INVESTOR PRESENTATION

February 2020
Safe Harbor Statement

This presentation contains statements about management’s future expectations, plans and prospects of our business that constitute forward-looking statements, which are found in various places throughout the press release, including, but not limited to, statements relating to expectations of orders, net sales, product shipments, expenses, timing of purchases of assembly equipment by customers, gross margins, operating results and capital expenditures. The use of words such as “anticipate”, “estimate”, “expect”, “can”, “intend”, “believes”, “may”, “plan”, “predict”, “project”, “forecast”, “will”, “would”, and similar expressions are intended to identify forward looking statements, although not all forward looking statements contain these identifying words. The financial guidance set forth under the heading “Outlook” contains such forward looking statements. While these forward looking statements represent our judgments and expectations concerning the development of our business, a number of risks, uncertainties and other important factors could cause actual developments and results to differ materially from those contained in forward looking statements, including any inability to maintain continued demand for our products; failure of anticipated orders to materialize or postponement or cancellation of orders, generally without charges; the volatility in the demand for semiconductors and our products and services; failure to develop new and enhanced products and introduce them at competitive price levels; failure to adequately decrease costs and expenses as revenues decline; loss of significant customers, including through consolidation or the emergence of industry alliances; lengthening of the sales cycle; acts of terrorism and violence; disruption or failure of our information technology systems; inability to forecast demand and inventory levels for our products; the integrity of product pricing and protection of our intellectual property in foreign jurisdictions; risks, such as changes in trade regulations, currency fluctuations, political instability and war, associated with substantial foreign customers, suppliers and foreign manufacturing operations, particularly to the extent occurring in the Asia Pacific region; potential instability in foreign capital markets; the risk of failure to successfully manage our diverse operations; any inability to attract and retain skilled personnel; those additional risk factors set forth in Besi’s annual report for the year ended December 31, 2018; and other key factors that could adversely affect our businesses and financial performance contained in our filings and reports, including our statutory consolidated statements. We expressly disclaim any obligation to update or alter our forward-looking statements whether as a result of new information, future events or otherwise.
Agenda

I. Company Overview

II. Market

III. Strategy

IV. Financial Update and Summary

V. Appendix
I. COMPANY OVERVIEW
Besi Overview

Corporate Profile
• Leading assembly equipment supplier with #1 and #2 positions in key markets. 32% addressable market share
• Broad portfolio: die attach, packaging and plating
• Strategic positioning in substrate and wafer level packaging
• Global operations in 6 countries; 1,596 employees. HQ in the Netherlands

Financial Highlights
• LTM revenue and net income of € 356.2 million and € 81.3 million
• Cash/deposits at Q4-19: € 408.4 million
• Net cash/deposits at Q4-19: € 130.3 million
• € 725.8 million of dividends and share repurchases since 2011*

Investment Considerations
• Applications for digital society key long term drivers: Internet of Everything, AI, Big Data, Cloud computing, 3D imaging, 5G network roll out
• Advanced packaging is critical part of semi value chain
• China market growth and share gains also benefit revenue development
• Asian production optimization, European overhead reduction and common parts initiatives also help drive profit potential

* Assumes proposed 2019 dividend payment of € 1.01 per share for approval at April 30 AGM

February 2020
Company History

Die Attach Acquisitions

- Expanded advanced packaging leadership into die attach area
- Gained market share organically and via acquisitions
- Gained mindshare with key industry leaders
- Growth in China, key customers and electronics supply chains

Product Strategy

- Asian production transfer combined with European restructuring enhanced profit potential
- Developed Asian production hubs (MY and CN), Singapore development/support center and Asian supply chain
- Scalability enhanced. Break even revenue levels reduced

Successful Execution of Strategic Plan Initiatives

- Achieved peer leading gross and net margins and ROI
- Improved cash flow generation
- Implemented attractive capital allocation policy

Financial Metrics

- Revenue
- Gross Margin

Gross Margin (%)

Revenue (€ millions)

2003

€ 85.5

25.9%

2019

€ 356.2

55.8%

February 2020
Best in Class Product Portfolio

Die Attach

**Die Bonding**
- 2100 xP plus/hs
- 2100 sD plus/PPP plus/2100 SC
- 2100 sD advanced
- 2100 SSI

**Multi Module Attach**
- 2200 evo
- 2200 evo plus
- 2200 evo hS New
- 2200 evo advanced

**Flip Chip**
- 8800 CHAMEO advanced
- 8800 TC advanced
- 8800 FC QUANTUM advanced
- 2100 FC hS New

**Die Sorting**
- WTT New
- TTR New

**Die Lid Attach**
- DLA New

Packaging

**AMS-i/X**
- Leadframe
- MEMS
- Sensors

**AMS-LM**
- Substrate

**FML** New
- Wafer
- Panel

**FCL**
- X
- P New
- X/P New

**FSL**
- Singulation
- Sorting

Plating

**Plating**
- Leadframe
- Film & Foil
- Solar
- Battery

In Development

- Next generation Die Attach
- Next generation Packaging
- Common modules

February 2020
Diversified, blue chip customer base, top 10 = 44% of 2019 revenue
Leading IDMs and subcontractors. 61%/39% split in 2019
Also supply leading fabless companies: Qualcomm, Broadcom, MediaTek via subcontractors
Long term relationships, some exceeding 50 years
Product Positioning

