ARM Holdings plc
2011 Analyst & Investor Day

17 May 2011

London

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- More information about potential factors that could affect ARM’s business and financial results is included in ARM’s Annual Report on Form 20-F for the fiscal year ended December 31, 2010 including (without limitation) under the captions, “Risk Factors” and “Operating and Financial Review and Prospects,” which is on file with the Securities and Exchange Commission (the “SEC”) and available at the SEC’s website at www.sec.gov.

Agenda

Timing	Topic
10:00 – 10:30	**Overview and ARM's 2020 Vision** Tudor Brown, President
10:30 – 11:00	**Licensing and Royalty Evolution** Graham Budd, Chief Operating Officer
11:00 – 11:20	Break
11:20 – 11:40	**ARM Performance Computing** Mike Muller, Chief Technology Officer
11:40 – 12:00	**Ecosystem and Software development** James McNiven, VP of Software Alliances
12:00 – 12:30	**Q&A** Chaired by Warren East, CEO
12:30 – 13:30	Buffet Lunch

ARM Overview and Our 2020 Vision

Tudor Brown

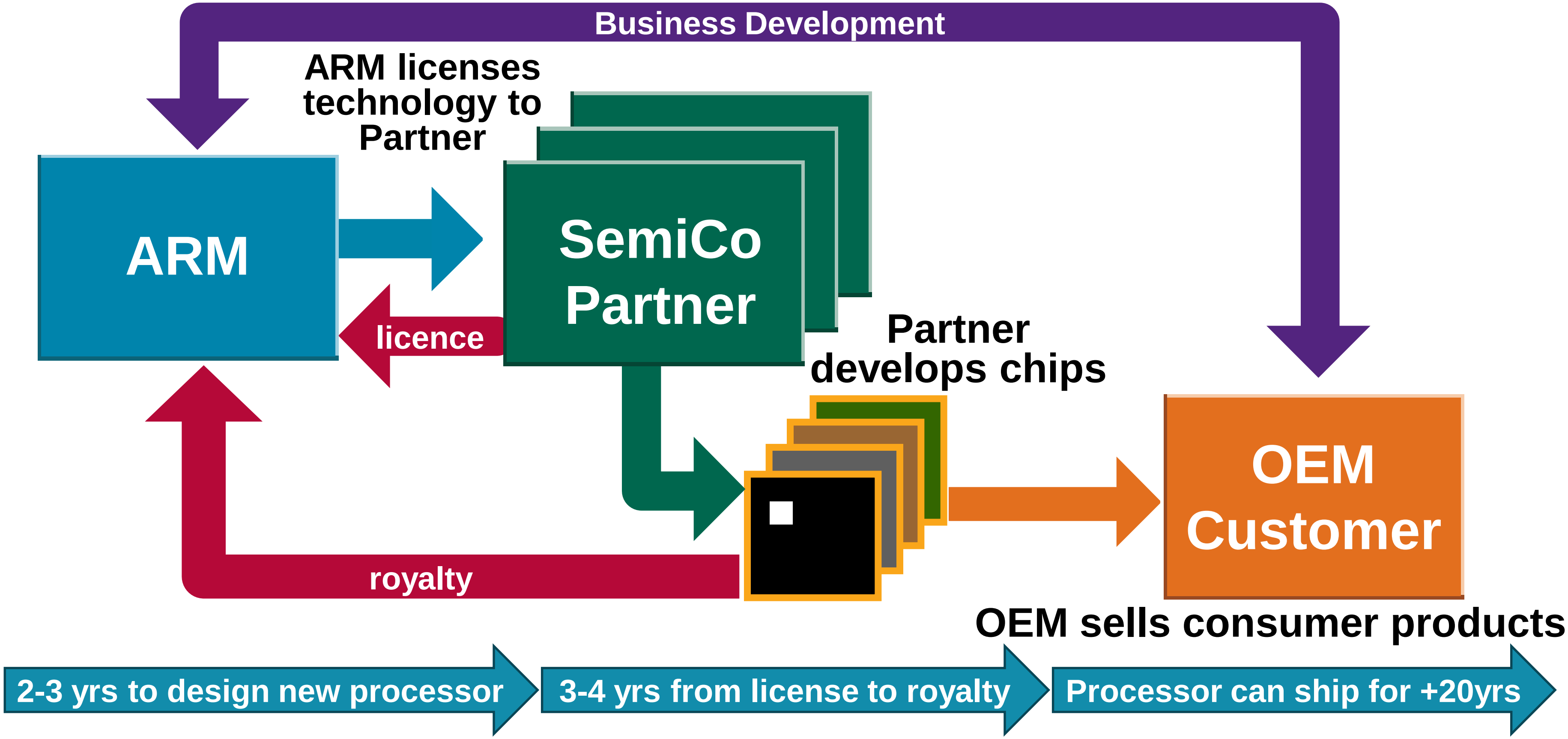
President

ARM Overview

ARM is the world's leading semiconductor IP company

- R&D outsourcing company for semiconductor industry
- Licensing and royalty business model
- Gaining share in growing markets
- Turning revenues into profits and cash

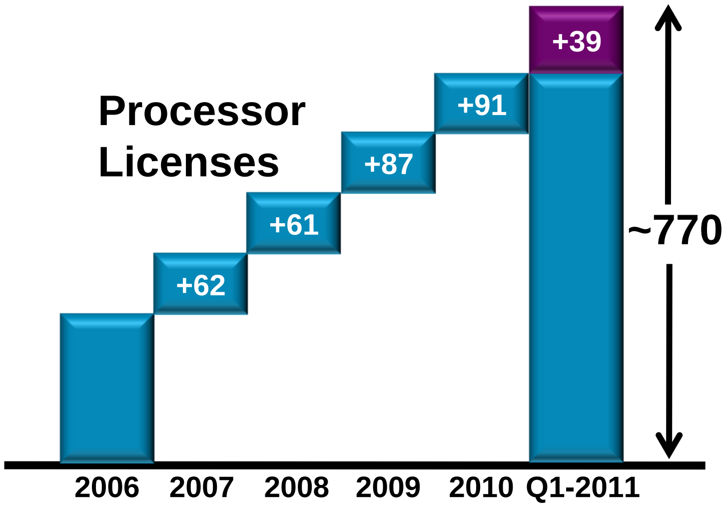
The ARM Business Model

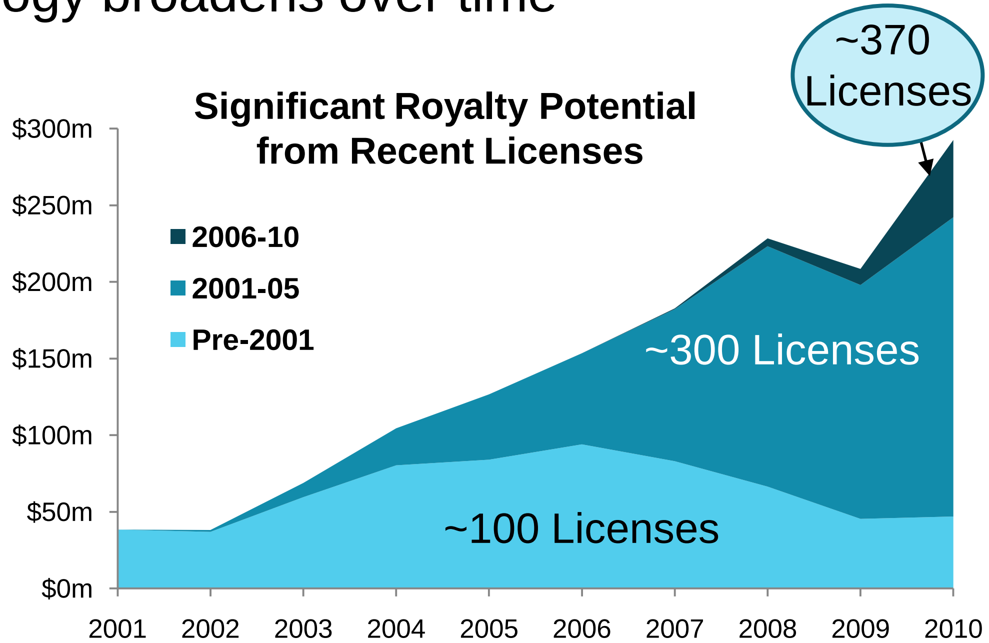


- Innovative business model yields high margins
  - Upfront license fee – flexible licensing models
  - Ongoing royalties – typically based on percentage of chip price
  - Technology suitable for multiple applications – can ship for decades

