

A sustainable strategy for competitive success

The Digital Revolution is one of the most important trends shaping – and fundamentally transforming – the lives of people everywhere. It enables more and more people to share information instantly, improve daily routines and drive innovation. Economic growth in many areas depends on it and it enables more efficient use of resources. Working models have changed thanks to the use of digitalization, allowing people to work and learn remotely thereby, reducing the environmental impact of travel. Many achievements in modern healthcare would not have been possible without the use of digital devices, but perhaps the biggest positive impact of digitalization is society's ability to address one of the most urgent global challenges – climate change – in ways that would have been unthinkable just a few years ago. Ultimately, digitalization has the potential to further improve the quality of life and equality of opportunity for millions, while at the same time playing a role in limiting the negative environmental impacts on our planet.

This new digital world relies on more complex and powerful semiconductors, and VAT plays an important role in this transformation. Manufacturing these advanced devices can only be done in the purest vacuum environment, and VAT's leading-edge vacuum valve technology is a key contributor to that process.

The contribution digitalization can make to business globally was highlighted in 2023 with the mass adoption of Artificial Intelligence (AI) with OpenAI and Bing creating the ability for users to create new applications and even new business models. For AI to deliver on its promises, the latest technologies in semiconductor design and production are required and VAT's technology and market leadership in advanced semiconductor manufacturing positions the company to capture the growth potential presented by these technologies.

Higher semiconductor performance and lower energy hunger drive technology and innovation

The semiconductor is digitalization's technological powerhouse, and it has developed beyond all recognition from the pioneering devices of more than 60

years ago. But it may still be early days in the race to increase processing power, while reducing size and power consumption. Back in 1956, IBM developed a data storage device with a capacity of five megabytes that weighed about a ton. Today's most powerful high-capacity micro SD memory chip stores 1.5Tb and weighs less than 5 grams. In 2015, the volume of data and information created, captured, copied, and consumed globally amounted to some 16 zettabytes (10^{21} bytes), and this number is expected to grow more than ten times by 2025 to over 180 zettabytes. The expected growth has accelerated over the past years and is predicted to continue at least throughout this decade. To make this possible, the value of semiconductors to process or store all this data is forecast to reach more than USD one trillion by 2030, up from about USD 600 million in 2023.

To handle this expected data growth, not only a larger number of semiconductors is required but even more importantly faster and less energy consuming ones are needed. It is estimated that electricity consumption by data centers around the globe today represents between 240–340TWh or around 1.0%–1.3% of total global final electricity demand. In addition, another 110TWh or 0.4% of final electricity demand is estimated to be used by cryptocurrency mining. Reducing this energy hunger by developing more efficient semiconductors is therefore a key priority.

By “printing” microscopic transistors, or integrated circuits (ICs) onto a silicon wafer, semiconductors can store and process vast amounts of information. The more ICs that can be printed onto a wafer or chip, the faster the chip performs. Today's semiconductors routinely contain ICs in node sizes of 5–10 nanometers, smaller than the average virus. Nodes of 3 nanometers are becoming more common – like in the latest generation of smartphones – and the industry is already talking about nodes of 1–2 nanometers. That means that a chip the size of a fingernail, containing not only billions of transistors and being immensely powerful, while at the same time consuming less energy than semiconductors with larger node sizes.

Designing and manufacturing at this 'nano' scale becomes ever more demanding and presents a multitude of challenges. Typically, more than 1,500 steps are required to produce a final semiconductor, including lithography, deposition, etching, packaging, and inspection. The entire process takes up months from start of manufacture to the final product. Eliminating contaminants from the whole process therefore is a key success factor. Even the tiniest particle landing on a chip during fabrication can significantly reduce the chip's performance or cause it to fail. As the world needs more semiconductors and becomes more dependent on them in almost every activity, manufacturing purity and precision become paramount to increase the production yield to the highest possible level.

With specially designed and manufactured valves that ensure an extremely pure vacuum chamber in which semiconductors are made, VAT provides that kind of precision. VAT valves create an extremely tight seal between process chambers, isolating chambers from one another and the external environment, as well as controlling the volume and pressures of gases moving in and out of the chambers. This ensures the vacuum remains as particle-free as possible as wafers are moved from one chamber to the next. Similar processes are also used to manufacture

high-resolution displays, such as LED (light-emitting diode) and OLED (organic light-emitting diode) screens used in smart phones and televisions. In addition, other industries are also turning to high-vacuum manufacturing processes where extreme precision is required. These industries are covered through the business unit Advanced Industrials, serving sectors such as solar, specialty industrial coating, life sciences, energy transition and generation, among others. VAT serves all these markets with the most advanced valve technologies, delivered via a flexible global manufacturing and service footprint, and long-standing relationships with some of the world's most exacting customers.