Semiconductor Manufacturing Equipment
(2019: $60.6B)*

<table>
<thead>
<tr>
<th></th>
<th>Front end: $52.3B (86.3%)</th>
<th>Assembly: $3.0B (5.0%)</th>
<th>Test: $5.3B (8.7%)</th>
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</thead>
</table>

Semiconductor Assembly Process

<table>
<thead>
<tr>
<th>Dicing</th>
<th>Die Attach</th>
<th>Wire Bond</th>
<th>Packaging**</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

- Leadframe Assembly
- Substrate Wire Bond Assembly
- Substrate Flip Chip Assembly/TCB
- Wafer Level Packaging Flip Chip Assembly/Fan Out

* Source: VLSI January 2020
** Includes Molding, Trim and Form and Singulation Systems

February 2020
Operational Profile

- Development activities in Europe
- Production in Asia
- Sales/service activities in Asia, US and Europe

### Key Sites
- Sales Office
- Production Site
- Sales, Production and R&D Site

#### YTD December 31, 2019

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<thead>
<tr>
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<th>Europe/NA</th>
<th>Asia</th>
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<tr>
<td>Revenue (MMs)</td>
<td>€ 99.0</td>
<td>€ 257.2</td>
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<tr>
<td></td>
<td>27.8%</td>
<td>72.2%</td>
</tr>
<tr>
<td>Headcount</td>
<td>507</td>
<td>1,089</td>
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<td></td>
<td>31.8%</td>
<td>68.2%</td>
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<tr>
<td>Year Ended December 31,  (€ millions, except share data)</td>
<td>2017</td>
<td>2018</td>
</tr>
<tr>
<td>----------------------------------------------------------</td>
<td>-------</td>
<td>-------</td>
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<tr>
<td>Revenue</td>
<td>592.8</td>
<td>525.3</td>
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<td>% seq. change</td>
<td>58%</td>
<td>-11%</td>
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<tr>
<td>Gross margin</td>
<td>57%</td>
<td>57%</td>
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<tr>
<td>EBITDA</td>
<td>222.8</td>
<td>187.7</td>
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<tr>
<td>Pretax income</td>
<td>199.2</td>
<td>154.9</td>
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<tr>
<td>Net income</td>
<td>173.2</td>
<td>136.3</td>
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<td>Net margin</td>
<td>29%</td>
<td>26%</td>
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<tr>
<td>EPS (diluted) (a)</td>
<td>2.17</td>
<td>1.68</td>
</tr>
<tr>
<td>EPS (basic) (a)</td>
<td>2.32</td>
<td>1.83</td>
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<tr>
<td>Dividend per share (a)</td>
<td>2.32</td>
<td>1.67</td>
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<tr>
<td>Net cash</td>
<td>247.6</td>
<td>199.4</td>
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</table>

(a) Adjusted for 2:1 stock split in May 2018

**Long term, step function revenue growth in cyclical business**
- Last peak reached in 2017 at € 592.8 million
- Current performance affected by downturn starting in Q2-18
- Q4-19 appears to be end of downturn. Orders +22.3% vs. Q3-19

**Strong margins and profit potential**
- Attractive quarterly gross margins of 55%+ achieved
- Aligned overhead and production levels with market conditions
- Net margin of 23% in 2019 despite 32% YOY revenue decrease
- Peer leading financial metrics

**Improved cash generation supports shareholder friendly capital allocation policy**
- € 167.1 million distributed in 2019: dividends and share repurchases
Increased Profitability vs. Last Downturn

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**2015**

- Revenue: €57.9 million
- Operating Income: €349.2 million

**2019**

- Revenue: €91.9 million
- Operating Income: €356.2 million

Revenue Growth: +58.7%

Operating Income Growth: +25.8%

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Business Model Objectives

Objectives

- Revenue: €800MM
- Addressable Market Share: 40%+
- Gross Margin: 55-60%
- Net Margin: 30-35%
- Headcount Split: 80% Asia/20% Euro

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Capital Allocation Trends

- € 725.8 million distributions since 2011:
  - Includes € 72.9 million proposed 2019 dividend

- € 1.01 dividend proposal 2019

- Current € 75 million share repurchase program:
  - 3.1 million shares (€ 67.1 million) bought at € 21.91 per share
  - 7.8 million shares (9.8%) held in treasury

* Includes proposed dividend for approval at April 30, 2020 AGM
II. MARKET
What Drives Besi’s Business?