Cumulative Licensing Drives Royalties

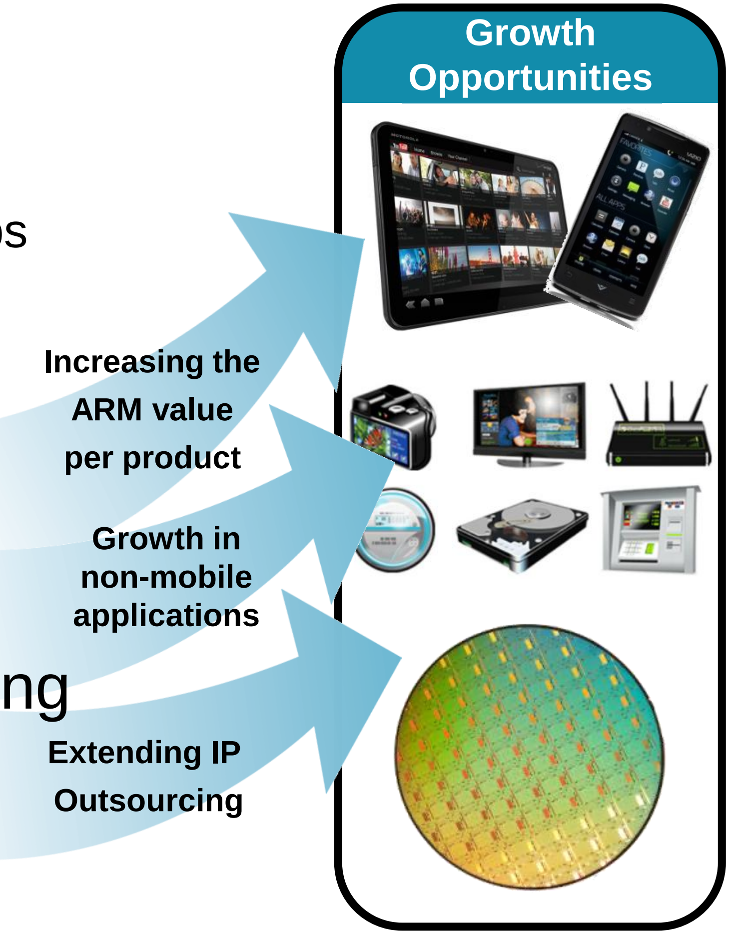
- Licensing base typically grows by 60-90 licenses every year
  - Different license types enables broad range of customers
- Growing base yields royalty revenues over long period
  - Key technology companies have made long-term, strategic commitments to deploy ARM IP in their products
  - Applicability of ARM technology broadens over time





Key Growth Drivers

- Growth in value per smart product
  - ARM's processor content per chip increasing
  - More chips per product and higher priced chips
- Growth into more markets
  - Increasing ARM penetration into broader range of digital products
- Growth into new technology outsourcing
  - Physical IP and graphics IP further increase ARM's value per chip



From Revenue to Profits and Cash

FY2010 Revenues	$m	£m	%revs
Licensing	208.2	132.5	33%
Royalty	335.3	217.7	53%
Other	87.8	56.4	14%
Total	**631.3**	**406.6**	**100%**

COGS	23.3
Gross Margin	**94.3%**
Operating Costs	**219.0**
Operating Margin	40.4%
Profit Before Tax	167.4
EPS	**9.34p**
Free Cash Flow	**£290.1**

95% of revenues earned in US dollars

Royalties more than 50% of revenues

R&D expensed as incurred

Approximately 50% of costs in USD
10% move in $/£ impacts EPS by ~15%

Operating margins and earnings will increase as royalties grow

Cash generative, debt free

From 2011 to 2020

Billions of Internet-Connected Screens

- With choice of suppliers, OEMs are innovating with new types of products
  - ARM technology can be used for applications processing, connectivity and storage
  - Standard software is available today and enables all form factors to connect to the internet and display all the web pages, play videos, network with friends ...

Form Factor	TAM(m) 2015
Mobile Phones	1,750
Media players	300
Mobile Computers	750
Desktop PCs	150
Digital TV/STB	500
Automotive Infotainment	100
Other*	450
Total	**4 billion**

*Includes PND, photo-frames, etc

ABI Research, IDC, Gartner and ARM forecasts

Billions of Real-Time Devices

- Consumer products becoming increasingly connected
  - Mobile baseband, WiFi, Bluetooth & GPS
- Local storage increasing for when we are not connected
- ARM provides efficient, reliable processors for real-time communication and control

Device	TAM(m) 2015
Mobile baseband	2,500
Other mobile connectivity	3,500
Home & Computing	1,000
Networking & Printers	1,000
Disk drives	1,100
Other*	1,900
Total	**11 billion**

*Includes industrial, media players, etc

ABI Research, IDC, Gartner and ARM forecasts

Billions of Microcontrollers

- Microcontrollers make the world smarter
  - Motor control, smart metering, security, air bags, toys, heating and air-conditioning
- Government low-energy mandates and green initiatives
- Innovation driving system cost of 32-bit ARM microcontrollers toward levels of traditional 8-bit solutions

End-Market	TAM(m) 2015
Automotive	2,200
Smartcards	7,700
Microcontrollers	9,000
Total	**19 billion**

ABI Research, IDC, Gartner and ARM forecasts

Smartmeter

Environmental Control

Peripherals

Toys

Smart Utilities

Remote Control

Smartcards

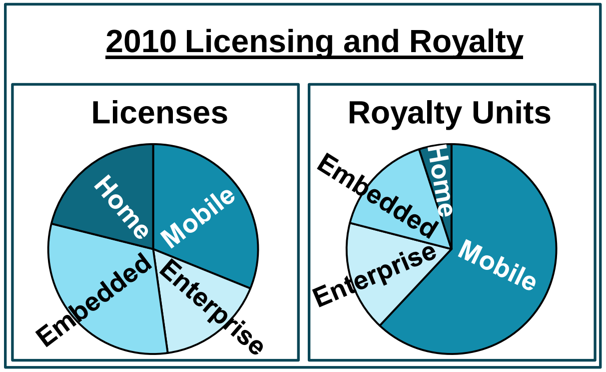
Electric Vehicle Re-charging Point

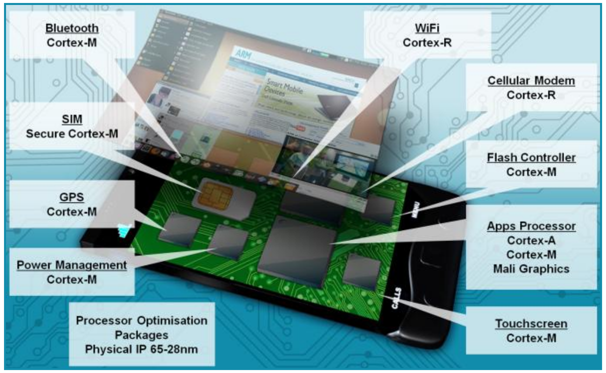
In Vehicle Infotainment

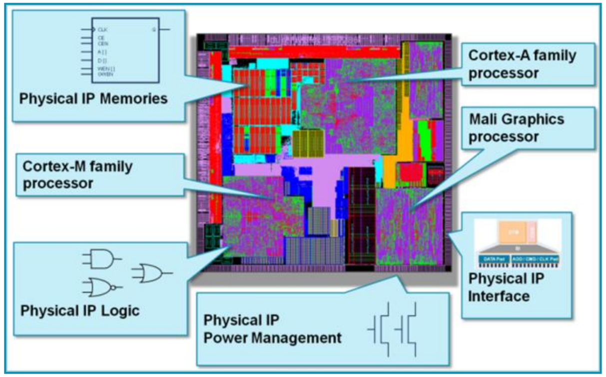
Equipment Adopting 32-bit ARM Microcontrollers

Evolution Brings Opportunities

- Business model is becoming increasingly relevant as the market evolves
  - Non-mobile becoming a greater proportion of total licenses and shipments
    - ~75% licenses and ~40% royalties
- Consumer electronics products are containing multiple ARM-processor based chips
  - Mobile phones, computing, digital TVs can all contain multiple ARM-processor based chips
- ARM royalty opportunity per chip is increasing
  - Higher value processors
  - Multiple processor per chip
  - Physical IP and graphics IP







ARM's Business is Evolving

- ARM regarded as a key strategic partner by an increasing number of leading technology companies
  - Each member of the management team has responsibility for developing relationships with key ecosystem companies

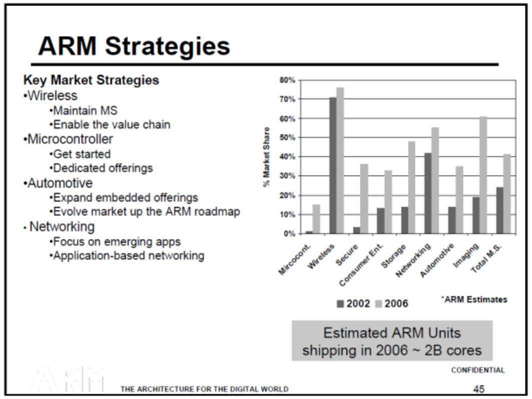
- ARM continues to invest in R&D and operations to develop and deploy the technology our customers need
  - Multiple experienced engineering teams, spread over the globe, de-risk projects and enable new ideas and innovation into ARM
  - Development of engineers experienced in different disciplines and connected to the external ecosystem continues innovation drive

