunch and informal interaction                                 |                      | 12:00 – 12:45 |
| 3 | Global Service (GSE) – Preferred partner for vacuum service solutions | Joe Haggerty, SVP    | 12:45 – 13:05 |
| 4 | Advanced Industrials (ADV) – Wide variety of markets and drivers      | Karin Dahlström, SVP | 13:05 – 13:30 |
| 5 | Financial targets and capital allocation strategy                     | Fabian Chiozza, CFO  | 13:30 – 14:00 |
| 6 | Panel discussion and closing remarks                                  |                      | 14:00 – 14:45 |
| 7 | Apéro   |                      |               |

# VAT Capital Markets Day 2022



## Forward-looking statements

Forward-looking statements contained herein are qualified in their entirety as there are certain factors that could cause results to differ materially from those anticipated. Any statements contained herein that are not statements of historical fact (including statements containing the words “believes,” “plans,” “anticipates,” “expects,” “estimates” and similar expressions) should be considered to be forward-looking statements. Forward-looking statements involve inherent known and unknown risks, uncertainties and contingencies because they relate to events and depend on circumstances that may or may not occur in the future and may cause the actual results, performance or achievements of the company to be materially different from those expressed or implied by such forward-looking statements. Many of these risks and uncertainties relate to factors that are beyond the company’s ability to control or estimate precisely, such as future market conditions, currency fluctuations, the behavior of other market participants, the performance, security and reliability of the company’s information technology systems, political, economic and regulatory changes in the countries in which the company operates or in economic or technological trends or conditions. As a result, investors are cautioned not to place undue reliance on such forward-looking statements.

Except as otherwise required by law, VAT disclaims any intention or obligation to update any forward-looking statements as a result of developments occurring after this presentation was made.



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# VAT – We change the world with vacuum solutions

Mike Allison, CEO

[www.vatvalve.com](http://www.vatvalve.com)



# Agenda



- 1** VAT – We change the world with vacuum solutions Mike Allison, CEO
- 1.1** VAT at a glance
- 1.2** Markets and growth drivers
- 1.3** Strategic priorities
- 1.4** Conclusion

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- 1** VAT – We change the world with vacuum solutions Mike Allison, CEO
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- 1.4** Conclusion

# VAT is the clear technology and market leader in the growing and profitable vacuum systems market



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VAT actively captures **key megatrends** to drive sustainable long-term growth



VAT is the **undisputed market leader** due to technology leadership in all fab vacuum applications, global scale and customer intimacy



VAT's outstanding performance is based on **wide competency reach** with close to 300 R&D and application engineers, over 100 global sales experts



VAT's **focus on operational excellence and strategy execution** delivers superior financial results

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# Our business segments are delivering superior performance – will deliver record results in 2022



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Our business segments  
*(Share of 9-mo. 2022 net sales,  
growth vs. 9-mo. 2021)*

Valves (82%)

Sales of CHF 524m (+33%)



Global Service (18%)

Sales of CHF 155m (+28%)



## Delivering outstanding performance in 2022

1,150 (+28%)

Midpoint of full-year  
sales guidance CHFm<sup>1</sup>

~35%

Guidance on full-year  
EBITDA margin

+60%

Full-year factory  
output Malaysia vs.  
2021

~60%

Market share across all  
industries

~500

Active patents on our  
technology

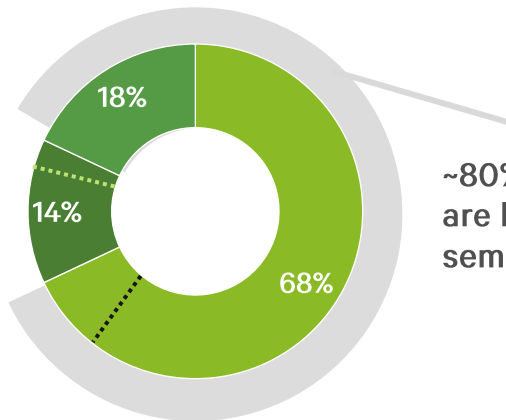
~75

New specification wins

<sup>1</sup> Midpoint of guidance issued with Q3 Trading update released on October 13, 2022

# Semiconductors are our driving force with advanced industrial markets adding to our value proposition

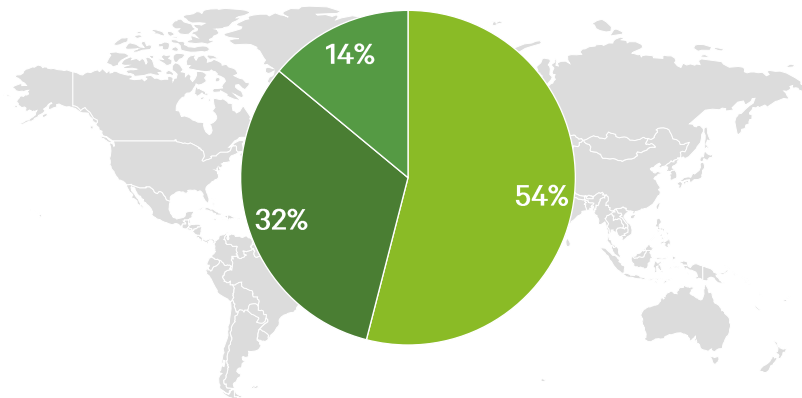
9-mo. 2022 sales by business unit<sup>1</sup>



~80% of VAT's sales are linked to the semiconductor sector

- Semiconductors (of which 5% is Display)
- Advanced Industrials (of which 2% is Solar)
- Global Service

9-mo. 2022 sales by region



- APAC
- Americas
- EMEA

<sup>1</sup> Starting January 2023, the Display & Solar business will be integrated into the Semiconductors business unit (Display) and the Advanced Industrials business unit (Solar)

# VAT is the preferred supplier of vacuum valves and systems to many high-tech process industry OEMs



## Vacuum system component manufacturers



## SEMI is a global supplier to semiconductor OEMs



## GSE supports semiconductor OEMs and end users



## ADV sells to a wide variety of high-vacuum customers in many advanced industries both OEM and end customers



Deutsches Elektronen-Synchrotron DESY  
Ein Forschungszentrum  
der Helmholtz-Gemeinschaft



# VAT is the undisputed market leader with sustained growing market share

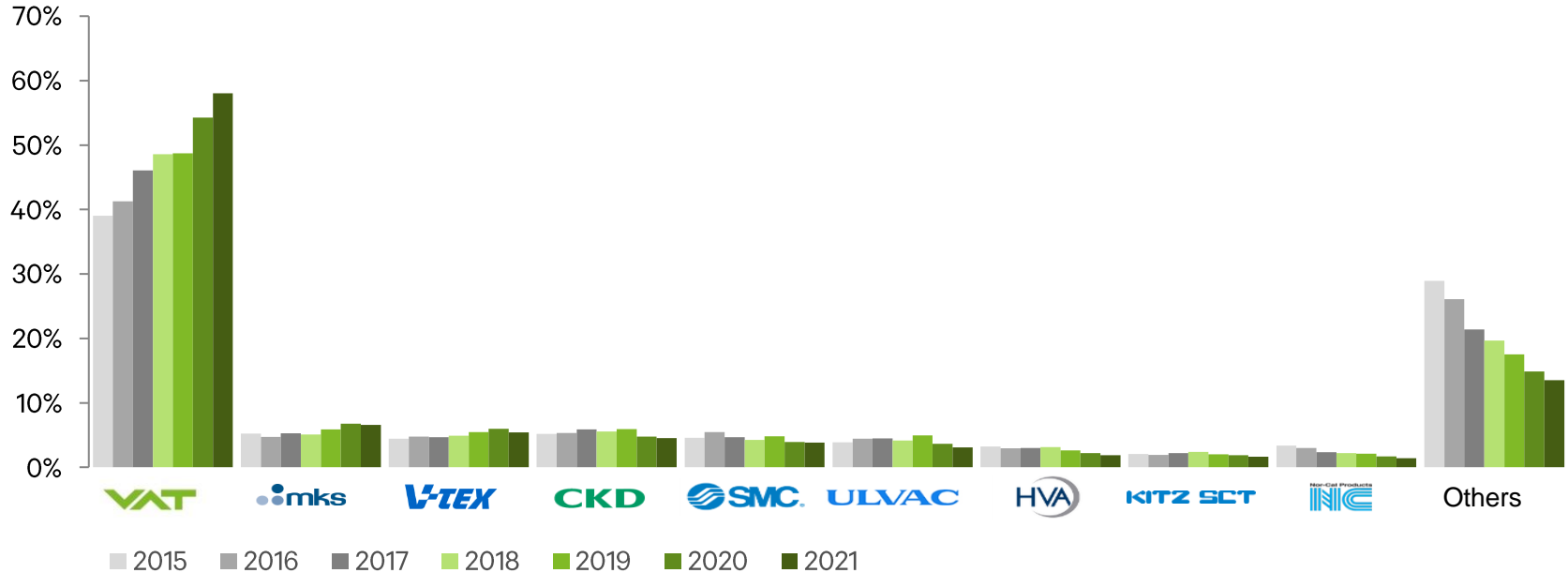


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## Market shares across all industries in %



Source: VLSIresearch/TechInsights Inc. March 2022



# Sustained market share growth – harnessing innovation strength and customer focus



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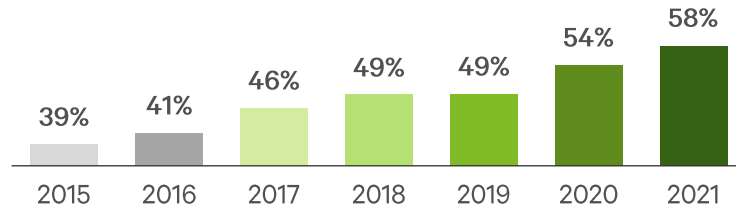
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## Market share all industries<sup>1</sup>

Total vacuum valve market size

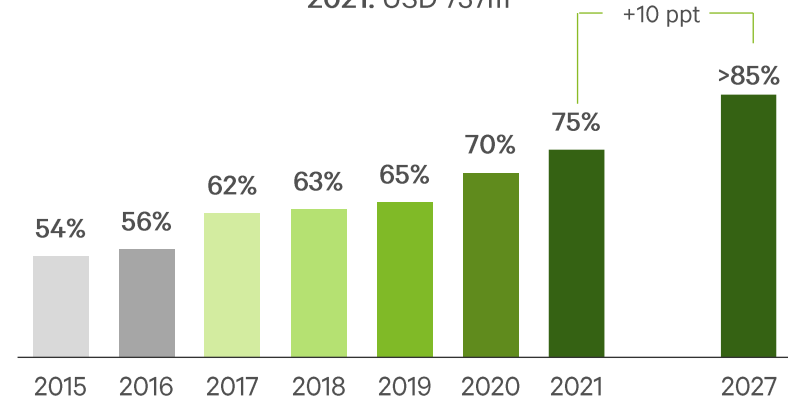
2021: USD 1,269m



## Market share SEMI<sup>2</sup>

Total vacuum valve market size

2021: USD 737m



With our specification “win rate”  
of more than 95% in SEMI, we expect  
to reach over **85% market share by 2027**

<sup>1</sup> All industries includes semiconductor and related, general vacuum

<sup>2</sup> SEMI includes semiconductors, LED and HDD

# On track to deliver on our 2025 commitments



|  | 2020<br>Our guidance at CMD | Q1 / 2022<br>Our adjustment | 12 / 2022<br>Our progress              |
|--|-----------------------------|-----------------------------|--|
| Sales in 2025                                    | ~CHF 1,100m                 | ~CHF 1,500m                 | CHF 1,150m<br>for FY 2022 <sup>1</sup> |
| EBITDA margin band 2020-2025                     | 30-35%                      | 32-37%                      | 35% for FY 2022 <sup>1</sup>           |
| Adjacencies sales volumes in 2025                | CHF 150m                    | -                           | ~CHF 95m for FY 2022                   |
| SEMI sales growth 2020-2025<br>incl. adjacencies | CAGR of 10%                 | -                           | 39% CAGR 2020-2022                     |
| Market share growth in SEMI 2020-2025            | +10ppt                      | -                           | on track                               |
| Global Service sales growth 2020-2025            | CAGR >9%                    | -                           | 29% CAGR 2020-2022                     |
| 2025 market share in Global Service              | 50%                         | -                           | on track                               |



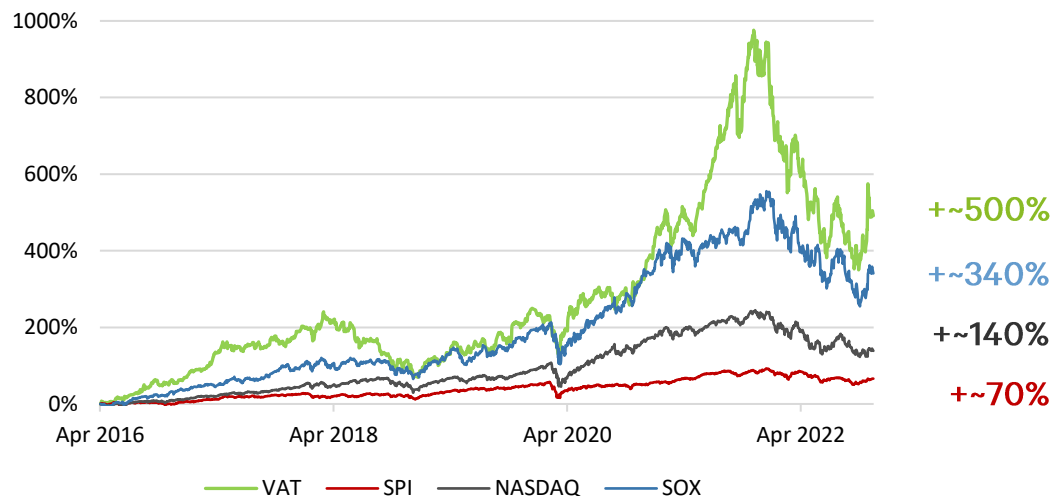
Delivering towards our commitments fueled by stronger than expected markets and enhanced by outstanding execution despite challenging supply chain conditions and COVID restrictions.

