



**VISION
MARKETS** 
Your global growth in Machine Vision

Market Overview: Automation in the Food Industry

2023-12-11, EPIC Webinar, Dr. Ronald Müller



About Us

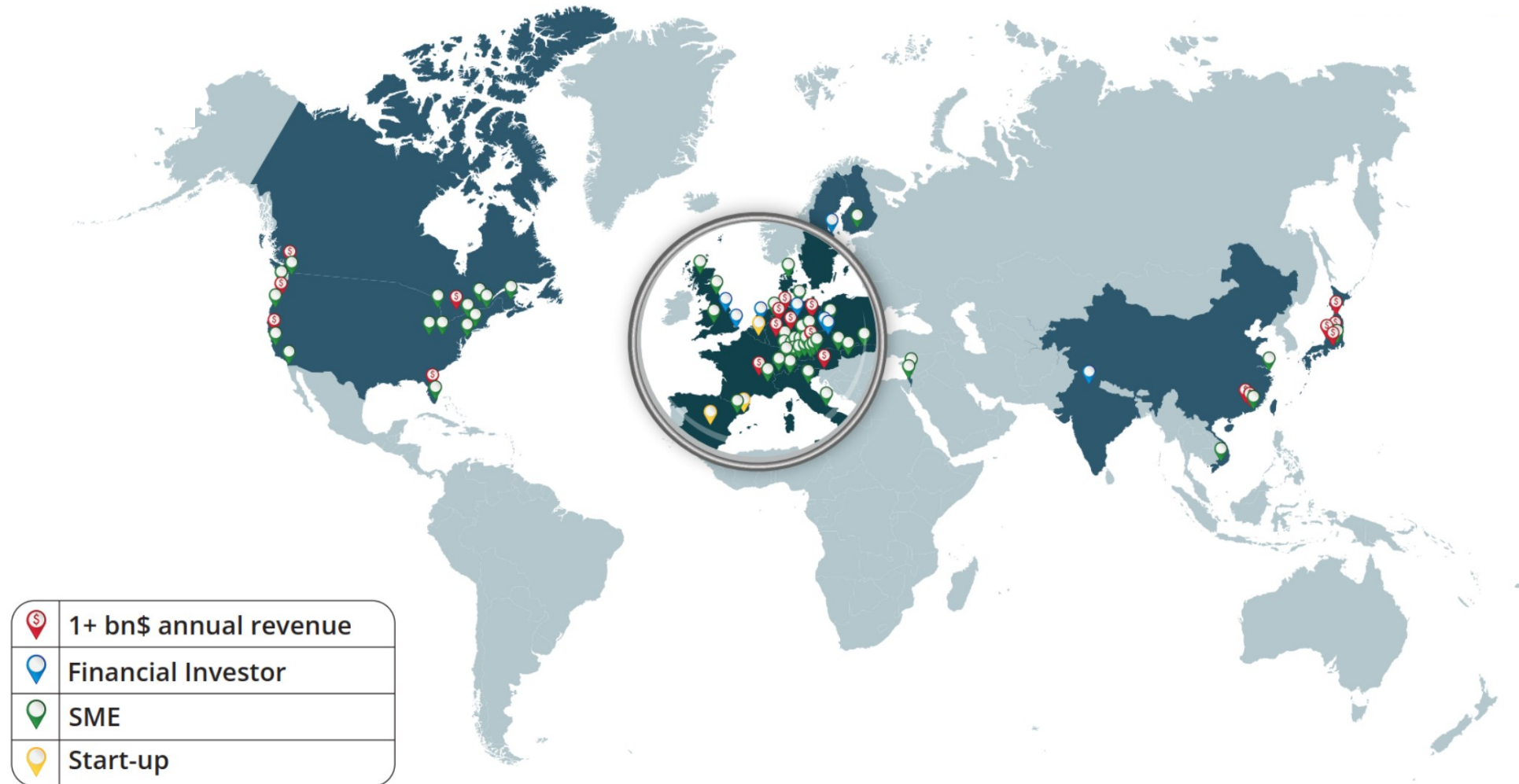
Founded in 2014, Vision Markets is the leading management and marketing consulting firm exclusively dedicated to the global machine vision market. We provide consulting services in four business lines: Strategy, Mergers & Acquisitions, Recruitment, and Marketing.

