Technology trends that will redefine all industries

- Artificial Intelligence in every device
- Autonomous machines
- Augmented reality
- Hyperscale cloud and connectivity

Security and Privacy
Arm defines the technology that will redefine all industries

<table>
<thead>
<tr>
<th>Feature</th>
<th>Mobile and Consumer</th>
<th>Networking and Servers</th>
<th>Automotive and Robotics</th>
<th>Internet of Things</th>
</tr>
</thead>
<tbody>
<tr>
<td>Artificial Intelligence in every device</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<td>Autonomous machines</td>
<td></td>
<td></td>
<td>✓</td>
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<tr>
<td>Augmented reality</td>
<td>✓</td>
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<tr>
<td>Security and Privacy</td>
<td>✓</td>
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Arm introduction

- Global leader in technology licensing
  - R&D outsourcing for semiconductor companies

- Innovative business model
  - Upfront licence fee – flexible licensing models
  - Ongoing royalties on customer sales
  - Technology can be reused across multiple applications

- Long-term, secular growth markets
Arm’s business model

- Arm develops technology that is licensed to semiconductor companies
- Arm receives an upfront license fee and a royalty on every chip that contains its technology
Arm’s strategy

• Maintain or gain share in long-term growth markets
  • From mobile phones to networking infrastructure and servers to embedded smart devices and automotive

• Increase value of Arm technology per smart device
  • Invest in developing more advanced processors with higher royalty rates
  • Physical IP and multimedia IP further increase Arm's value per chip

• Explore and exploit new opportunities in emerging applications created by the Internet of Things

• Invest to create a sustainable business, fit for the long term
  • Create superior returns by developing new technology that will deliver increased profits and cash generation in the future
## Arm’s main growth markets

<table>
<thead>
<tr>
<th>Mobile and Consumer</th>
<th>Networking &amp; Servers</th>
<th>Embedded Markets</th>
</tr>
</thead>
<tbody>
<tr>
<td>$89bn TAM 2029</td>
<td>$67bn TAM 2029</td>
<td>$76bn TAM 2029</td>
</tr>
</tbody>
</table>

- Smartphones, tablets and laptops
- Apps processor, modem, connectivity, touchscreen and image sensors
- Growth coming from higher-value Arm technology such as Arm v8-A, more cores per chip, multimedia

- Base stations, routers, switches, and servers for cloud and data centres
- Networks evolve to cope with increased data at lower latency: virtualisation, integration and programmability
- Most major chip vendors have announced Arm-based products

- Automotive, white-goods, wearables, smart devices in industrial and utilities
- Microcontrollers, smartcards, embedded connectivity chips
- Over 300 companies have licenced Arm processors for use in embedded computing devices
History of Arm

Joint venture between Acorn Computers and Apple

Designed into first mobile phones and then smartphones

Now all electronic devices can use smart Arm technology

1990

1993 onwards

Today
Arm-based chip shipments

>166bn

Arm-based chips shipped to date

34%

Market share in 2019

Arm-powered chips shipped (billions)

Calendar Years 1991 to 2019

22.8bn

22.5bn
In July 2019, Arm introduced Arm Flexible Access (AFA) licensing program which provides a wide range of Arm’s most popular processors for no upfront license fee.

AFA licenses are not included in the licensing count.

In Q4, 15 AFA licenses were signed.
Licensing enables future royalties

- Arm signed 34 processor licences in Q4 2019; 147 for the FY2019
- Arm’s current royalty revenues are derived from licences signed many years ago
- Growing base yields royalty revenues over long period

>30% of Arm’s most recent licences are drivers of future royalty revenue

Significant Royalty Potential from Recent Licences

~700 licences signed since Q1 2015
## Arm’s expanding opportunity

### Mobile
- Applications processor: 90% market share, $41bn market value in 2019, $43bn in 2029
- Other mobile chips: 40% market share, $10bn market value in 2019, $13bn in 2029

### Infrastructure
- Networking: 32% market share, $17bn market value in 2019, $36bn in 2029
- Data Center/Cloud: 5% market share, $20bn market value in 2019, $32bn in 2029

### Automotive
- IVI and ADAS: 75% market share, $3bn market value in 2019, $12bn in 2029
- Other automotive chips: 10% market share, $7bn market value in 2019, $10bn in 2029
## Arm’s expanding opportunity

<table>
<thead>
<tr>
<th>Embedded</th>
<th>Other Markets</th>
<th>Total Market</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controller in IoT Devices</td>
<td>Microcontrollers/SIM Cards</td>
<td>All chips with processors</td>
</tr>
<tr>
<td>Other chips</td>
<td>Consumer Electronics</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>2019</th>
<th>2029</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Market Share</strong></td>
<td><strong>Market Value</strong></td>
<td><strong>Market Value</strong></td>
</tr>
<tr>
<td>90%</td>
<td>$4bn</td>
<td>$16bn</td>
</tr>
<tr>
<td>25%</td>
<td>$10bn</td>
<td>$15bn</td>
</tr>
<tr>
<td>42%</td>
<td>$15bn</td>
<td>$33bn</td>
</tr>
<tr>
<td>38%</td>
<td>$11bn</td>
<td>$23bn</td>
</tr>
<tr>
<td>34%</td>
<td>$138bn</td>
<td>$232bn</td>
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- **2019 Market Values:**
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  - Controller in IoT Devices: $4bn
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Arm's current business

Arm primary business is the development of **intellectual property** (IP) blocks which are used in silicon chips.

Our partners combine Arm IP with their own IP to create complete chip designs.

We earn **license fees** when we deliver Arm IP to our partners and **royalties** when our partners ship chips that contain Arm IP.

Highly **profitable and cash generative**.
Accelerating investment to increase share gains

Generating profits and cash to be reinvested

Investing in new processor technology
- Machine learning processors
- Computer vision
- Augmented reality
- Platform security

Investing in new IoT software and services
- Device Management
- Connectivity as a Service
- Data Management as a Service
- Pelion platform
Pelion – Combining physical and digital insights

Simplifying deployment and enabling scale
Return on Investments – Arm v8-A case study

- Arm incurs R&D costs many years before revenue starts

- Research into 64-bit computing started in 2000

- Arm v8-A development starts

- Architecture development and processor design

- First generation of processors

- Multiple processors in development

Revenues, investments and profits

- Until 2016 revenues grew faster than costs as Arm constrained investment in R&D to enable increasing profits.

- For the current phase of investment Arm expects costs to grow faster than revenues.

- This should yield even greater profits in the future.

- Note: Headcount in 2018 excludes 341 employees transferred to Arm China Joint Venture in June. By the end of Fiscal 2018, Arm China had 439 employees.
Arm Investor Relations Contact

<table>
<thead>
<tr>
<th>Contact</th>
<th>Title</th>
<th>Contact</th>
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<tbody>
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<td><a href="mailto:ian.thornton@arm.com">ian.thornton@arm.com</a></td>
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More content available on

- Arm’s website: [arm.com](arm.com)
- SoftBank Group’s website: [group.softbank/en/ir](group.softbank/en/ir)