ARM Introduction

- Global leader in the development of licensable technology
  - R&D outsourcing for semiconductor companies

- Innovative business model yields high margins
  - Upfront licence fee – flexible licensing models
  - Ongoing royalties – typically based on a percentage of chip price
  - Technology reused across multiple applications

- Long-term, secular growth markets

>1,400 licences
Growing by >100 every year

16.7 bn ARM-based chips in CY2016

~15% CAGR over previous 5 years

>450 potential royalty payers
Industry leaders and high-growth start-ups; chip companies and OEMs
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 profitability and cash generation
History of ARM

Joint venture between Acorn Computers and Apple

1990

Designed into first mobile phones and then smartphones

1993 onwards

Now all electronic devices can use smart ARM technology

Today
ARM-based chip shipments

>95bn

ARM-based chips shipped to date

34%

Market share in 2016

16.7bn

ARM-powered SoCs shipped (billions)
ARM 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
## From Revenue to Profits and Cash

### YTD 2016 Revenues

<table>
<thead>
<tr>
<th>Service</th>
<th>$m</th>
<th>£m</th>
<th>%revs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Licensing</td>
<td>479</td>
<td>345</td>
<td>37%</td>
</tr>
<tr>
<td>Royalty</td>
<td>716</td>
<td>569</td>
<td>56%</td>
</tr>
<tr>
<td>Software and Services</td>
<td>85</td>
<td>60</td>
<td>7%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,280</td>
<td>974</td>
<td>100%</td>
</tr>
</tbody>
</table>

**Total Costs** 472

**Adjusted EBITDA (£m)** 502

**Operating Margin** 52%

**Other expenses** 331

**IFRS EBIT (£m)** 171

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- Over 95% of revenues earned in US dollars
- Royalties approximately 50% of revenues
- 10% move in $/£ impacts profits by ~15% (forex impacts £ revenues and costs)
- Strong revenue growth has driven operating margins and profits
- Includes expenses incurred by ARM during acquisition by SoftBank. Excludes SoftBank’s acquisition related expenses.

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Financial numbers aligned with SoftBank reporting periods (01 April 2016 to 31 March 2017)
ARM’s opportunity continues to broaden

- Semiconductor industry continues to grow – 3% by volume, 1% by value over past 5 years
- Proportion of chips with processors is increasing – 70% in 2016
- ARM is gaining share within the “chips with processors” segment of the industry – 34% in 2016

* Data source: WSTS, January 2016 and ARM, Industry volume excluding analog and memory
** ARM estimates
ARM’s main growth markets

**Application Processors**
- Smartphones, tablets and laptops
- Apps processor, modem, connectivity, touchscreen and image sensors
- Apps processor: Increasing proportion using ARM technology with higher royalty per chip from ARMv8-A, octa-cores, graphics and physical IP

**Networking & Servers**
- 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

**Embedded Markets**
- Automotive, white-goods, wearables, smart devices in industrial and utilities
- Microcontrollers, smartcards, embedded connectivity chips
- 200 companies have licenced ARM processors for use in embedded intelligent devices

$55bn TAM 2025

$38bn TAM 2025

$85bn TAM 2025
<table>
<thead>
<tr>
<th>Segment</th>
<th>Share 2016*</th>
<th>TAM 2016</th>
<th>TAM 2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile Application Processors</td>
<td>90%</td>
<td>$20bn</td>
<td>$30bn</td>
</tr>
<tr>
<td>Networking Infrastructure</td>
<td>17%</td>
<td>$13bn</td>
<td>$18bn</td>
</tr>
<tr>
<td>Servers</td>
<td>&lt;1%</td>
<td>$15bn</td>
<td>$20bn</td>
</tr>
<tr>
<td>Embedded Intelligence</td>
<td>30%</td>
<td>$23bn</td>
<td>$40bn</td>
</tr>
</tbody>
</table>

* 2016 ARM Market Share by Volume
† Total Available Market (TAM)
## ARM’s expanding opportunity

<table>
<thead>
<tr>
<th>Industry</th>
<th>Share 2016*</th>
<th>TAM 2016</th>
<th>TAM 2025</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Automotive</strong></td>
<td>10%</td>
<td>$11bn</td>
<td>$17bn</td>
</tr>
<tr>
<td><strong>Other Mobile Chips</strong></td>
<td>45%</td>
<td>$14bn</td>
<td>$18bn</td>
</tr>
<tr>
<td><strong>Consumer Electronics</strong></td>
<td>35%</td>
<td>$20bn</td>
<td>$25bn</td>
</tr>
<tr>
<td><strong>Chips into Other Markets</strong></td>
<td>40%</td>
<td>$7bn</td>
<td>$10bn</td>
</tr>
</tbody>
</table>