Our Mission

Vision Markets helps to leverage the full potential of Machine Vision for the world by unleashing the full potential of the best players in the market.



Vision Players and Investors Trust our Advice, globally



The Food Industry is a major driver of economies with a major impact on labor, cost of living, and the environment

The Food Industry and its Impact

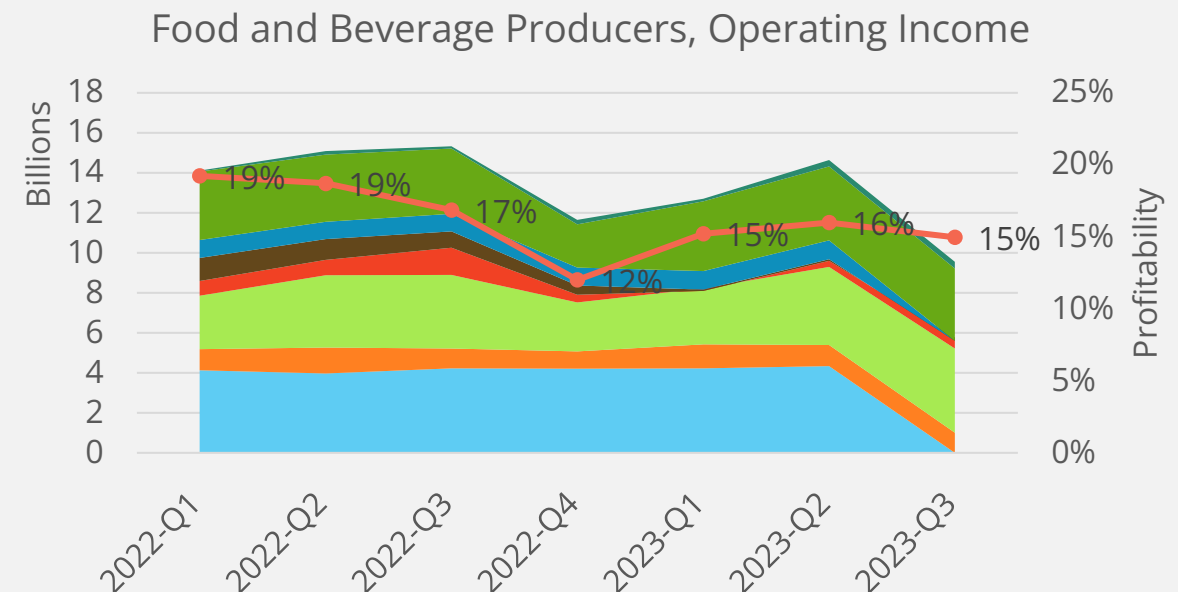
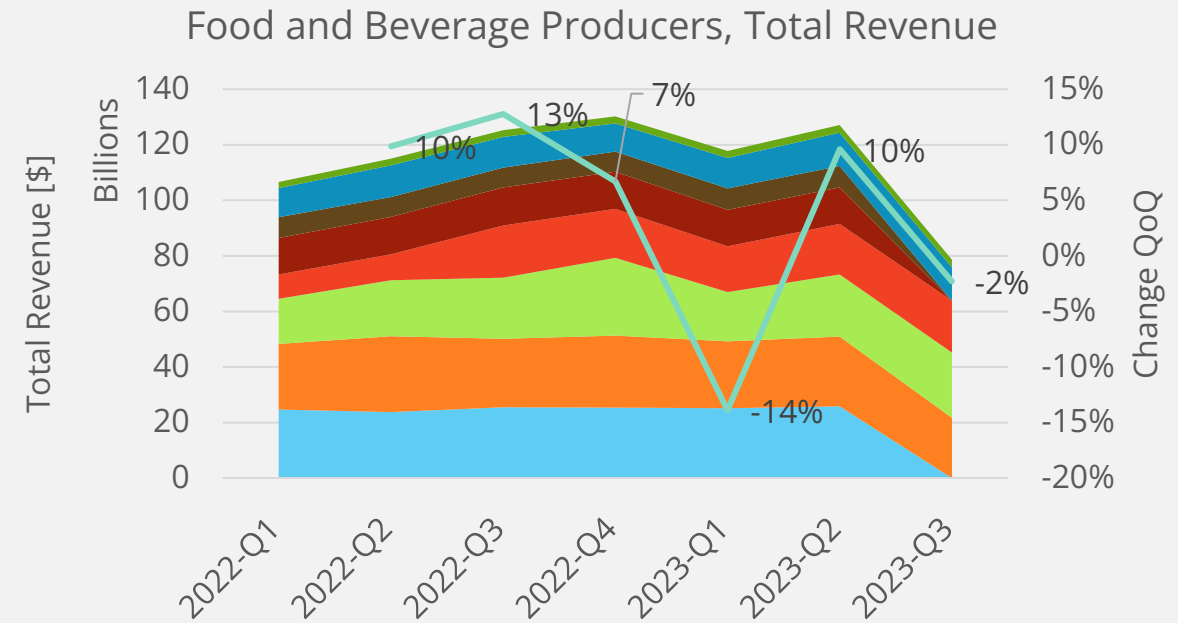
- ▶ Strong dependency on labor: employs 1 bn people, ~1/3 of the global workforce
- ▶ Dominated by 10 major companies
- ▶ 58% of global seeds are produced by 4 companies
- ▶ High volatility in pricing, 27% price increase in the last 5 years in the US (<https://fred.stlouisfed.org/series/CPIFABSL>)
- ▶ 1/3 of food is wasted, mostly at consumers, stores, farms
- ▶ 40% of US corn used for fuel
- ▶ Agriculture is responsible for 75% of global deforestation
- ▶ By 2050, 50% more food is required to feed the global population compared to 2010