<sup>1</sup> Midpoint of guidance issued with Q3 Trading update released on October 13, 2022

# Shareholder value creation of close to 500% (CAGR ~28%) since IPO



VAT TSR in comparison to key indices  
(normalized to VAT price at the time of IPO)



**+~500%**

TSR for shareholders  
participating in the VAT  
IPO on April 14, 2016

Note: In local currencies as of November 28, 2022

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## 1 VAT – We change the world with vacuum solutions Mike Allison, CEO

1.1 VAT at a glance

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# VAT's business units are well positioned to harness the major megatrends



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## Digitalization



- Strong semiconductor growth across all markets
- IC market >USD 1 trillion by 2030
- Wafer Fab Equipment (WFE) to grow to USD 150-170bn by 2030
- Benefits **all** our businesses

## Energy and Emissions



- **Energy demand** with double-digit growth; needs to be generated with low GHG emissions
- ADV benefits from solar, nuclear and coating (batteries)
- Mid-term **carbon capture**, long-term **fusion** – both vacuum intensive

## Population Growth and Aging



- Growing demand in **biotech and life sciences**
- ADV benefits from analytical and medical non-invasive equipment, and medical inserts
- Medical drives 10% CAGR on ICs

## SAM market growth (CAGR 21-27)

WFE +8%

Renewable Energy +8%

Life Science & Analytical Instr. +7%

# Due to growing digitalization, semiconductor sales are expected to grow to reach USD 1.0-1.3 trillion



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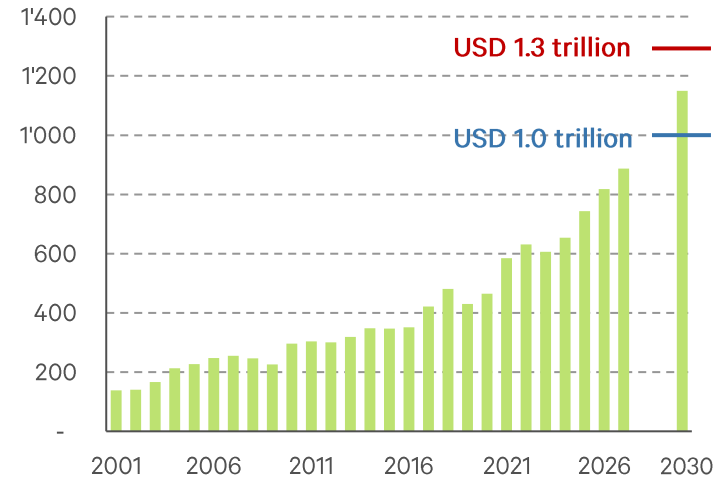
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| Semiconductor end markets         | CAGR 22-30 <sup>1</sup> |
|-----------------------------------|-------------------------|
| Personal computing                | 2%                      |
| Smartphone                        | 5%                      |
| Consumer electronics              | 6%                      |
| Wired and wireless infrastructure | 6%                      |
| Automotive                        | 11%                     |
| Industrial electronics            | 10%                     |
| Servers, datacenters and storage  | 12%                     |
| Total                             | 7%                      |



End-market growth fuels IC volumes



Semiconductor sales forecast at USD 1.0-1.3 trillion by 2030:

- CAGR 2010-2020: 5%
- CAGR 2020-2030: 9% (at 2030 midpoint)

<sup>1</sup>Source: Gartner Q3 2022 forecast; years 2027 to 2030 extrapolated by VAT using historic average CAGR

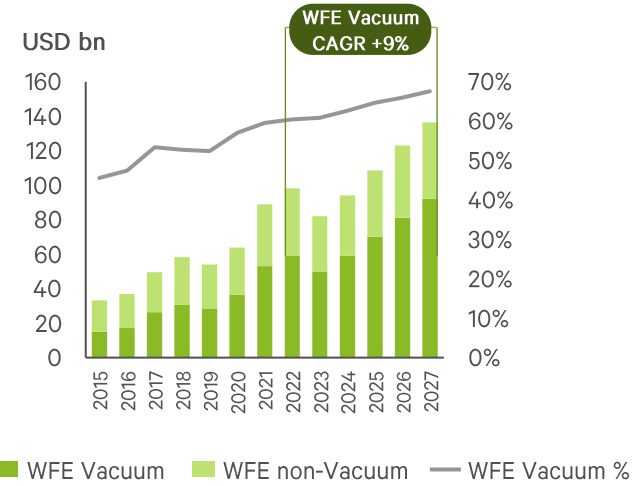
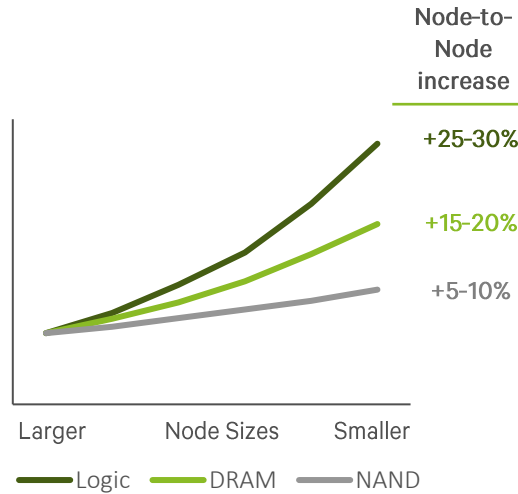
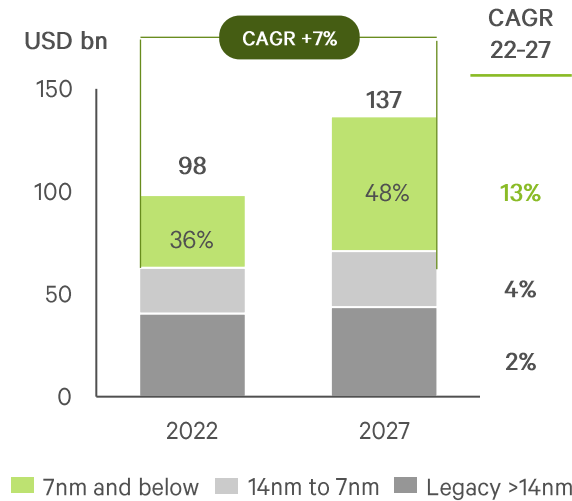
# Strong growth of leading-edge semiconductors is cascades down to increasing vacuum content



Fastest growth in leading edge nodes, VAT's stronghold ...

... capital intensity expected to increase from node to node ...

... driving strong medium-term growth in overall WFE and even faster on vacuum based WFE



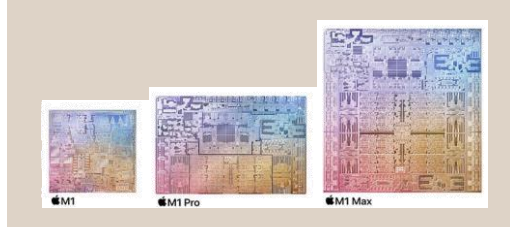


# Additional upside opportunities may further increase WFE over the next ten years



## Sustainability

Semiconductor value chain on a path to create 12%<sup>1</sup> of global emissions, **energy efficiency of devices** crucial in reducing this



Lower voltages (energy consumption) results in lower transistor performance – compensated by larger die sizes



## Rising energy costs

Accelerated demand for **renewable technologies** with high semiconductor content

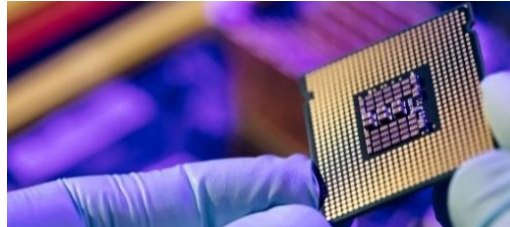


Increasing chip content driven by smart grids, power electronics, electric vehicles. This legacy chip sector also set to grow strongly “More than Moore”



## Re-shoring

Top economies are driving semiconductor self-sufficiency



Several “chip acts” have been announced in the US, Europe, South Korea and Japan to regain technology sovereignty

<sup>1</sup>Source: Semi.org

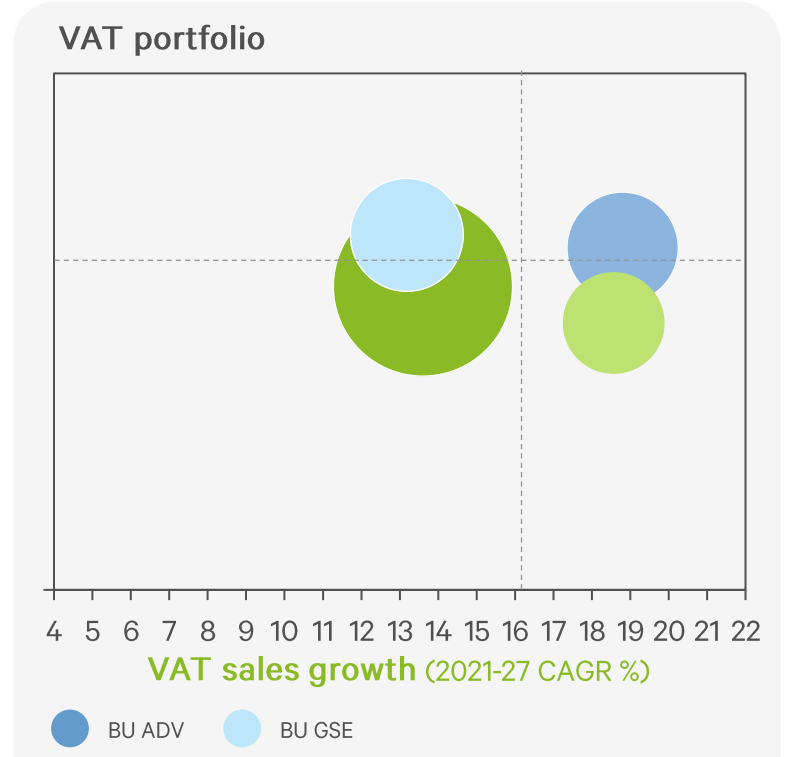
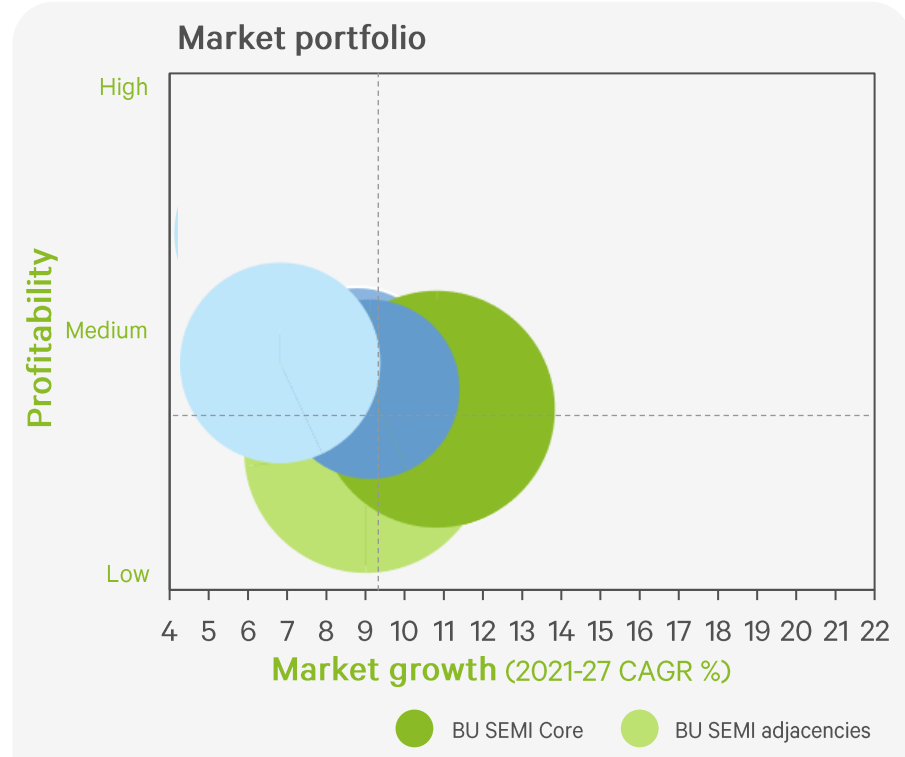
# All VAT businesses outperforming their markets in growth and profitability



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# VAT is a leader in high growth markets, especially where Moore's Law drives increasing opportunities



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## Market summary



VAT actively captures **key megatrends** to drive sustainable long-term growth



Move to smaller design rules drives VAT **market share** and access to the growing vacuum content



WFE to grow over the foreseeable future driven by sustained growth in IC production, **especially in leading edge**

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## 1 VAT – We change the world with vacuum solutions Mike Allison, CEO

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# VAT focuses on four strategic priorities to sustain and accelerate performance to 2027 and beyond



1



Gain market share in all our core businesses and markets

2



Expand Share of Wallet (SoW) with adjacencies

3



VAT2B: Build strong capabilities and further improve operational excellence

4



Execute VAT's ESG strategy that creates value for all stakeholders

# Investments in leading edge continue to dominate; specification wins key for future success

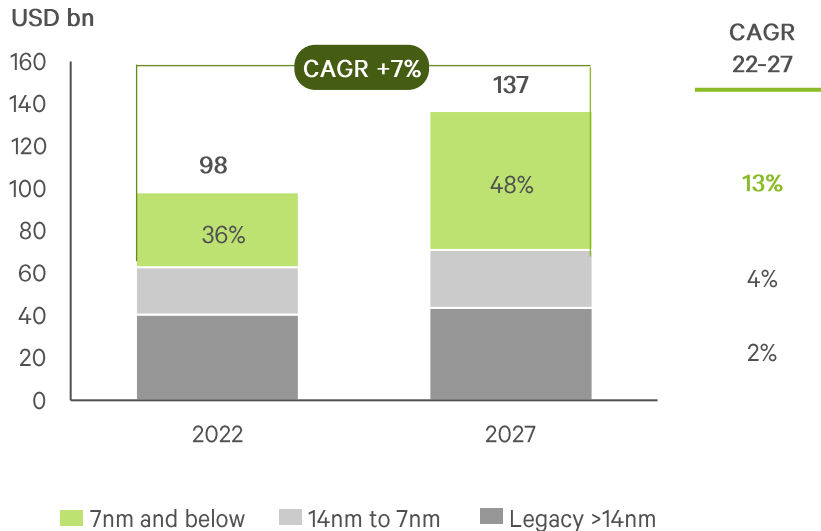


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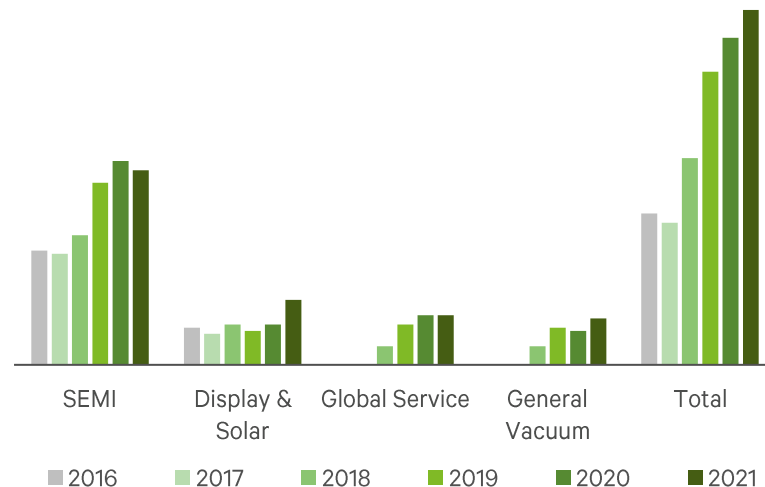
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Capturing the faster growth  
in leading edge nodes ...



... enabled by strong track record  
in specification wins

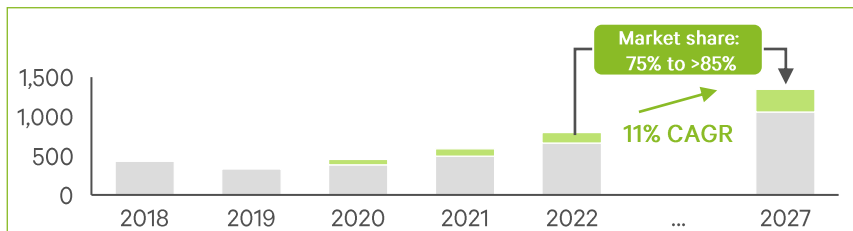


# Sales and market share to grow across all our businesses



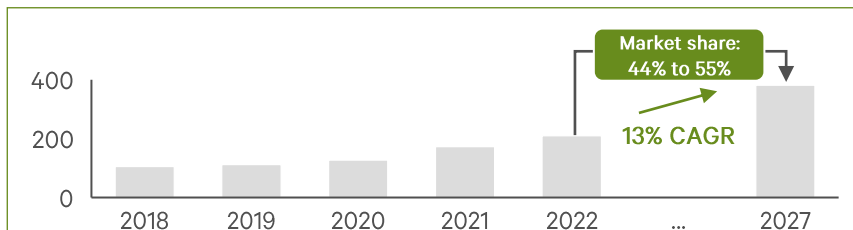
## Semiconductors

Sales growth and market share gains based on very strong specification win track record and #1 market position for leading-edge vacuum valves



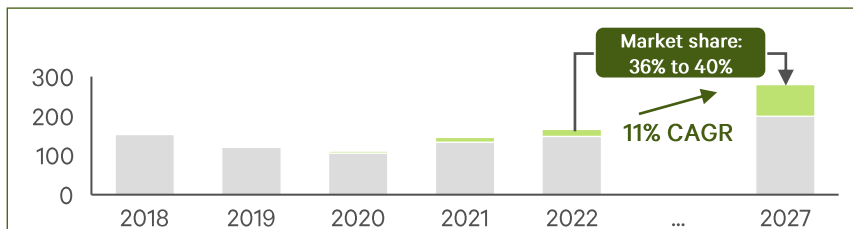
## Global Service

Capture all opportunities coming from the fast-growing installed base of valves, coupled with increased focus on key customers



## Advanced Industrials

Grow business and market share through increasing direct sales force in USA and Asia and higher Share of Wallet (added customer value) at customers, especially in Europe