- Macro GDP trends
- Tech capabilities in 24/7 production environment
- IDM customer and supply chain choice
- Timing of customer roadmaps and capital spending programs
- Competitive cycle times and scalability
Assembly Equipment Market Trends

Assembly Equipment Market

Source: VLSI January 2020

- VLSI downwardly revised 2019 forecast to -30.4%
- Rebound anticipated in 2020 and 2021

Besi Revenue

February 2020
Assembly Equipment Market Composition

- Roughly half of assembly market represented by die attach and packaging equipment
- Die Attach represents Besi’s largest addressable market

* Source: VLSI July 2019
Besi Market Share Trends

<table>
<thead>
<tr>
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<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
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<tr>
<td>Total Assembly Market ($MM)</td>
<td>$3,725</td>
<td>$3,119</td>
<td>$3,515</td>
<td>$4,421</td>
<td>$4,313</td>
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<td>Besi Market Share</td>
<td>13.5%</td>
<td>12.4%</td>
<td>11.9%</td>
<td>15.1%</td>
<td>13.9%</td>
</tr>
<tr>
<td>Addressable Market ($MM)</td>
<td>$1,622</td>
<td>$1,286</td>
<td>$1,540</td>
<td>$1,983</td>
<td>$1,848</td>
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<tr>
<td>Besi Market Share</td>
<td>30.4%</td>
<td>29.6%</td>
<td>27.0%</td>
<td>33.5%</td>
<td>32.4%</td>
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</table>

- Market share trending upwards
- Can vary p.a. based on customer roadmaps and advanced packaging needs

<table>
<thead>
<tr>
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<th>2018</th>
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<tr>
<td>Die Attach</td>
<td>76.4%</td>
<td>81.6%</td>
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<tr>
<td>Packaging</td>
<td>19.2%</td>
<td>15.2%</td>
</tr>
<tr>
<td>Plating</td>
<td>4.4%</td>
<td>3.2%</td>
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</tbody>
</table>

Source: VLSI June 2019 and Besi estimates
Digital Society Increases Computing and Data Needs

Disruptive Technology
- Motion sensing
- Olfactometry
- Imaging
- Audio

5G
Al
IoT

5G graphics
3D

Deep neural network
2010 Siri

2014 Alexa

HD Voice Processing

Hyper Data Centers

5G

Mobile

Virtual assistant

Smartphone with AI

First SoC with NPU

2017

Alexa

5G

Human Augmentation

2019

2030

2040

Source: Yole, January 2020
Requiring Increased Density, Higher Accuracy and Smaller Form Factors for Next Generation Devices

Front End
- Transistor scaling
- Lithography
- New structures 3D

Back End Assembly
- More contacts
- Smaller pitches
- Thinner/denser, more complex packages
- Stacked structures 3D
- WLP/FOWLP packages

Today => Tomorrow

Front End
- Strained Silicon
- Hi K Metal Gate
- 3D Transistors
- 90 nm, 65 nm, 45 nm, 32 nm, 22 nm, 14 nm, 10 nm, 7 nm

Back End Assembly
- More contacts
- Smaller pitches
- Thinner/denser, more complex packages
- Stacked structures 3D
- WLP/FOWLP packages

From simple Wire Bond to BGA/Flip Chip to complex 3D structures with TSVs, microbumps and thin dies

to WLP/FOWLP packages without substrate interposer

February 2020
Advanced Packaging Critical to Next Generation Applications

Mobile Revolution
- Mobile internet
- Messaging
- Social media
- Shared economy
- Gaming
- Geo-location
- Audio/video
- Auto electronics

Digital Society
- Smart mfg, cities, mobility and homes
- Driverless cars
- Data mining
- Cloud servers
- IoT
- 5G mobile/wearable devices
- Artificial intelligence
- VR/AR
- High performance Computing
- MEMS

Greater Miniaturization
- Die Bond
  - Datacon 8800 TC
  - Datacon 8800 CHAMEO fan-out
  - Esec DB2009
  - Esec DB2100

Greater Complexity
- Packaging
  - Fico AMS-LM
  - Fico Singulation Line
  - FML Wafer Molding
  - Fico Compact Line - X

Higher Accuracy

Lower Power Consumption

Increased Density

Higher Performance

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### Besi Portfolio Well Positioned by Node Size and Accuracy

#### Estimated % of 2019 Revenue

<table>
<thead>
<tr>
<th>Micron</th>
<th>Size NM</th>
<th>0%</th>
<th>10%</th>
<th>20%</th>
<th>30%</th>
<th>40%</th>
<th>50%</th>
<th>60%</th>
<th>70%</th>
<th>80%</th>
<th>90%</th>
<th>100%</th>
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<tr>
<td>10+</td>
<td>28+</td>
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<tr>
<td>25%</td>
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<tr>
<td>20%</td>
<td>28</td>
<td></td>
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<tr>
<td>40%</td>
<td>17</td>
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<tr>
<td>15%</td>
<td>10</td>
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<td>3</td>
<td>10</td>
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</tr>
</tbody>
</table>