The Food Industry is among the few drivers of the non-service GDP in 2023 in NA & EU

- ▶ 8 companies, 341 bn\$ revenue in 2022
- ▶ YoY growth in 2023, ~10+% (not inflation adjusted)
- ▶ Varying profitability depending on product portfolio from 3 to 32%
- ▶ Decreased profitability due to cost of labor and energy (esp. in Europe)
- ▶ Slight decline in meat and dairy product consumption

Leading Food Producers in 2022 and 2023

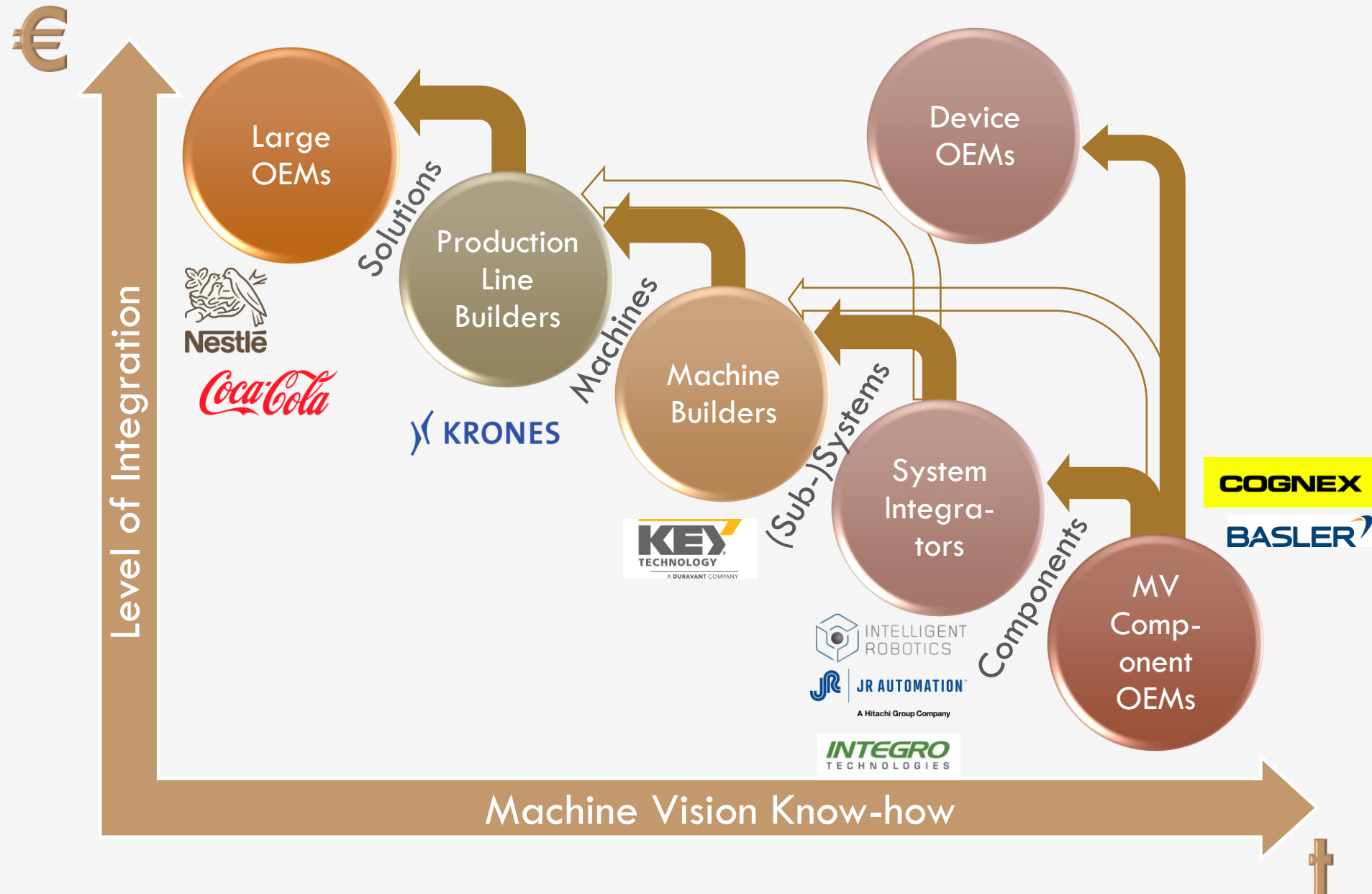


Schematic of the Value Chain in the Food Automation Industry

Long value chain in Food Automation due to technical complexity plus a scattered supplier and target markets

