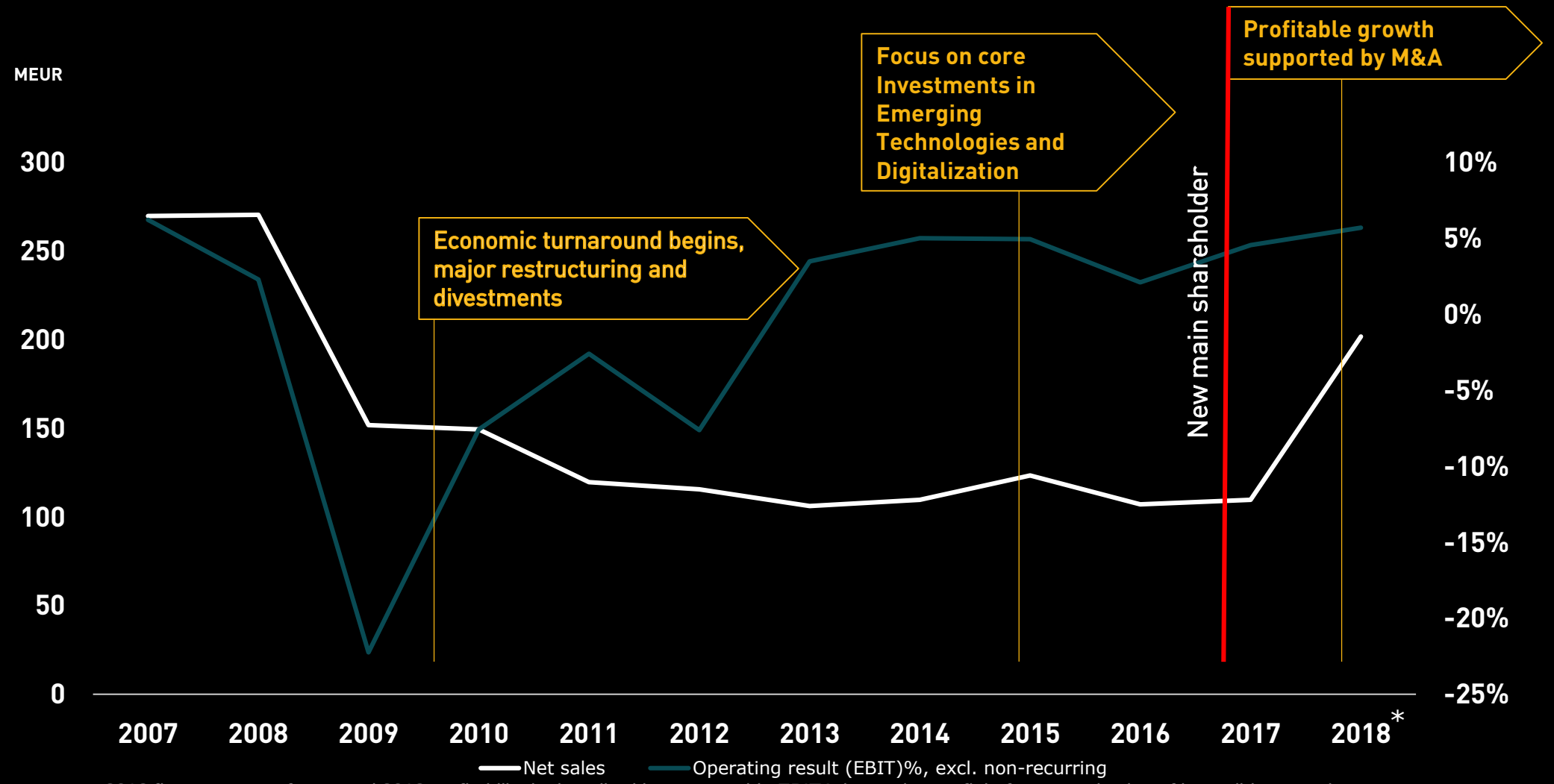
FROM INDUSTRIAL GOODS TO TECHNOLOGY COMPANY