What We Told You Previously

2002 Analyst Day Forecasting for 2006

Forecast: ARM shipments at 2 billion units per year

Actual: 2.6 billion shipped



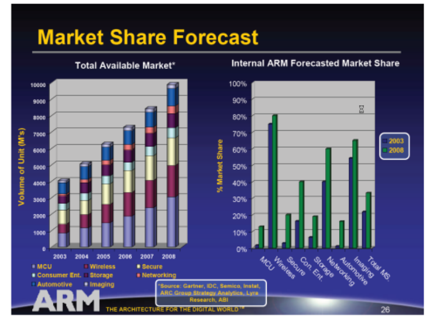
2004 Analyst Day Forecasting for 2008

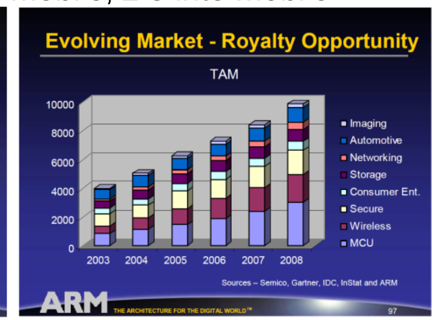
Forecast: 3.3 billion ARM-processor based chips

1.6 billion into non-mobile, 1.7 into mobile

Actual: 4.0 billion shipped

1.5 billion into non-mobile, 2.5 into mobile





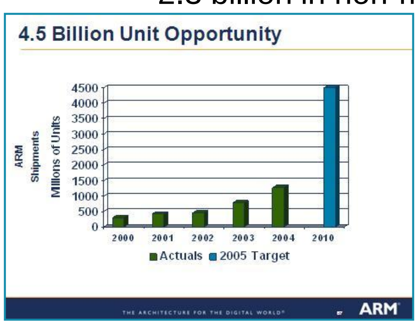
2005 Analyst Day Forecasting for 2010

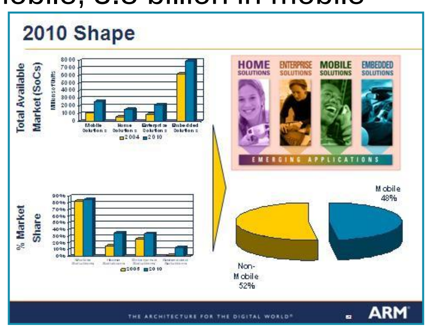
Forecast: 4.5 billion ARM-processor based chips

2.3 billion in non-mobile, 2.2 billion in mobile

Actual: 6.1 billion shipped

2.3 billion in non-mobile, 3.8 billion in mobile

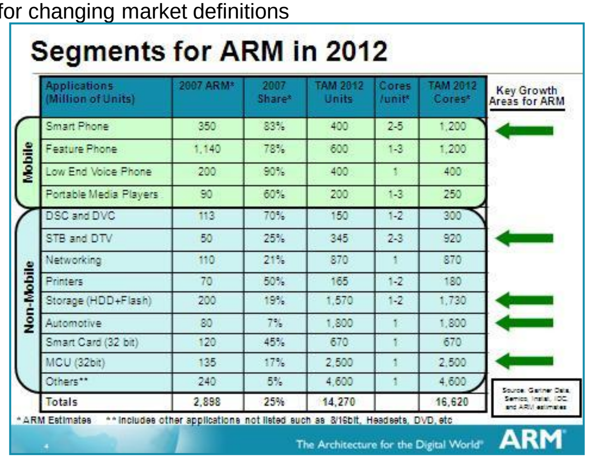




2007 Analyst Day Forecasting for 2012

Forecast market size for 2012 was surpassed in 2010*

*Accounting for changing market definitions



Segments for ARM in 2012

	Applications (Million of Units)	2007 ARM*	2007 Share*	TAM 2012 Units	Cores /unit*	TAM 2012 Cores*
Mobile	Smart Phone	350	83%	400	2-5	1,200
	Feature Phone	1,140	78%	600	1-3	1,200
	Low End Voice Phone	200	90%	400	1	400
	Portable Media Players	90	60%	200	1-3	250
Non-Mobile	DSC and DVC	113	70%	150	1-2	300
	STB and DTV	50	25%	345	2-3	920
	Networking	110	21%	870	1	870
	Printers	70	50%	165	1-2	180
	Storage (HDD+Flash)	200	19%	1,570	1-2	1,730
	Automotive	80	7%	1,800	1	1,800
	Smart Card (32 bit)	120	45%	670	1	670
	MCU (32bit)	135	17%	2,500	1	2,500
	Others**	240	5%	4,600	1	4,600
	Totals	2,898	25%	14,270		16,620

Key Growth Areas for ARM

Source: Gartner Data, Semico, Instat, IDC and ARM estimates

*ARM Estimates **Includes other applications not listed such as 8/16bit, Headsets, DVD, etc

ARM's 2015 Opportunity

	Devices Shipped (Million of Units)	TAM 2010 Chips	10 ARM Share	TAM 2015 Devices	Chips/ Unit	TAM 2015 Chips	Key Growth Areas for ARM
Mobile	Smart Phone	1,200	90%	1,100	3-5	4,000	←
Mobile	Feature Phone	1,900	90%	650	2-3	2,000	
Mobile	Low End Voice	570	95%	700	1-2	1,300	
Mobile	Portable Media Players	300	70%	120	1-3	250	
Mobile	Mobile Computing* (apps only)	230	10%	750	1	750	←
Non-Mobile	Desktop PCs & Servers (apps)	220	0%	250	1	250	
Non-Mobile	Digital Camera	200	80%	150	1-2	250	
Non-Mobile	Digital TV & Set-top-box	450	35%	500	1-4	1,200	←
Non-Mobile	Networking	750	25%	800	1-2	1,400	
Non-Mobile	Printers	120	65%	200	1	200	
Non-Mobile	Hard Disk & Solid State Drives	670	85%	1,100	1	1,100	←
Non-Mobile	Automotive	1,800	10%	2,200	1	2,200	
Non-Mobile	Smart Card	5,400	6%	7,700	1	7,700	
Non-Mobile	Microcontrollers	5,800	10%	9,000	1	9,000	←
Non-Mobile	Others **	1,800	15%	2,000	1	2,000	
	Total	**22,000**	**28%**	**27,000**		**34,000**	

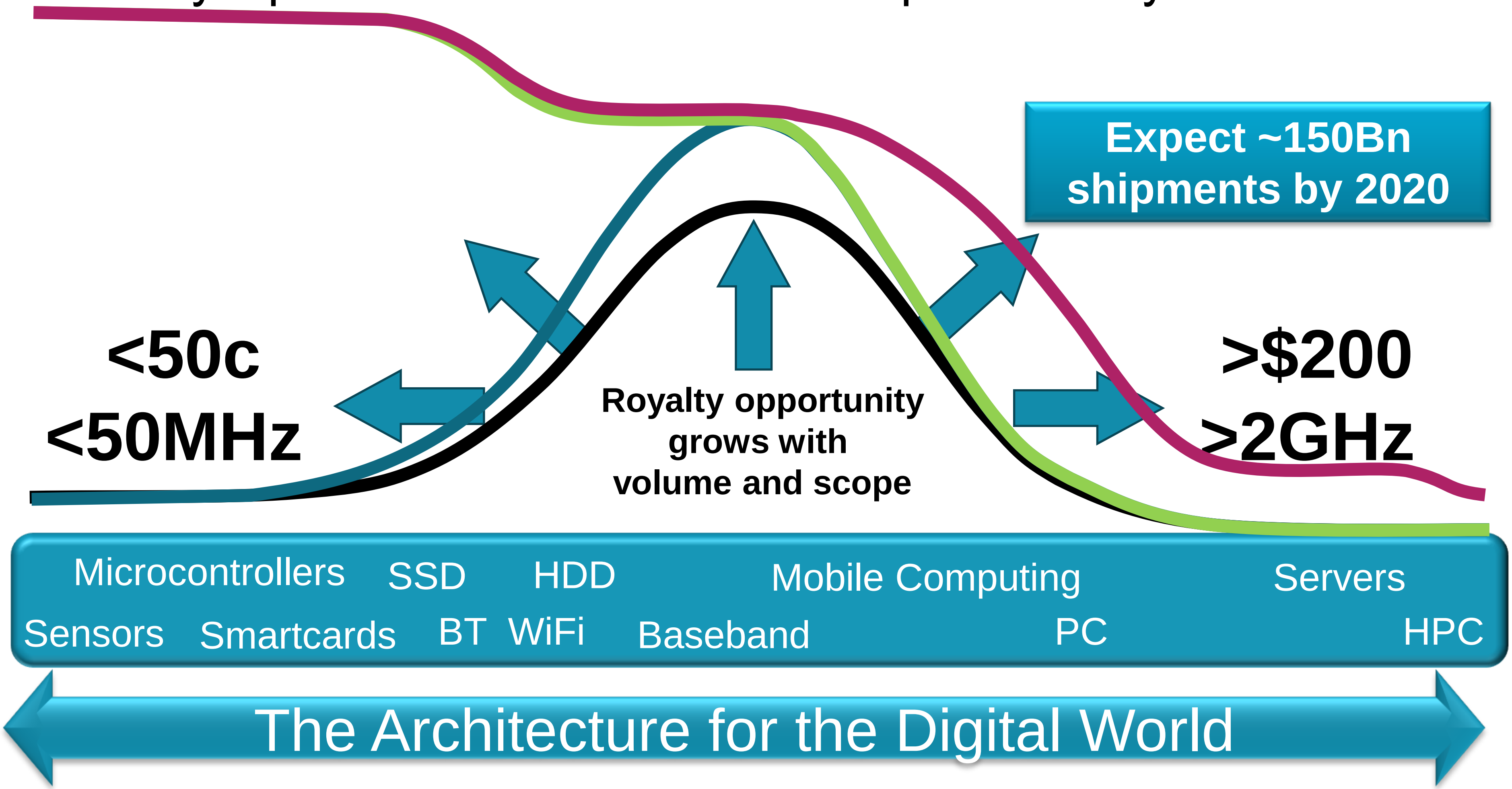
Source: ABI, Gartner, Semico, Instat, IDC, and ARM estimates