Strong margin accumulation

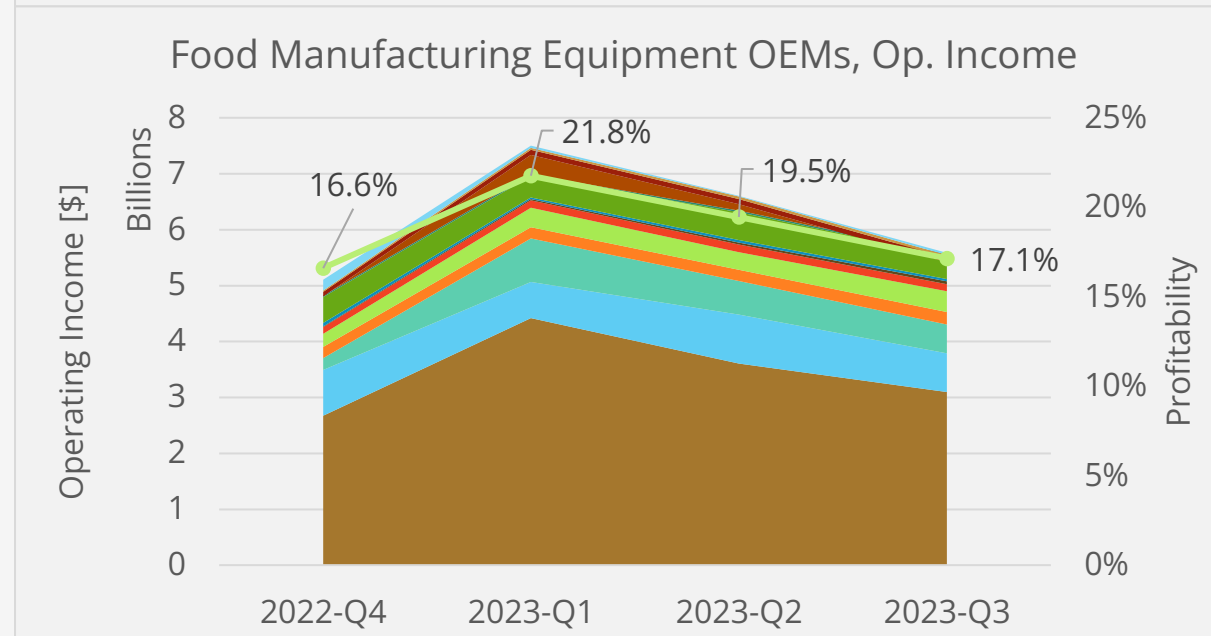
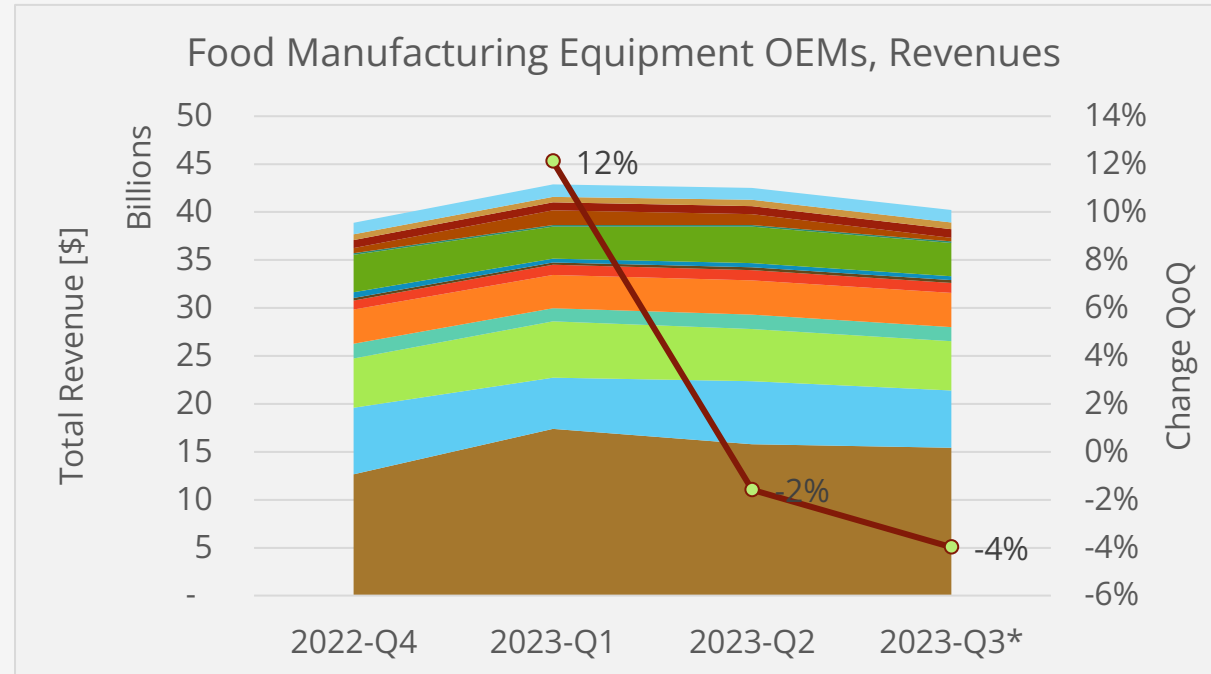
With increasing know-how, players tend to integrate up and down the value chain