### Typical Application

<table>
<thead>
<tr>
<th>Besi Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automotive, SiP Power</td>
</tr>
<tr>
<td>Die Attach Packaging Plating</td>
</tr>
<tr>
<td>IOT General ICs</td>
</tr>
<tr>
<td>Die Attach Packaging Plating</td>
</tr>
<tr>
<td>Computer, PC, Mobile Cloud Computing</td>
</tr>
<tr>
<td>Die Attach Packaging</td>
</tr>
<tr>
<td>High Performance Computing Memory</td>
</tr>
<tr>
<td>Die Attach Packaging</td>
</tr>
</tbody>
</table>

- **75% of Besi equipment revenue advanced packaging as per VLSI definition**
- **55% equipment revenue is < 7 micron accuracy and sub 17 nanometer**
- **Most rapidly growing market segment**

February 2020
Advanced Packaging Unit Volume and Market Share Are Increasing

- Advanced packaging applications have grown significantly since 2010
- Currently, estimated 38% of wafers use advanced packaging interconnects
- Leading growth segment of assembly equipment market
- Flip chip and WLP are leading AP assembly processes next five years

Source: VLSI February 2020
Fan Out WLP and TCB/TSV Are Emerging Advanced Packaging Process Technologies

**Fan Out WLP (Wafer Level)**

Preferred process for high data transfer and optical devices in IoT, mobile and power

**Fan Out Advantages:**
- Wafer scale. Eliminates expensive substrate
- No wire bonding
- More cost effective than TSV in many applications by factor of 2x

**Leading market position:**
- Installed base of ~70 systems in production
- Estimated 70% market share
- Principal Competition: Shibaura

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**TCB/TSV (Substrate Based)**

Enabling technology for high end memory and optical applications

**Next step beyond Flip Chip**

**Besi TCB Advantage**
- 32 die stack at <5 micron accuracy (current market: 4-8 die stack)
- High accuracy over large area placement
- Highly stable
- Industry leading throughput
- Compact form factor

**Leading market position**
- Installed base of 40 systems in production
- Estimated 25% market share of active systems
- Highest penetration of memory and GPU markets
- Principal competition: Toray, ASM PT, Shinkawa
Besi End User Application Trends

- Mobile Internet, Computing and Automotive are largest end markets
  - Estimated 71% of revenue in 2019
  - Percentages vary p.a. based on customer roadmaps

- Mobile is largest market
  - % varies based on timing and success of new product introductions

- Computing growth due to increased demand for high end logic, cloud and memory solutions

- Growth in automotive reflects ever increasing electronic content

- Spares/service: 20% of 2019 revenue
  - Growth in installed base
  - Less volatile revenue stream

Source: Company Estimates

February 2020
Mobile: 5G Is Coming
Drives Increased Mobile Data Traffic and New Applications

Mobile subscriptions by technology (billion)

Source: Ericsson Mobility Report Nov 2018
5G Rollout Creates New Opportunities in Besi End User Markets

**Smart Drone**
- Spread of Internet
- Emergency Situations
- Disaster Recovery

**Virtual and Augmented Reality**
- Remote work
- Entertainment
- Gaming

**Automotive**
- Smart Car
- Vehicle-to-Vehicle Communication

**Smart City**
- Smart Homes
- Smart Education
- Smart Surveillance
- Smart Factory

**Healthcare**
- Telemedicine
- Telesurgery
- Massive IoMT

**Fintech**
- E-commerce
- Digital Banking
- Smart Trading

Source: KPMG January 2020
Besi technology can support virtually all device platforms utilized in latest mobile devices.

### Main Components

<table>
<thead>
<tr>
<th>Component</th>
<th>Generation 2012</th>
<th>Generation 2016</th>
<th>Generation 2017 iPhone X</th>
<th>Generation 2018 iPhone X</th>
<th>Manufacturer</th>
<th>IDM/OSAT</th>
<th>Best systems utilized</th>
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</thead>
<tbody>
<tr>
<td>Processor</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Apple</td>
<td>TSMC</td>
<td>TSMC, AMS, LG</td>
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<td>DRAM Memory</td>
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<td>X</td>
<td>X</td>
<td>X</td>
<td>Hynix/Micron/Samsung</td>
<td>Hynix/Micron/Transcend</td>
<td>2100D, TSL</td>
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<tr>
<td>NAND Flash</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Hynix/Toshiba/Intel</td>
<td>Hynix/Anmitronics/SeSpec</td>
<td>2100D, 2KSL, 2AMS, W/SL, FCB800</td>
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<td>Power Management</td>
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<td>PMIC</td>
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<td>X</td>
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<td>Accelerometer/Gyroscope</td>
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<td>Qualcomm/Intel, Samsung</td>
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<td>X</td>
<td>Anmitronics</td>
<td>Anmitronics</td>
<td>Anmitronics</td>
</tr>
</tbody>
</table>