through Innovation, Cooperation and breakthrough Transformation

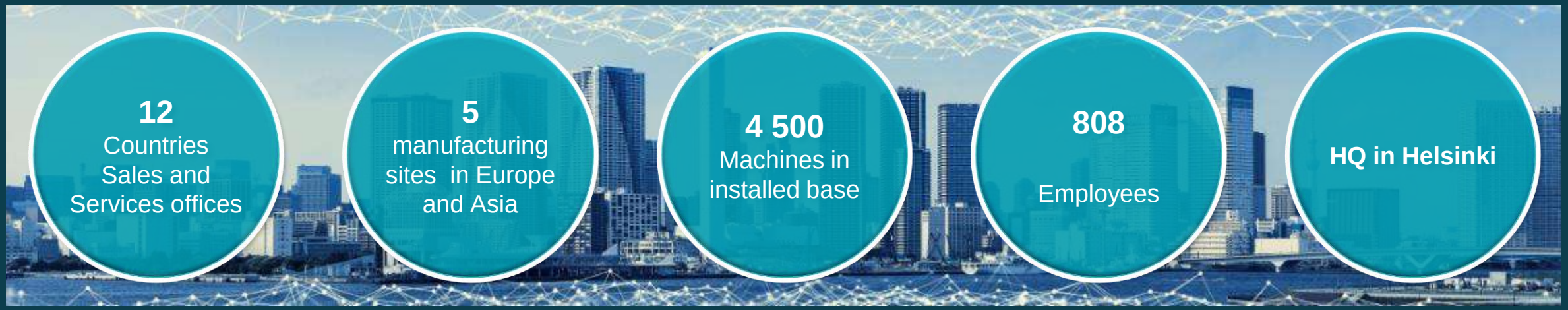
President & CEO Arto Metsänen, Glaston Corporation

Our transformation journey



*2018 figures are pro forma and 2018 profitability is described by comparable EBITA (operating profit before amortization of intangible assets) and excluding purchase price allocation

Glaston Today



Our Business

- **Digitalization** and growth of intelligent **smart glass solutions** are re-shaping the glass industry. We respond to the growing role of glass
- Glaston's core competence is in **glass processing** technology. We develop, design and manufacture glass processing machinery and equipment
- Our **services** meet globally to the most demanding needs of our clients and guarantee the sustainable long life cycles of our products
- Our leadership in technology is based on both our own **research & development** as well as our understanding of **emerging new technologies**

Our purpose

GLASTON BUILDS A BETTER TOMORROW THROUGH SAFER, SMARTER, MORE ENERGY EFFICIENT GLASS SOLUTIONS

GLASTON ENABLES THE DEVELOPMENT AND COMMERCIALIZATION OF NEW GLASS TECHNOLOGIES

Emerging Technologies

- In 2017 Glaston established the **Glaston Emerging Technologies unit**
- The unit offers consulting and planning services for smart glass and energy glass production as well as solar energy applications
- The unit also sells and delivers the production lines in question

- In 2015, Glaston made an investment in the Californian nanotechnology company Heliotrope Technologies Inc. Heliotrope develops electrochromic smart glass technology that regulates the heat and light transmissivity of glass precisely and quickly