*** Including tablets, netbooks and laptops**

*** * Includes other applications not listed such as headsets, DVD, game consoles, etc**

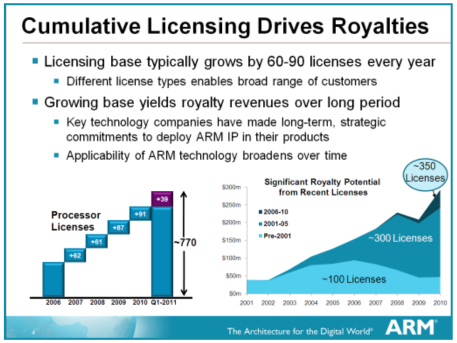
ARM's 2020 Vision

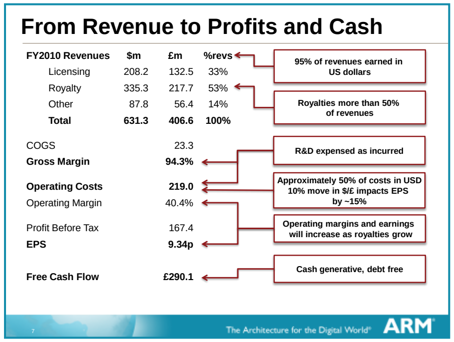
- ARM is growing into new markets and product categories
- Today's processor licenses drive shipments beyond 2015

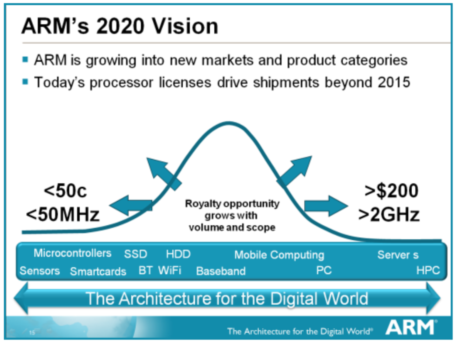


ARM’s Consistent Strategy

- ARM’s strategy and vision has been consistent over the last 20 years
  - To develop semiconductor IP that we license to leading companies, and collect royalties from their shipments
  - To grow our overall revenue faster than our costs, over the medium term
  - To become the architecture for the digital word







The Architecture for the Digital World®

Licensing and Royalty Evolution

Graham Budd
Chief Operating Officer

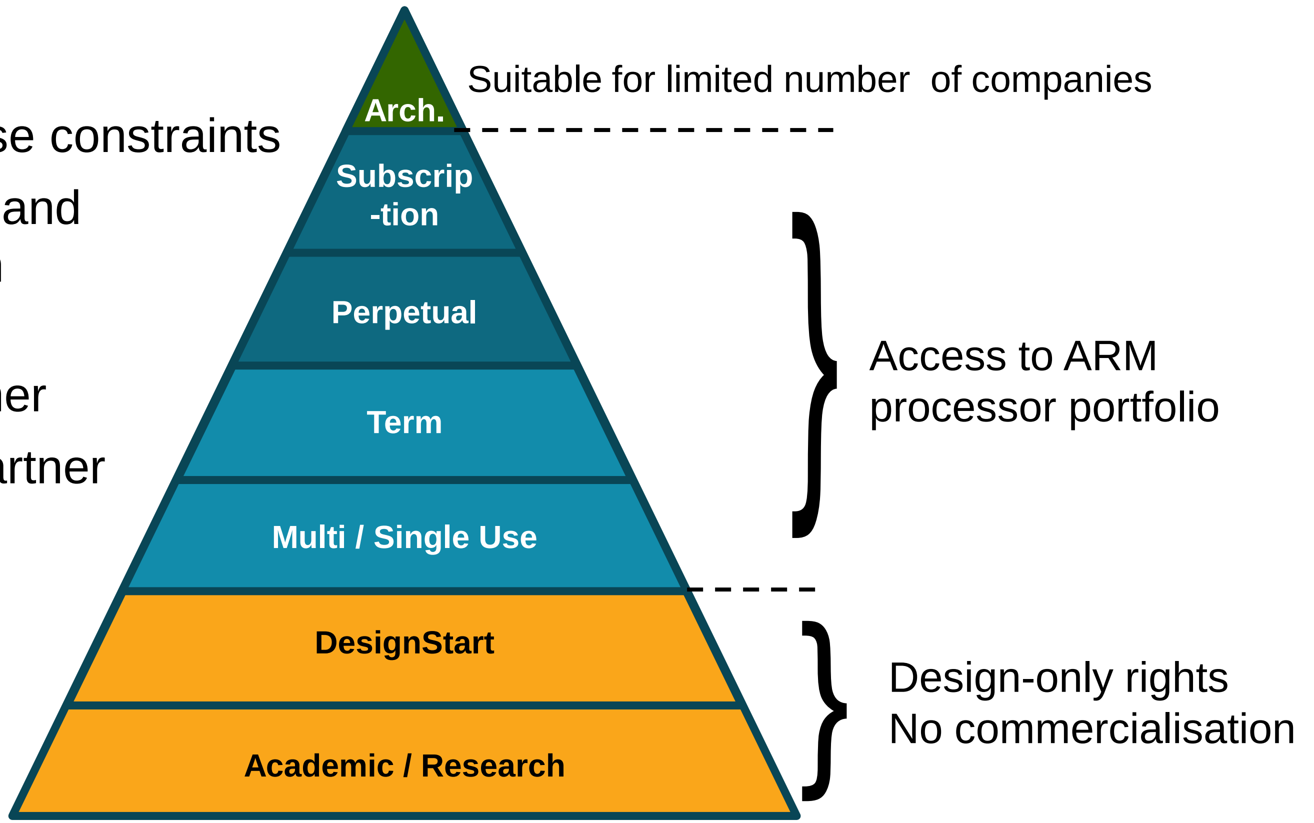
Business Model Evolution

- ARM today is well positioned within the industry
  - Over 25 processors – suitable for expanding range of end markets
  - Introducing complementary products - Graphics and Physical IP
- Industry today is continuing to disaggregate
  - Existing customers increasing technology outsourcing
  - New companies are outsourcing for the first time
  - New types of companies are becoming ARM's customers
  - Over 250 customers – IDMs, fabless, foundries, OEMs, software vendors, service providers
- ARM's business model evolves to provide latest technology to enable all types of opportunity