* 2016 ARM Market Share by Volume
† Total Available Market (TAM)

**Automotive Application Processors and Automotive Controllers**
Incorporates Automotive Application Processors and Automotive Controllers

**Other**
Modems, WiFi/BT, GPS, NFC, sensor hubs, image sensors, eMMC, etc...

**Consumer Electronics**
Includes Desktop PCs, DTVs and STBs

**Chips into Other Markets**
Licensing enables future royalties

- ARM signed 126 licences in CY2016
- ARM’s current royalty revenues are derived from licences signed many years ago
- Growing base yields royalty revenues over long period

- ~50% of ARM most recent licences are drivers of future royalty revenue

- ~650 licences signed since Jan 2012

Significant Royalty Potential from Recent Licences

Cumulative Licences

Calendar years

Cumulative Licences


$0m $50m $100m $150m $200m $250m $300m $350m $400m

2007-2011

2012 to present

Pre-2007

~650 licences signed since Jan 2012

~380 licences

~380 licences

~380

~380

~100

~104

~160

~126
### Licensing drives market share

**ARM gains share by winning designs at leading semiconductor companies**

<table>
<thead>
<tr>
<th>Market Segment</th>
<th>2016* Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile Applications Processors **</td>
<td>90%</td>
</tr>
<tr>
<td>Networking Infrastructure</td>
<td>17%</td>
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<tr>
<td>Servers (ARMv8-A based)</td>
<td>&lt;1%</td>
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<tr>
<td>Embedded Intelligence</td>
<td>30%</td>
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<tr>
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<td>Other mobile chips</td>
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<tr>
<td>Consumer electronics</td>
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</tr>
<tr>
<td>Chips into other markets</td>
<td>40%</td>
</tr>
<tr>
<td>3D Graphics</td>
<td>50%</td>
</tr>
</tbody>
</table>

* Calendar year  
** Includes smartphones, tablets and laptops

<table>
<thead>
<tr>
<th>Market Segment</th>
<th>Change in latest quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile Applications Processors **</td>
<td>➡ ➡ 2 companies re-equipped</td>
</tr>
<tr>
<td>Networking Infrastructure</td>
<td>➡ ➡ 2 companies re-equipped</td>
</tr>
<tr>
<td>Servers (ARMv8-A based)</td>
<td></td>
</tr>
<tr>
<td>Embedded Intelligence</td>
<td></td>
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<tr>
<td>Automotive</td>
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<td>Other mobile chips</td>
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<td>Consumer electronics</td>
<td></td>
</tr>
<tr>
<td>Chips into other markets</td>
<td></td>
</tr>
<tr>
<td>3D Graphics</td>
<td></td>
</tr>
</tbody>
</table>

- ➡ Shipping mainly ARM-based chips
- ➡ Shipping some ARM-based chips
- ➡ Public ARM design wins, but not yet shipping
- ➡ No ARM design win or not yet public

Based on current market shares and ARM’s view of how these markets may develop. ARM will update the chart on the left only when design wins become public.
2025 opportunity in smartphones

Overall Smartphone Device CAGR: 3%

2020 Smartphone Chips

Applications Processor $15-$20
Connectivity Sensors } $5-$10
Applications Processor $5-$15
Connectivity Sensors } $2-$3
Applications Processor < $5
Connectivity $1-$2

ARM’s advanced technology commands a higher royalty percentage per chip

Smartphone penetration
- ARMv8-A technology: 65%
- Mali graphics: 50%
- High core count: 30%

Additional opportunities to grow royalty percentage
- Mali video, imaging and display technology
- Computer vision
- Virtual/augmented reality
- Physical IP
- Machine learning inference engine
- Increased connectivity

Smartphone penetration

Premium Smartphones
Mid-range Smartphones
Entry-level Smartphones

Source: Gartner and ARM
2025 opportunity in smartphones

Advanced consumer products are incorporating more and more ARM technology

Applications Processor chips can contain multiple ARM technologies

- ARM Processor
- Multimedia processors: Graphics, video, display, camera, etc.
- Physical IP