# Our strategy is to increase customer value and SoW by expanding into sub-systems and complementary technologies



SEMI as the **CORE** market and the main **technology driver** for all products and solutions



**Leverage** all products and technologies into Advanced Industrial applications

2022

## TODAY

A successful valves business with 1-2% SoW

- 75% share in SEMI valves, #1 in all markets
- Growing Advanced Modules share
- #1 in Motion Components

2027

## NEXT 5 YEARS

Current adjacencies will drive >CHF 200m additional sales by 2027, 2-4% SoW

- Gas inlet systems and valves
- EUV
- Advanced Pressure Control
- Adjacencies by 2027 >CHF 300m

2032

## NEXT 10 YEARS

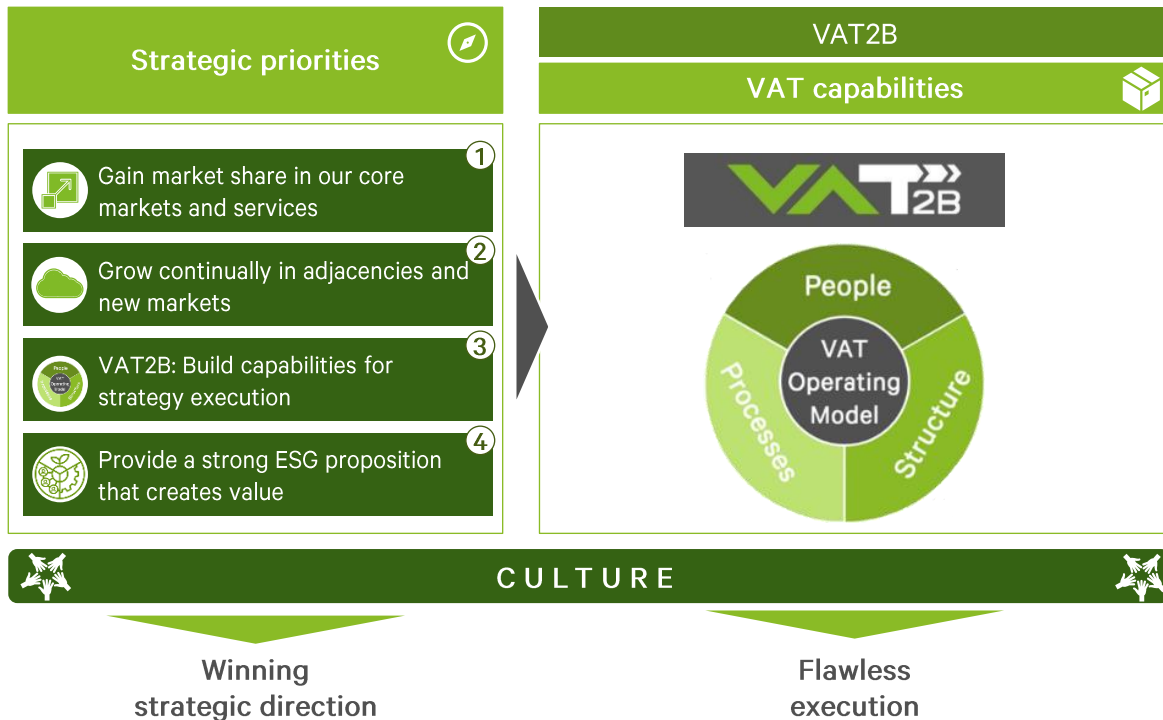
To: Vacuum sub-systems business with 4-5% SoW

# VAT2B is our program to provide the capabilities in our growing and scalable organization



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## Flexible operations model

- +/- 30% year-on-year ramp capability
- Global, best cost operating model

## Scalable processes via digitalization

- Scalable, low-cost processes
- Optimized customer experience

## Core competencies

- Technology and methods differentiation
- Vacuum and design leadership

## Best people

- High engagement, low attrition
- Caring and inclusive employer

# 1<sup>st</sup> VAT sustainability review as starting point of comprehensive ESG strategy



## Creating value sustainably



Long-term success only sustainable by integrating a broad range of values into strategic and operational planning



Values include: provide **employees** with opportunities to grow, play a positive role in our **communities**, reduce our impacts on the **environment**



In 2022, the Board of Directors and the Group Executive Committee made sustainability a strategic and management **priority**

“Ultimately, our goal is to transform VAT into an enterprise that puts sustainable value creation for all its stakeholders at the heart of everything we do.”

Dr. Martin Komischke  
Chairman of the Board of Directors

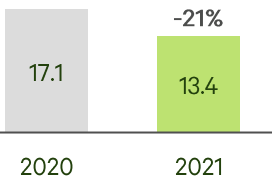
CREATING  
**VALUE**  
SUSTAINABLY

Sustainability Review 2022



## ESG highlights in 2021 include

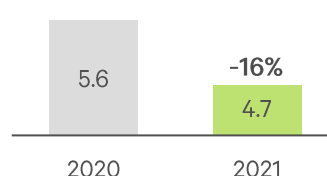
CO<sub>2</sub> emissions in tons per CHF 1m sales



Solar energy from VAT PV installations in kWh (millions)



Total waste in tons per CHF 1m sales



Compliant with **equal pay** provisions of the Swiss Federal Act on Gender Equality

# Become a best-in-class company addressing the needs of a wide stakeholder group



|                        | 2022  | 2023  | 2024-2027  |
|------------------------|---|---|--|
| <b>Overall ESG</b><br> | <ul style="list-style-type: none"> <li>First Sustainability Review</li> <li>ESG anchored at BoD level</li> <li>Materiality analysis</li> </ul>                            | <ul style="list-style-type: none"> <li>ESG target setting</li> <li>Participate in key sustainability ratings</li> </ul> | <ul style="list-style-type: none"> <li>Continuous reporting on improvements in ESG</li> <li>ESG becomes part of VAT DNA</li> <li>Become a semiconductor industry benchmark in ESG</li> </ul> |
| <b>Environment</b><br> | <ul style="list-style-type: none"> <li>CO<sub>2</sub> accounting project</li> <li>Initial focus on Scope 1 and 2, Scope 3 currently assessed</li> </ul>                   | <ul style="list-style-type: none"> <li>Emission goals defined</li> <li>Materiality assessment concluded</li> </ul>      | <ul style="list-style-type: none"> <li>Execute and report on key environmental metrics such as GHG emissions, waste and water consumption reduction</li> </ul>                               |
| <b>Social</b><br>      | <ul style="list-style-type: none"> <li>Social aspects assessed and implementation started</li> <li>VAT Cares program launched</li> <li>Community engagement MY</li> </ul> | <ul style="list-style-type: none"> <li>Define diversity targets across key levels</li> </ul>                            | <ul style="list-style-type: none"> <li>Reposition the employer value proposition to become employer of choice for target groups</li> </ul>   |
| <b>Governance</b><br>  | <ul style="list-style-type: none"> <li>BoD and committee composition adjusted</li> </ul>  | <ul style="list-style-type: none"> <li>Changes to Articles of Association</li> </ul>                                    | <ul style="list-style-type: none"> <li>Link senior management long-term incentive to ESG performance</li> <li>Shareholding rules to be considered</li> </ul>                                 |

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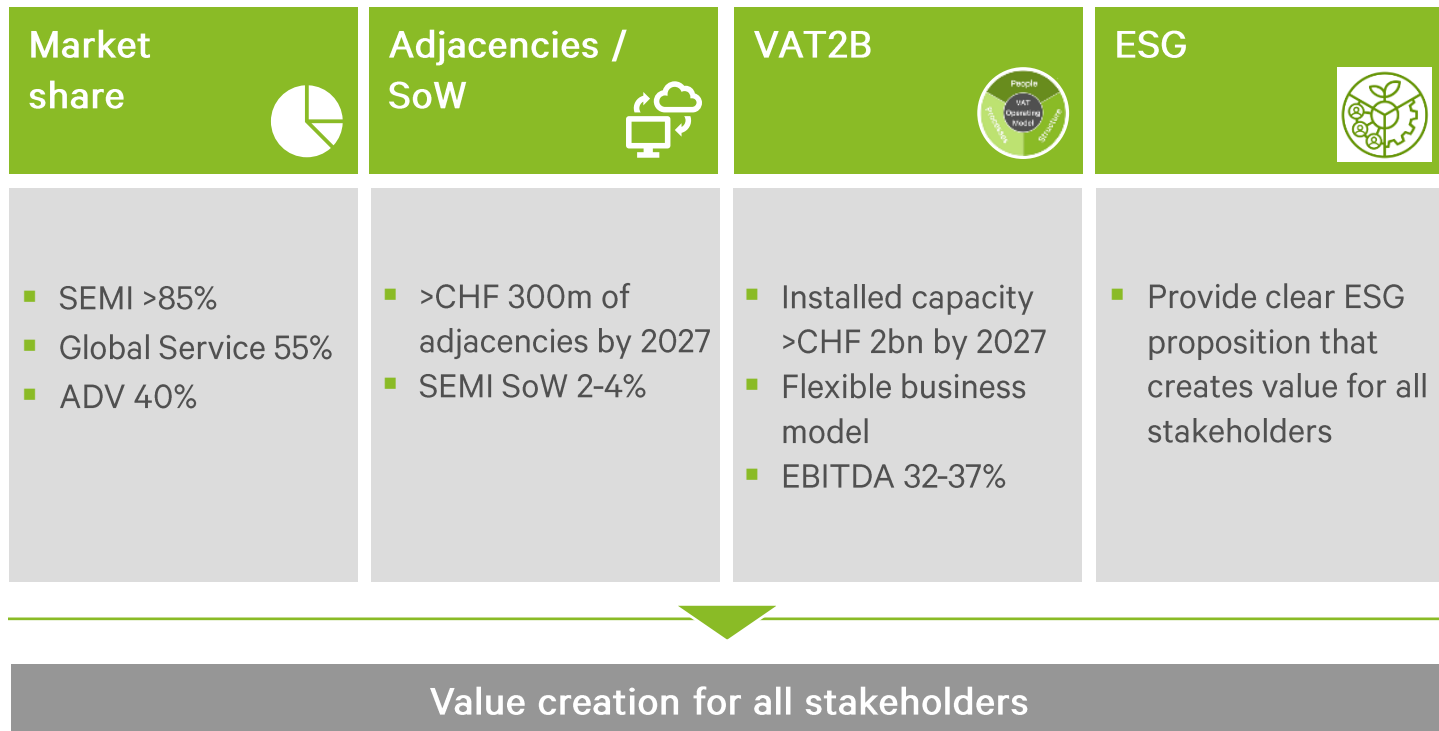
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# To achieve leadership in high-value vacuum solutions, we have set tough ambitions for 2027 and beyond



## Strategic priorities

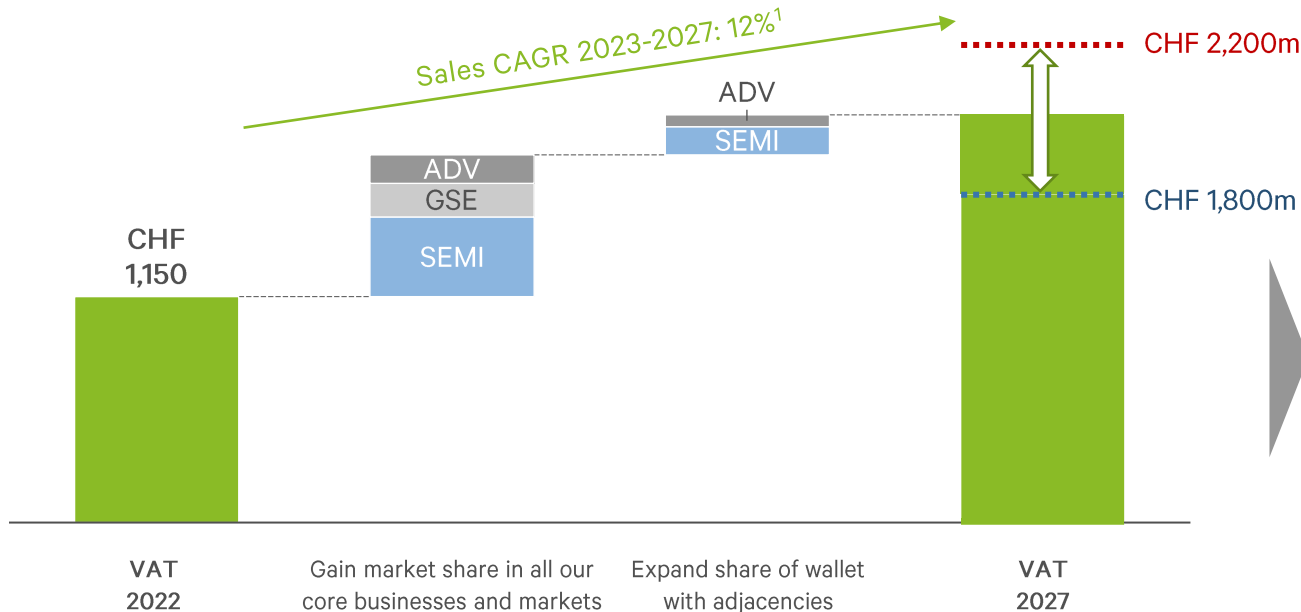
## Ambition for 2027 and beyond



# Our growth strategy is expected to generate CHF 2,000m in sales by 2027<sup>1</sup>



EBITDA margin band over the cycle:  
32-37%



- Strong organic revenue growth driven by increase in general market growth and share gains
- Expansion of share of wallet with substantial growth in adjacencies
- Maintain high profitability over the cycle with flexible cost structure

<sup>1</sup> at mid-point between CHF 1,800m to 2,200m, based on organic growth and USD/CHF rate of 0.95



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# Semiconductor Solutions Group (SSG)

Urs Gantner, EVP

# SSG – strengthened SEMI organization for sustained success



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## Semiconductor Solutions Group (SSG)

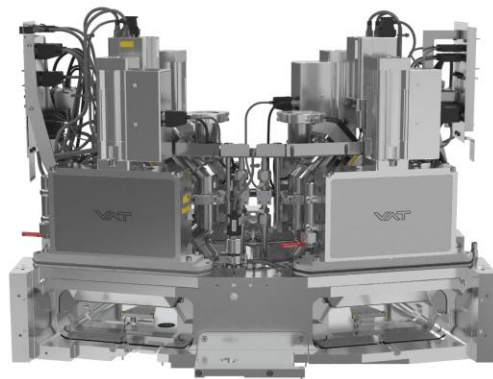
### Business Unit SEMI

Customer Business Development

Product Marketing

Engineering SEMI

### Advanced Products Business Development



### Core Technology

Advanced Technology

Advanced Design

Materials

Intellectual Property

Execution of core business and adjacent products crossing CHF 1bn

Advanced product development: Pathfinding and business growth

# BU SEMI at a glance – on track to cross CHF 1bn in sales



## Our business segments

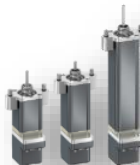
### Valves

Control valves  
Transfer valves  
Isolation valves



### Motion components

Wafer lifter  
Ring lifter  
Bellows



### Advanced modules

Load locks  
Transfer chambers  
Assemblies



## Delivering outstanding performance in 2022

~30%

Expected net sales growth

>95

Sales in adjacencies CHFm

>90%

Specification win-rate in leading technologies

~75%

Market share in core valves

~500

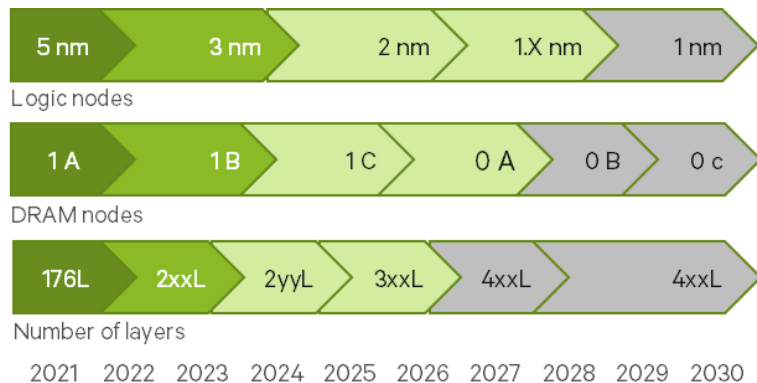
Active patents on our technology

~220

R&D and application engineers across the world

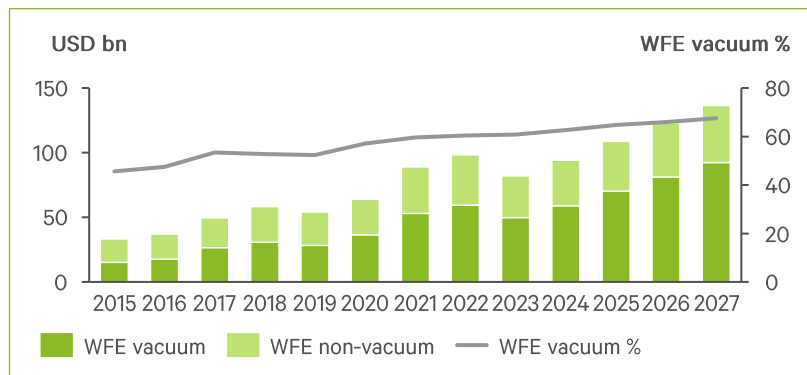
# Significant technology advances are required to resolve the performance vs. power consumption paradox

**Moore's Law** is alive and kicking – increasing device complexity resulting in new processes and engineering challenges ...