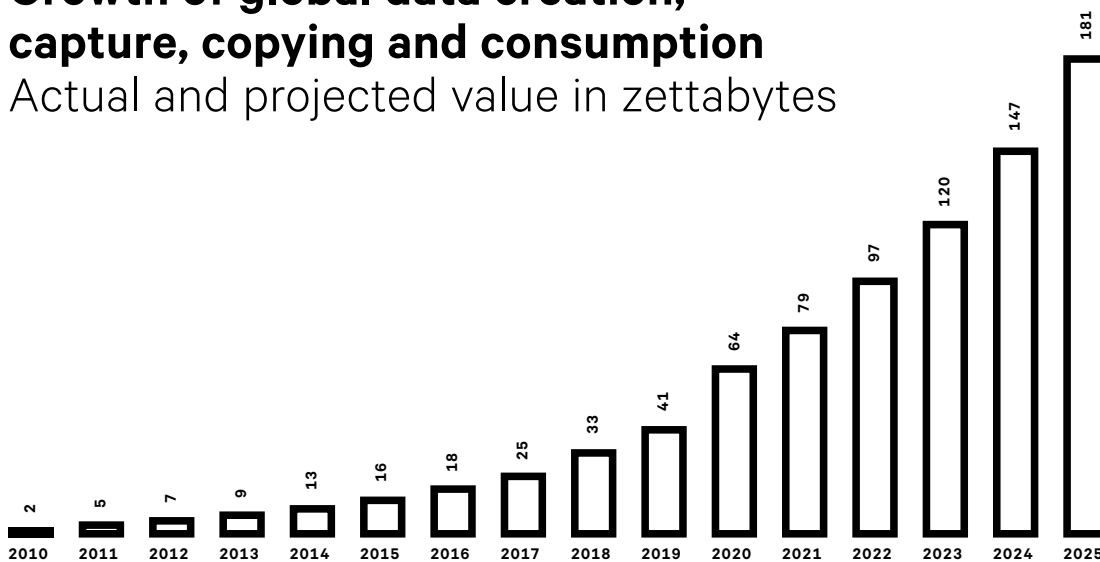
VAT serves a long-term growth market

The semiconductor industry is VAT's largest end market, accounting for close to 80% of net sales in 2023. The overall value of semiconductor sales is expected to reach more than USD 1 trillion by 2030, up from about USD 600 billion in 2023. This represents an annual growth rate (CAGR) of about 9% over the period 2023 to 2030, and almost double the pace of growth during the previous decade.

VAT typically sells its valves to OEMs (original equipment manufacturers) who build the valves into a wide

Growth of global data creation, capture, copying and consumption

Actual and projected value in zettabytes



variety of tools used in chip fabrication, generally referred to as wafer fabrication equipment (WFE). OEMs then sell these to the ultimate end user, the chip fabricators. In addition, VAT sells a wide variety of service products, ranging from spare parts to customized retrofits that allow customers to adjust production to new demands without automatically having to invest in new equipment.

As a result, and with its major exposure to the semiconductor industry, VAT's most useful measure of demand through the business cycle is investment from semiconductor manufacturers into large fabrication facilities, both new capacity and the retrofit and upgrade of existing equipment. In 2023, global WFE spending was flat at around USD 98 billion*, after having grown substantially from less than USD 60 billion in 2019. It is expected that 2024 will see slight growth of WFE over the 2023 level, with an acceleration in 2025 to around USD 113 billion, followed by around USD 130 billion in 2027.

Leading technology and market position – the basis for VAT's ongoing profitable growth

VAT benefits from these trends – in growing investment needs and higher technological requirements – in two ways.

The first is simply the growing volume of semiconductor units needed as chips are used in more and more devices. There is ever-increasing demand for more digital devices in industry, greater interconnectivity in consumer electronics, expanded cloud computing and data storage related to the growth in AI. Together, these developments require the fabrication of a larger number of chips, which drive increasing investments in additional manufacturing tools, thus generating increasing demand for vacuum valves.

The second factor is the increasing complexity in the manufacturing of the leading-edge semiconductors with node sizes of 3 nanometer and less. These more powerful and more energy-efficient chip designs typically pack more transistors into the same or a smaller space, which in turn require more process steps, higher manufacturing purity and longer times in the process chambers. Vacuum valve performance becomes even more critical to meet these new demands. This market segment is expected to grow by more than 9% a year (CAGR) over the period 2023 to 2028, and nearly double the growth expectations for general WFE.

