Digitalization

IFX Day 2021
virtual format, 5 October 2021
Electrification and Digitalization

Electrification
› CO₂ saving
› Energy efficiency
› Cost saving

Digitalization
› Productivity
› Comfort
› New use cases
The high-growth and broad IoT market offers a business opportunity of ~9bn devices

IoT applications: connected devices in billion units shipped in 2026\(^1\)

- From 5.5bn connected devices in CY21 to more than 9.1bn devices shipped in CY26\(^1\), CAGR\(_{21-26}\) ~11%
- We address **focus applications** directly with key customers
- All applications served perfectly via excellent distribution partners with solutions that are easy-to-use and integrate

\(^1\) ABI Research: *Wireless Connectivity Technology Segmentation and Addressable Markets*. July 2021; excluding Chromebooks, desktop PCs, feature phones, media tablets, netbooks, smartphones, white box tablets.
Our strategic P2S approach enhances profitable growth

Executing P2S

Turning **system and market understanding** into **superior solutions**

Maximize **customer value**

› Differentiating functionality
› Better cost/performance ratio
› Faster time-to-market

Enhance **profitable growth**
With Cypress we created the most comprehensive portfolio to execute our P2S strategy at the core of the IoT space.

- Enhanced portfolio linking the real and the digital world
- Improved IoT system understanding
- Easy-to-use IoT-solutions

**Infineon at the core of IoT**

- **Sense**
- **Compute & control**
- **Actuate**
- **Security solutions**

**Digital world**

- **Connectivity**
- Information and data about the real world
- Value addition and optimized use of resources

**Real-world applications**

- Software / Ecosystem

2021-10-05
Infineon makes IoT happen: through excellence in all system-defining elements we create solutions with superior customer value

**Security**
- HW-based
- Cloud access

**Sense**
- MEMS, magnetic, current
- Radar, haptic, CO₂, H₂

**Software**
- BIOS, driver, firmware
- Reference software

**Compute**
- Scalable MCU offering
- Pairing with connectivity

**Application understanding**
- Algorithms
- Security requirements

**Power semiconductors**
- AC-DC and DC-DC
- Motor control

**Ease-of-use**
- Development platform
- Product support

**Connectivity**
- Wi-Fi, BT, BLE
- Combo
Well on track to achieve announced revenue synergies

Planned ramp-up of revenue synergies

- ~1.5 years after closing, tangible progress on synergy generation is being made in remote PMI, following a proven script for the integration.
- We expect to overachieve our target for revenue synergies for FY22.
- We are on a good track to reach our targets for FY25 and FY28.

- Well on track to achieve announced revenue synergies

- Current status

- FY22e
- FY22 current status

- FY25e
- FY25 current status

- FY28e
- FY28 current status

- Planned ramp-up of revenue synergies

- €1.5bn
- €1bn

- P2S for long-term revenue synergies
- Near-term revenue synergies: improved customer access, cross-selling opportunities
- Design wins, open design wins and P2S initiatives
MCU and software are key for the success in IoT as they define the functionality and time-to-market of the device.
Edge AI is a fast developing market enabled by and calling for many of our core competencies

**Cloud AI**
- Public and private clouds offer scalability and flexibility
- Growing performance demand with higher power consumption (ASIC/SoC/FPGA/CPU/GPU)

**Edge AI**
- Smart subsystems offer low latency, improved privacy, higher power efficiency
- Growing solution demand for e.g. image and object recognition, autonomous material handling, predictive maintenance, and human-machine interface

**Infineon:**
- Power supply (AC-DC)
- Power conversion (DC-DC)

**Infineon:**
- Smart sensors with AI capabilities
- Embedded control including connectivity and edge AI accelerators
- Smart power, toolchain/ecosystem, deployment services
For the Industrial IoT, Edge AI enables predictive maintenance and other use cases – playing right into our core competences

**Predictive maintenance is a significant lever for productivity**

Maintenance prediction for key assets (avoidance of fixed preventive maintenance cycles)