GLASTON HAS THE HIGHEST SHARE OF R&D IN ITS INDUSTRY

Innovation has never been compromised

Customer focused innovations

Towards automated processing

ONLINE REAL TIME REPORTS

PREDICTIVE MAINTENANCE

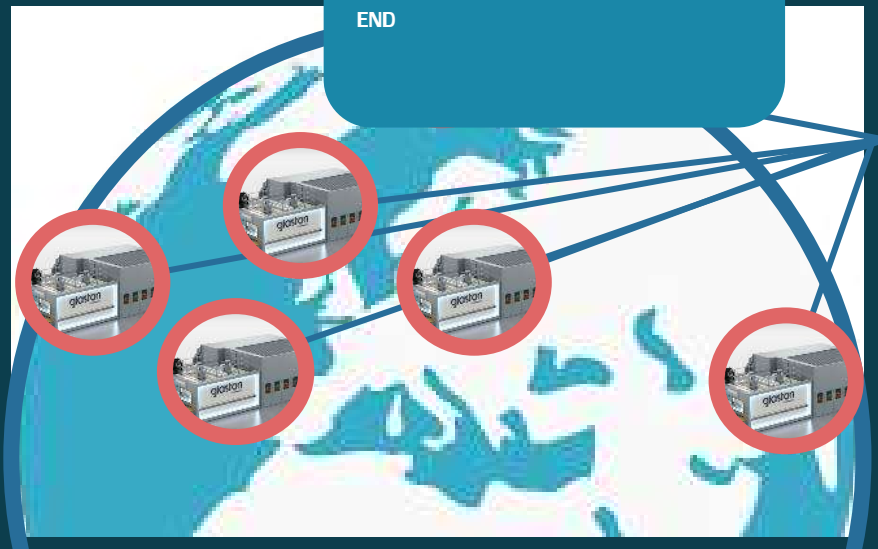
RECIPES & AUTOMATION

STRATEGIC PARTNERSHIP WITH TIETO TO INCREASE THE LEVEL OF DIGITALIZATION AND AUTOMATION OF GLASTON'S PRODUCTS SERVICES

tieto

BUSINESS INTELLIGENCE

MORE THAN 100 GLASTON MACHINES CONNECTED TO THE CLOUD SO FAR – BYSTRONIC GLASS EQUIPMENT INTEGRATION WILL START BY YEAR-END



BIG DATA SOURCES

- PROCESS DATA
- QUALITY DATA
- PRODUCT DATA
- RAW MATERIAL DATA
- MAINTENANCE DATA

MACHINE LEARNING FOR INDUSTRY APPLICATIONS (MIDAS)-PROJECT

DIMECC

ARTIFICIAL INTELLIGENCE DEVELOPMENT

Customer focused innovations

Improved productivity, uptime and quality control

GLASTON SUPPORT ROOM FOR REAL-TIME CUSTOMER SUPPORT

ARTIFICIAL INTELLIGENCE FOR AUTOMATED PROCESSES

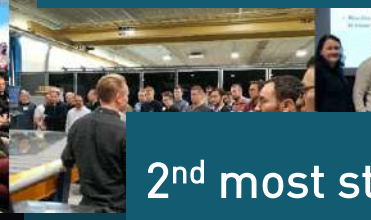
Open innovation – co-creation

GPD Step Change

Step Change and GPD in numbers:
764 participants (+ High Rise n. 100 participants)
59 Step Change participants, presenting 40 teams
20 Step Change exhibitors
6 Step Change reverse pitching
19 Workshops with 304 participants
405 One-to-One meeting participants

Hack the Glass!

Prize: 10 000 euros
up to 3 winning teams
for R&D piloting project



72 SW developers
24 Teams innovating
9 Teams to continue with Glaston
3 Days of Innovation
2 New Product Ideas
1 Winner - TUT Machine Vision

XR CHALLENGE
GOES INDUSTRY

XR Challenge is an international challenge competition for developers in virtual, augmented and mixed reality.

Valmet FORWARD · glaston · 8760 Fastems · VIRTUAL REALITY FINLAND RY · BUSINESS TAMPERE · BUSINESS FINLAND · TAMK · Leonidas

2nd most start-up friendly company in Finland

Lessons learned

FOCUS

HAVE THE COURAGE TO BE IN THE FOREFRONT OF THE INDUSTRY

NEVER COMPROMISE ON INNOVATION


glaston