New functionality creates opportunity for new IP

Future expansion points

- ARM CPU
- Apps Processor Chip
- Touchscreen & Sensor Hub
- WiFi
- SIM
- Bluetooth
- GPS
- cellular Modem
- Flash Controller
- Power Mgmt
- Multiple cameras, front and rear
- Sensor Hub

2025 opportunity in smartphones

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- Multiple cameras, front and rear
- Sensor Hub
Networking infrastructure opportunity for ARM

- 5G networks will provide
  - High-speed, low latency connectivity consumers
  - High-volume low-data rate connectivity for IoT

- 5G will need heterogeneous network equipment for macro- to femto-cells

- Distributed virtualised functions enables efficient use of the network

- ARM is working with software community to expand availability of virtualised network functions
Server opportunity for ARM

- Web/cloud scale companies can reduce costs with servers optimised for specific workloads
- ARM business model enables increased innovation and differentiation
- Range if design wins in HPC, webhosting, machine learning and analytics
- New workloads (i.e. containers and microservers) are ideal for ARM multicore approach
Internet of Things opportunity

Over 1 trillion IoT devices
(accumulated in 2016-2035)

Every Internet of Things device needs:
- Sensor
- MCU
- Radio
- Security

ARM has high share of technology components needed to create a smart, secure connected device

- >75% market share
- >60% market share
- >90% market share

Advanced* microcontrollers
© ARM 2017

ARM-based technology is the platform for many Internet of Things devices

- >90% market share
- >90% market share
- >50% market share

Wearables
Drones
Connectivity in cars

* Advanced 32-bit devices
ARM’s automotive opportunity

Functional safety, consolidation, partitioning, virtualisation, performance, power, cost

- Autonomous driving, ADAS, Cluster, Connectivity
- Powertrain, chassis
- Body electronics, sensors, actuators, communications
Virtual reality and augmented reality

Mali graphics processor is used in around 50% of all VR head-mounted displays including some:

- Samsung Gear VR
- Google Cardboard VR and
- Other all-in-one VR HMDs

**Mali is #1 VR graphics processor**

Requirements for smooth mobile AR/VR

- High resolution: 2k to 4k per eye
- High performance: 60fps (120fps with asynchronous "Timewarp")
- Responsive rotation & position tracking: Increases immersion & experience
  - <20ms "motion to photon"
  - 6 degrees of freedom
- Mobile power envelope: ~4W TDP
Virtual reality and augmented reality

Asynchronous timewarp

- Decouple rotation from graphics pipeline
- Draw larger scene than needed and determine scene to display at the last moment

Gaze Tracking and Foveated Rendering

ARM's Frame Buffer Compression for low power

Post processing step/barrel distortion doubles fragment bandwidth
Machine learning in client devices

The AI landscape

Machine Learning process on ARM
The speech recognition process

1. Feature Extraction
2. Acoustics
   - Features
   - Phonemes
3. Word formation
4. Words
5. Language Model
6. Text

Automatic speech recognition on ARM-based devices

- Keyword spotting of simple commands
  - “OK Google” / “Set alarm for 7”
  - Only learn one voice saying a range of words

- Large Vocabulary Continuous Speech Recognition (LVCSR)
  - Dictation/transcription, virtual assistant, call centers
  - Requires dictionary, knowledge of grammar

- Sound monitoring
  - Early/automatic anomaly and fault detection
## Qtr ending Dec. 2016 – Financial summary

<table>
<thead>
<tr>
<th></th>
<th>Q3 2015</th>
<th>Q3 2016</th>
<th>Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Revenues ($m)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Licensing</td>
<td>158</td>
<td>229</td>
<td>45%</td>
</tr>
<tr>
<td>Royalty</td>
<td>216</td>
<td>248</td>
<td>15%</td>
</tr>
<tr>
<td>Software and Services</td>
<td>33</td>
<td>31</td>
<td>-6%</td>
</tr>
<tr>
<td><strong>Total ($m)</strong></td>
<td>407</td>
<td>508</td>
<td>25%</td>
</tr>
</tbody>
</table>

