Vacuum Technique

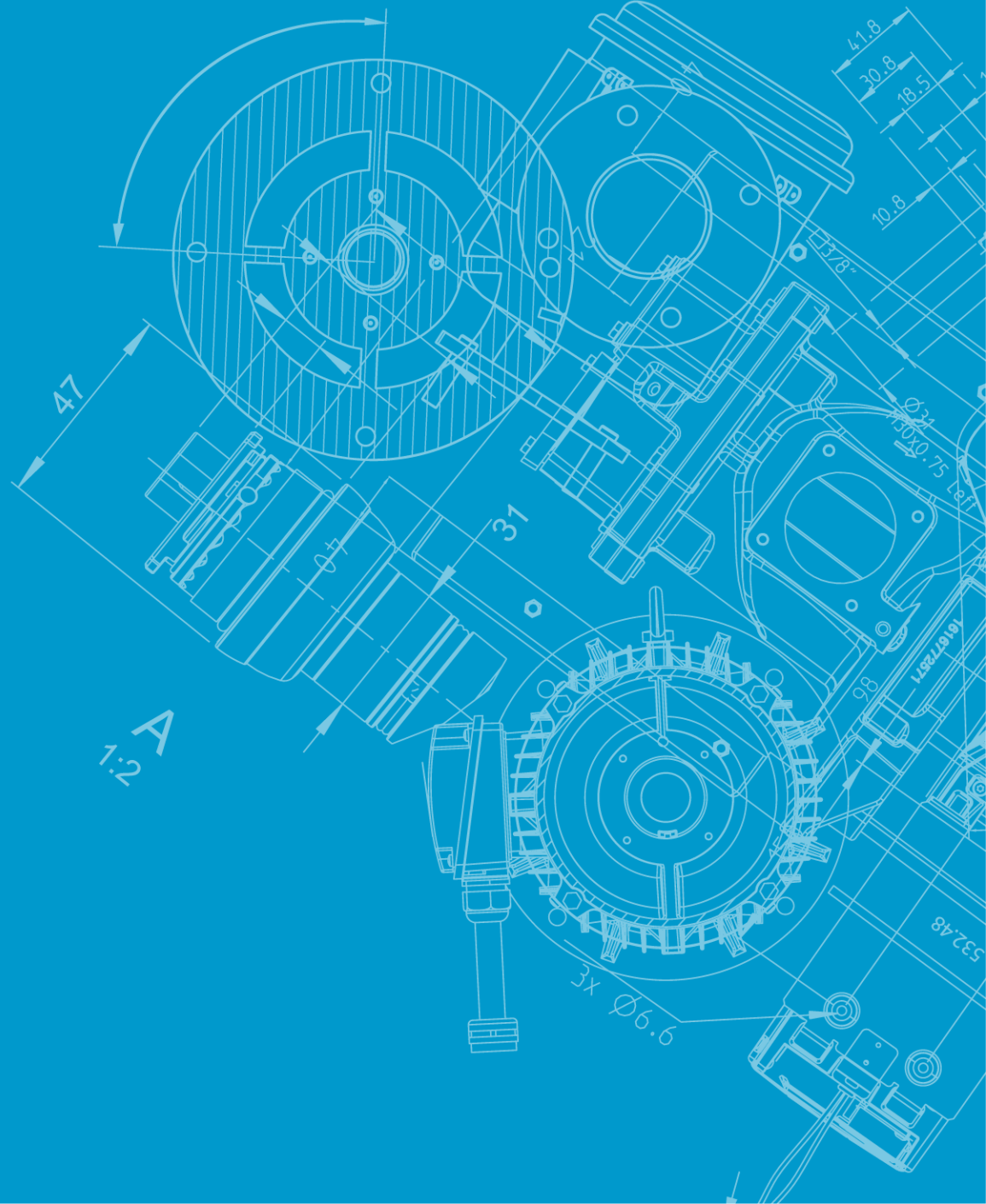
Geert Follens, Business Area President

Capital Markets Day 2022

Agenda

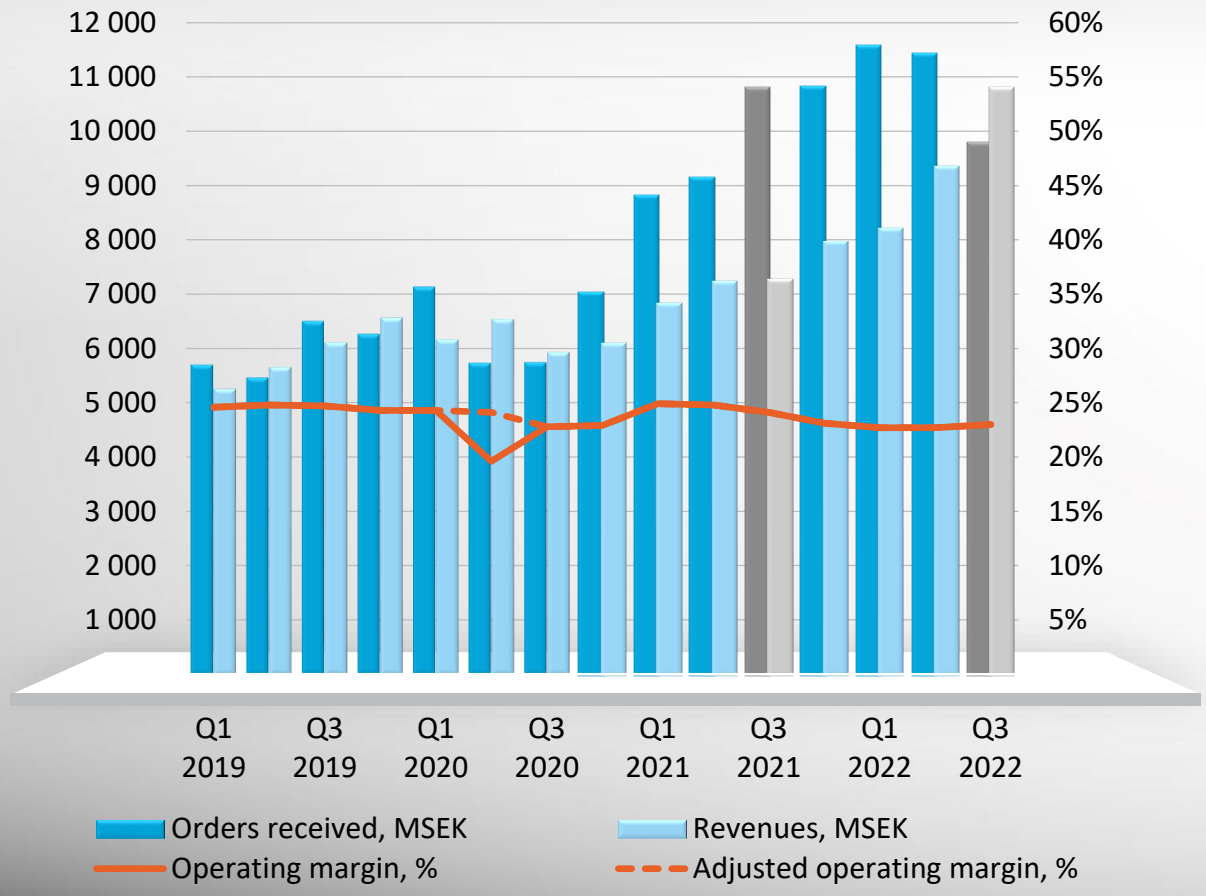
1. Facts in brief
2. Market trends and business fundamentals
3. Strategy for growth
4. An enabler of the transition to a low carbon society
5. Summary