Technology progression is the key driver of our success as 90% of our specification wins are at the leading-edge

... driving strong medium-term growth in WFE and an increasing percentage of production processes going into vacuum



Technology advances drive increasing number of vacuum processes to approx. 70% of WFE in the next 5 years, particularly EUV, dry clean, etc.

# Leverage our global presence and fast customizable solutions to win market share in valves and adjacencies

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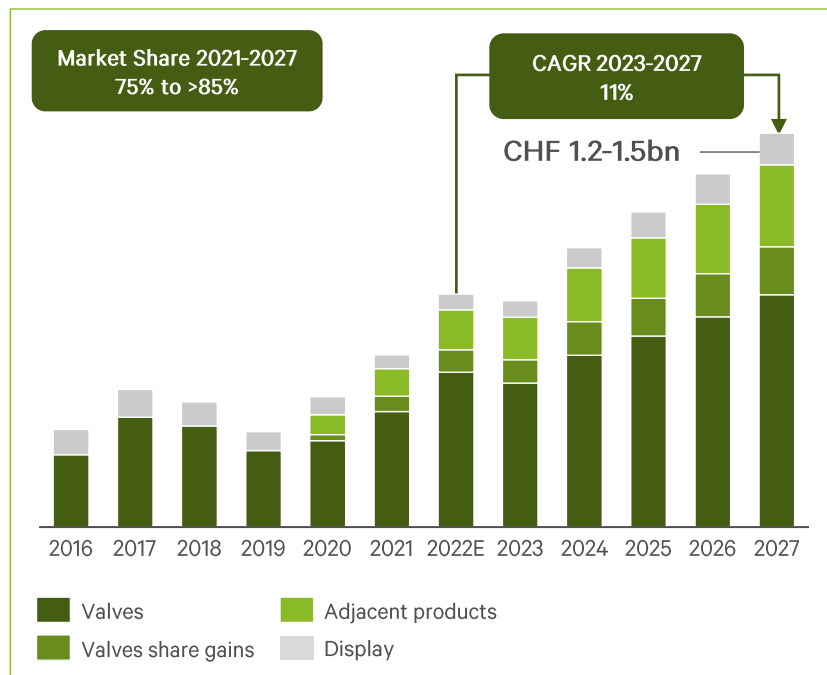
# Outperform the market and increase market share in core valves and adjacencies

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## SEMI growth plan 2023-2027



## SEMI goals and initiatives for 2023-2027

**From core valves to sub-systems in the wafer path and progressing into advanced pressure control in the process chamber.**

### Four key initiatives:

- 1) Focus on share gains in the core across all OEMs and enhance product portfolio with smart features
- 2) Penetrate advanced modules at the key OEMs, by integration of high value components
- 3) Grow Motion Component range, driving share in leading edge platforms
- 4) Expand infrastructure for innovation and co-locate VAT experts with OEMs

### Targets:

- Sales CAGR of 11%
- Approx. CHF 250m in organic adjacencies
- More than 85% market share in valves
- Doubling the Share of Wallet on critical wafer fab equipment

# SEMI Initiative 1: Grow our core valves business



Driving advanced modules and valve assemblies consolidates VAT core valve products into one package to increase market share of all VAT valves and components to double SoW

## Initiative description

- Market share development in core valves from 75% in 2022 to >85% in 2027
- Dual site business continuity approach with strict firewalls and IP protection
- Drive specification wins on new leading-edge platforms and offer upgrades for remaining white spots

### Market share by valve family (2022 to 2027)



#### Control valves

85% → 95%



#### Transfer valves

75% → 90%



#### Isolation valves

55% → 65%

## Initiative execution

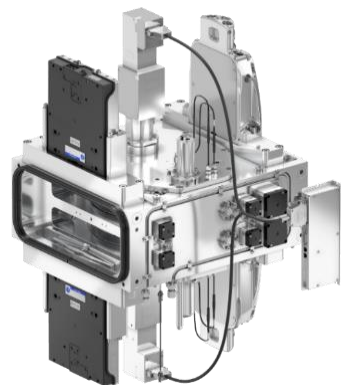
### Digital products

- Complete the mechatronic valve portfolio
- Add high value smart features driving performance
- Connect the components enabling predictive maintenance
- New materials and coatings to increase yield in harsh processes and ultra clean environments

### Market penetration

- Be the outsource partner for the key vacuum subsystems – shorten our customer's time to market with state-of-the-art turnkey solutions encompassing all of VAT valves
- Serving all OEMs and customizing for the large players

# SEMI Initiative 2: Double the advanced modules business

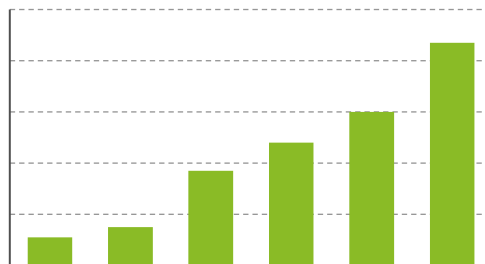


Growth will be driven by complex integrated systems for leading edge platforms offering plug & play solutions with additional features and functionality

## Initiative description

- Shift from OEM-owned vacuum design (built-to-print) to VAT offering vacuum design-in solutions (built-to-spec)
- Leading-edge requirements and supply chain optimization offering growth opportunities for VAT

VAT advanced modules sales development



CAGR 13%

## Initiative execution

### High-value solutions

- Fully tested plug & play solutions
- Proprietary vacuum design with lowest footprint
- High purity with zero-particle components
- Additional functionality, such as controlled and customized pump and vent curves
- Adding adjacent components, such as heating and cooling plates

### Market penetration

- Focusing on the leading OEMs
- Select the technology leaders in critical applications
- Expected TAM<sup>1</sup> in 2027 >CHF 2bn, SAM<sup>2</sup> for VAT at approx. CHF 0.5bn

<sup>1</sup> Total Available Market; <sup>2</sup> Serviceable Available Market



# SEMI Initiative 3: Grow market share in motion components



Migrating pneumatic products into mechatronic solutions assisting customers on their digital journey

## Initiative description

- Dry etch and deposition SAM expected to grow from CHF 200m in 2022 to CHF 360m in 2027
- VAT one-stop shop motion provider with high level of customization
- Smart features enabling mechatronics



CAGR 2023-2027

SAM 14%

VAT Sales 27%

## Initiative execution

### High-value solutions

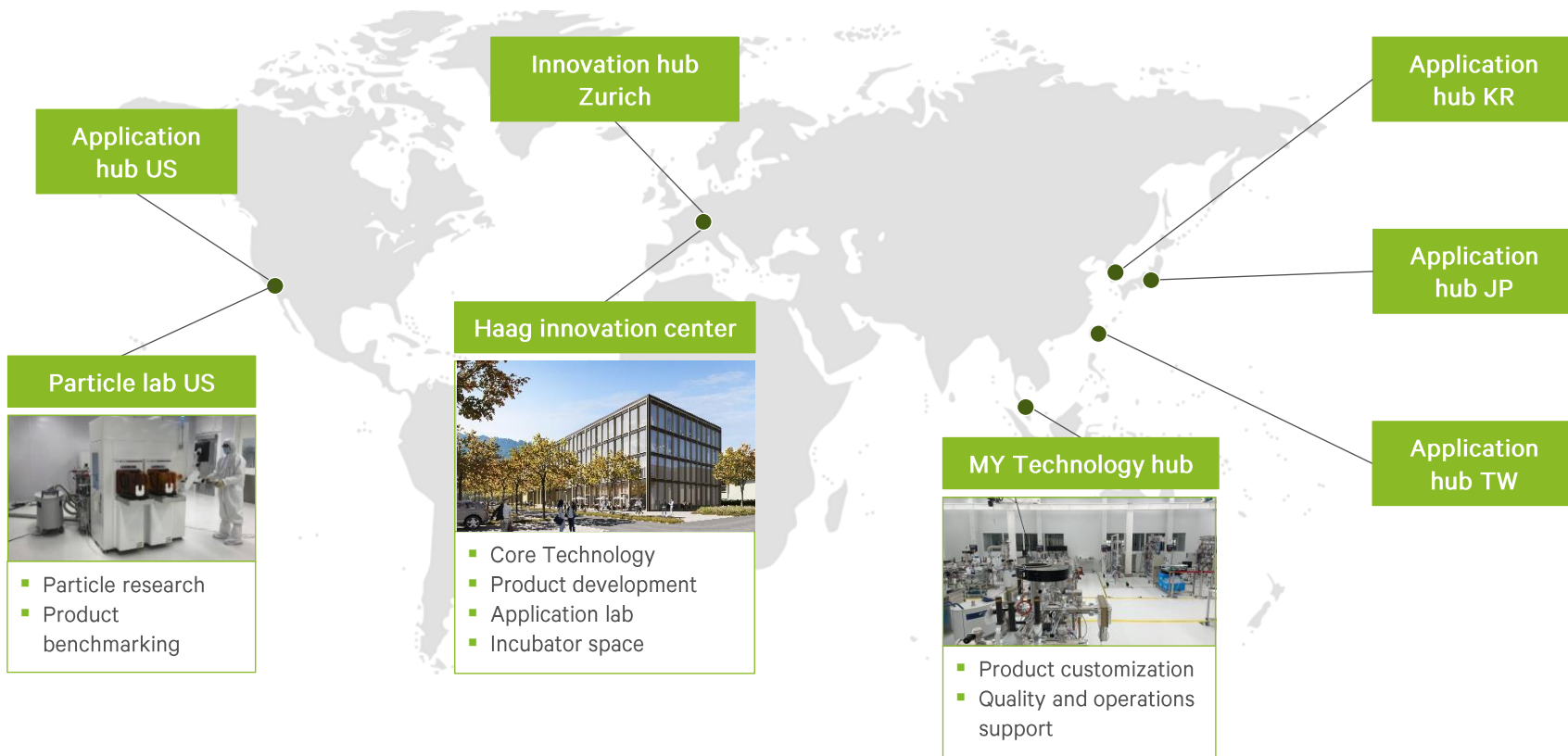
- Proprietary designs
- Enhanced positioning accuracy
- Performance and predictability features
- Minimal vibration at high-speed
- Extended temperature range
- Plug & play functionality
- Prolonged lifetime
- High purity
- Strong VAT patents



### Market penetration

- Focus on key accounts and dry etch market
- Roll out the VAT platform for Tier 2 OEMs
- Expand into deposition market
- Progression into additional motion application, such as ring and shield lifters

# SEMI Initiative 4: Expand the global engineering network



# Extending our market leadership and growth – our view on adjacencies at CMD in December 2020

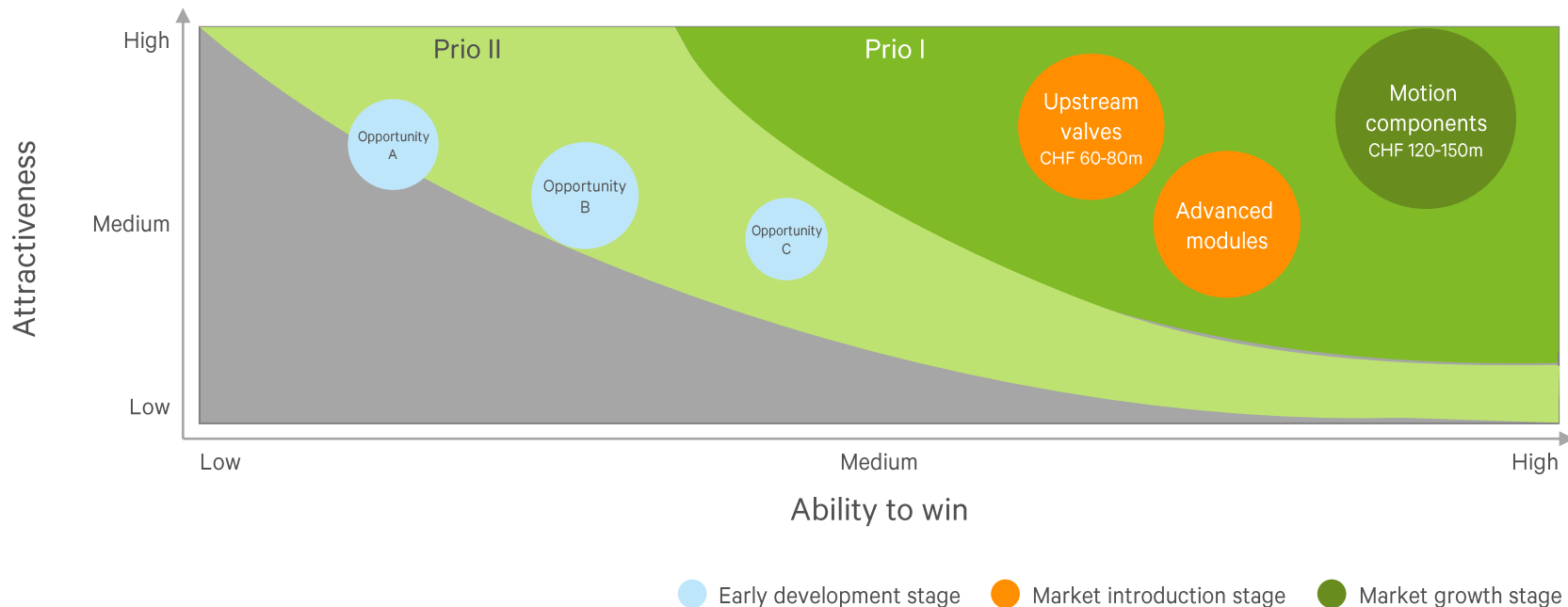


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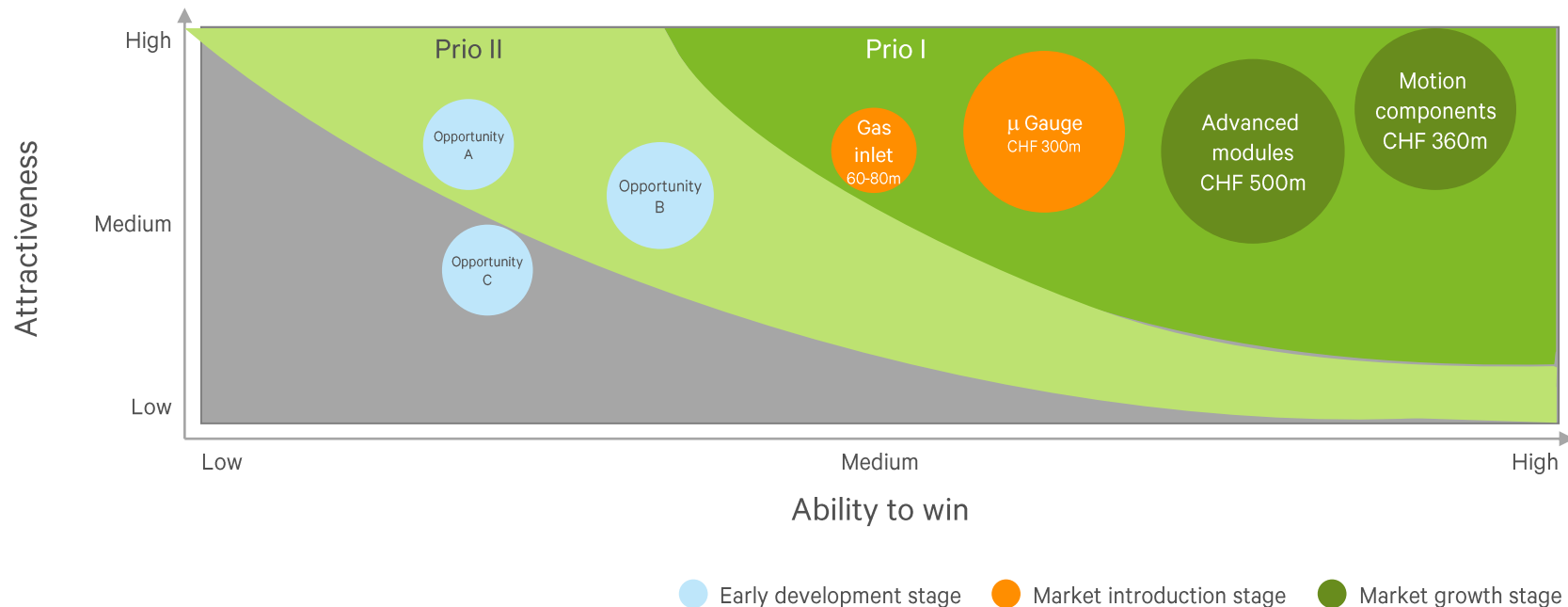
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## Our strategic priorities