Broad Range of Licensing Options

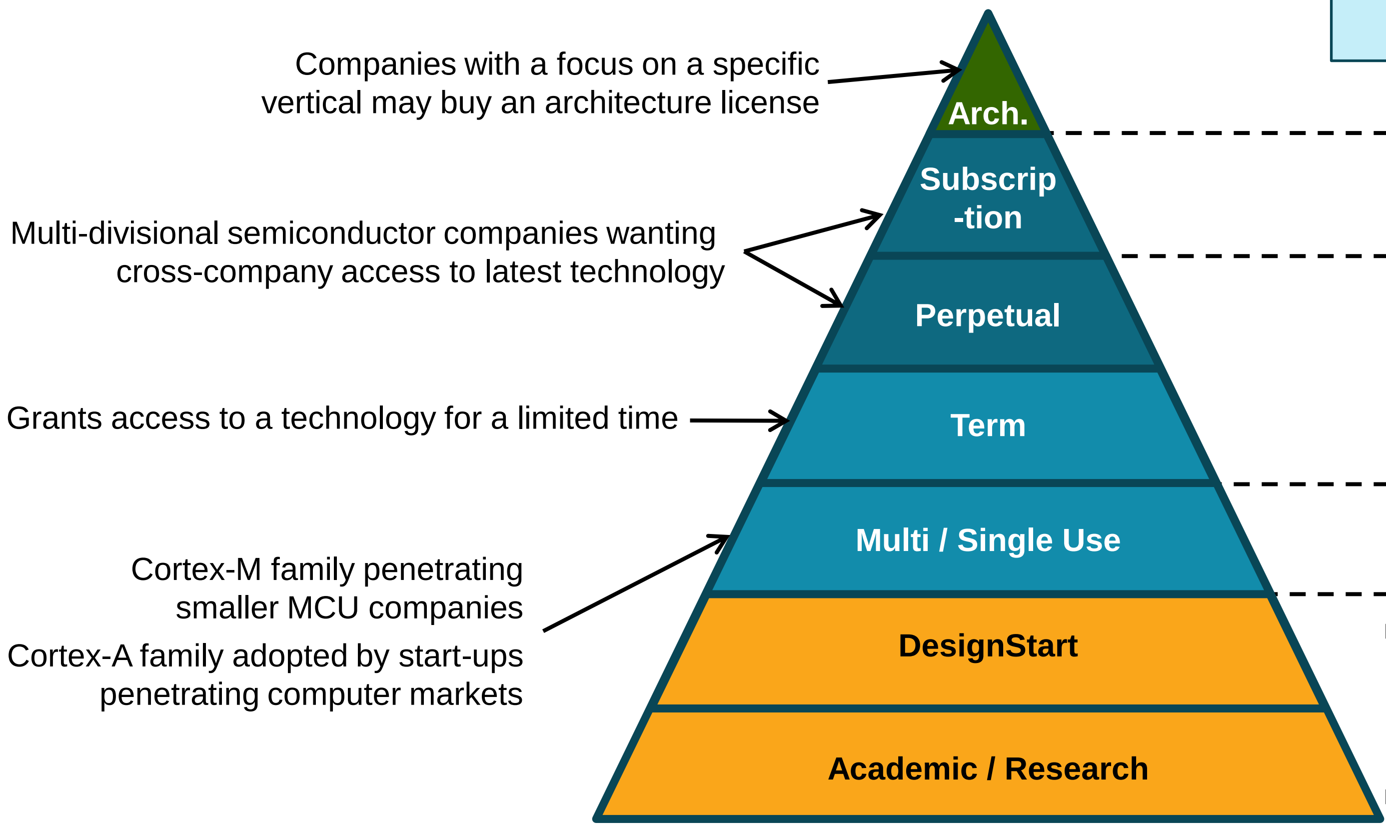
- Flexible business model enables all types of companies to gain access to ARM's technology
  - High-volume customers want cross-divisional access
  - Start-ups typically require lower upfront fees

- Fewer technology/use constraints
- Greater commercial and technical interaction
- Increasing internal investment by Partner
- Increasing ARM / Partner business knowledge
- Higher license price



Broad Range of Licensing Options

- Major companies often choose term, perpetual or subscription licenses
- Smaller/new companies often choose single-use licenses for mature IP



Licenses signed to date	Average time to royalties
1%	4.5yrs
2%	2.0yrs
51%	3.0yrs
46%	2.5yrs

100s of seeds for future full licenses

Increased Subscription Licensing

- Leading semiconductor companies making long-term commitments to ARM technology
  - Multi-year, corporate-level commitments
  - Fixed annual fee giving multiple divisions access to broad range of ARM technology
  - Revenue recognised pro-rata across the term

- Customer gets immediate access to our most advanced technology
  - Reduces barrier to cross-divisional deployment
  - Engineering no longer has to justify access, management want to maximise reuse of investment
  - Subscription licensees often choose to use ARM technology across more divisions

Subscription Licensees

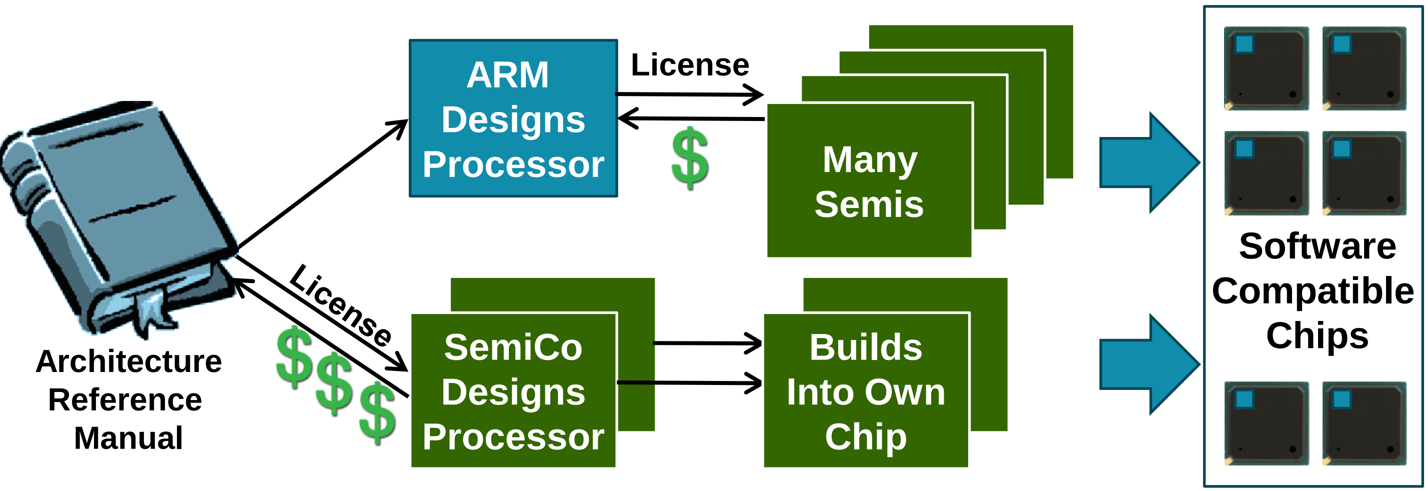
Broadcom, Fujitsu, LG, NXP, Renesas, Samsung, ST

Physical IP Subscription

Freescale semiconductor

Occasional Architecture Licensing

- ARM processors are designed to be applicable to a wide range of end markets



- Companies focused on vertical markets may wish to design own ARM compliant processor
  - Higher license fee, plus design costs, plus royalty
  - Each Partner has different motivation for signing an architecture license
  - Also continue to license standard ARM processors

Architecture Licensees

Infineon

MARVELL

Microsoft

NVIDIA

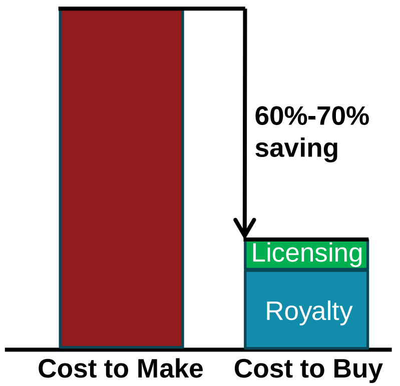
QUALCOMM

+4 others

Outsourcing Opportunity is Increasing

- Semiconductor companies are using ARM technology rather than developing internally
  - It is cheaper, faster and safer to buy rather than make some technologies
  - ARM estimates that we save our customer over 60%-70% of the cost of developing internally

Estimated Make vs. Buy for a Top-10 Customer



- ARM technology enables access to a rich ecosystem shared with the rest of industry
  - Immediate access to a pool of expert engineers, EDA and software tools, operating systems and middleware, application software and content
  - No single company has the scale of ARM's connected community

50% Penetration of Top 20 Companies

- 18 of the top 20 semiconductor companies use ARM's technology, but not in all of their product-lines
- ARM technology penetration is increasing:
  - Only one company has more than 20 processor licenses
  - Five companies are subscription licensees
  - Significant opportunity for Mali graphics and physical IP

Average Number of Licenses Each[1]	Subscription Licensees	Number of Cortex Licensees[2]	Mali Graphics Licensees	Physical IP End Users
10	5	A : 13 R : 9 M : 11	6	12

1. Excluding subscription licensees

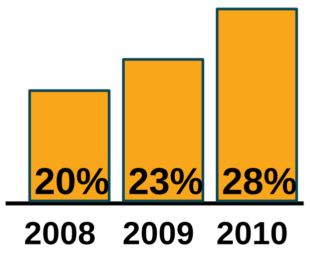
2. Only six have A, R and M processors

Enabling the Whole Industry

~30% of chips are based on ARM processors

- To gain a high proportion of the semiconductor industry ARM needs to achieve and maintain design wins with current market leaders and all potential future leaders

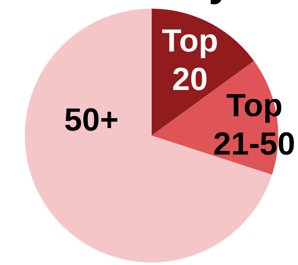
Growing Penetration



~80% of licenses are outside of Top 20

- Smaller semiconductor companies have fewer resources and so benefit greatly from outsourcing R&D