Facts in brief



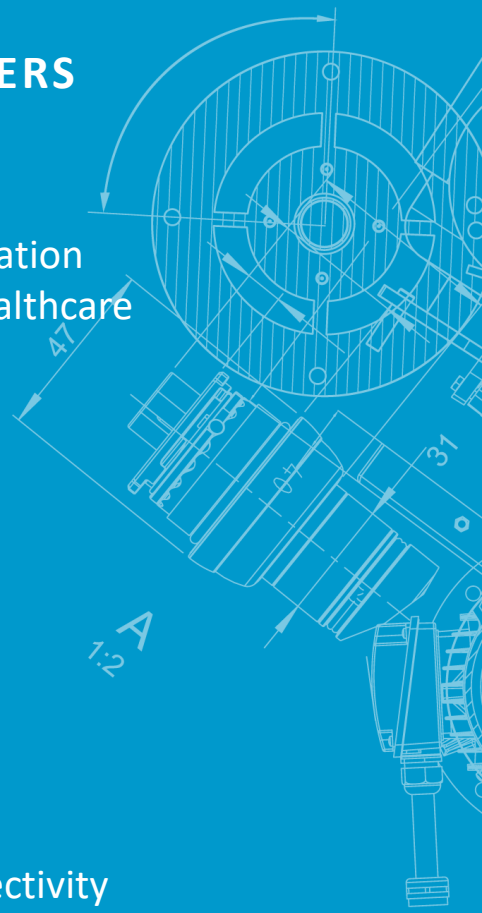
Vacuum Technique

ROCE
25%

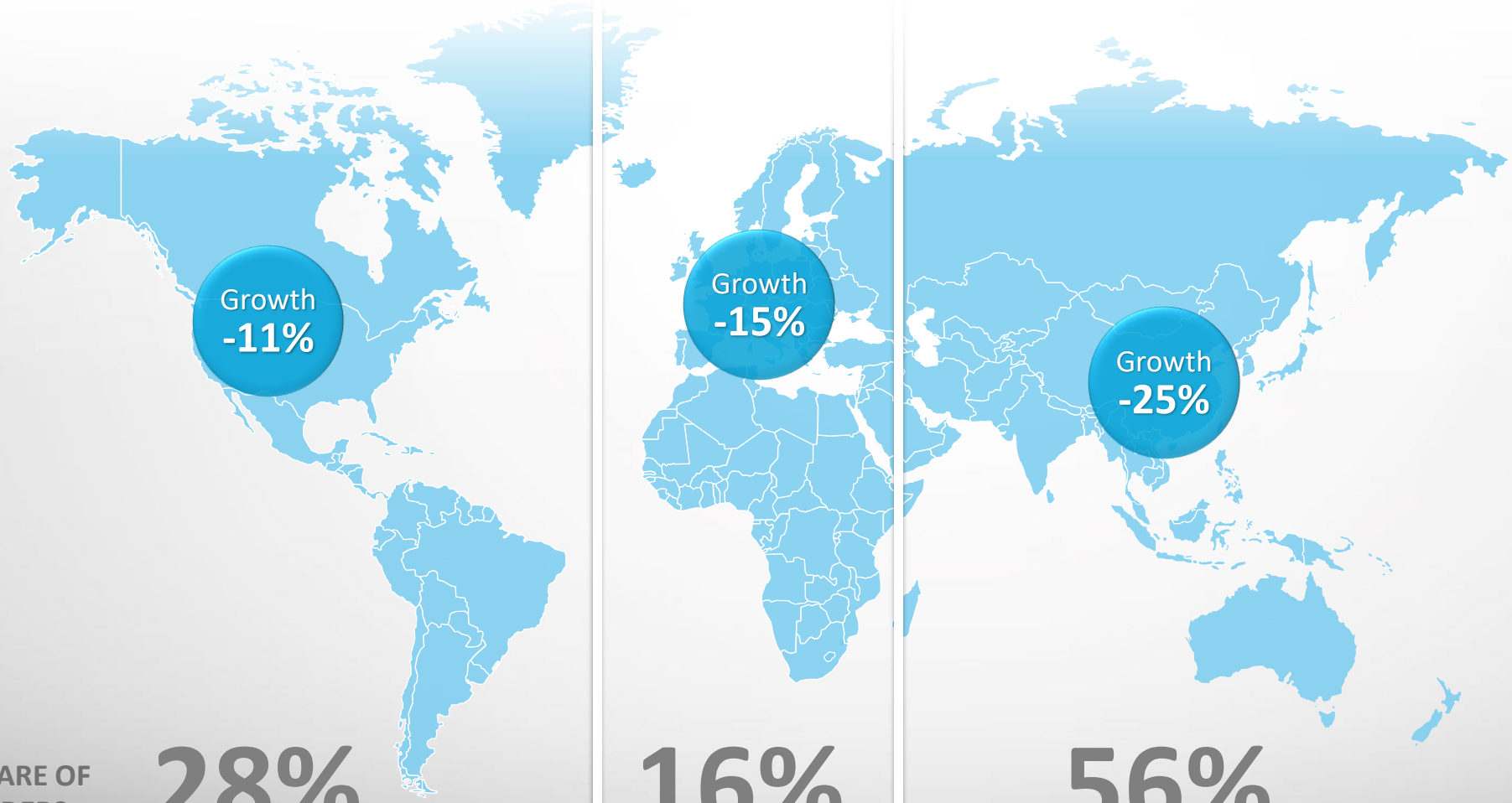


MARKET TRENDS / DRIVERS

- Semiconductor
  - Miniaturization
  - Machine-driven data generation
  - 5G, AI, VR, Automotive, Healthcare
  - Interconnectivity
  - Legislation
- Industrial Vacuum
  - Food regulations
  - Li-Ion batteries
  - Solar
  - Space
- Common Trends
  - Sustainability
  - Service – Up-time & Connectivity
- Geopolitics - Local for Local



Orders received July – September 2022 vs 2021



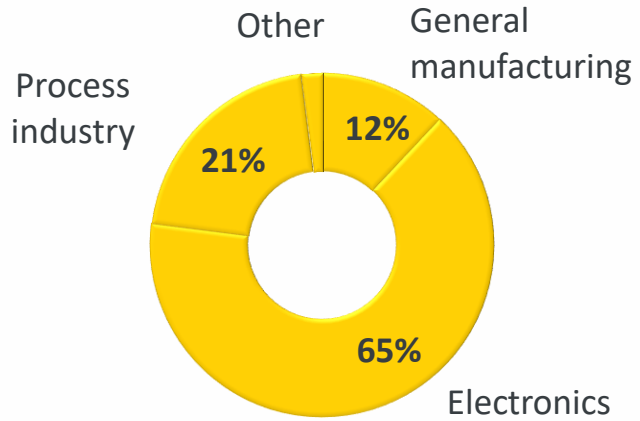
SHARE OF ORDERS : 28% 16% 56%

* Growth in local currency.

The market we operate in

ORDERS RECEIVED

January – September 2022



ELECTRONICS

- Machine data and interconnectivity driven
- Revival of 200mm fabs for complicated/IOT chips
- Harsher processes
- More foundry players, local for local
- Capacity and Agility take share

PROCESS INDUSTRIES

- Increasing market share across the process industry – food, chemical refining, and metallurgy
- Extensive range of applications in food sector – e.g., canning, packaging, and freeze drying