# Our view today – confirm existing adjacencies and new opportunities in market introduction stage

## Our strategic priorities



# Solving the industry's next generation challenges: Revolutionary pressure measurement



## The industry problem

### Accuracy and stability vs. next gen process windows

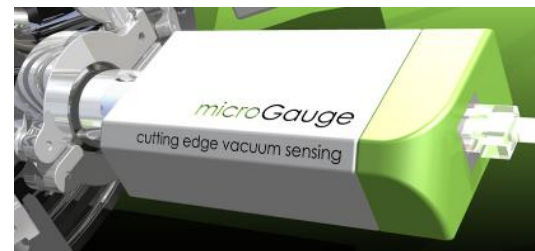
- Current technologies will soon reach their technical limitations
- Fast processes will require high-speed, stable and precise pressure measurements
- Up- and downstream components need to be closely synchronized to the millisecond level

## The VAT solution

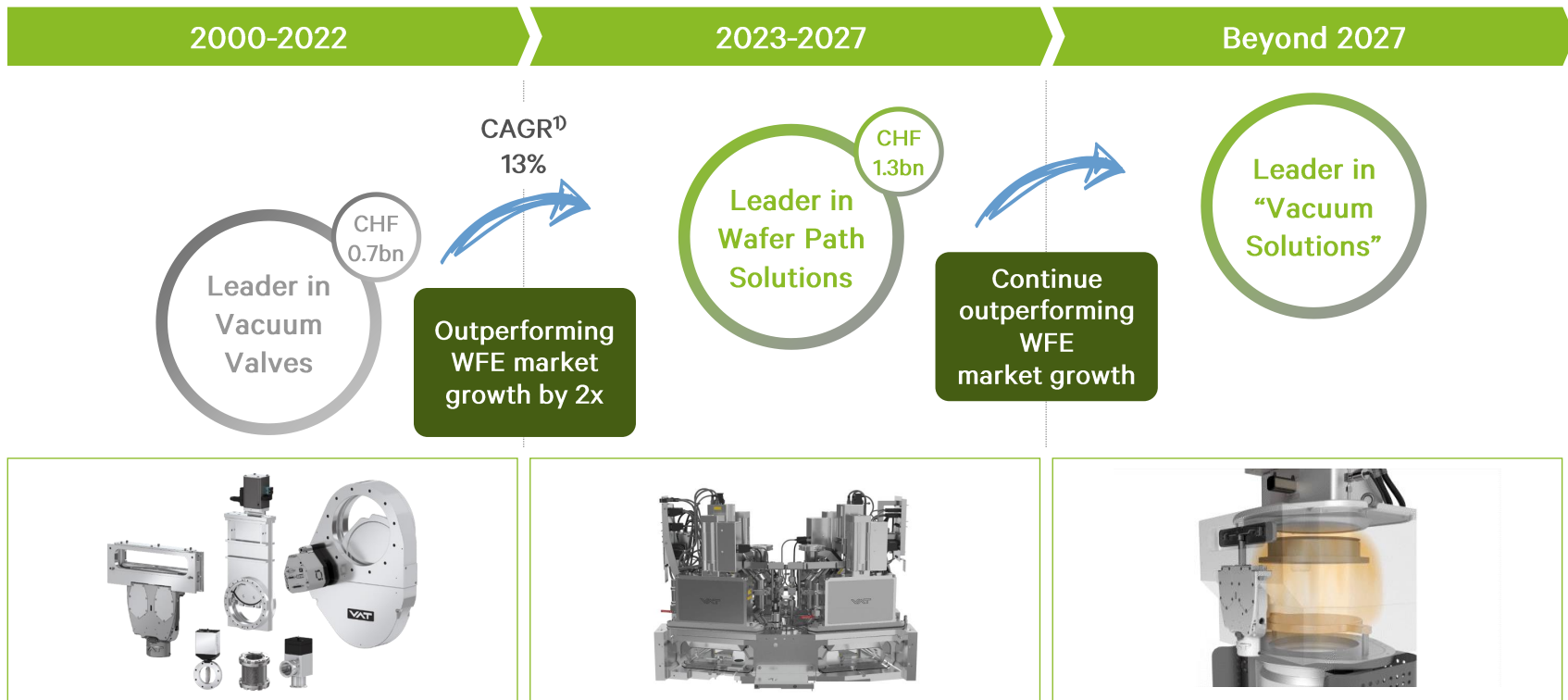
### MEMS-based pressure sensor with proprietary technology

- Ultra compact transducer enables new ways of sensing
- High accuracy and speed over multiple pressure ranges
- Reduced tool down-time
- Currently in lab testing

## VAT's MEMS-based pressure solution



# SSG aims to outpace the market in the next five years and grow in connected solutions beyond 2027



1) 2021-2027 2) 2027-2032

# SSG aims to outpace the market in the next five years and grow in connected solutions beyond 2027

Our SEMI business is based on customer centricity and innovation



Increased **market share** from 65% in 2019 to 75% in 2022



Formed **key account** structure for large and global OEMs



**Complete portfolio** for all applications ensuring IP protection for our partners

... and will continue to outgrow the market through organic growth



Strong sales growth of **>11% CAGR** from 2023 to 2027



**Increase market share** in core valves to **>85%** by 2027



**Adding >CHF 250m** in adjacent **products through** motion components and advanced modules

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# Global Service (GSE)

Joe Haggerty, SVP



# Global Service at a glance – VAT has a strong position in services and is well-positioned for growth

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## Our business by product type

*(Share of 9-mo. net sales 2022)*

**Spare parts & Gates**  
(52%)



**Repair**  
(13%)



**Valves**  
(spare valves, upgrades, retrofits and subfab valves)  
(35%)



## Delivering outstanding performance in 2022

**21%**

Net sales growth with sales over CHF 200m in 2022

**~90%**

Win-rate in retrofits vs. incumbent competitors

**>1.5m**

Installed base of repairable valves

**~44%**

Market share up from 34% in 2019

**8**

Global service and repair centers

**>35**

New upgrade/retrofit products since 2018




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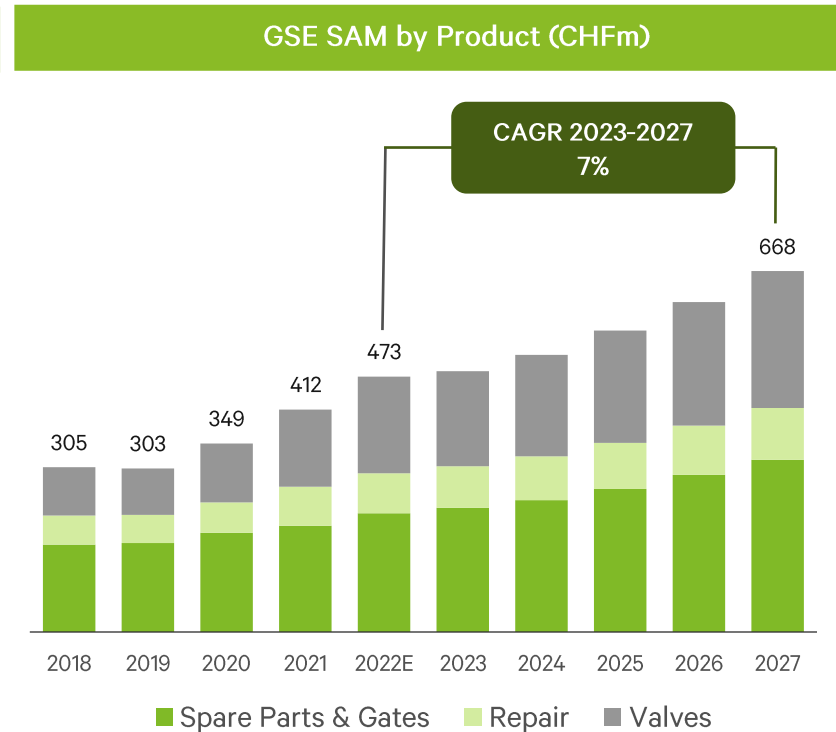
# Strong market growth in 2023-2027 driven by WFE growth and higher fab utilization

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| Market segments   | Description  | 2027 (CHFm)<br>23-27 CAGR |
|---|--|---------------------------|
|  | Spare parts for all valve types and Gates for transfer and control valves  | 319<br>8%                 |
|  | Evaluation repairs and fixed price refurbishments (FPR)  | 96<br>5%                  |
|  | Spare valves, upgrades of VAT valves, retrofits of competitors' valves, isolation valves sold for sub-fab applications | 253<br>7%                 |
| <b>GSE</b>  | <b>Total</b>   | <b>668<br/>7%</b>         |



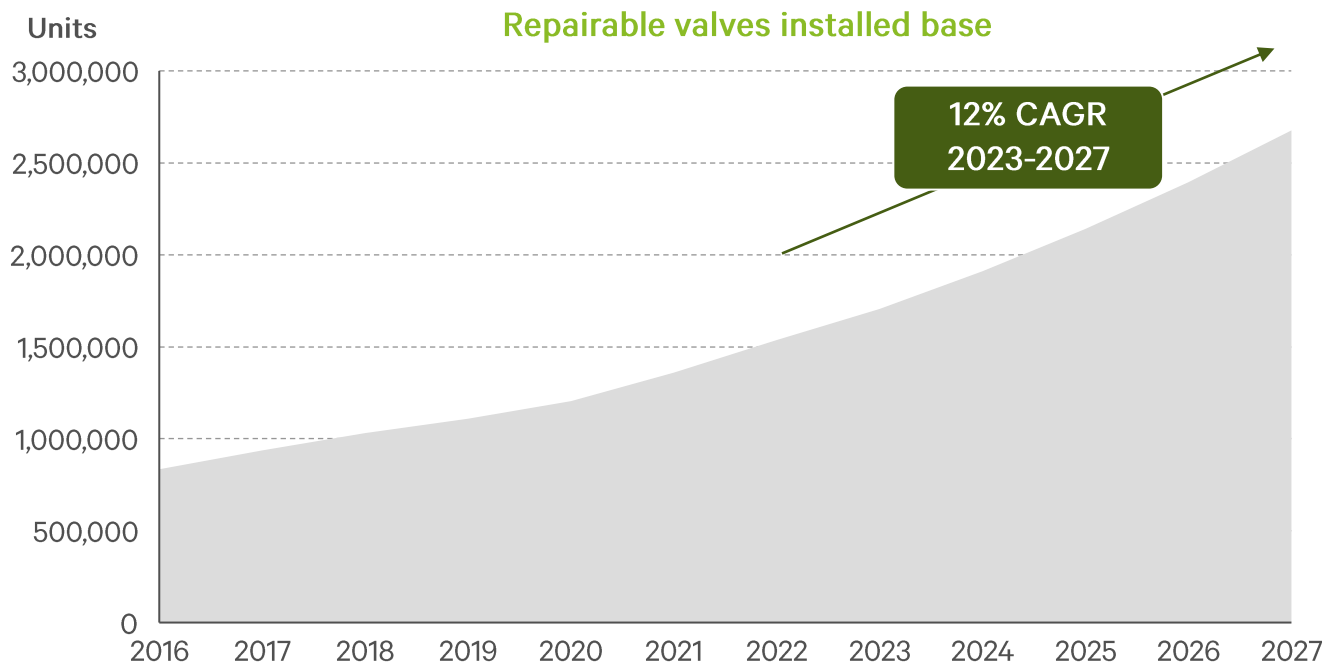
# Installed base of repairable valves expected to grow from 1.5m in 2022 to over 2.6m in 2027

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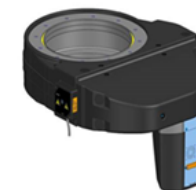
## VAT repairable valve installed base and annual growth rates



## Repairable valves






Transfer valves



Control valves

# Each repairable transfer and control valve in the installed based brings significant recurring revenue

| Service element  | Value proposition   | Total revenue potential<br>(vs. valve OEM sales price) |
|--|---|--|
|  Spare parts & Gates                                    | VAT offers consumable parts, including <b>gates and seal kits</b> , to allow end users to <b>optimize valve performance and cost of ownership</b>                     | x2.0   |
|  Repair   | VAT supports end-users in <b>minimizing down-time</b> through 8 global repair centers   | x1.2   |
|  Valves   | VAT upgrades and retrofits cover <b>solutions on existing tools preparing</b> them for new technologies or requirements and therefore <b>prolonging tool lifetime</b> | x1.5   |
| Over the 20-year lifetime of a valve, VAT service elements have potential to generate up to 5 times the revenue from original valve sale |   | x5   |

# GSE maintains an aggressive sales plan through 2027

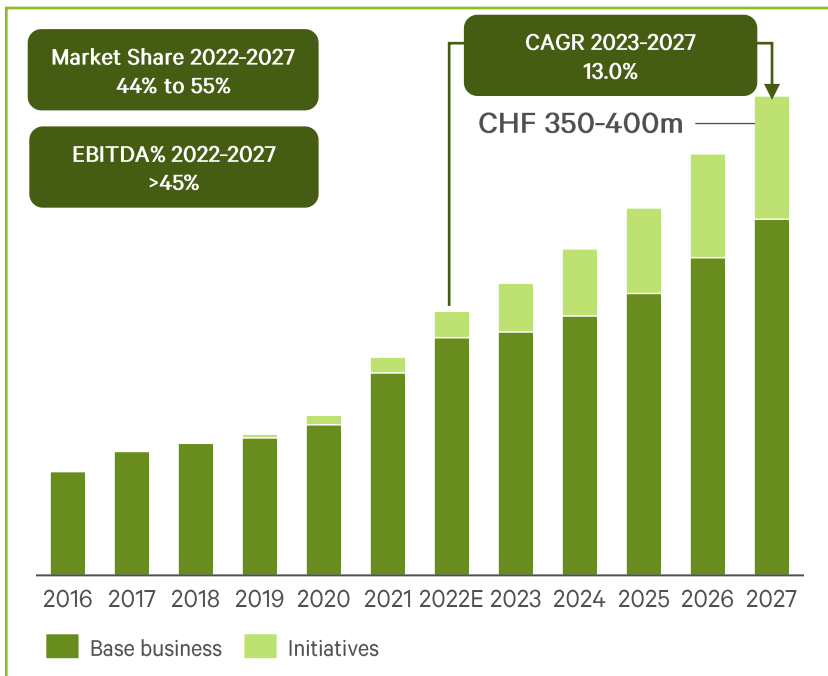


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## GSE sales plan 2023-2027



## GSE mission

The preferred service provider for vacuum valves and vacuum components in the semiconductor industry