<p>| | | | |</p>
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<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>Revenues (£m)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Licensing</td>
<td>104</td>
<td>169</td>
<td>63%</td>
</tr>
<tr>
<td>Royalty</td>
<td>152</td>
<td>210</td>
<td>38%</td>
</tr>
<tr>
<td>Software and Services</td>
<td>22</td>
<td>23</td>
<td>5%</td>
</tr>
<tr>
<td><strong>Total (£m)</strong></td>
<td>278</td>
<td>402</td>
<td>45%</td>
</tr>
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<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating expenses (£m)</td>
<td>125</td>
<td>168</td>
<td>34%</td>
</tr>
<tr>
<td>Adjusted EBITDA (£m)</td>
<td>153</td>
<td>234</td>
<td>53%</td>
</tr>
<tr>
<td>Other operating expenses (£m)</td>
<td>23</td>
<td>7</td>
<td>-70%</td>
</tr>
<tr>
<td>Depreciation &amp; amortisation</td>
<td>10</td>
<td>12</td>
<td>20%</td>
</tr>
<tr>
<td>IFRS EBIT (£m)</td>
<td>120</td>
<td>215</td>
<td>79%</td>
</tr>
</tbody>
</table>

- **Q3 licensing exceptionally strong as some licenses were delayed until after the acquisition closed.**
- **Good royalty revenue continues to increase at long-term historic growth rates.**
- **Sterling revenues benefitted from a 14% fall in value of Sterling vs US Dollar.**
- **15% increase in total headcount.**
- **Currency impact of US-based employees.**
- **New long-term remuneration scheme.**
- **Ending of previous share-based remuneration scheme.**
## Qtr ending Dec. 2016* – Progress against strategy

### Licences signed for broad range of end markets

<table>
<thead>
<tr>
<th></th>
<th>FY2015</th>
<th>FY2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cortex-M</td>
<td></td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>Q3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>43</td>
<td></td>
</tr>
<tr>
<td></td>
<td>+50%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2015</td>
<td>2016</td>
</tr>
</tbody>
</table>

### Key market performance (growth in reported royalty units)

<table>
<thead>
<tr>
<th></th>
<th>Q3 2015</th>
<th>Q3 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile</td>
<td>+10%</td>
<td></td>
</tr>
<tr>
<td>Microcontrollers and Smartcards</td>
<td>+25%</td>
<td></td>
</tr>
<tr>
<td>Enterprise infrastructure</td>
<td>+50%</td>
<td></td>
</tr>
</tbody>
</table>

### Reported Royalty Units Growing

<table>
<thead>
<tr>
<th></th>
<th>FY2015</th>
<th>FY2016</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Q3</td>
<td>4.9bn</td>
</tr>
<tr>
<td></td>
<td>+20%</td>
<td></td>
</tr>
</tbody>
</table>

### Investing in Future Technology

| Technical Headcount | Q3 2015 | Q3 2016 |
| Total Headcount     | Q3 2015 | Q3 2016 |
|                     | 848     | 3,736   |
|                     | other employees | 4,584    | 3,736 Technical |

* SoftBank’s financial year runs from April 01 to March 31.
Investment leading to technology adoption
Introducing technologies for a broad range of industry-leaders in different markets

ARM acquires Allinea
Leading supercomputer software tools company

ARM announces technical information for TSMC 7FF
Including a new memory and power grid architecture for SOCs; and partnership with Xilinx who intends to be one of the first companies to deploy FPGAs made with TSMC’s 7nm FinFET process

ARM announces mbed Cloud SaaS to securely manage IoT devices

ARM and OpenSynergy announced the first software hypervisor for safety critical systems – addressing increasing complexity in autonomous vehicles
Contact information

<table>
<thead>
<tr>
<th>Contact</th>
<th>Title</th>
<th>Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ian Thornton</td>
<td>Head of Investor Relations</td>
<td>+44 1223 400796</td>
</tr>
<tr>
<td></td>
<td></td>
<td><a href="mailto:ian.thornton@arm.com">ian.thornton@arm.com</a></td>
</tr>
<tr>
<td>Philip Sparks</td>
<td>Senior Manager of Investor Relations</td>
<td>+44 1223 400566</td>
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<td></td>
<td></td>
<td><a href="mailto:philip.sparks@arm.com">philip.sparks@arm.com</a></td>
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More content available on our website

- Most quarters ARM hosts a series of investor events. Recordings of these events are available on the ARM investor website at [www.arm.com/ir](http://www.arm.com/ir)
- Currently available:
  - Intelligent buildings whitepaper by Ani Deodhar, Segment marketing manager for IoT Solutions
  - Machine learning in client devices presentation by Jem Davies, General Manager of ARM’s Media Processing Group