### Communications

<table>
<thead>
<tr>
<th>Generating 2012</th>
<th>Generating 2014</th>
<th>Generating 2017 iPhone X</th>
<th>Generating 2018 iPhone X</th>
<th>Manufacturer</th>
<th>IDM/OSAT</th>
<th>Best systems utilized</th>
</tr>
</thead>
<tbody>
<tr>
<td>WiFi/FRC</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Apple/Murata</td>
<td>USI</td>
<td>USI</td>
</tr>
<tr>
<td>NFC</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Anmitronics/STMicroelectronics</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>LTE</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Qualcomm/Intel</td>
<td>Anmitronics/STMicroelectronics</td>
<td>2100D, 2106D, 2AMS, W/SL, FCL, 2200Evos</td>
</tr>
<tr>
<td>Reception/Transceiver</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Qualcomm/Intel</td>
<td>Anmitronics/STMicroelectronics</td>
<td>2100D, 2106D, 2AMS, W/SL, FCL, 2200Evos</td>
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<tr>
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<td>X</td>
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<td>X</td>
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<td>2100D, 2106D, 2AMS, W/SL, FCL, 2200Evos</td>
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<tr>
<td>Reception/Transceiver</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Qualcomm/Intel</td>
<td>Anmitronics/STMicroelectronics</td>
<td>2100D, 2106D, 2AMS, W/SL, FCL, 2200Evos</td>
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</table>

### Video/Audio

<table>
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<tr>
<th>Camera ID</th>
<th>Generating 2012</th>
<th>Generating 2014</th>
<th>Generating 2017 iPhone X</th>
<th>Generating 2018 iPhone X</th>
<th>Manufacturer</th>
<th>IDM/OSAT</th>
<th>Best systems utilized</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black icon LUM (OIS)</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>Apple</td>
<td>OIS</td>
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<tr>
<td>Imaging ID</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>FujiFilm</td>
<td>FujiFilm</td>
<td>FujiFilm</td>
</tr>
<tr>
<td>Dot Projects ICE</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Sharp</td>
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### Audio

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<th>Manufacturer</th>
<th>IDM/OSAT</th>
<th>Best systems utilized</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 MHz microphone</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Knowles/Sennheiser</td>
<td>Knowles/Sennheiser</td>
<td>Sennheiser</td>
</tr>
<tr>
<td>Audio OLED</td>
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<td>X</td>
<td>X</td>
<td>X</td>
<td>Apple</td>
<td>Apple</td>
<td>Apple</td>
</tr>
</tbody>
</table>

### Touch screen control

<table>
<thead>
<tr>
<th>Touch screen control</th>
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<th>Generating 2014</th>
<th>Generating 2017 iPhone X</th>
<th>Generating 2018 iPhone X</th>
<th>Manufacturer</th>
<th>IDM/OSAT</th>
<th>Best systems utilized</th>
</tr>
</thead>
<tbody>
<tr>
<td>Touch Transmitter</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>Broadcom</td>
<td>Broadcom</td>
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<tr>
<td>Touch Transmitter</td>
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<td>X</td>
<td>X</td>
<td>X</td>
<td>TI</td>
<td>TI</td>
<td>TI</td>
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<tr>
<td>Touch Transmitter</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>STMicroelectronics</td>
<td>STMicroelectronics</td>
<td>STMicroelectronics</td>
</tr>
<tr>
<td>Display Port Multiplier</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>STMicroelectronics</td>
<td>STMicroelectronics</td>
<td>STMicroelectronics</td>
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</tbody>
</table>

### Sensors

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<th>Generating 2014</th>
<th>Generating 2017 iPhone X</th>
<th>Generating 2018 iPhone X</th>
<th>Manufacturer</th>
<th>IDM/OSAT</th>
<th>Best systems utilized</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gyroscope</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>STMicroelectronics</td>
<td>STMicroelectronics</td>
<td>STMicroelectronics</td>
</tr>
<tr>
<td>Barometric Pressure Sensor</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Bosch</td>
<td>Bosch</td>
<td>Bosch</td>
</tr>
<tr>
<td>Image Sensor</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>AMIS/STMicroelectronics</td>
<td>AMIS/STMicroelectronics</td>
<td>AMIS/STMicroelectronics</td>
</tr>
</tbody>
</table>
Electric vehicles could reach 50% of market by 2030

Electric cars will have 2x more semi content vs ICE cars

Source: KPMG Automotive Semiconductor Market Model, 2019
Automotive: Requires Variety of Package Formats