**Advantages**
- Reduced downtime through optimized maintenance
- Lower maintenance costs
- Increase transparency on device usage

**Edge AI enhances Industrial IoT to enable predictive maintenance, increasing production efficiency and robustness**

**Edge AI-enabled control and field-level devices**

**Products and services from Infineon enable safe, secure, power-efficient, dependable implementation**

- **Smart sensors**
  - Detect and pre-process signals through AI capabilities to recognize potential abnormal operation of equipment

- **Edge AI processing and control**
  - Edge AI enabled MCUs to identify at-risk equipment, repair urgency and control adaptation

- **Smart Actuators**
  - Receive and implement instructions to reduce potential impacts in production

- **Security**
  - Ensure secure communication and protection of critical information

- **Connectivity**
  - Enable dependable communication across devices, factory levels, cloud and secure device management
With a broad set of key enabling technologies, Infineon is well positioned to capture growth opportunities

Market: Home Automation Devices

<table>
<thead>
<tr>
<th>Leading competencies to provide full system solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application understanding</td>
</tr>
<tr>
<td>Ease-of-use</td>
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<tr>
<td>Software</td>
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<tr>
<td>Sense</td>
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<tr>
<td>Security</td>
</tr>
<tr>
<td>Connectivity</td>
</tr>
</tbody>
</table>

Customer ex. for wireless smart cameras and smart door locks

220
2020
546
2025e

CAGR: +20%

1 ABI Research: Wireless Connectivity Technology Segmentation and Addressable Markets. July 2021; excluding Chromebooks, desktop PCs, feature phones, media tablets, netbooks, smartphones, white box tablets.
Infineon acts as one-stop-shop with excellent RF, sensor, connectivity, power, memory and security solutions

**Market: Smartwatches, Trackers & Hearables**

<table>
<thead>
<tr>
<th>Year</th>
<th>Smartwatches</th>
<th>Trackers &amp; Hearables</th>
<th>CAGR: +9%</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>898</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2025e</td>
<td>1,365</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Acting as one-stop-shop with comprehensive solutions**

- Application understanding
- Ease-of-use
- Software
- Sense
- Compute
- Actuate
- Security
- Connectivity

**Customer examples for smart watches and fitness trackers**

- GARMIN
- huami
- POLAR
- SAMSUNG
- SUUNTO
- vivo
- WYZE

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1 ABI Research: Wireless Connectivity Technology Segmentation and Addressable Markets. July 2021; excluding Chromebooks, desktop PCs, feature phones, media tablets, netbooks, smartphones, white box tablets.
We are driving the smart home opportunity together with market-shaping customers

<table>
<thead>
<tr>
<th>Market: Smart home(^1,2,3)</th>
<th>Combining our portfolio to create new use cases with our customers</th>
<th>Customer examples for smart home</th>
</tr>
</thead>
<tbody>
<tr>
<td>[units m]</td>
<td>Application understanding</td>
<td>Frame TV</td>
</tr>
<tr>
<td>CAGR: +16%</td>
<td>Ease-of-use</td>
<td></td>
</tr>
<tr>
<td>1,946</td>
<td>Software</td>
<td>smart vacuum cleaner</td>
</tr>
<tr>
<td>926</td>
<td>Sense</td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td>Compute</td>
<td></td>
</tr>
<tr>
<td>2025e</td>
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<td>1,2,3</td>
<td>Security</td>
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1. ABI Research: *Wireless Connectivity Technology Segmentation and Addressable Markets*. July 2021; excluding Chromebooks, desktop PCs, feature phones, media tablets, netbooks, smartphones, white box tablets.