Being a preferred supplier while maneuvering successfully through market fluctuations

VAT's largest market, semiconductors, is characterized by phases of strong investments, typically followed by shorter periods of lower demand. The industries investment activities are varying in response to technology advancements, changes in GDP, inflation, consumer spending and other factors. While the spread between peaks and troughs in investments has become less over time, partly due to the integration of semiconductors into a broader range of products today – such as personal digital devices, vehicles, 5G telecommunications networks and cloud computing – compared with the traditional market driven by GDP-related demand for consumer products such as cell phones and personal computers, the swings still exists and need to be dealt with appropriately.

The industry has seen tremendous consolidation from many producers to a much smaller number of strong market leaders – both OEMs and chip fabricators – over the past 15 years. Today these large players have reached a position enabling them to fund research and development, and to achieve

the economies of scale needed for long-term profitability. This has created a large global market in which a few participants remain and where the barriers to entry have become prohibitively high. In turn, this situation has also created a substantial consolidation in the supply chain of the OEMs. To be a successful supplier to these OEMs, VAT must constantly demonstrate its willingness and ability to invest in R&D to provide the products and solutions needed in the technological advancements and to also invest proactively in adequate production capacity and an expert workforce.

To fulfill these requirements, VAT has structured its operational model in a highly flexible manner, allowing it to quickly react to market upswings and to support its customers with the quality and quantity of products and services needed, but also to be flexible in adjusting its overall setup in slower market phases without jeopardizing the ability to quickly react to the next market recovery. The resulting deep customer relationships, based on a track record of successful collaboration, enable the company to stay ahead of the curve. As a result, VAT continues to deliver against its strategic targets over the entire business cycle.

* VLSITechInsights Inc., January 2024.

VAT's installed base of valves 2023

in million

> 1.6

2020: 1.2

As the global technology leader in vacuum valves, VAT is poised to benefit from these two growth drivers.

With its very long track record with semiconductor OEM customers – dating back to 1988 – VAT also has by far the largest installed base of vacuum valves in the field – more than 1.6 million in 2023 – and this is expected to grow significantly as a result of the large investments by the semiconductor industry over the last couple of years. These investments will also lead to a larger demand in services over the coming years and will provide VAT with a significant long-term service opportunity in gates, spare parts and consumables, upgrades and retrofits.

Set up to get the most from its competitive advantages

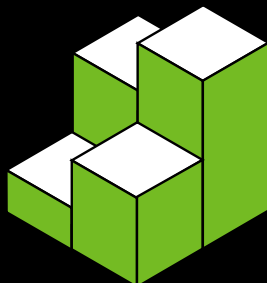
VAT continues to optimize its business setup and operating model to best meet the needs of its custom-

ers on a sustainable basis and to gain the greatest benefit from its significant competitive advantages from both the technological and market position perspectives.

The company is structured in two segments. The Valves segment is focused on VAT's core vacuum valves technology and consists of the two business units aligned with its biggest markets: Semiconductors and Advanced Industrials. Starting January 1, 2023, VAT reorganized its Display & Solar activities – previously a separate business unit within the Valves segment – by integrating these activities into the Semiconductor and the Advanced Business unit. The display business became part of the Semiconductor business and the Solar business moved to the Advanced Industrial business unit. The moves were aimed at taking advantage of synergies and economies of scale related to technology, business drivers and customer needs.

Four strategic priorities

Gain market share in all our core businesses and markets



Expand Share of Wallet with adjacencies



The second segment, Global Service, supplies a growing range of service products and solutions to help customers improve their competitiveness through increased productivity and uptime.

VAT is headquartered in Haag, Switzerland, the location of the company's primary production facility and the site of most of its research and development activities, including a new CHF 40-million Innovation Center that is expected to be inaugurated at the beginning of 2025. VAT also operates the industry's only particle measurement lab in San José, CA, in the US. VAT expanded its manufacturing and engineering footprint to Penang, Malaysia in 2012 to support its growing customer base in Asia. The facility in Malaysia is dedicated to semiconductor industry OEMs. In 2023, the plant had a factory output of about CHF 260 million, slightly lower than in 2022, reflecting the lower market demand for semiconductor manufacturing tools compared to 2022. During 2023, most of the expansion of capacity in Penang in a second factory was completed thanks to a CHF 70-million investment that brings the production capacity in the two Malaysian factories to over CHF 1 billion, which is approximately the total capacity available in Haag, Switzerland.