## 3 key strategic plan initiatives

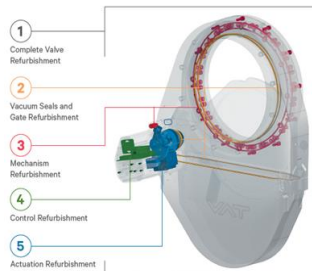
- 1. Market share growth:** Develop new business models for repair & spares and gates that leverage the size of VAT vs. the local competition
- 2. New product initiatives:** focus on retrofitting competitors' valves in the installed base and addressing the growing legacy market with upgrades of VAT valves
- 3. SEMI adjacency retrofit program:** have a strong go-to-market program ready to leverage new products and adjacencies and enable above-market growth beyond the next 5 years

# GSE Initiative 1 : Invest in new business models for repair, our service network, and MY gate production

## New repair business models

- Fixed Price Refurbishment (FPR) enables scaling of the business to large IDMs and Foundries
- New sales models to lock in customers long-term (e.g., exchange valve programs & industry-best warranty conditions)

### FPR



## Invest in the worldwide repair network

- VAT already has the largest repair network in the industry with 8 service centers
- 3 upgraded service centers opening in 2022 in Japan, Korea, and Taiwan
- 2x to 3x capacity increase and higher-grade cleanrooms in each of these 3 facilities

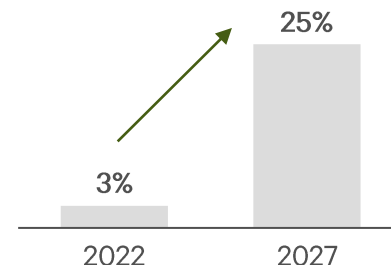
### VAT Service Center Network



## Invest in gate production in Malaysia

- Expanding on our industry-leading IP in gate technology is a primary goal of VAT and investments in gate R&D continue
- VAT recently installed high volume gate manufacturing capacity in Malaysia
- The improved cost competitiveness of this facility will keep VAT in a leadership position in both technology and value

### MY-produced gates as % of total in VAT

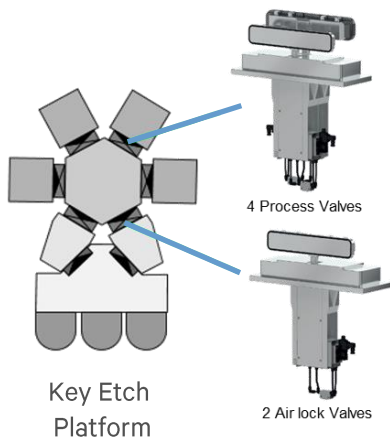


# GSE Initiative 2: Upgrades & retrofits – high customer value from VAT upgrades & retrofits

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## Transfer valve retrofits



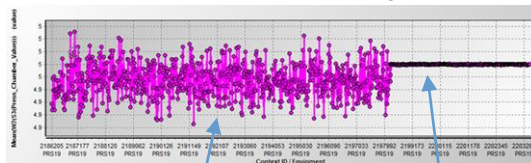
Retrofits replace competitor valves in the installed base with VAT valves

## Initiative description

### Why customers retrofit their valves?

- For transfer valves the primary reason is improved die yield due to particle reduction
- Significant yield improvements seen on many different machine platforms
- For control valves the primary reasons are smoother pressure control and faster settling times for higher wafer throughput

### Pressure control example



Competitor Valve

VAT retrofitted valve

## VAT initiative execution

- GSE has expanded the upgrade and retrofits portfolio by 35 new launches since 2018
- VAT retrofits target competitor legacy control and transfer valves where VAT has a technology advantage in yield and throughput, and often offer payback times for customers on the order of weeks or months
- Retrofits add new valves into the VAT installed base and enable future downstream sales in consumables and repairs

### Priorities over the next 5 years

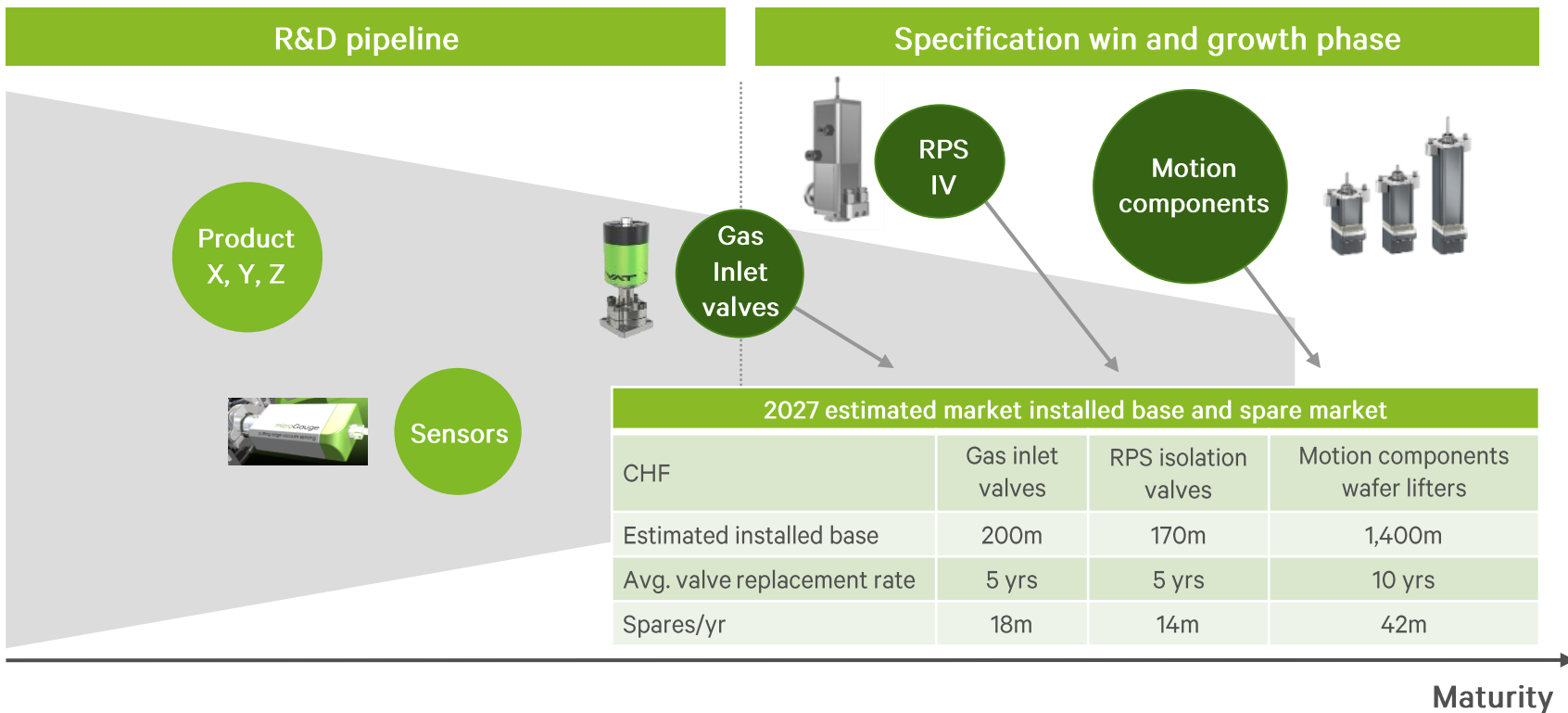
- Upgrade to new generation controllers
- Solutions targeting legacy fabs that are maintaining high utilization rates
- Supporting node-to-node transitions in high-end modern facilities

# GSE Initiative 3: Upside potential in the adjacency markets for VAT service and retrofits

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Market includes all VAT and competitor products



# We will grow our unique service business by 13% CAGR until 2027 (vs. 9% in 2020 CMD)

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## Our service business is based on a strong foundation ...



Rapidly expanding installed base of over 1.5m repairable valves



Largest service network in the industry  
(8 service centers worldwide)



Fast expanding upgrade portfolio  
(35 new upgrades launched since 2018)

## ... and will continue to deliver strong & profitable growth



Strong sales growth of >13% CAGR from 2023 to 2027



Increase market share in service to 55% by 2027 by expanding our offering



Maintain high EBITDA margin of >45% in our service business

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# Advanced Industrials (ADV)

Karin Dahlström, SVP

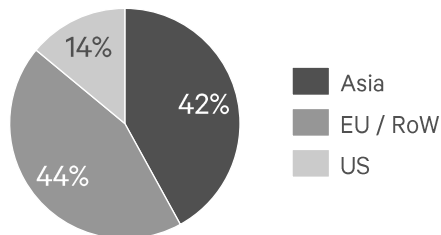
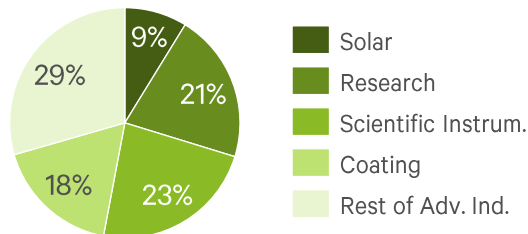
# Advanced Industrial business at glance – strong position in a variety of advanced industrial markets

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## Our business segments



## Delivering outstanding performance in 2022

~36%

Market share  
Up from 27% in 2019

>110k

Valves and bellows  
delivered

19%

Expected net sales  
growth (CHFm)

>1600

Customers








>65

Channel experts:  
>25 direct sales force,  
>40 distributors

>65





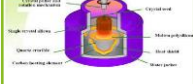
Engineers and  
application specialists

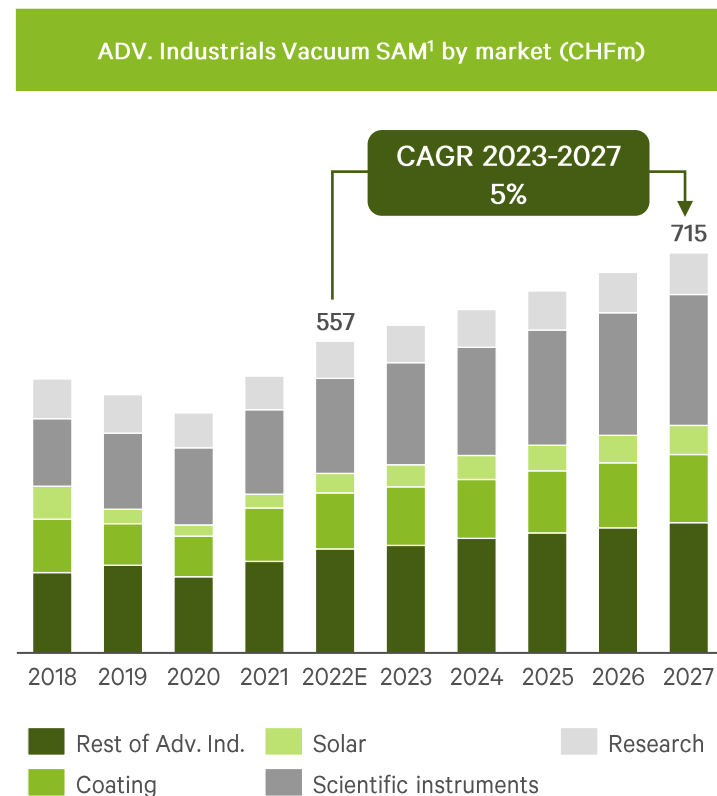
# Powerful synergies – products developed for the semiconductor market are customized for advanced industrial markets

| Product line     |   | BU ADV<br>2021 %<br>Quantity | BU ADV<br>2021 %<br>Margin | Rest of VAT<br>2021 %<br>Margin |
|------------------|---|------------------------------|----------------------------|---------------------------------|
| Angle valves     |  | 51%                          | VAT average                | VAT average+                    |
| All metal valves |  | 98%                          | VAT average+               | N/A                             |
| Bellows          |  | 39%                          | VAT average+               | VAT average                     |
| Control valves   |  | 8%                           | VAT average+               | VAT average                     |
| Gate valves      |  | 42%                          | VAT average+               | VAT average                     |
| Integrated mod   |  | 1%                           | VAT average                | VAT average                     |
| Transfer valves  |  | 2%                           | VAT average+               | VAT average                     |
| Others / parts   |   | 10%                          | VAT average+               | VAT average+                    |

| Comments  |
|---|
| <ul style="list-style-type: none"> <li>ADV takes advantage of 4 key SEMI product lines and customizes to application and customer need</li> <li>Application expertise and customizations valued by customers</li> <li>Only all-metal valve portfolio exclusive to BU ADV</li> <li>New SEMI products and adjacencies show high potential in ADV</li> </ul> |

# Core business with potential to expand market share in existing advanced industrials applications

| Market segments   | Description  | 2027 CHFm/<br>22-27 CAGR | MS <sup>3</sup> %<br>21 |
|---|--|--------------------------|-------------------------|
|  Research                            | Space simulations; fusion reactors; particle accelerators                  | 74<br>2%                 | 62%                     |
|  Scientific instruments <sup>2</sup> | Health and material science, E-beam  | 234<br>7%                | 27%                     |
|  Solar                               | Power generation   | 52<br>8%                 | 62%                     |
|  Coating                             | Optical lenses; mobile phones  | 122<br>4%                | 33%                     |
|  Rest of Adv. Industry               | Crystal pulling, SiC material for SEMI conductors, 3D printing, e-vehicles | 233<br>5%                | 32%                     |
| <b>Total</b>  | <b>Total</b>   | <b>715<br/>5%</b>        | <b>36%</b>              |



<sup>1</sup>Serviceable Available Market; <sup>2</sup>E-beam; <sup>3</sup>Market Share Source: VLSI & VAT

Future strong growth potential

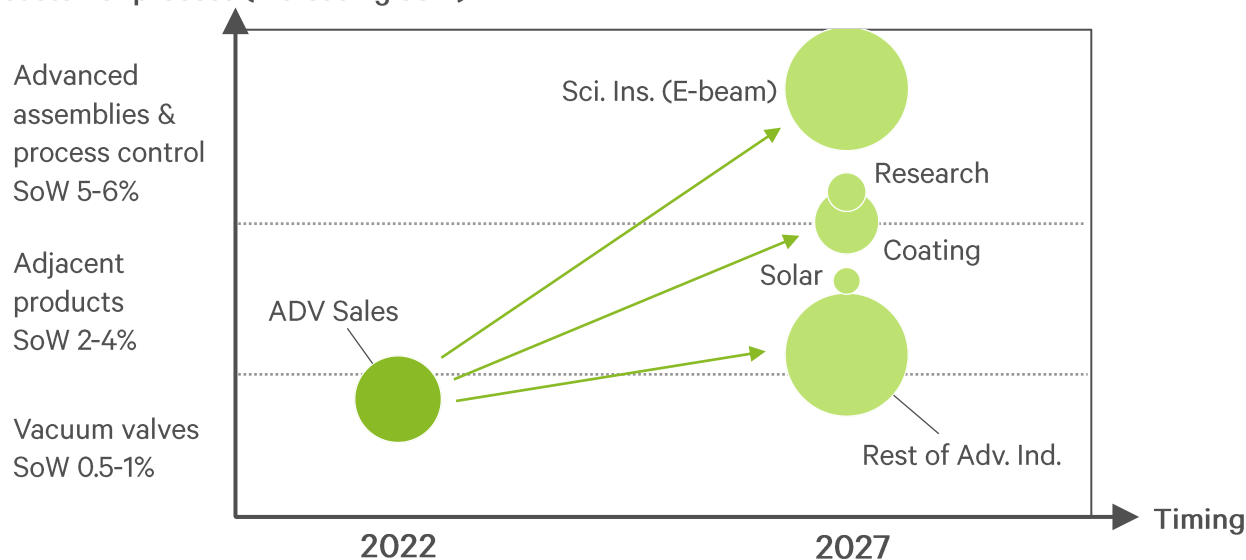
# Grow customer value and share of wallet in existing business; E-beam offers largest opportunity

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Potential VAT contribution to customer process (increasing SoW)



- ADV today mainly selling vacuum valves
- Further leverage SEMI synergies
- Potential to increase share of wallet in:
  - Bellows
  - Integrated modules
  - Pressure and process control

Legend: Bubble size indicates annual vacuum market size potential, in 2022 equivalent, CHFm