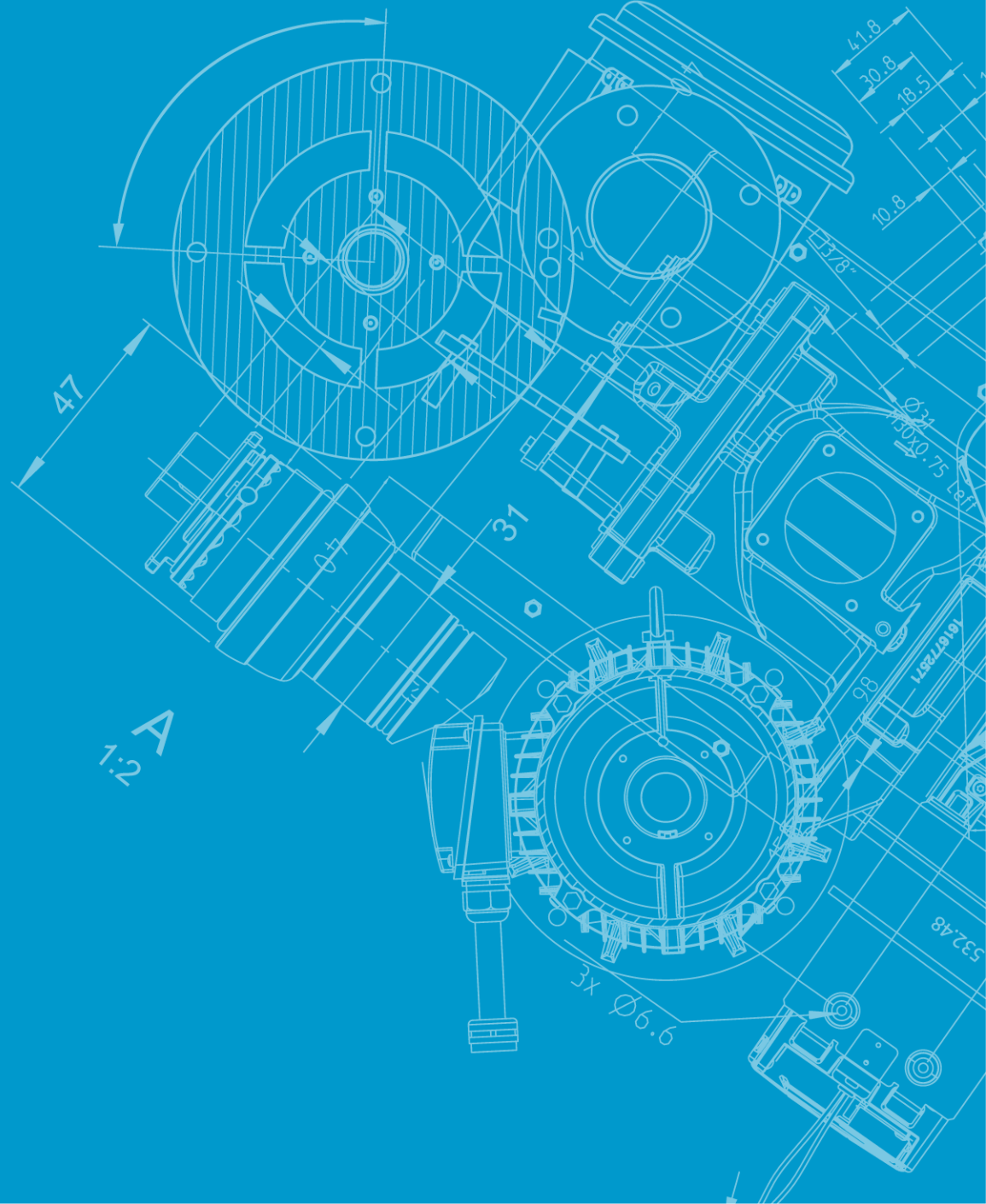
GENERAL MANUFACTURING

- Clear market leadership
- Wet to dry transition
- Liquid Ring Focus
- Mobile vacuum

OTHER

- Enabling advancements in space simulation and solar cell production, glass and optical coating

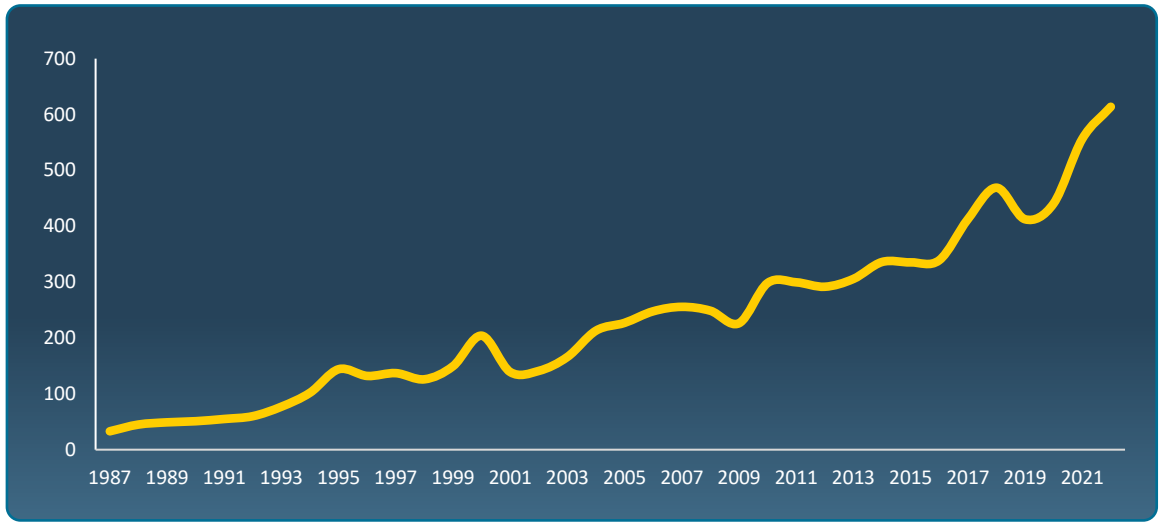
Market trends and business fundamentals



Semiconductor market size

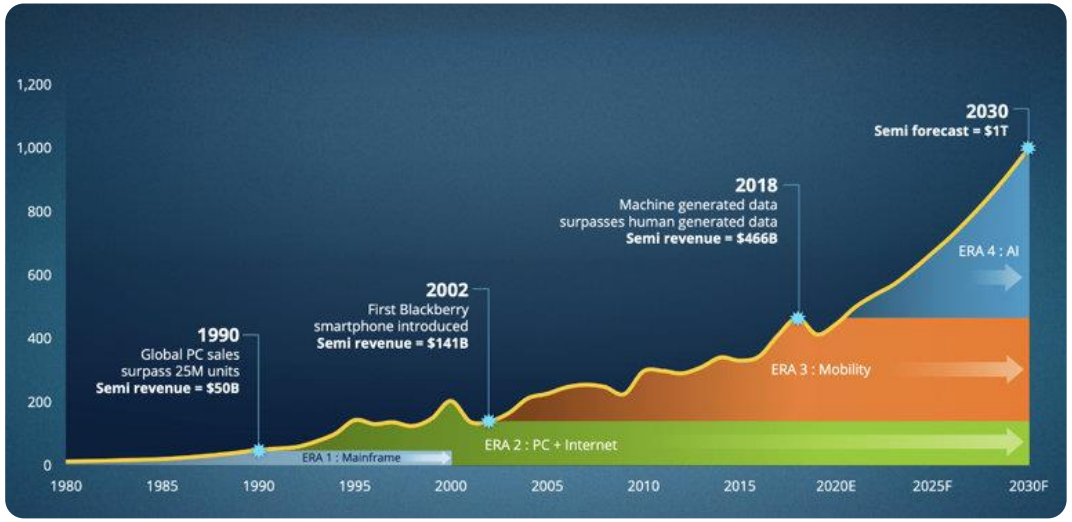
CAGR 10% over full 35 year term

SEMICONDUCTOR MARKET SIZE WORLDWIDE
From 1987 to 2022* ($B)



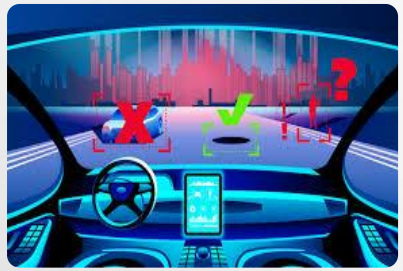
*Source: Statista June 2022

SEMICONDUCTOR INDUSTRY REVENUE ($B)