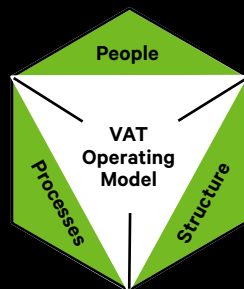
This expansion of its global production footprint has significantly enhanced VAT's already formidable ability to collaborate closely with customers and precisely develop the solutions they need, to deliver them faster, and provide quicker service. With many customers operating in the Asian region, the production

hub in Penang also shortens distribution lines, reducing the environmental impact of transcontinental logistics. It has also increased operational flexibility and, importantly, business continuity, allowing VAT to not only quickly shift production and supply as markets circumstances change, as well as to optimize productivity and cost over the business cycle, but also to guarantee its customers that even in the case of an accident or fire in one facility, their demand for products and services will continue to be met. In addition, a diversified talent pool also fosters innovation, broadening the base of expertise and experience, and providing people with opportunities to develop both personally and professionally, making VAT an ever more attractive employer.

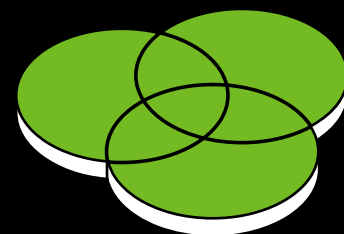
Innovation – pushing the boundaries of technology and setting industry standards

Over nearly 60 years, VAT has developed its position as the technology leader in high-end vacuum valves. The company's strong track record of R&D investment – typically about 5–6% of sales every year – a team of around 300 scientists and research engineers, and a portfolio of some 500 patents, represents a considerable competitive advantage. R&D investments are maintained even in phases of lower market activities as at present so that our OEM customers also have sufficient R&D capacity to develop new manufacturing platforms for the next technology generation. In 2023, VAT investments in R&D amounted to CHF 54 million, or about 6% of sales.

VAT2B: Build strong capabilities and further improve operational excellence



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



VAT measures the success of its R&D efforts partly through the number of new specification wins and agreements with customers on new product designs to address specific customer requirements for upcoming generations of new equipment. Specification wins are significant to the extent they fix all the components used in the upcoming manufacturing platforms. A specified component will be used for the entire lifespan or production period of that tool. Winning a specification is therefore important, as it secures business in the future when they translate into revenues as the customer rolls out new tools and equipment over the subsequent three to seven years. In 2023, VAT succeeded in securing a record number of specification wins, predominantly in the leading-edge technologies. Some 120 wins were achieved in 2023 – a new record – giving the company a clearer view of future sales and market position.

Our success with new specification wins is also the result of VAT's close collaboration with customers, which provides an additional advantage. Qualifying a new product with a customer – such as developing the specifications, providing quality assurance and testing, and securing the long-term supply chain – comes with considerable costs. Being able to constantly demonstrate to our customer our willingness and ability to invest in innovation gives VAT an edge with customers.

Based on this combination of technology leadership, deep customer relationships, global production and service footprint, together with highly qualified and engaged people, VAT has been able to steadily outgrow the overall market on a regular basis.

2023 strategy review expects profitable growth to be maintained

In late October 2023, VAT's Board of Directors held its annual strategy review meeting, updating the profitable growth path laid out in late 2022. Overall, the Board did not identify any reason to fundamentally change direction, despite the temporary lower market demand experienced in 2023, and therefore all four key strategic priorities were once again confirmed.

The first element in the strategy is a clear focus on continued market share gains in our core valves business. The company aims to grow its share in the high-end semiconductor market from approximately 75% today to 85% by 2027 by building on its leading-edge valve technology used to fabricate the most

advanced chips. This segment of WFE is expected to have the fastest growth and VAT – as the technology leader – is expected to capitalize on this market position and make commensurate gains in this area. The specification wins achieved in the last three years form an excellent basis for this expected growth. In the other, predominantly semiconductor-driven business, Global Service, VAT also intends to increase its market share by tapping more opportunities from its fast-growing installed base of valves, coupled with a tighter focus on its biggest customers. Finally, in the Advanced Industrials business unit, the company will continue to build its offering for the more industrial customers in all regions as the demand for vacuum valves expands into more and more industrial sectors.