100m

# Leverage BU SEMI integrated assemblies to grow Share of Wallet

- Strong growth expected in E-beam:
  - Material Science for new electric vehicles and more sustainable compounds
  - Life Science driven by aging population
  - Semiconductor Inspection and Metrology

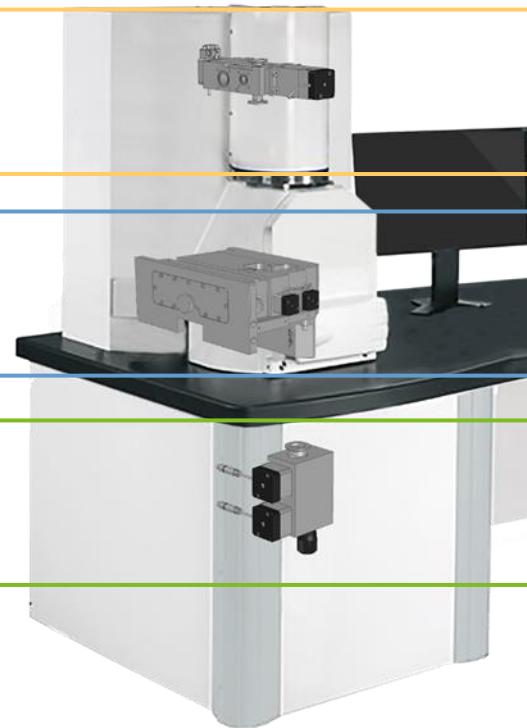
- Address customer pain points **by offering integrated solutions adapting SEMI advanced products and combining it with ADV ultra high vacuum valves, pressure control and compact motorized portfolio**

- Today SoW: 0.5%
- Target 2027: 6%

E-beam path  
mechanical  
assemblies

Sample path  
solutions

Vacuum solutions: valves,  
adjacent products



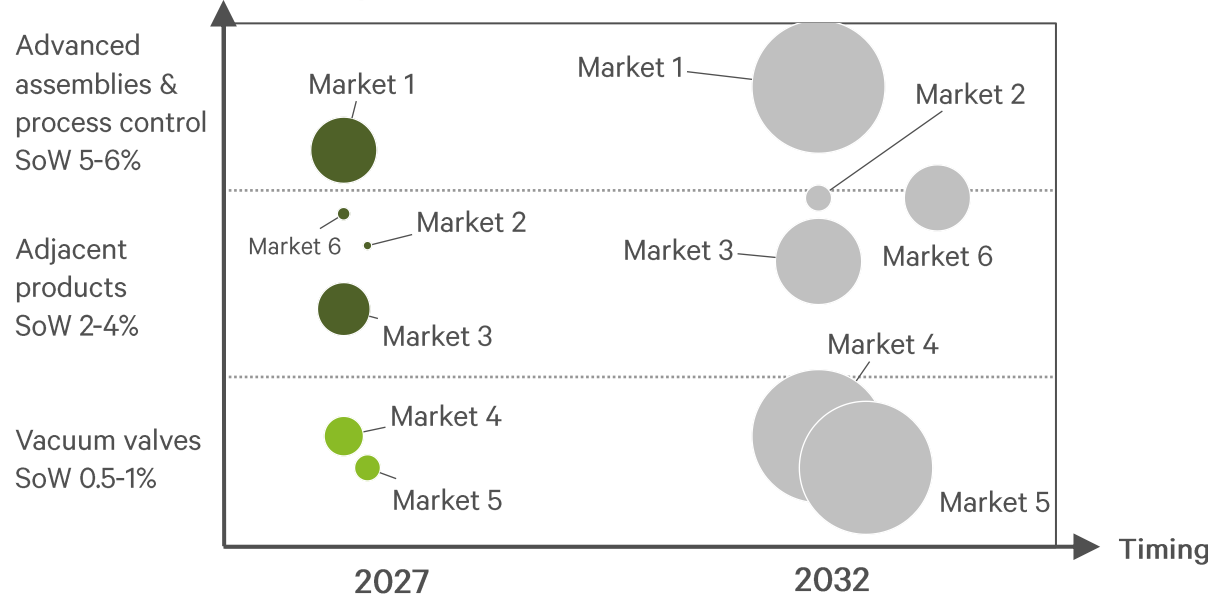
# Long term, several interesting new markets with vacuum potential are emerging

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Potential VAT contribution to customer process (increasing SoW)



50m

- Interesting new markets based on similar technologies:
  - 3D printing (E-beam)
  - Fusion (all-metal valve products)
- VAT well positioned, prototypes in progress
- Portfolio options, attractiveness monitored through systematic process



# ADV plan focuses on innovation and improving market coverage

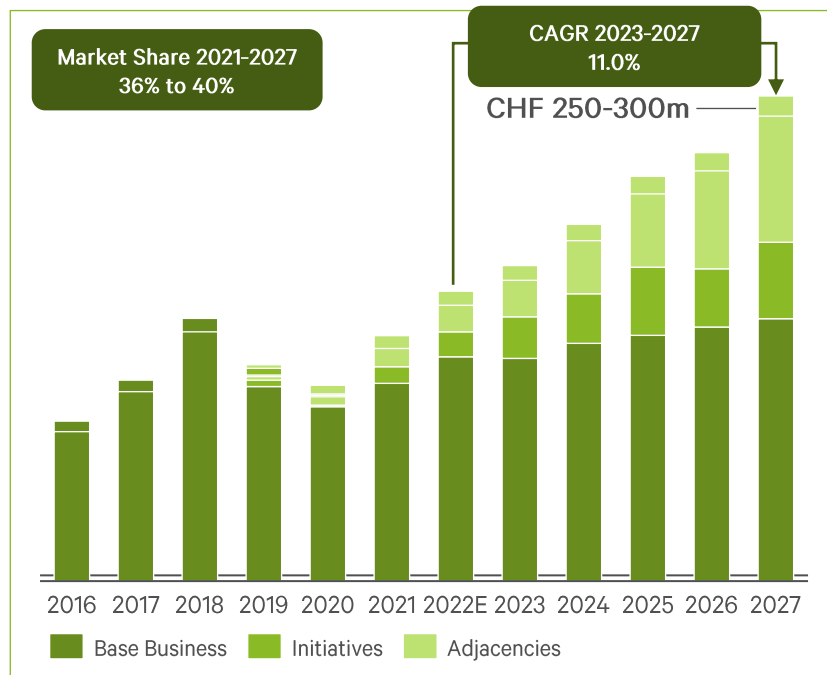


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## ADV sales plan 2023-2027



## ADV key initiatives

### Product roadmap, enhancements and adjacencies:

- Initiative 1** New differentiated, configurable product platforms
- Initiative 2** E-beam: Increase adjacencies, share of wallet from only valves to advanced assemblies and pressure control

### Market reach:

- Initiative 3** Investing in direct sales force as well as Web-shop

# VAT product reuse at higher profitability with several attractive growth opportunities

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## ADV well positioned for future growth ...



VAT synergies, SEMI product reuse at high profitability  
**7 of 8 product categories with margins equal or above VAT average**



Strong position in Advanced Industrial markets, **36% market share**



Well positioned for future growth  
**Prototypes and pilots in progress**

## ... several attractive growth opportunities identified



Potential to grow market share in existing markets **to 40%**



Opportunities to grow customer value and Share of Wallet in existing markets **by up to 6%**



New attractive markets emerging  
**Leverage VAT technologies and capabilities (E-beam, 3D printing, ...)**

- 
- 6** Financial targets and capital allocation strategy Fabian Chiozza, CFO
  - 6.1** Historical stakeholder value generation
  - 6.2** Stakeholder value proposition 2023-2027
  - 6.3** Ongoing stakeholder value creation
  - 6.4** Conclusion

# Ambitious growth path coupled with clearly defined profitability targets and capital allocation priorities



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## Market growth Business execution

- Capturing long-term growth drivers in the Business Units Semiconductor, Advanced Industrials and Global Service
- Further expanding our market share in all business areas



## Leverage technological leadership in valves to adjacent products and solutions – production capacity guaranteed

- R&D investments as basis for our growth ambitions, extending our reach with adjacencies
- Capex investments ahead of the curve to meet customer demand



## Strong profitability Sustainable free cash flow generation

- Resilient, scalable and asset light operating model
- Focus on cash is of strategic priority



## Focused capital allocation

- Above-market organic growth, paired with industry-leading margins enabling R&D and capex investments ahead of the curve
- Return cash to shareholders up to 100% of FCFE

- 
- 6** Financial targets and capital allocation strategy Fabian Chiozza, CFO
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  - 6.4** Conclusion

# We have a strong track-record of delivering outstanding financial performance



Sales

15.9%<sup>1</sup>  
CAGR  
2015-22

**Strong double-digit growth** as market share continuously increases

EBITDA margin

26-35%  
Between  
2015-22

**High profitability** throughout the business cycle

FCF conversion

51-94%<sup>2</sup>  
Between  
2015-22

**High FCF conversion** through balanced capex program

ROIC

28-58%  
Between  
2015-22

**Strong Return on Invested Capital** at 2.5-5.5x WACC<sup>3</sup>

<sup>1</sup> Reported numbers, 16.3% CAGR on constant 2015 FX rates

<sup>2</sup> Free Cash Flow as percentage of EBITDA

<sup>3</sup> Compared to WAAC used in annual impairment testing

# On track to deliver on our 2025 commitments



|  | 2020<br>Our guidance at CMD | Q1 / 2022<br>Our adjustment | 12 / 2022<br>Our progress              |
|--|-----------------------------|-----------------------------|--|
| Sales in 2025                                    | ~CHF 1,100m                 | ~CHF 1,500m                 | CHF 1,150m<br>for FY 2022 <sup>1</sup> |
| EBITDA margin band 2020-2025                     | 30-35%                      | 32-37%                      | 35% for FY 2022 <sup>1</sup>           |
| Adjacencies sales volumes in 2025                | CHF 150m                    | -                           | ~CHF 95m for FY 2022                   |
| SEMI sales growth 2020-2025<br>incl. adjacencies | CAGR of 10%                 | -                           | 39% CAGR 2020-2022                     |
| Market share growth in SEMI 2020-2025            | +10ppt                      | -                           | on track                               |
| Global Service sales growth 2020-2025            | CAGR >9%                    | -                           | 29% CAGR 2020-2022                     |
| 2025 market share in Global Service              | 50%                         | -                           | on track                               |



Delivering towards our commitments fueled by stronger than expected markets and enhanced by outstanding execution despite challenging supply chain conditions and COVID restrictions.

<sup>1</sup> Midpoint of guidance issued with Q3 Trading update released on October 13, 2022

# Since the 2020 CMD VAT shares have delivered a TSR of ~40% despite the sharp 2022 correction



We have delivered great results since 2020 ...

29%  
CAGR

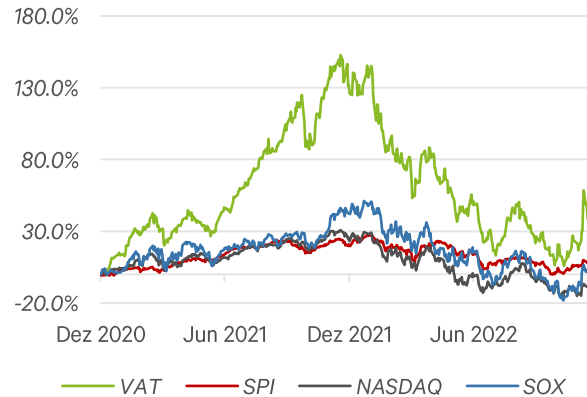
Sales growth between 2020 and 2022<sup>1</sup>

+4.6ppt

EBITDA margin improvement between 2020 and 2022<sup>1</sup>

... and created substantial shareholder value above the industry

VAT TSR in comparison to key indices  
(normalized to VAT price at 2020 CMD)



**~40%**  
TSR for  
shareholders  
invested in VAT  
since the 2020 CMD

<sup>1</sup>Calculation based on reported results 2020 and the full-year 2022 guidance issued on Oct. 13, 2022 in the Q3 Trading Update

Note: NASDAQ in dollars VAT including dividends 2017-20; Values as of Nov. 27, 2020



- 
- 6** Financial targets and capital allocation strategy Fabian Chiozza, CFO
    - 6.1 Historical stakeholder value generation
    - 6.2 Stakeholder value proposition 2023-2027**
    - 6.3 Ongoing stakeholder value creation
    - 6.4 Conclusion

# Sales and market share to grow across all our businesses



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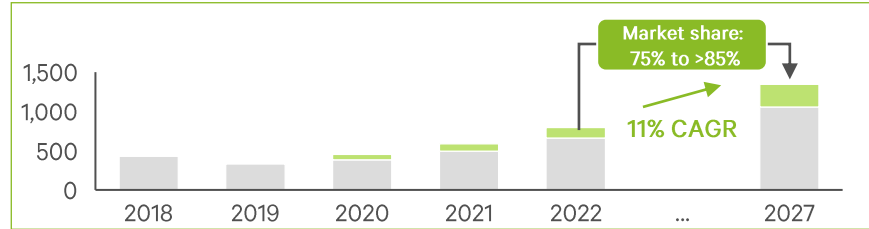
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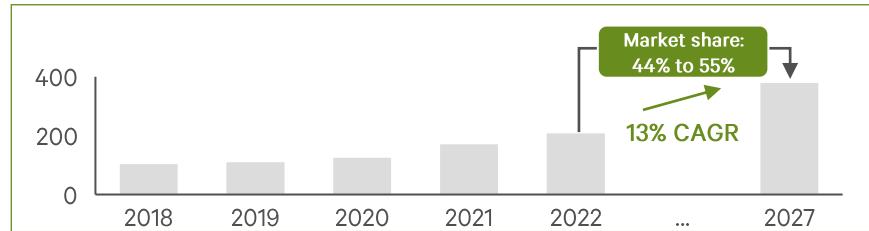
## Semiconductors

Sales growth and market share gains based on very strong specification win track record and #1 market position for leading-edge vacuum valves



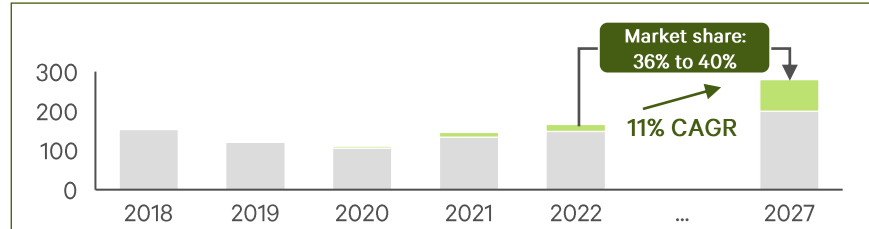
## Global Service

Capture all opportunities coming from the fast-growing installed base of valves, coupled with increased focus on key customers



## Advanced Industrials

Grow business and market share through increasing direct sales force in USA and Asia and higher Share of Wallet (added customer value) at customers, especially in Europe



Core

Adjacencies

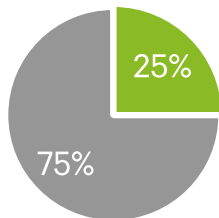
# We drive operational excellence through our global footprint and flexible operating model



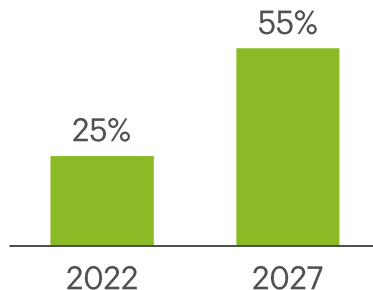
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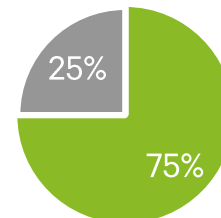
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25% flexible workforce group-wide  
(factory workers in CH, MY and RO)



Best cost country sourcing is expected  
to reach more than 55% by 2027  
compared to 25% in 2022



75% of our components  
are purchased from outside and around 2/3  
of our costs are variable