*Source: Applied Materials

Market drivers



Artificial Intelligence

5G Network

Cloud Computing

Gaming

Medical

Work from home

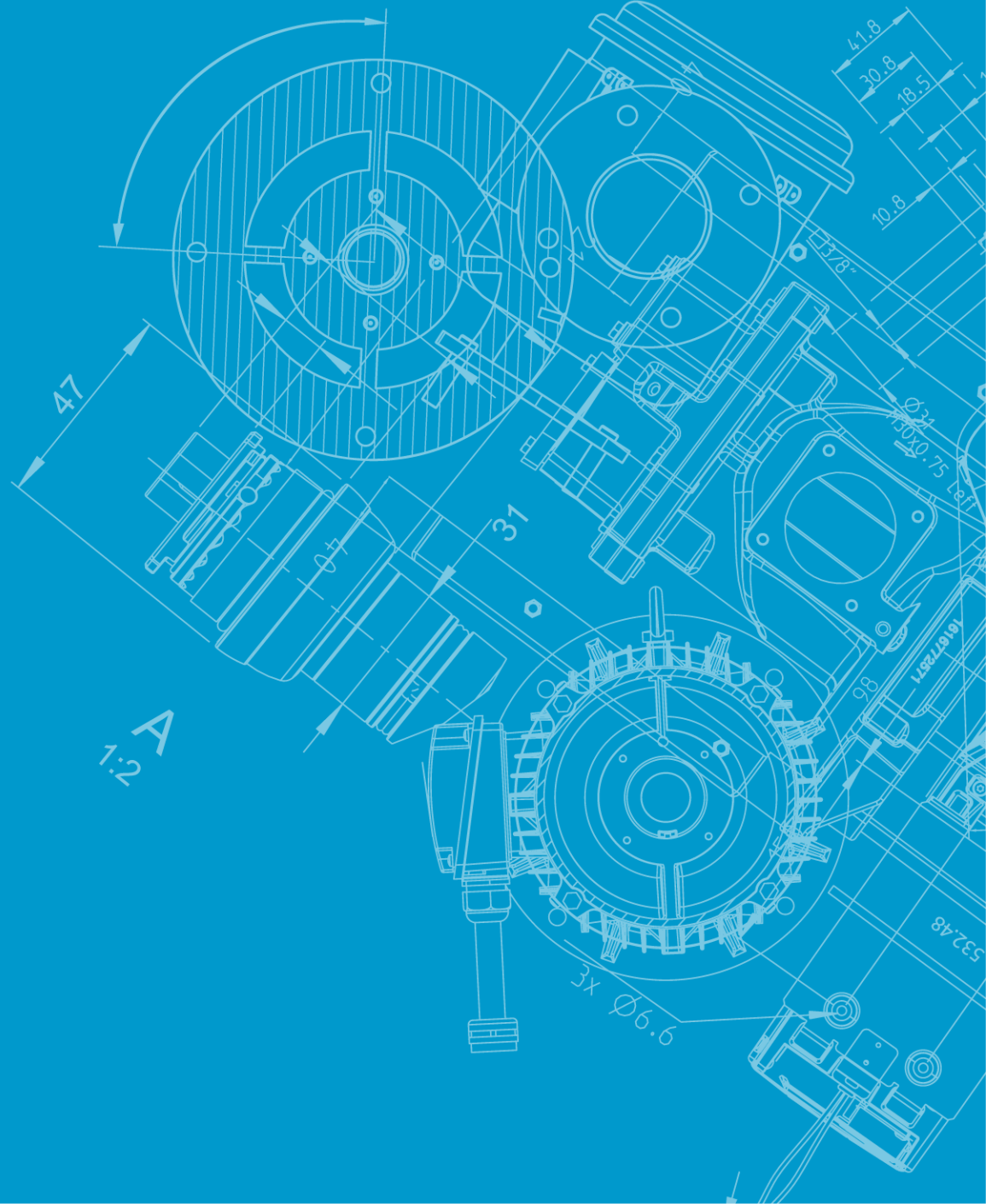
Super Computing

IoT

Automotive

Industrial

Strategy for growth



Strategy for profitable growth – Summary

Agility/Capacity

Innovation

Opportunities in the US

Acquisitions

Growth in General Vacuum

Local for Local

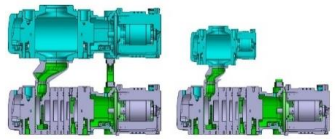
Service/Connectivity

People & Culture

Agility and Capacity

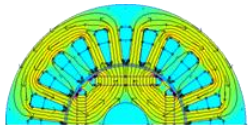
Why we innovate

PERFORMANCE DENSITY



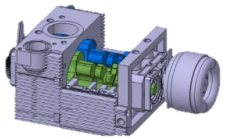
- Footprint, NVH, 3D Printing
- EMS Emissions, PFC, NOx

MOTORS & DRIVES



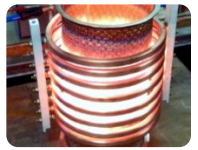
- Variable Speed / Universal
- 1f, 3f, 80W – 11kW

PRODUCT ENERGY & EFFICIENCY



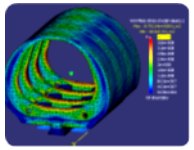
- Optimized mechanisms
- Utilities Consumption

CIRCULAR ECONOMY & RENEWABLE



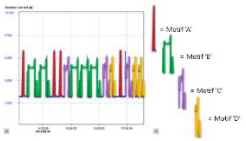
- Reduce, Reuse, Recycle
- Abatement Electrification

PRODUCT INTEGRITY



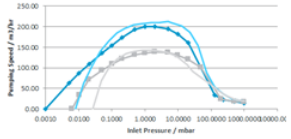
- Safe Operation
- Reliability & Robustness

MONITORING ALGORITHMS



- Diagnostics & Prognostics
- Operation optimization

SIMULATION & ANALYTICAL TOOLS



- Pumping Mechanisms
- Network Modelling

DIGITAL TWINS

- IoT, Sensors, Ecosystems
- ML/AI Analytics, HMI

HARSH APPLICATION SOLUTIONS

- Powder Management
- Corrosion Resistance

PRODUCT CLEANLINESS

- Particle Management
- Contamination Reduction

INTELLIGENT CONTROLS

- Intelligent operating modes
- Interfaces/Protocols

NEW TECHNOLOGIES/APPLICATIONS

- Cryogenics, Chillers, Traps
- Gauges, Detectors, Quantum

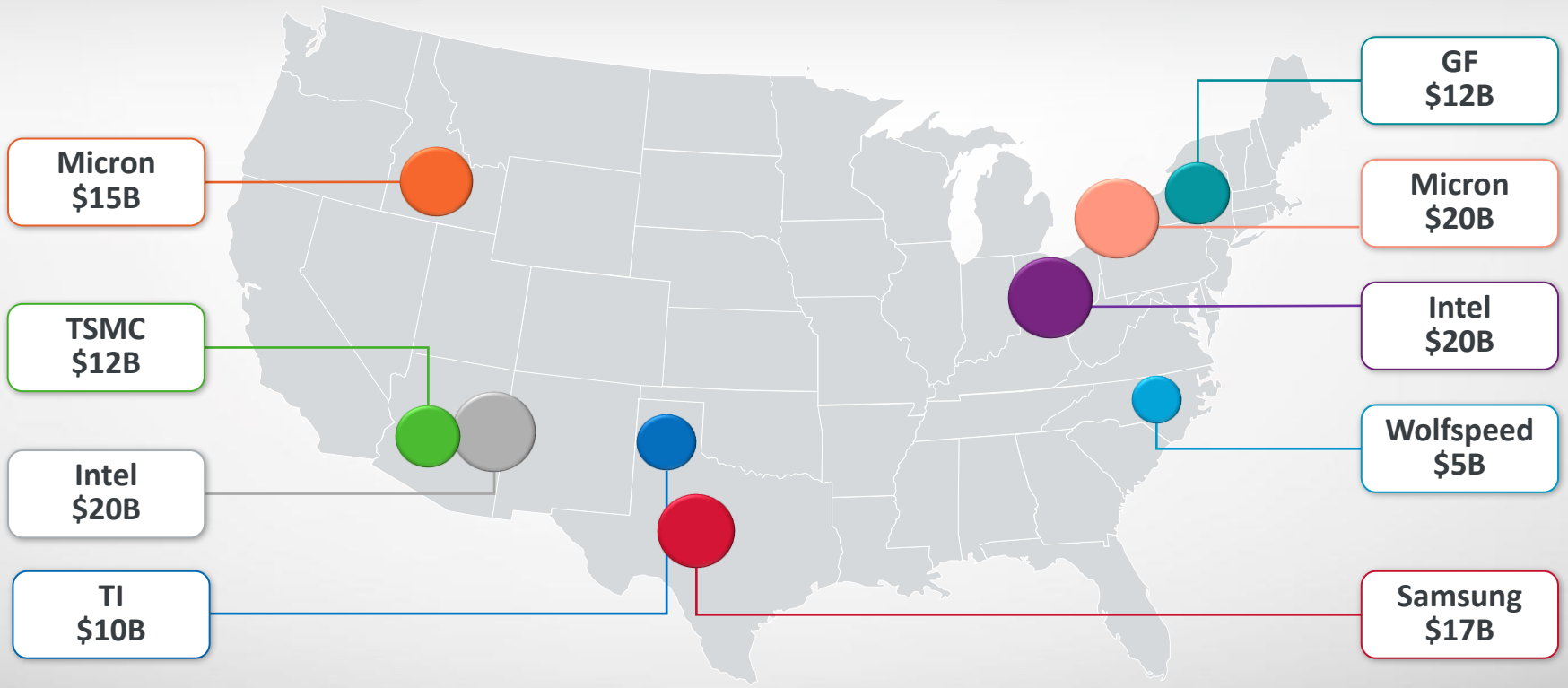
BASELINE CORE TECHNOLOGY THEMES

INCREASED FOCUS, SKILLS, PROJECTS

Local for Local – US Chips Act

Recently announced customer investment plans 2023-2025

- Semiconductor manufacturing in USA is now a matter of national security
- Only 10% of the worlds chips are now made in the USA
- In July 2022, US Congress passed the CHIPS Act
- Geopolitics will be the top factor in influencing where investments are made
- The construction of new semicon manufacturing facilities has increased 116% over the last year



VT Strategic approach to acquisitions (Semicon and Industrial / Scientific Vacuum)

Cryogenics – Vacuum and Low Temperature Physics

CTI Polycold

Semicon Cryo pumps and Cryo chillers

2019

Montana Instruments

Quantum Physics Cryostats

2022

Semicon – Solutions to reduce Carbon Intensity

Ceres Inc

Semicon molecule delivery & recycling

2022

Qolibri

Semicon foreline abatement

2022

Semicon – Process Efficiency

iTrap (Zeiss)