The second important growth pillar is to continuously increase customer value by providing complementary technologies in areas that are closely adjacent to the core valves business. These adjacencies include motion components, such as lifters used in moving materials along the wafer pathway and advanced valve modules, comprising multiple valves with other components. In these two adjacencies, VAT has already been able to gain significant market share and intends to continue this trend. Other adjacent products that will start contributing to the VAT business include in precision delivery Atomic Layer Deposition (ALD) gas inlet valves or a new generation of pressure measurement and control technology. These adjacencies are expected to generate more than CHF 300 million in sales by 2027.

Thirdly, developing an organization that has the capabilities to meet the emerging challenges of a dynamic, demanding, and high-growth market is key to our future success. To this end, the company launched the VAT2B program in 2022, whose overall ambition is to achieve flawless execution against the company's strategic priorities. This means, for example, making sure the company can adjust capacity by up to 30% year-on-year, either higher or lower, over the cycle, while remaining on course to achieve its financial targets. VAT intends to build its own digital capabilities to not only improve internal business processes but also to make it easier for customers to interact seamlessly with the company. And VAT is committed to providing its people with a rewarding work environment that fosters engagement and personal growth. Initiatives under the VAT2B program have been accelerated during 2023 with a focus on the target operating model, helping the company

to coordinate functions, projects, and investments across the Group.

Finally, VAT aims to strengthen its environment, social and governance (ESG) capabilities. VAT issued its second Sustainability Report in mid-2023, in which it again committed to building a sustainability culture and issuing an inaugural set of ESG-related targets in Green House Gas (GHG) reduction and gender diversity on a management level and in our new hires. For 2024, VAT intends to show improvements in target-setting, continue its participation in sustainability ratings and further increase the engagement score, measured annually through a Group-wide Employee Engagement Survey.

Staying ahead of the curve

With these four strategic pillars, VAT is confident that it will further strengthen its market and technology leadership in all its attractive markets. The positive long-term growth outlook is confirmed and not derailed by temporary market softness which is a periodic feature of the semiconductor industry. The company has reached its No. 1 position by building competitive advantages over many years: deep relationships with customers, a dedication to innovation, a flexible and cost-efficient global footprint, and an engaged and highly skilled workforce. These allow VAT to generate consistent long-term growth, profitability, and cash flow across the business cycle, thereby generating sustainable value for all its stakeholders.

On course to meet mid-term targets but foreign exchange risk to reported numbers

At its last Capital Market Day in December 2022, VAT issued its set of financial targets for the period 2022 to 2027. At the same time, the previously communicated and subsequently adjusted mid-term targets for the period 2020 – 2025 were confirmed.

Overall, VAT believes that it is on course to meet these targets based on the assumptions shared at the time. These assumptions are based on a Wafer Fab Equipment (WFE) spend in 2025 and 2027 of about USD 110 billion and USD 135 billion respectively and a USD to Swiss franc exchange rate of 0.95 to 1. While the current WFE investment forecasts are broadly in line with the company's assumptions in late 2022, making the like-for-like results in 2025 and 2027 feasible, foreign exchange developments pose a strong headwind. Over the last 18 months, the Swiss franc has substantially strengthened against not only the USD but against all of VAT's major trading currencies. As a result, reported Swiss franc numbers for 2025 and 2027 may be lower than the like-for-like numbers calculated for the exchange rates in the original plan.

On this basis, and including new estimates of revenues to be generated from service and adjacent technologies, VAT in March 2022 adjusted several of its original 2025 targets issued in late 2020 targets. Net sales are forecast to grow at a low double-digit pace in the period 2022 to 2027, compared with the high single-digit rate forecast previously for the 2020 to 2025 period. This would lead to 2027 net sales of between CHF 1.8 billion and CHF 2.2 billion, versus the sales target expected in March 2022 of CHF 1.5 billion by 2025.

The EBITDA margin is forecast to remain in the 32%–37% range over the cycle, while Return on Invested Capital (ROIC) is now expected to be above 45% compared with above 40% for the prior target period.

The table below summarizes the mid-term targets for 2025 and 2027 based on WFE of USD 110 billion and USD 135 billion respectively and a USD/Swiss franc exchange rate of 0.95 to 1:

Financial targets	2020 – 2025	2022 – 2027
Net sales growth	~CHF 1.5 billion	~CHF 1.8 – 2.2 billion
EBITDA margin corridor over the cycle		32–37%
Return on Invested Capital (ROIC)		>45%
Capital expenditure as % of sales		4–5%
R&D investment as % of sales		5–6%
Free cash flow conversion as % of EBITDA		60–65%
Dividend payout as % of free cash flow to equity		Up to 100%