# Growing production capacity > CHF 2bn

## Moving volume to BCC locations

### BCC suppliers reducing cost base



Growth in Best Cost Country content improves our cost position

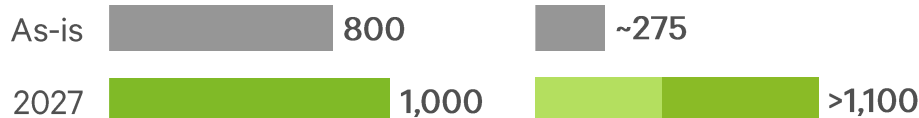


Switzerland



Malaysia

Factory output (CHFm)



>50%

Best Cost Country content in **factory output by 2027**

Best Cost Countries purchase volume



>55%

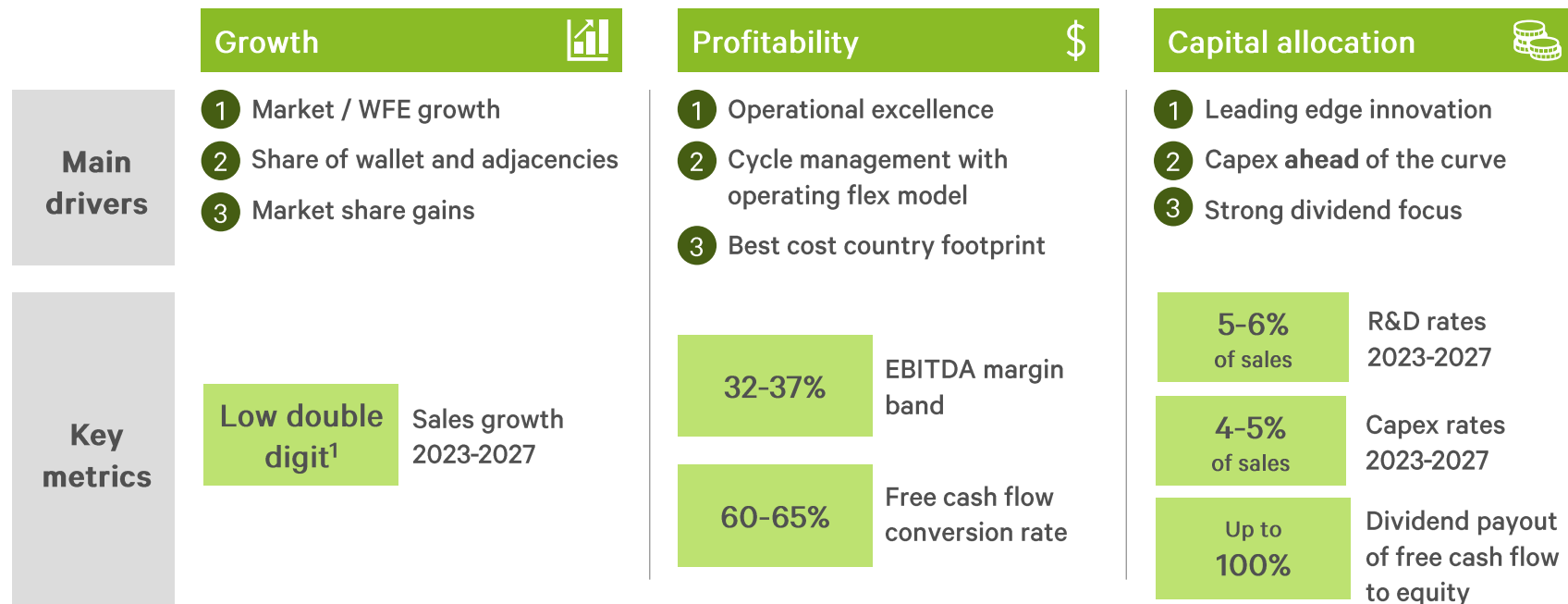
Best Cost Country content in **purchase volume by 2027**

# VAT's strong business fundamentals create a sustainable investment story



## Stakeholder value proposition 2023-2027

Our sustainable value creation is based on 3 key pillars:



<sup>1</sup> At midpoint of sales guidance of CHF 1.8-2.2bn in 2027

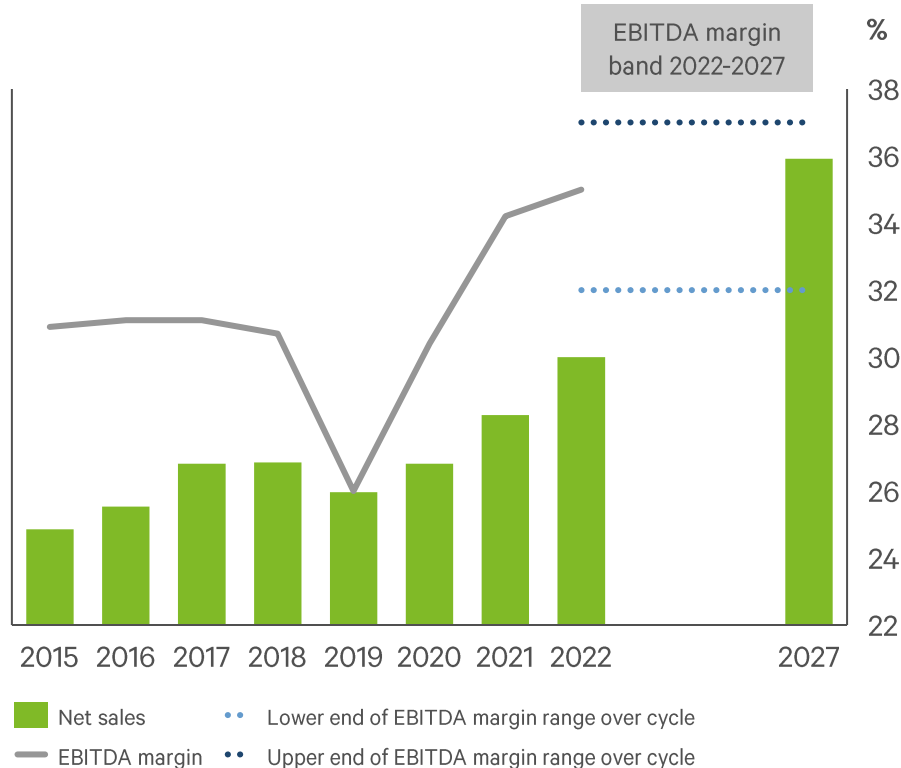
- 
- 6** Financial targets and capital allocation strategy Fabian Chiozza, CFO
    - 6.1 Historical stakeholder value generation
    - 6.2 Stakeholder value proposition 2023-2027
    - 6.3** Ongoing stakeholder value creation
    - 6.4 Conclusion

# Strong profitability with EBITDA margin of 32-37% over the cycle



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Our **EBITDA margin** is expected to be **between 32% and 37% over the cycle<sup>1</sup>**



Scenario-based planning and decision-making allows us to **stay in target profitability range** during cyclical sales swings of +/-20%



Key financial focus during the next five years will be our **accelerated movement to Best Cost Countries** and **focus on operational excellence**

<sup>1</sup> assuming USD/CHF FX rate of 0.95

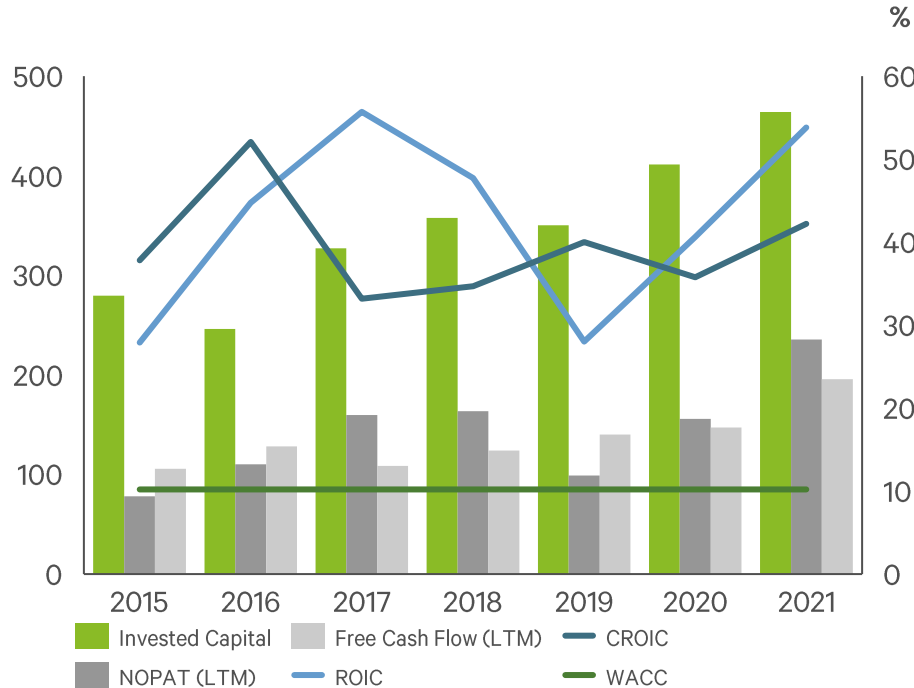
# Strong ROIC across the cycle and expected to remain above 45% in the period 2022-2027



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The Group's weighted average cost of capital was assumed at 10.2% as used in the 2021 impairment test

>40%

Our historic organic growth coupled with our asset-light business model allows us to **generate ROIC / CROIC substantially above our WACC**



Our asset-light strategy involves around 75% components outsourcing which results in **two thirds of variable cost structure**



**Invested capital is not expected to grow over-proportionally** in the coming years despite our organic growth strategy



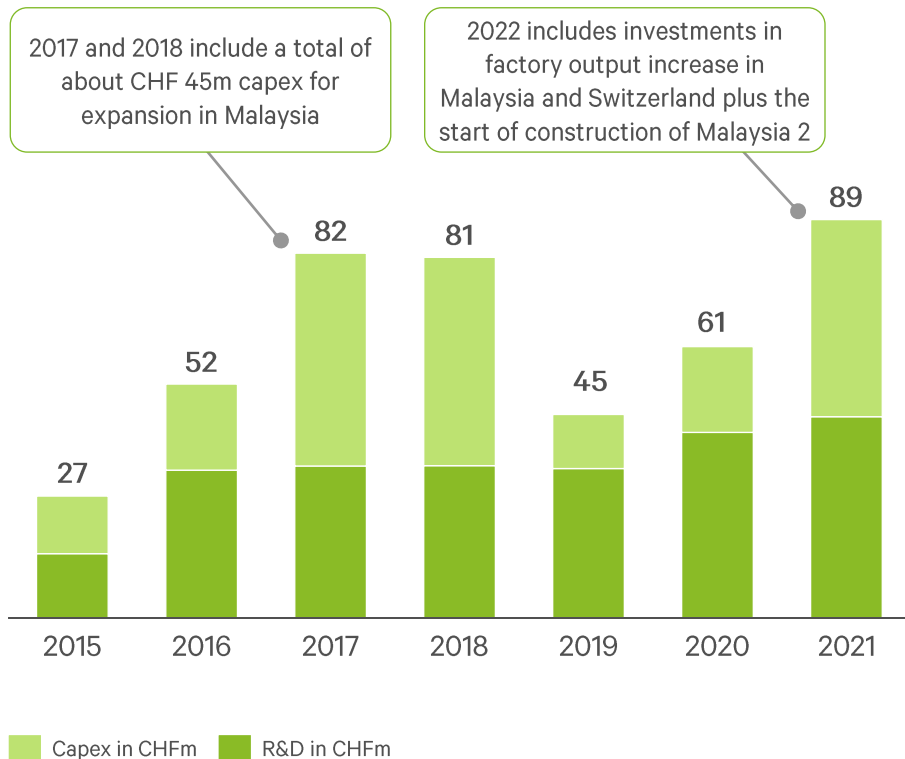
# Strong commitment towards our customers to invest ahead of the curve in innovation and capacity



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10%

VAT has on average invested around **10% of sales** in capex and innovation, demonstrating a **strong commitment to our customers** and their needs



R&D investments as a % of sales are relatively stable over time while capex fluctuations reflect periodic investments in production capacity **ahead of the curve**



2023 and 2024 are expected to be **high capex years at around 6.5% of sales** each year for Malaysia 2 and the innovation center in Haag, Switzerland; for 2025 onwards we expect capex to be **below 4% of sales**

# We have a three-pillar cash investment strategy

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## Our historical capital allocation principles ...

### Capex<sup>1</sup>



CHF  
>270m

Allocation of capital enabled by **sustainable cash flow** and a strong balance sheet

### R&D<sup>1</sup>



CHF  
>200m

Organic value creation based on disciplined **use of cash for innovation** and **our organic growth ambitions**

### Dividends<sup>2</sup>



CHF  
780m

Returning **cash back to our shareholders** is one of our **key value propositions**

## ... will continue to guide our cash allocation in 2023-2027

4-5%

of sales in capex

5-6%

of sales in R&D

Up to  
100%

of FCFE distributed to our shareholders

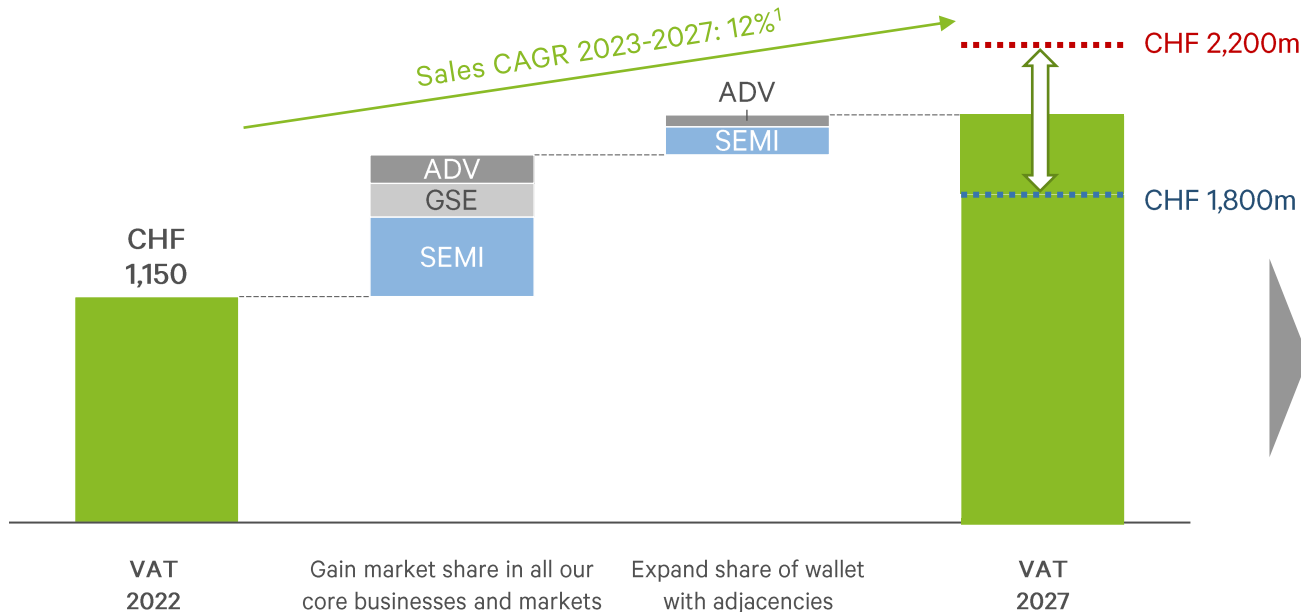
<sup>1</sup> cumulative total for the years 2016-22E    <sup>2</sup> cumulative for the fiscal years 2016-21

- 
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# Our growth strategy is expected to generate CHF 2,000m in sales by 2027<sup>1</sup>



EBITDA margin band over the cycle:  
32-37%



- Strong organic revenue growth driven by increase in general market growth and share gains
- Expansion of share of wallet with substantial growth in adjacencies
- Maintain high profitability over the cycle with flexible cost structure

<sup>1</sup> at mid-point between CHF 1,800m to 2,200m, based on organic growth and USD/CHF rate of 0.95

# Unique combination of profitable growth and cash returns to shareholders



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<sup>1</sup>At midpoint of sales guidance of CHF 1.8-2.2 bn in 2027



Confirmed guidance



Updated guidance

Note: Guidance assumes constant FX and unchanged scope of consolidation



Semiconductor  
Climate Consortium  
FOUNDING MEMBER



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# VAT – We change the world with vacuum solutions

## Q&A session

### Capital Markets Day 2022

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