In-chamber chemistry analysis

2019

Liquid ring pump Roll-up Initiative

Dekker

USA: Liquid ring pumps

2020

Arpuma

Europe: LRP Chemical industry vacuum systems

2021

Chinco

China: Liquid ring pumps

2022

Process Industry – Application Solutions

Ehrler & Beck

Industrial vacuum systems

2021

Eugen Theis

Meat packaging application knowhow

2021

HHV Pumps

India industrial and pharmaceutical vacuum pumps & systems

2022

Mobile Vacuum Market Entry

National Vacuum Equipment

Mobile vacuum

2022

Industrial Vacuum acquisition strategy

Distribution and System Builders

STRENGTHS

Presence

Application knowledge

Products and operations

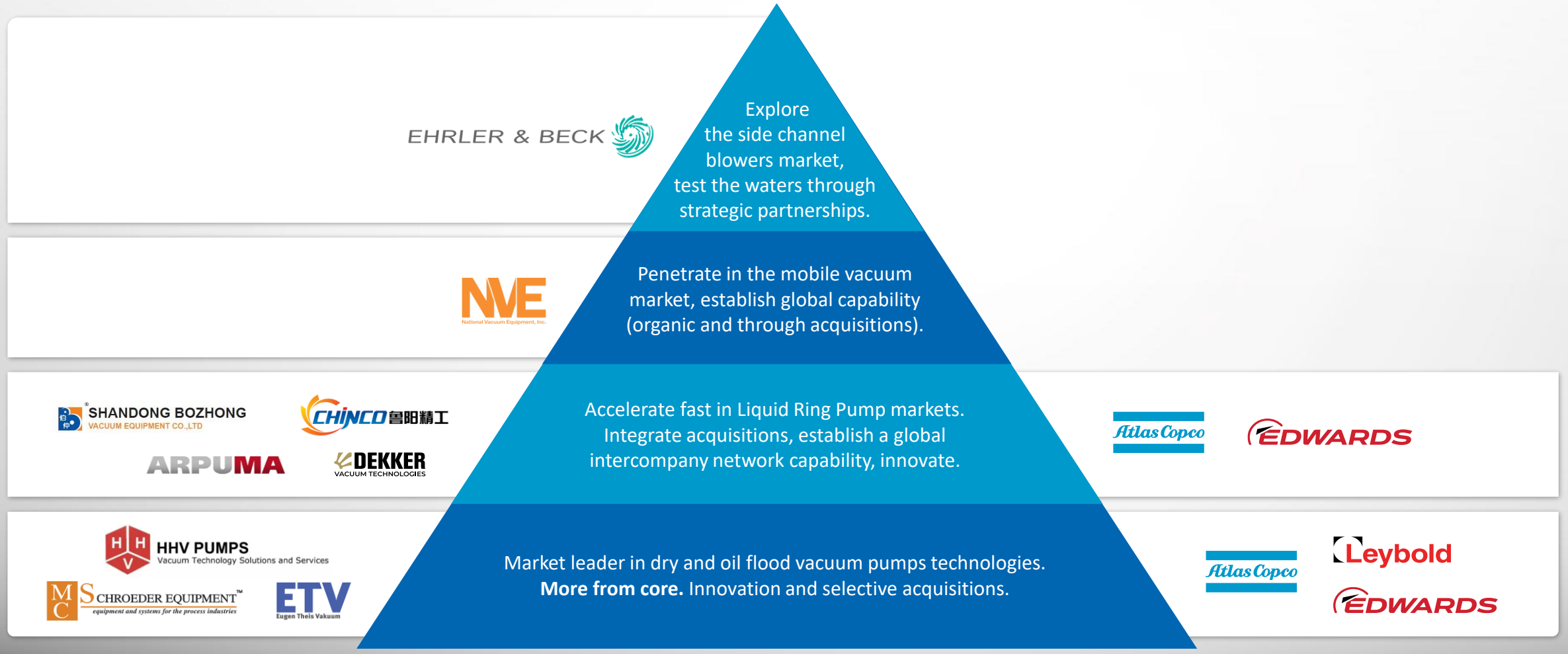
OEM – Pump manufacturing

Hundreds of small sized distributors and system companies that possess unique and in-depth vital application knowledge

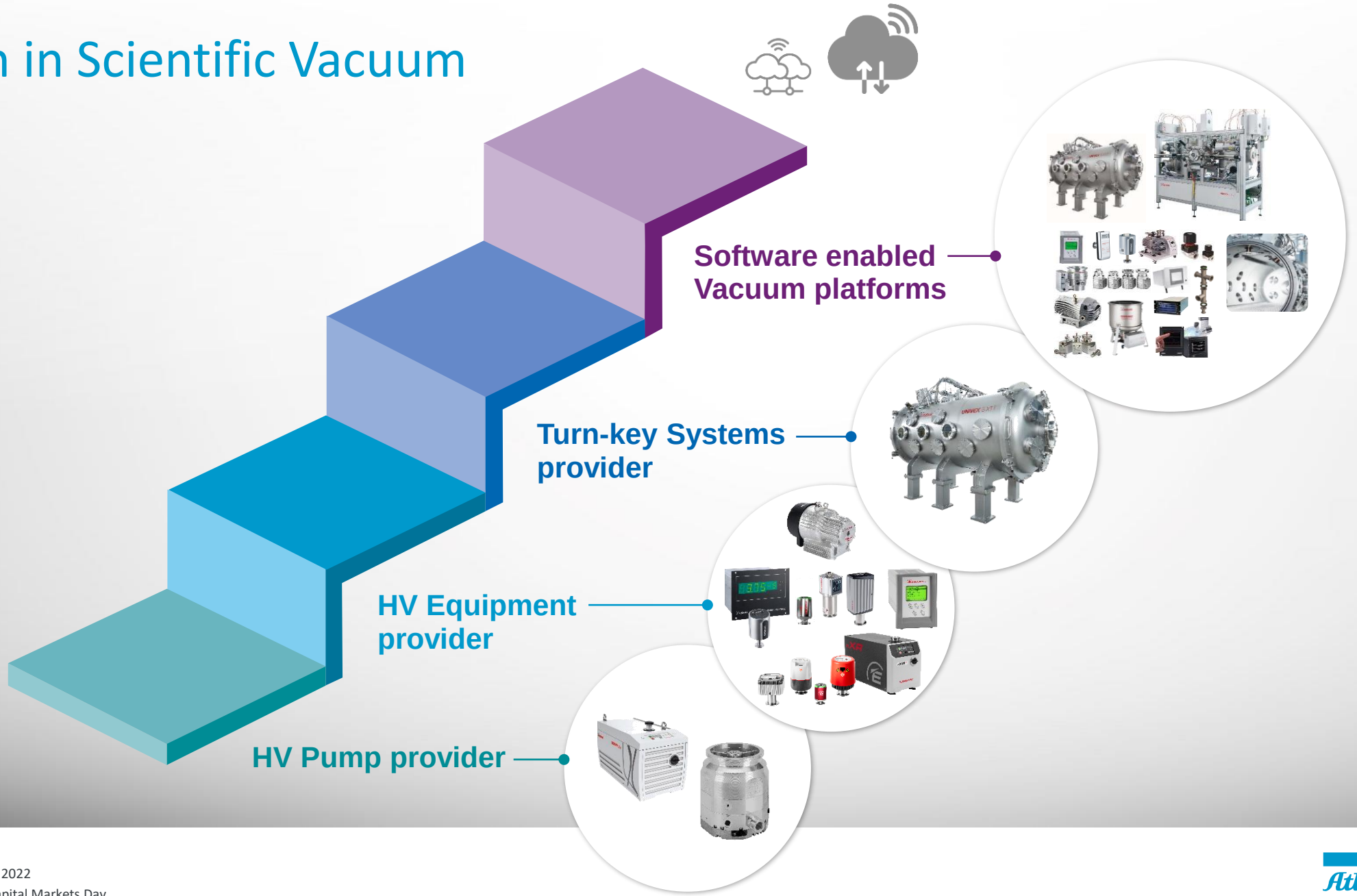
Realize full potential and growth acceleration

Less then 50 industrial vacuum OEMs with IP, factory and pump production operations