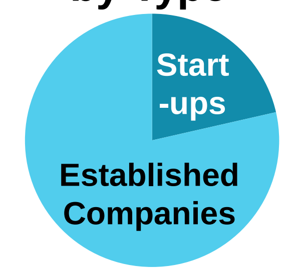
Licensing the Industry



~25% of licenses are with new customers

- Mainly for microcontrollers, but also for mobile, consumer electronics and networking
- Most are established companies, who have not previously needed a smart processor for their application

New Customers by Type



Licensing Increases Market Opportunity

To gain share ARM works to win designs at market leading semiconductor companies

Application	Penetration of Key Companies' Products	2010 Share Shipments
Smartphone – Apps	🔵🔵🔵🔵🔵🔵🔵	>95%
Mobile Computer – Apps*	🔵🔵🔵🔵🔵🔴🔴	10%
Mobile – Modems	🔵🔵🔵🔵🔵🔵	>95%
Mobile – BT	🔵🔵🔵🔵🔵🔴	70%
Mobile – WiFi	🔵🔵🔵🔵🟡🔴🔴🔴	65%
Digital Camera**	🔵🔵🔵🔵🔵🟢🟡🟡🟡🔴	80%
Digital TV / Set-Top-Box	🔵🔵🟢🟢🔴	35%
Networking	🔵🔵🟢🟢🟢🟢🔴🔴🔴🔴	25%
Printers**	🔵🔵🔵🟢🟢🟢	65%
Disk Drives (HDD & SSD)	🔵🔵🔵🔵🔵	85%
Automotive	🔵🔵🟢🟢🟢🔴🔴🔴🔴🔴	10%
Smart Card	🟢🟢🟢🟢🟡🟡🟡🟡🔴	6%
Microcontrollers	🔵🔵🔵🟢🟢🟢🟡🟡🔴🔴	10%
3D Graphics	🟢🟢🟡🟡🔴🔴🔴🔴	<1%

* Includes handheld computers, tablets, and laptops
**Based on OEM market share rather than semiconductor vendor

- 🔵 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

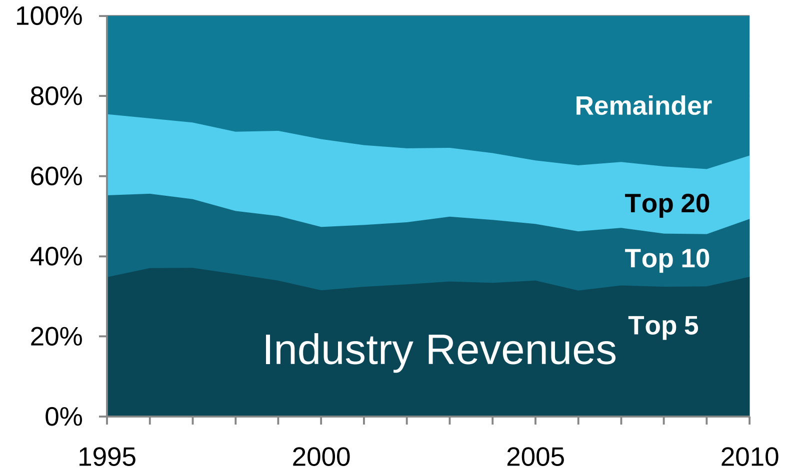
Q4 2010	🔵 3 company re-equipped 🟢 2 companies re-equipped
Q1 2011	🔵 3 companies re-equipped 🟢 1 company re-equipped 🔴 2 new design wins

Based on current market shares and ARM's view of how these markets may develop.

ARM will update the chart on the left only as design wins become public

Consolidation Can Benefit ARM

- Consolidation has not significantly changed licensing opportunity
  - Concentration of industry revenues broadly unchanged
- Consolidation can benefit ARM
  - Saving cost is often a driver
  - Existing licensees acquire ARM-based companies
  - Major companies buy into new markets with ARM-based technology
  - ARM works with enlarged company to aid integration opportunity

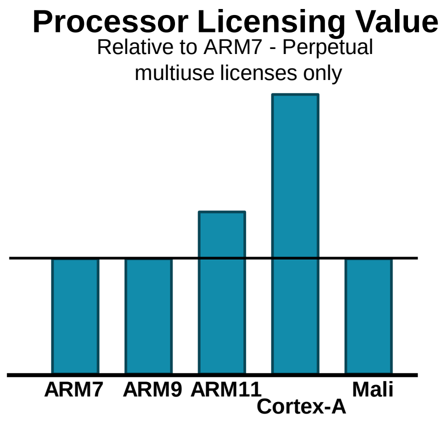


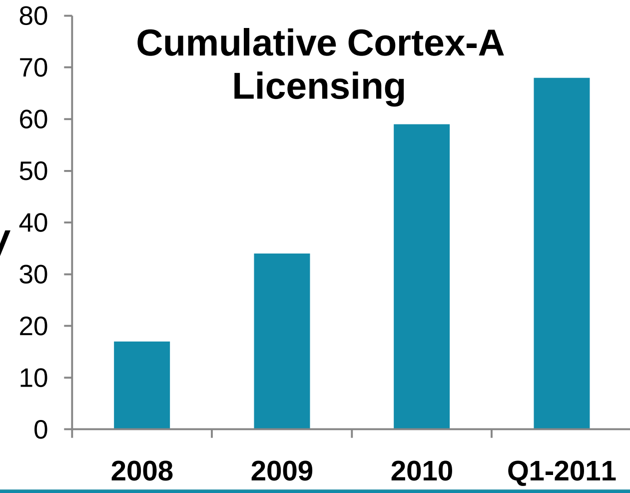
Acquirer	Acquiree / Division
Broadcom	Beceem Provigent
CSR	Zoran
Intel	Infineon / Wireless TI / Cable Modem
Mediatek	Ralink
Qualcomm	Atheros
Renesas	Nokia / Modem
TI	National Semi

- 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

Smarter Processors: Higher Value

- More sophisticated processors are achieving higher licensing fees and higher royalties
- Cortex-A family are ARM's most advanced processors
  - Higher R&D costs, richer software ecosystem and are therefore much more valuable
  - Cortex-A processors are achieving the highest ever licensing fees and royalty per-chip rate
- Strong demand for Cortex-A
  - Smartphone, mobile computing and digital TV
  - 4% of Q1 2011 unit shipments, from 16 licenses – 68 signed to date





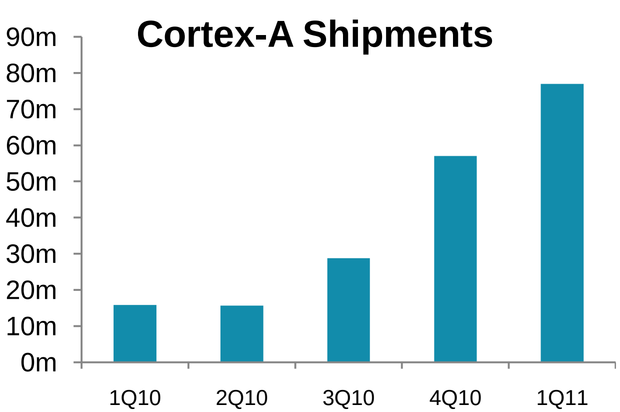
The Architecture for the Digital World®
ARM®

Increasing Royalty Percentage Per Chip

- Average royalty percentage per chip is beginning to increase
  - Cortex-A family of processors command higher percentage royalty
  - Increasing number of chips contain multiple ARM-based processors
  - ARM Mali and Physical IP generate additional royalties per chip
- Royalty percentage per chip is likely to grow over time

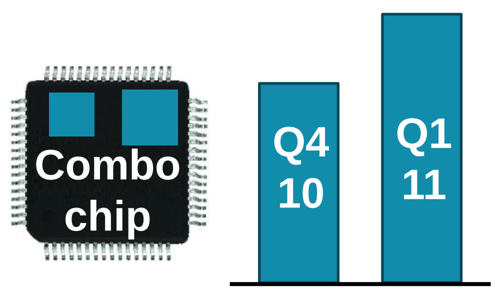
Higher Royalties for Cortex-A Processors

Cortex per chip royalties typically higher than historic royalty rates



Multiple ARM Processors Per Chip

When multiple ARM processors are integrated into a single chip, higher royalty rates typically apply

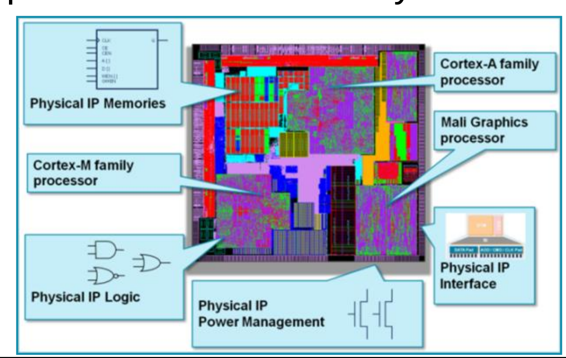


25% increase in chips with multiple ARM processors per chip

Multiple Royalty Sources Per Chip

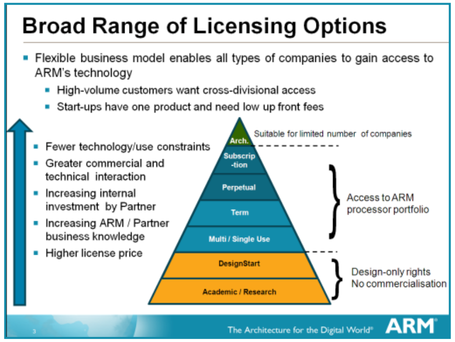
Mali and Physical IP generate additional royalties per chip