Advanced Packages
- SIP
- SOIC
- FCBGA
- WLFO
- ADAS
  - Park Assist, Radar, Blind Spot Detection

Body Electronics
- Comfort, HVAC, Lighting

Wirebond Packages
- EV/HEV
- Power
- Chassis
  - Antilock Brakes, Traction Control

Source: Amkor investor presentation April 2019
Computing: Demand for Computing Power Growing Exponentially

Source: Intel May 2019
Computing: Assembly Process Ever More Critical Step
In CPU Value Chain

3D STACKING AND MULTI CHIP ARCHITECTURE AS IMPORTANT OR EVEN MORE IMPORTANT THAN FRONT END PROCESSES !!!!!!
III. STRATEGY
Summary Operating Strategy

Maintain Best in Class Tech Leadership
- Expand capabilities for:
  - FOWLP, TCB, panel size, ultra thin die bonding and hybrid bonding
  - Large area, ultra thin, wafer level molding
  - Solar and lithium ion battery plating
  - Introduce products for next investment round

Increase Market Presence and Share
- Leverage technology leadership to gain share
- Increase mainstream penetration of global supply chains with high quality, mid-range products
- Expand presence and share of wallet in China

Grow via Timely Acquisitions
- Acquire companies with complementary technologies and products
- Emphasis on wafer level processing
- Leverage Asian platform and supply chain

Increase Scalability Reduce Cost
- Continue West-East personnel transfer
- Target 80% Asian headcount
- Further reduce euro based costs
- Target local production. Shorten cycle times
- Accelerate common parts development

February 2020
Current Technology Roadmap

Customers

- IDM investing in next generation devices

Besi

- Increasing R&D activities
- Highly focused per customer roadmaps

5G Applications
Artificial Intelligence
Cloud Infrastructure
Advanced Logic Apps

February 2020
Revenue Opportunities

Favorable Drivers:
- Digital Society
- Big Data
- Smart Everything
- Cloud Expansion

- Roll out next generation 5G applications to mobile customers
- Expand share of Korean and Chinese Android market
- Increase share of wallet in Memory/Logic space
- Expand share of Japanese automotive supply chain
- Grow China for China business
- Renewed customer interest in WLP, Panel WLP, TCB and Hybrid bonding

February 2020
Asian Production Transfer Has Reduced Break Even Revenue Levels and Improved Cash Generation

Asian Production Has Significantly Expanded

- Leading to Lower Fixed European + NA Headcount
- And Reduced Break Even Revenue Levels
- Improved Cash Generation

<table>
<thead>
<tr>
<th>China</th>
<th>Other Asian</th>
<th>% Direct</th>
</tr>
</thead>
<tbody>
<tr>
<td>396</td>
<td>174</td>
<td>43%</td>
</tr>
<tr>
<td>829</td>
<td>96%</td>
<td></td>
</tr>
</tbody>
</table>

Europe/NA Fixed HC
Asia Fixed HC

<table>
<thead>
<tr>
<th>2011</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>741</td>
<td>453</td>
</tr>
<tr>
<td>1,081</td>
<td>1,534</td>
</tr>
</tbody>
</table>

Cash Flow Ops
CF from Ops/Revenue

<table>
<thead>
<tr>
<th>2011</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>49</td>
<td>120</td>
</tr>
<tr>
<td>15%</td>
<td>34%</td>
</tr>
</tbody>
</table>
Materials Cost Reduction Is Also a Key Priority

Material costs are significant = ~35% of revenue

Supply Chain Actions

- 80% of material now purchased in Asia
- Increased outsourcing of modules and high level systems
- Vendor consolidation and volume discounts
- Increased common parts
- Increased Asian sourcing/selected products

- Asian supply chain expansion has:
  - Increased scalability
  - Limited capex and inventory investment
  - Reduced personnel, transport and logistic cost

Development Actions

- Redesign products for common parts, platforms
- Increase standardization
- Lower unit cost, design and maintenance hours
- Shorten cycle times

- Management reviews progress weekly component by component

55-60% Thru Cycle Gross Margin

February 2020
Flexible Production Model Has Generated Consistent Gross Margins in Market Cycles

Downturn

* Midpoint of guidance: Revenue flat (+/- 10%) vs. Q4-19, Gross Margin 54-56%.