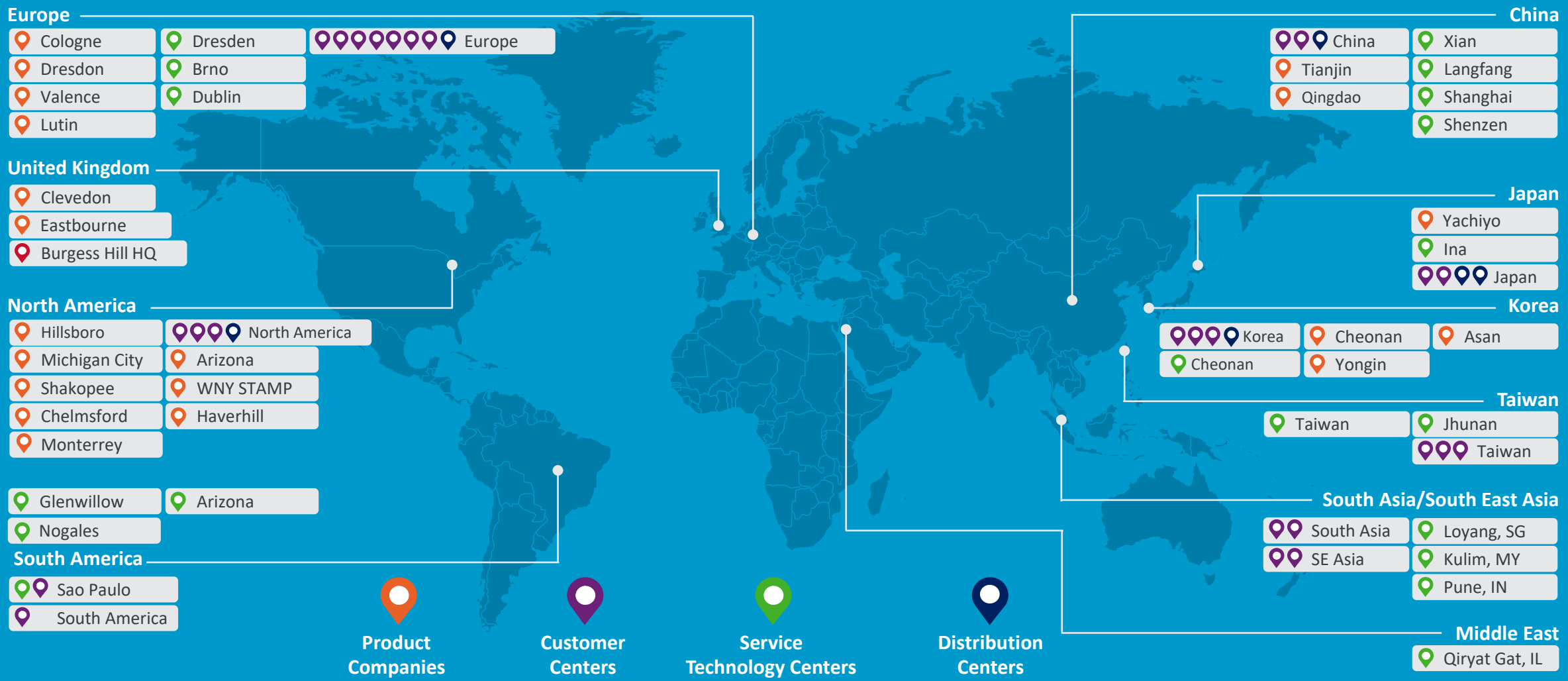
Market leader in Industrial and Scientific Vacuum



Growth in Scientific Vacuum



Vacuum Technique Global Footprint



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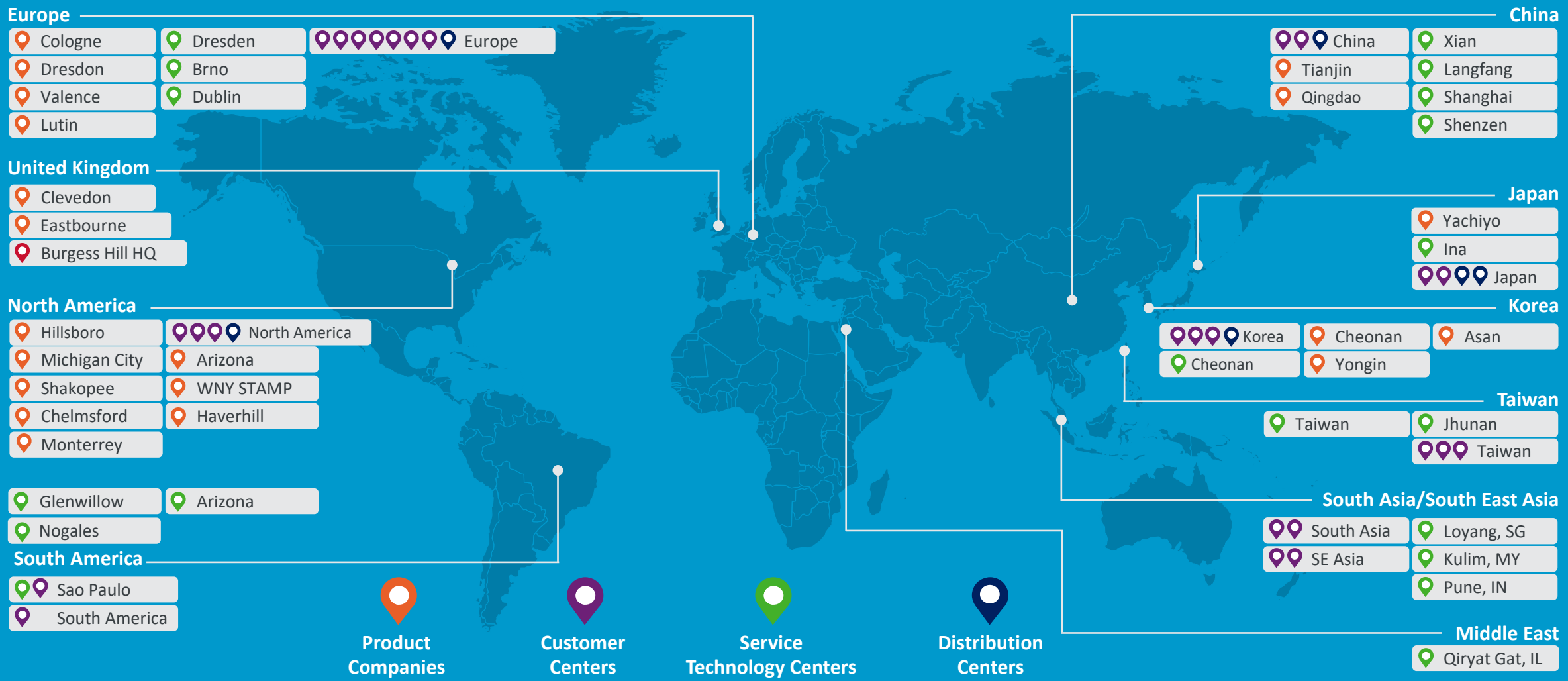
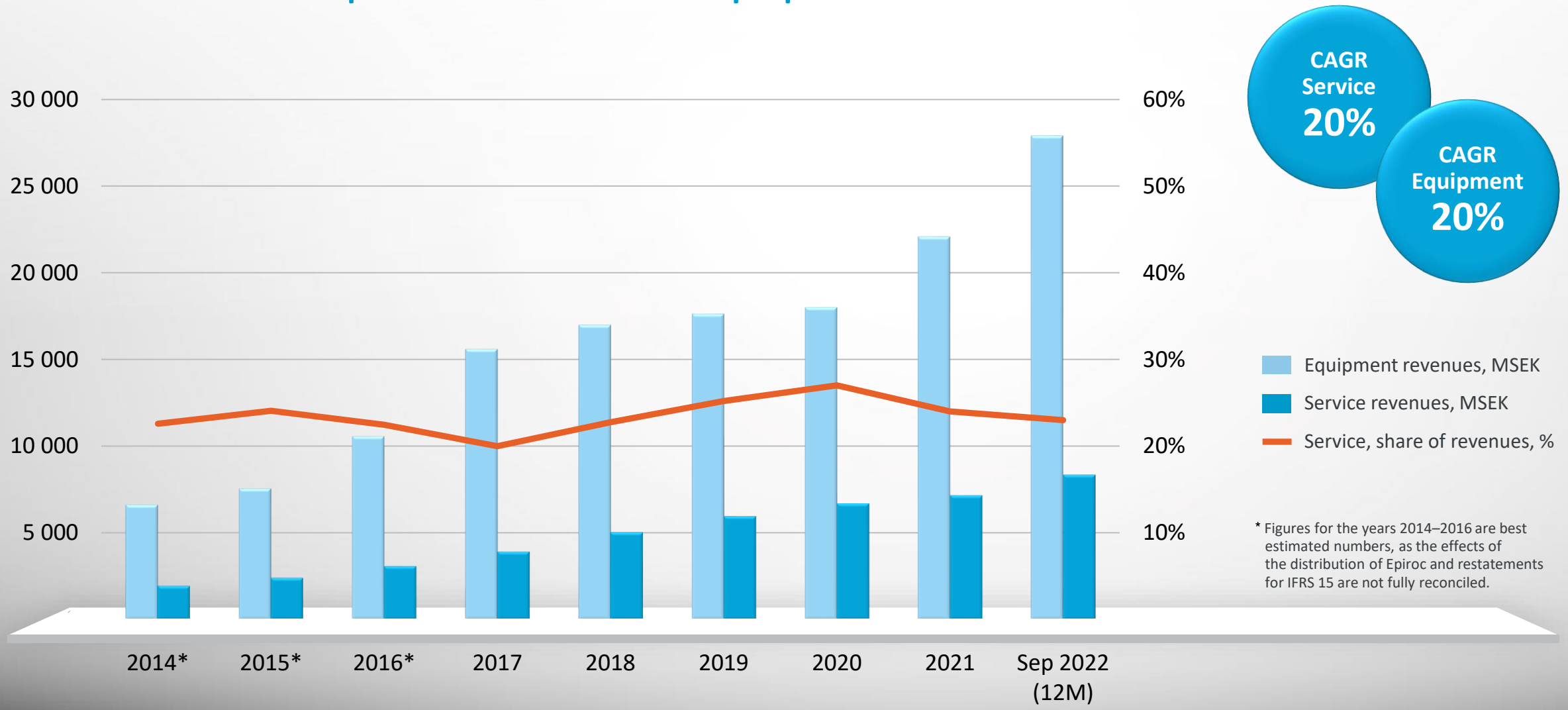