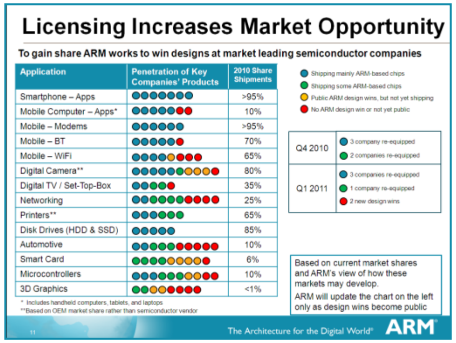
Multiple chip designs based on processors & Mali & Physical IP

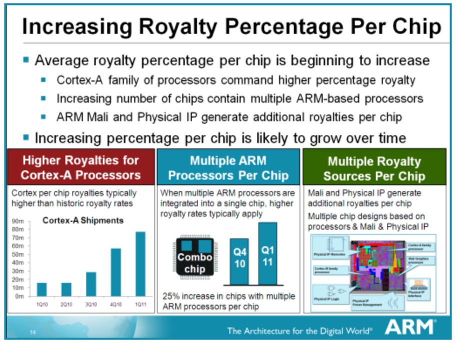


Power of the Business Model

- ARM has a range of licensing options enabling access to ARM technology for all different types of companies
- Licensing increases ARM's future royalty potential
- Advanced processors command both a higher license fee and higher royalties





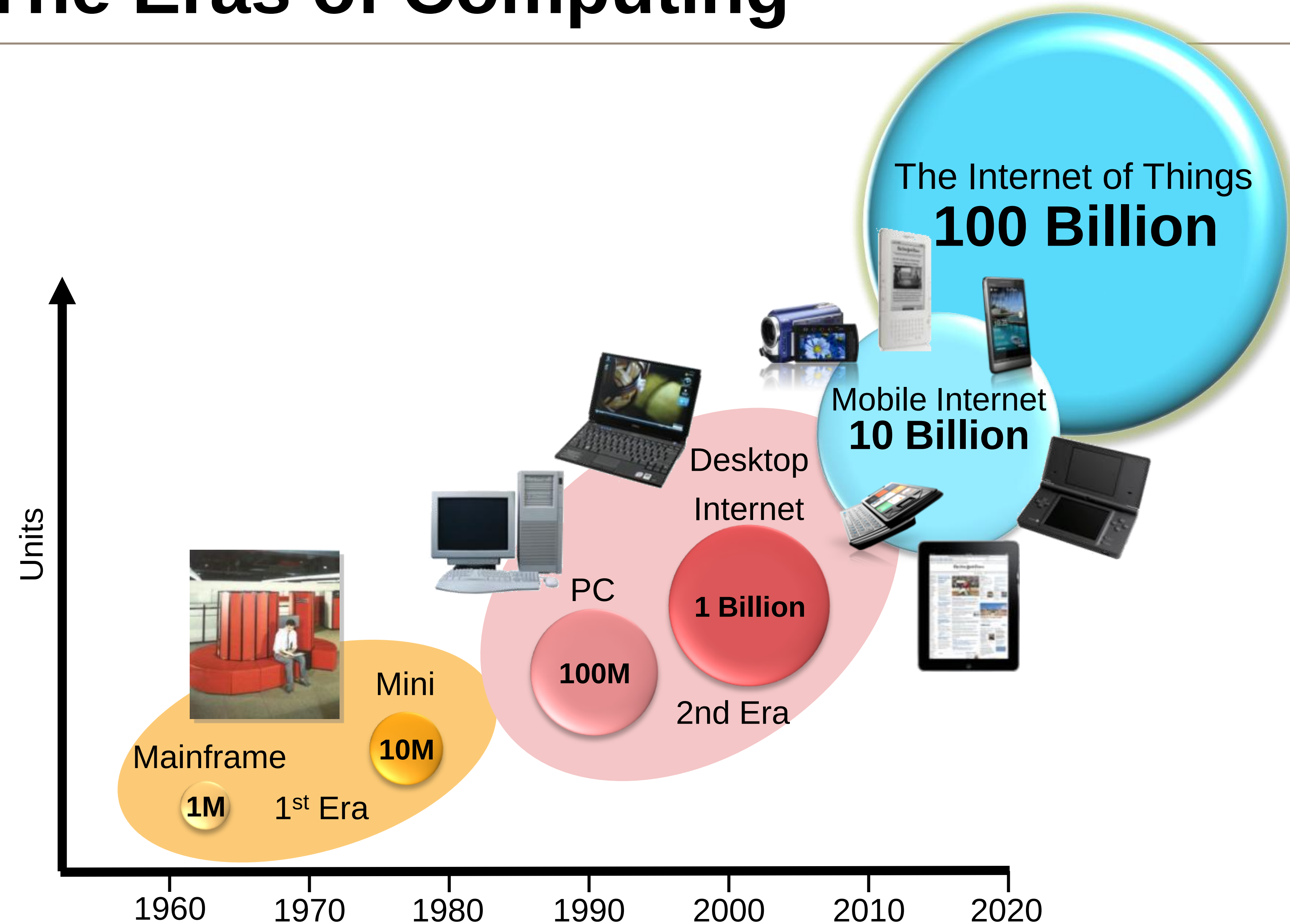


ARM Performance Computing

Mike Muller

Chief Technology Officer

The Eras of Computing



Historic Technology Drivers

Up to 1980s	1990s	2000s	2010s
Functionality	$\frac{\text{Functionality}}{\$}$	$\frac{\text{Functionality}}{\text{Power} \times \$}$	$\frac{\text{Functionality}}{\text{Energy} \times \$}$
Mainframes/mini	The PC	Notebooks	Mobiles

Low Power Positioned for the Future

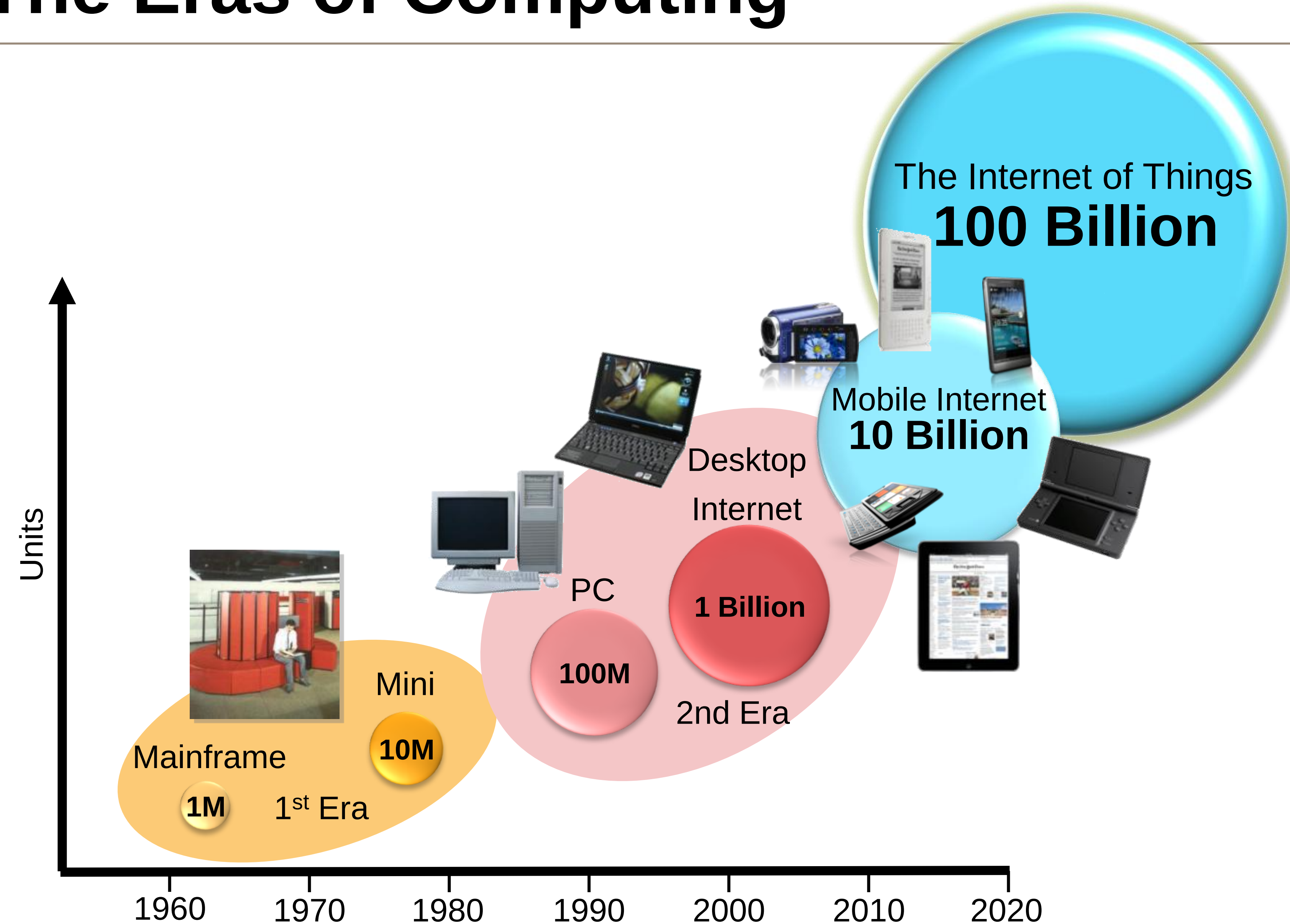
- Going forward low power is necessary for everything from microcontroller to servers
- Low power is a design philosophy
  - Mindset, style, culture and working practice
  - Not something you change or acquire easily
- Low power is a design reality
  - ARM is an efficient architecture
  - None of the 80806 legacy or CISC complexity
- Low cost is a design & manufacturing partnership
  - Time to volume not time to niche markets
  - Speed-binning not good enough for mass-market