February 2020
Flexible Asian Workforce Has Significantly Enhanced Scalability

- **Headcount adjusted in downturn:**
  - 25.3% reduction from Q1-18 peak to Q4-19
  - Focus on SG&A structure currently

- **Asian HC rationalized in 2019 post large 2015-2018 ramp**
  - Both fixed and temporary workers

- **European and NA fixed HC has declined:**
  - -37.3% since 2011
  - -16.0% vs. 2015
  - Stable in 2019 due to R&D ramp
Overhead Alignment With Market Cycles

- Overhead aligned with order patterns in market cycles
- Creates substantial operating leverage in business model
CSR Highlights 2019

Environmental Footprint

- Reduced packaging, energy, waste and water usage
- Installed solar panels at Malaysia facility
- Developed system to better assess sustainability in product design
- Received MISA ‘19 Audience Award for increasing solar panel efficiency
- Implemented video conferencing system to reduce corporate travel

Human Resources

- Launched new management training, corporate governance and e-learning programs

Supply Chain

- Achieved RBA gold status
- Increased supply chain compliance with RoHs standards
Besi Strategic CSR Objectives

**CSR Objectives**

1. Responsible tax practices in all jurisdictions
2. Reduce packaging, waste, transportation and energy
3. Develop sustainable supply chain. Minimize impact of conflict materials
4. Conserve natural resources
5. Promote employee talent, training and diversity
6. Maintain best practices environmental and ethical behavior
7. Reduce environmental impact of products and operations
8. Safeguard safe and healthy working conditions
9. Reduce packaging, waste, transportation and energy
10. Responsible tax practices in all jurisdictions
11. Conserve natural resources
12. Promote employee talent, training and diversity
13. Maintain best practices environmental and ethical behavior
14. Reduce environmental impact of products and operations
15. Safeguard safe and healthy working conditions

**2020 CSR Objectives**

- Review Sustainability Strategy
- Improved Reporting and KPI Monitoring
- Upscaling Sustainability Initiatives

February 2020
IV. FINANCIAL UPDATE AND SUMMARY
Attractive Profit and Margins Maintained in Downturn

**FY-19/FY-18**

- Revenue: €125.7 MM (15.0%) → €106.9 MM (15.0%)
- Net Margin: 56.8% (1.0 points) → 55.8%
- Gross Margin: 25.9% (3.1 points) → 22.8%

**Q4-19/Q3-19**

- Revenue: €24.2 MM (4.1%) → €25.2 MM
- Net Margin: 55.1% (1.2 points) → 56.3%
- Gross Margin: 21.4% (15.1 points) → 36.5%

*Includes €11.6 million tax benefit at Besi’s Swiss operations in Q4-19*
Liquidity Trends

Q4-19 vs. Q3-19
- Net cash increased by € 23.4 million (+21.9%) to € 130.3 million

Q4-19 cash movements
- +€ 36.3 million cash provided by operations
- - € 5.8 million share repurchases
- - € 4.1 million capitalized R&D
- - € 0.7 million capex
Guidance Q1-20

Q4-19/Q1-20

Revenue
€ 92.4
Q4-19
Q1-20

Gross Margin
56.3%
Q4-19
Q1-20

Operating Expenses
€ 25.2
Q4-19
Q1-20

Baseline Operating Expenses
€ 23.7
Q4-19
Q1-20

February 2020
Assembly market ever more critical in semiconductor value chain

Long term secular trends drive advanced packaging growth

Disciplined strategic focus has created an industry leader

Market presence has grown via key IDM customers and supply chains

Asian production expansion has been a game changer

Tech leadership and scalable model have resulted in benchmark financial returns

Attractive capital allocation policy rewards shareholders
V. APPENDIX
Revenue and Gross Margin Cycles Since 2006

€ millions

Revenue
Gross Margin


351 302 379 424 593 424 511 558

34.1% 39.5% 51.1% 55.8%

-12.9% -6.9% -7.8% -32.2%
Baseline Operating Expense Trends

Operating Expenses (€ millions)

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Baseline Opex</th>
<th>Other Opex*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1-18</td>
<td>39.1</td>
<td>7.4</td>
</tr>
<tr>
<td>Q2-18</td>
<td>31.8</td>
<td>1.0</td>
</tr>
<tr>
<td>Q3-18</td>
<td>29.1</td>
<td>2.8</td>
</tr>
<tr>
<td>Q4-18</td>
<td>25.9</td>
<td>0.2</td>
</tr>
<tr>
<td>Q1-19</td>
<td>30.7</td>
<td>5.4</td>
</tr>
<tr>
<td>Q2-19</td>
<td>26.8</td>
<td>2.1</td>
</tr>
<tr>
<td>Q3-19</td>
<td>24.2</td>
<td>0.9</td>
</tr>
<tr>
<td>Q4-19</td>
<td>25.2</td>
<td>1.5</td>
</tr>
</tbody>
</table>

* Other Opex includes both short term and long term incentive comp, forex effects, restructuring costs and selected one-time effects.