Vacuum Technique – Growth in equipment and service



* Figures for the years 2014–2016 are best estimated numbers, as the effects of the distribution of Epiroc and restatements for IFRS 15 are not fully reconciled.

Vacuum Technique Service strategy

Convenience, Quality and Customer Value

SALES

Proactive sales management – territory & Installed Base potential guiding activities, presence, lead generation

OEM and distributor management, supported by active price management and growth through acquisitions

SERVICE BUSINESS MODEL TRANSFORMATION

Connectivity

Expanding services, competitor business and online presence

Service strategy

Exceed customer expectations through planned business and online order tracking

CUSTOMER FOCUS

Administration, planning tech support and United Field Service with increased efficiency, supported by local4local, freight & inventory optimization

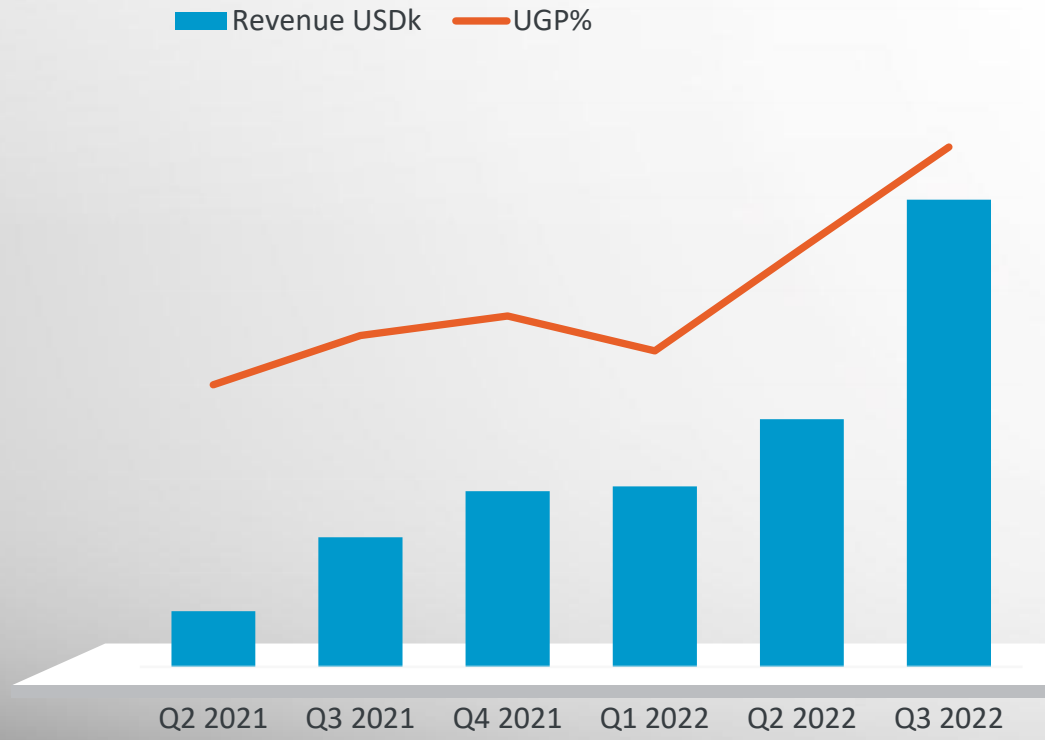
CONSOLIDATION

GENIUS Portal

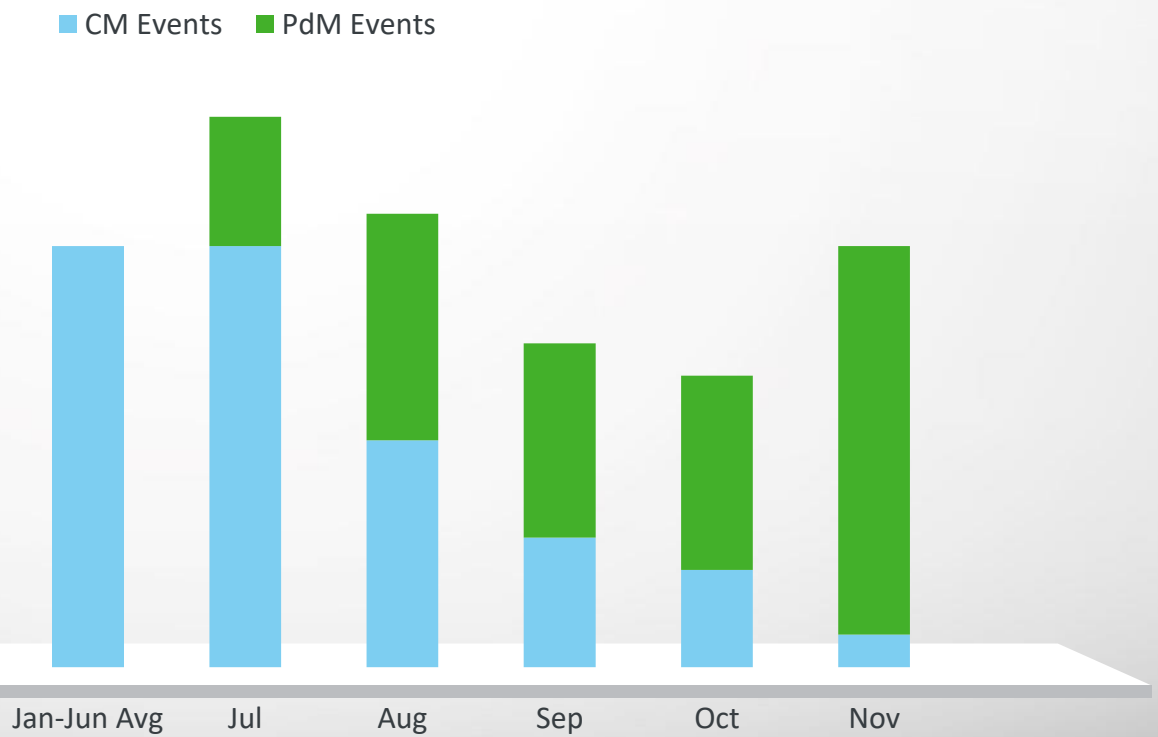
Semiconductor Service

Uptime based contracts

TRANSFORMATION REVENUE AND UGP TREND



CORRECTIVE MAINTENANCE VS PREDICTIVE MAINTENANCE
Events 2021



Vacuum Technique People & Culture Strategy

- Continue to provide different entry opportunities to attract and develop a diverse, innovative and agile talent and skills-based pipeline.
- Invest in early careers to meet our demographic and growth goals. Target 5% of workforce joining via one of our early careers programs.

- Develop future proof leaders who role model key behaviors & coach for high performance.
- Develop inclusive leadership behaviors that explicitly drive our D&I agenda, our Sustainability agenda and our focus on Growth mindset.