3. Incl. Smart Appliances, Smart Lighting, Flat Panel TVs, Smart Speakers & Displays, Smoke & Air Quality Sensors, Consumer Robotics, Thermostats and others.
The car of the future is driving digitalization in many aspects and Infineon provides the ingredients

**ADAS/AD**
- object recognition
- advanced spatial sensing
- MCU (AURIX™, TRAVEO™ 2, PSoC™)
- radar sensor

**software-over-the-air**
- remote OS updates
- secure feature upgrades
- NOR flash memory
- security solution

**infotainment and HMI**
- seamless digital entertainment
- always-on, secure connectivity
- intuitive user interface (UI)
- MCU (AURIX™, TRAVEO™ 2, PSoC™)
- Wi-Fi, Bluetooth, USB Type C
- touch controller with CapSense™

**digital instrument cluster**
- real-time driver information
- user-specific digital content
- MCU (AURIX™, TRAVEO™ 2, PSoC™)
- NOR flash and RAM memory

**comfort / premium**
- automatic exterior and interior lighting
- passenger-specific automatic settings
- MCU (AURIX™, TRAVEO™ 2, PSoC™)
- pressure and magnetic sensors
- LED driver ICs

**trends**
examples of benefiting products
The Infineon AURIX™ MCU family has become the first-choice automotive architecture for high-growth and safety-critical applications

Infineon AURIX™ revenue development over time

**Powertrain**
- ICE engine management
- ICE transmission
- xEV motor control

**Classical safety**
- power steering
- braking
- airbag

**ADAS/AD**
- camera host control
- sensor fusion host control
- radar signal pre-processing

**Domain and zone control**
- drive domain
- body & convenience domain
- zone control

Example of AURIX™ platform design-win

- ~7x AURIX™ in powertrain
- ~7x AURIX™ in classical safety
- ~10x AURIX™ in ADAS/AD
- ~11x AURIX™ in domain and zone control

= ~35x AURIX™ in OEM platform
Our platform based approach makes innovative solutions developed with market-shaping customers easy-to-use for solution-oriented customers.

“Market-shaping customer”
› Differentiators via component and product
› Strong software and integration competence
› Often need for customized silicon
› High skillset
› Example: large automotive tier-1

All solutions are designed upfront as adoptable, scalable and easy-to-use ...

... which facilitates their quick adoption by the solution-oriented customers and introduction to broad market

“Innovative solutions” are jointly developed with market-shaping customers in an intimate deeply integrated process

“Solution-oriented customer”
› Limited differentiation at component level; rather at product level
› Short time-to-market
› Limited experience
› High expectation for usability
› Example: Consumer IoT manufacturers
We are enhancing the customer experience along the customer journey: leveraging digital channels, increasing marketing, and sales efficiency.

Customer journey – simplified

<table>
<thead>
<tr>
<th>Awareness</th>
<th>Selection and Design</th>
<th>Purchase</th>
<th>Use and Expand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broader reach and more opportunities</td>
<td>Ease of use and deeper customer understanding</td>
<td>Higher conversion rate</td>
<td>Higher customer satisfaction and retention</td>
</tr>
</tbody>
</table>

Key objective

Customer touch-points

Numerous employees of many customers with different backgrounds and needs to be served along their customer journey

Interfaces and channels

Linkedin

Mail, IFX.com, FAE, Community, Mail, FAE, AM

Broad customer access leads to an increase in marketing and sales efficiency and revenue growth
Digitalization creates substantial customer value and increases speed and efficiency in processes

Digital transformation strengthens our key success factors

Digitalization creates substantial customer value

Digital products and services increase customer value and enable us to **grow faster** than the market.

Digital go-to-market to **reach more** customers, identify more sales opportunities and increase conversion rates.

Digitalization of end-to-end processes for **higher speed and efficiency**.
With Cypress we accelerated our P2S strategy at the core of the IoT space: industrial IoT, smart building, smart home, wearables etc.

The integration of key elements like MCU and software are well on track, synergies are unfolding as planned.

Platform approach and digital interface make innovative solutions easy-to-use for many applications and customers.

Digital transformation enhances Infineon’s key success factors – making us stronger.
Part of your life. Part of tomorrow.