February 2020
Net Income Trends

(a) Includes variable compensation from both cost of goods sold and operating expenses
Currency Exposure Trends

### Revenue

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2019 △ vs. €*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Euro</td>
<td>18%</td>
<td>33%</td>
<td>32%</td>
<td>21% 29% 33%</td>
</tr>
<tr>
<td>US dollar</td>
<td>82%</td>
<td>67%</td>
<td>68%</td>
<td>9% 9% 9%</td>
</tr>
<tr>
<td>Malaysian ringgit</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>31% 31% 25%</td>
</tr>
<tr>
<td>Chinese renminbi</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>13% 10% 11%</td>
</tr>
<tr>
<td>Swiss franc</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>19% 12% 10%</td>
</tr>
<tr>
<td>Singapore dollar</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>5% 6% 9%</td>
</tr>
<tr>
<td>Other</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2% 3% 3%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
<td><strong>100% 100% 100%</strong></td>
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### Expenses

<table>
<thead>
<tr>
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<th>2018</th>
<th>2019</th>
<th>2019 △ vs. €*</th>
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</thead>
<tbody>
<tr>
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<td>31% 31% 25%</td>
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<tr>
<td>Chinese renminbi</td>
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<td>13% 10% 11%</td>
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<tr>
<td>Swiss franc</td>
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<td>Singapore dollar</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>5% 6% 9%</td>
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<tr>
<td>Other</td>
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<td>-</td>
<td>-</td>
<td>2% 3% 3%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
<td><strong>100% 100% 100%</strong></td>
</tr>
</tbody>
</table>

* Currency variance in 2019 based on average forex rates vs. the euro

- USD revenue % comparable to 2018
- Long-term cost exposure shifting to Asia:
  - Production transfer increases importance of MYR, CNY and SGD
  - Material purchases and production expenses ~60% in Asian currencies (MYR, CNY and SGD)
  - Lower units produced vs. 2018 decreases % impact of Asian currencies in mix this year
Cash Generation Trends

€ millions

2015 2016 2017 2018 2019

86.5 98.7 168.2 35.0% 120.1

0 20 40 60 80 100 120 140 160 180 200

2015 2016 2017 2018 2019

24.8% 26.3% 28.4% 35.0% 33.7%

0% 10% 20% 30% 40% 50% 60%

CFO/Revenue

Total Cash Flow from Operations
### Share Repurchase Activity

**3.1 million shares (€ 67.1 million) purchased through December 31, 2019 under current € 75 million program (avg price € 21.91)**

**185,405 million shares purchased in Q4-19 for € 5.8 million**

**7.8 million shares held in treasury at December 31, 2019 at average price of € 15.05 per share, equal to 9.8% of shares outstanding**

<table>
<thead>
<tr>
<th>Year</th>
<th>Share Repurchases ($ millions)</th>
<th>Avg Cost per Share</th>
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</thead>
<tbody>
<tr>
<td>2015</td>
<td>4.0</td>
<td>€ 8.93</td>
</tr>
<tr>
<td>2016</td>
<td>22.4</td>
<td>€ 12.44</td>
</tr>
<tr>
<td>2017</td>
<td>22.8</td>
<td>€ 23.74</td>
</tr>
<tr>
<td>2018</td>
<td>35.5</td>
<td>€ 21.79</td>
</tr>
<tr>
<td>2019</td>
<td>44.7</td>
<td>€ 24.31</td>
</tr>
</tbody>
</table>
Dividend Trends

Cumulative dividends of € 577.0M since 2011, or € 7.74 per share*

* Calculated on Basic EPS. Includes value of both cash and stock dividends
** Includes proposed dividend for approval at April 30, 2020 AGM

February 2020
Besi Shareholder Information

Market Profile

- Symbol/Index: • BESI • Euronext Midcap AMX
- Market Cap*: € 2.8 billion ($ 3.0 billion)
- Dividend Policy: Pay out 40-100% of net income per annum

Share Ownership

Top 10 Shareholders** (% of shares outstanding)

<table>
<thead>
<tr>
<th>Year</th>
<th>Shareholder</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BESI</td>
<td>42%</td>
<td>41%</td>
<td>48%</td>
</tr>
</tbody>
</table>
| By Geography

<table>
<thead>
<tr>
<th>Region</th>
<th>Unidentified</th>
<th>Europe ex. NL</th>
<th>NL</th>
<th>UK</th>
<th>US</th>
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</thead>
<tbody>
<tr>
<td>2016</td>
<td></td>
<td>15%</td>
<td>30%</td>
<td>17%</td>
<td>15%</td>
</tr>
<tr>
<td>2017</td>
<td></td>
<td>15%</td>
<td>20%</td>
<td>22%</td>
<td>20%</td>
</tr>
<tr>
<td>2018</td>
<td></td>
<td>27%</td>
<td>16%</td>
<td>31%</td>
<td>16%</td>
</tr>
</tbody>
</table>

* As of February 20, 2020 ** Besi estimates

Avg. Daily Volume & Liquidity

- Pay out 40-100% of net income per annum

* As of February 20, 2020

** Besi estimates

By Geography

Europe ex. NL


NL

- NL: 30% (2016), 20% (2017), 16% (2018)

UK


US