The Food Industry is among the few drivers of non-service GDP growth in 2023 and will be in 2024

Leading Food Manufacturing Equipment OEMs in 2023 and 2024

- ▶ 13 companies, 131 bn\$ revenue in from Q4'22 to Q3'23 (incl. Deere with 61 bn\$)
- ▶ Deere:
YoY revenue +14% FY2023, -10% FY2024
- ▶ AGCO:
YoY revenue +21% Q1-3 2023 (+26% in South America)
- ▶ Alfa Laval:
YoY revenue +22% in 2023 +9% in 2024
- ▶ +5% YoY revenue growth in 2023 expected (w/o Deere)
Krones: +11 to 13%
- ▶ Outlook for 2024:
+4 to 6% of revenues in machinery sales



Growth Drivers for Automation in the Food Industry



Safety

- ▶ Regulatory requirements
- ▶ Tracing
- ▶ Less human errors



Quality

- ▶ Esthetics
- ▶ Preserved nutrients
- ▶ Less harmful substances



Yield

- ▶ Less waste
- ▶ Precise packaging



Productivity

- ▶ Pressure from growing population
- ▶ Higher throughput
- ▶ Lower cost



Human Labor Issues

- ▶ Labor shortage!
- ▶ Unionization
- ▶ Cost from spiraling inflation



Innovation

- ▶ AI
- ▶ 3D Vision
- ▶ Hyperspectral imaging
- ▶ Laser processing

Novel photonics technologies reveal new opportunities for optimized food processing

A Lively Start-up Landscape in Food

- ▶ New processing methods (lasers, robotics)
- ▶ Smart home appliances and consumer electronics
- ▶ Deep Learning for recognition and classification
- ▶ Smart farming (seeds, weeds, pests, fertilization, harvesting)



Our latest market reports:

- AI Inference Cameras

- Embedded Vision Cameras

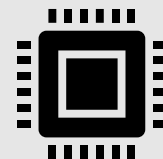
- 3D Cameras (stereo, active stereo, structured light)

AI Inference Cameras



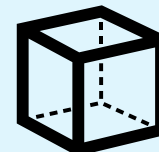
- ▶ Database of 90+ cameras
 - › 32 technical attributes per camera
 - › 1400 attributes filled
- ▶ Company briefs of 20+ OEMs of inference cameras
 - › Size
 - › Market positioning
- ▶ Commercial applications
- ▶ Quantitative market size on request

Embedded Vision Cameras



- ▶ Market value in USD
 - › by supplier
 - › by region of supply
 - › by price level
- ▶ Company briefs and market share by ~40 players (OEMs, ODMs, engineering services)
- ▶ Key technologies

3D Cameras (stereo, active stereo, structured light)



- ▶ Database of 300+ cameras
 - › 74 technical attributes per camera
 - › 7500 attributes filled (in progress)
- ▶ Company briefs of 35+ OEMs of 3D cameras
 - › Size
 - › Market positioning
- Market value by region and industry

Customized Market Analyses



- ▶ Quantitative market size
 - › by product type
 - › by target industry / application
 - › by region
 - › by sales channel
- ▶ Technology screening
 - › Compiling the state of the art
 - › Competitive analysis

Thank you

Dr. Ronald Müller
CEO, Vision Markets

EU: +49 89 21 553 665
US: +1 321 348 4084
r.mueller@markets.vision

Jean-Philippe Roman
Senior Marketing Consultant

m: +49 170 7964158
jp.roman@markets.vision

Bernhard Hofer
Senior Recruitment Consultant

m: +49 176 9693 4721
b.hofer@markets.vision



www.markets.vision

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