- An inclusive, diverse culture that inspires wellbeing, creativity and passion, self driven learning and where people have a sense of belonging and purpose.
- Investment in wellbeing activities to help our people better manage their own wellbeing to achieve their full potential.

KEY ENABLERS: Digitalization and data analytics to support speed, efficiency and informed decision making

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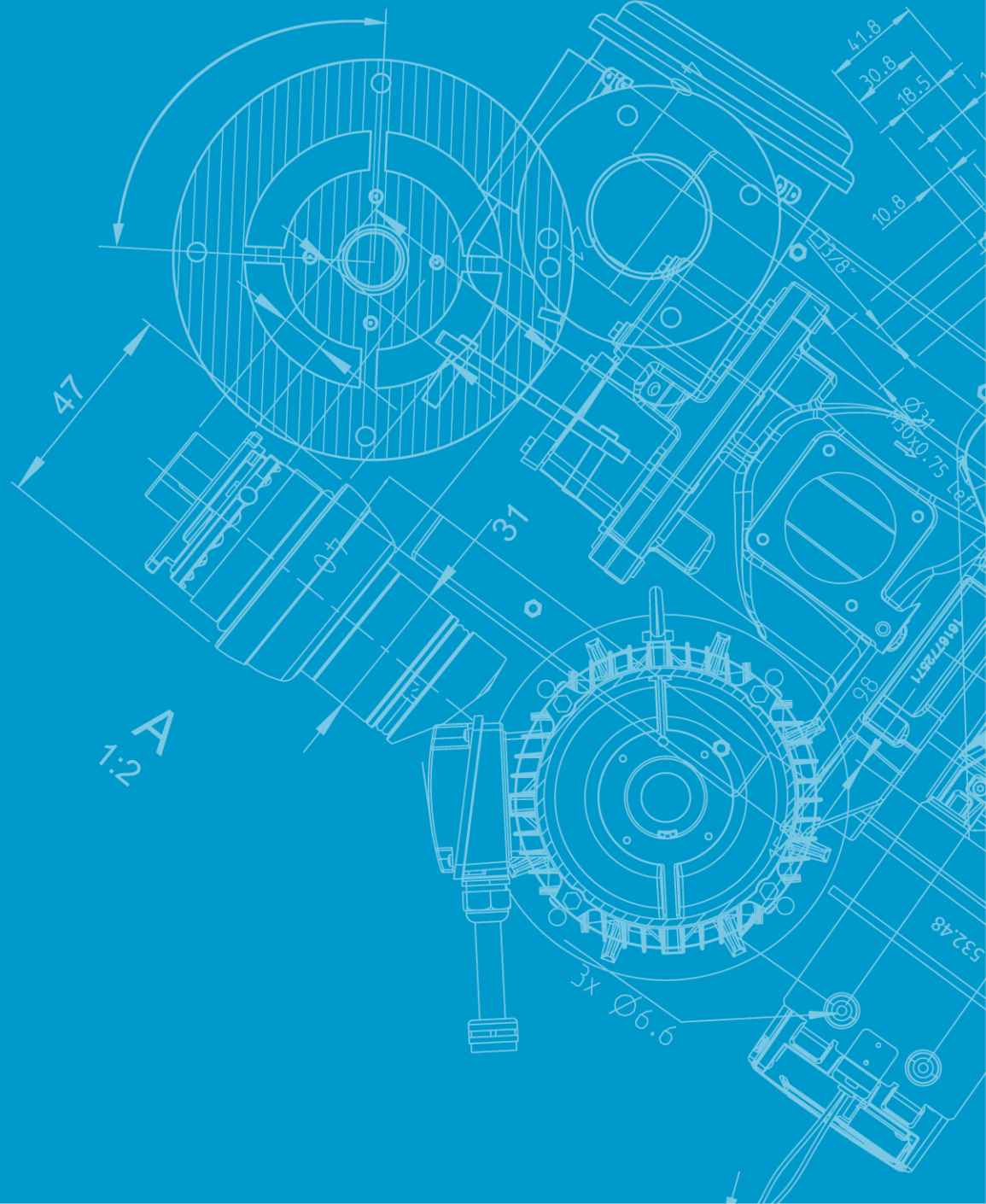
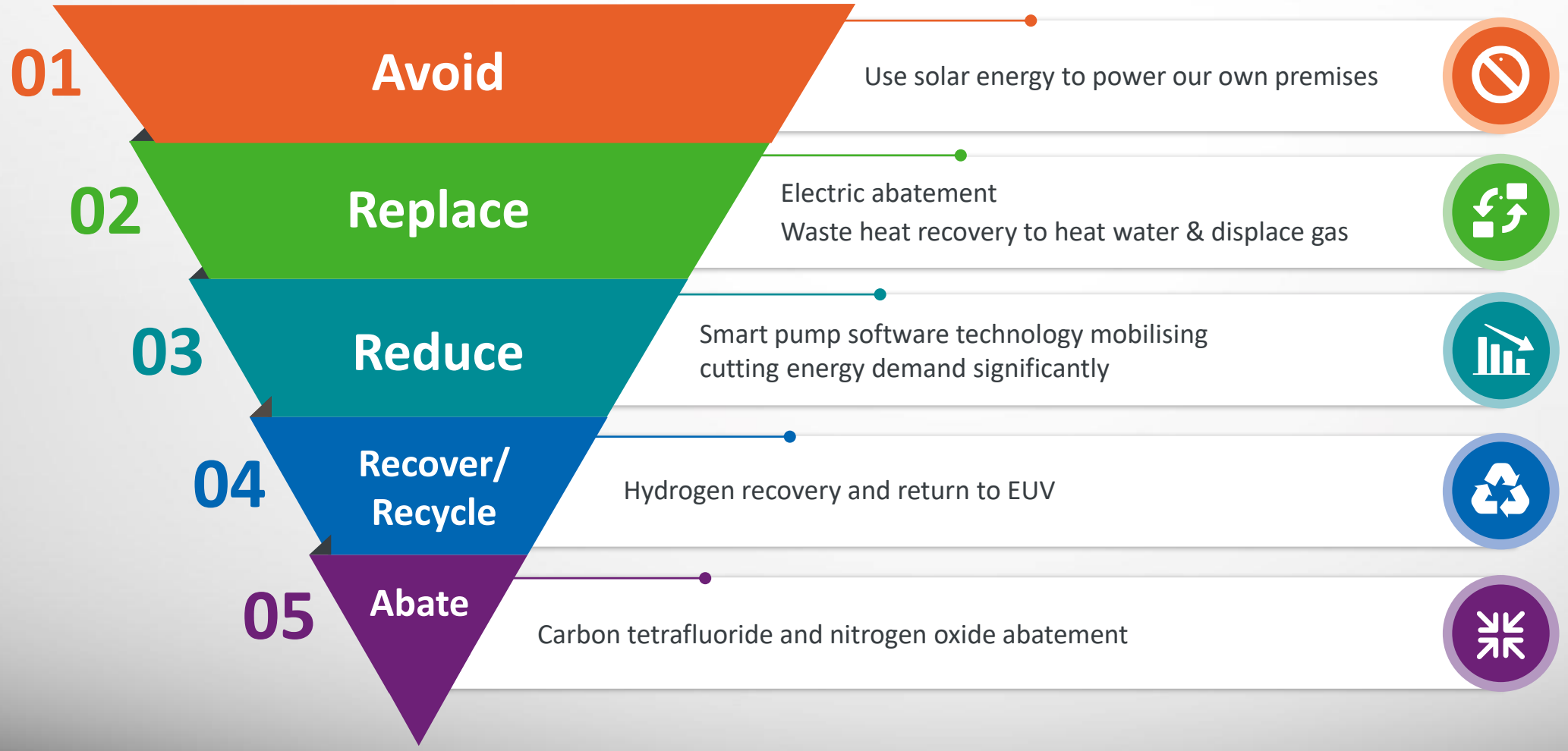
An enabler of the transition to a low carbon society



Towards a low carbon society – CO_2 reduction hierarchy



Summary – Vacuum Technique

- Develop channels organic + inorganic
- Expand core business
- Continuous innovation
- Capacity to take share
- Local for local
- Connectivity and uptime
- Data delivering growth
- Looking after our people
- Contributing to a low carbon society

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Forward-looking statements

“Some statements herein are forward-looking, and the actual outcome could be materially different. In addition to the factors explicitly commented upon other factors could have a material effect on the actual outcome. Such factors include, but are not limited to, general business conditions, fluctuations in exchange rates and interest rates, political developments, the impact of competing products and their pricing, product development, commercialization and technological difficulties, interruptions in supply, and major customer credit losses.”