$$\frac{\text{Functionality}}{\text{Energy} \times \$}$$

2010s

Mobiles

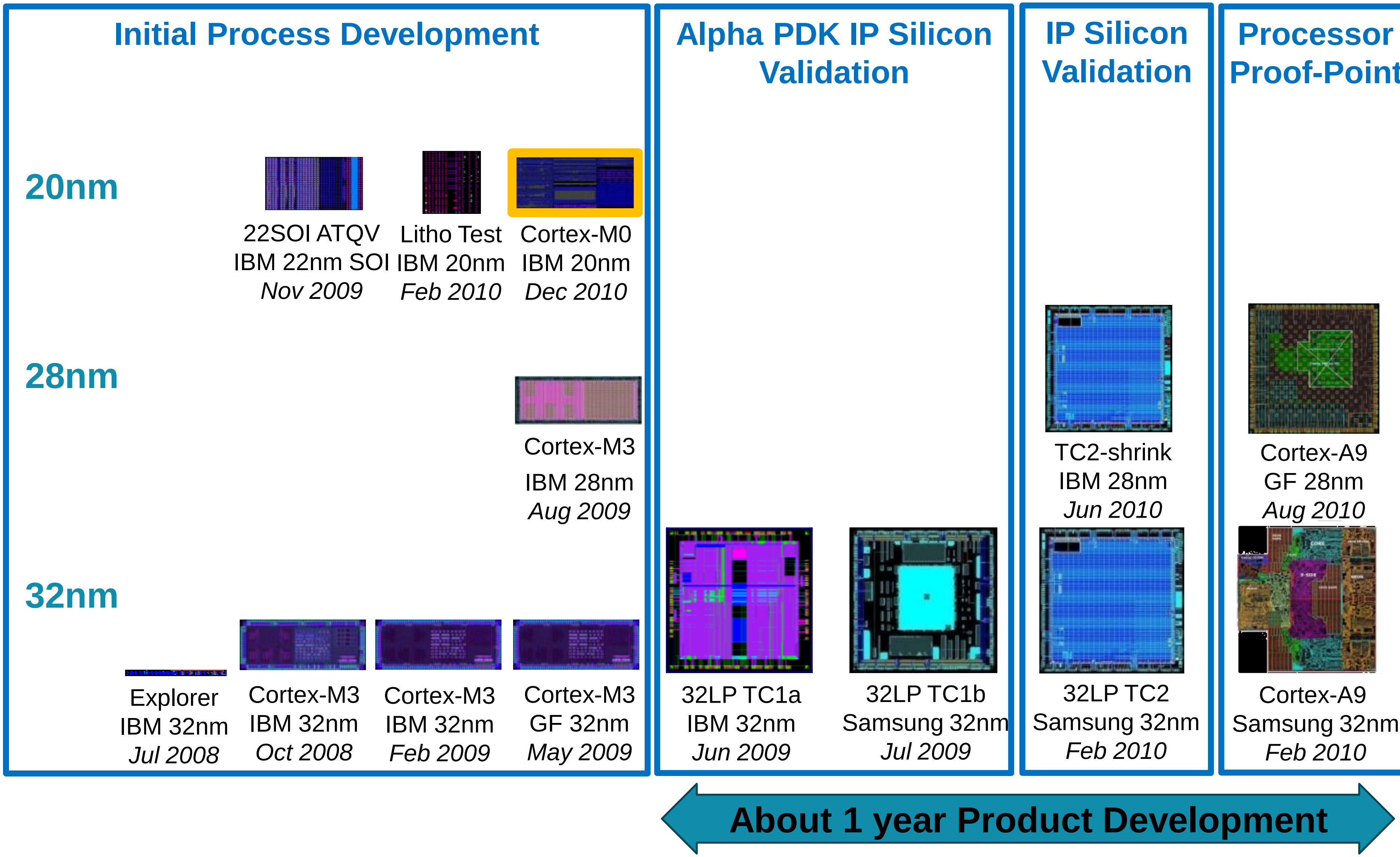
The Eras of Computing



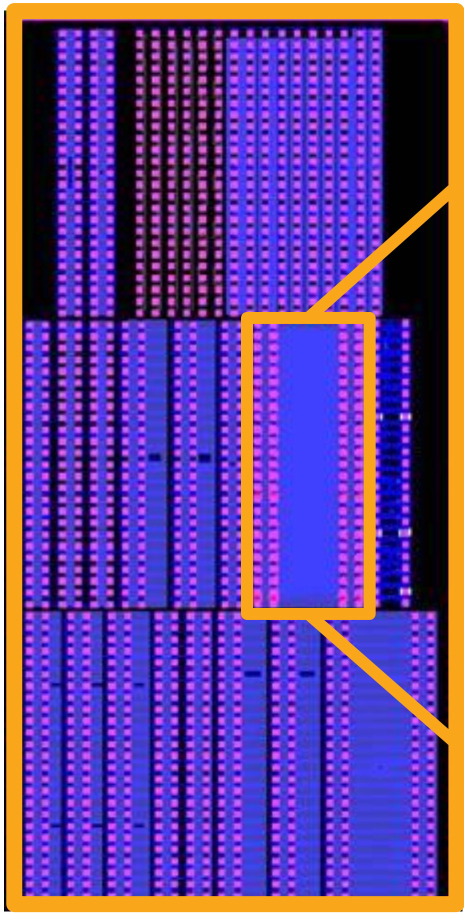
The Architecture for the Digital World

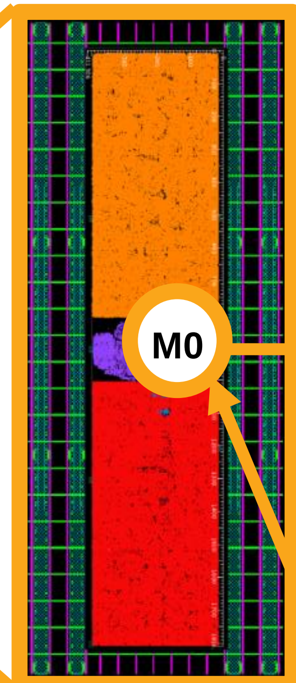

Services
Ubiquitous environments
Compute & storage cloud

Partners, Processors and Physical IP



20nm Cortex-M0 and the original ARM1

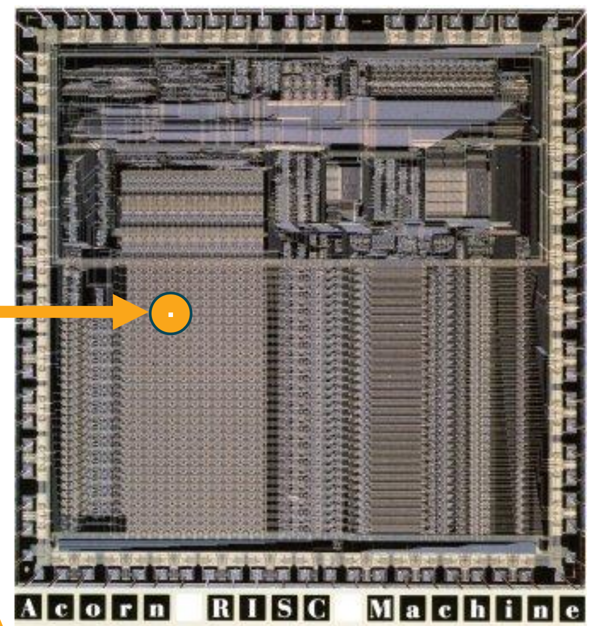




Cortex-M0 Subsystem

ARM1 3μ 6k gates

7mm x 7mm = 49mm^2



Cortex M0 20nm 8k gates

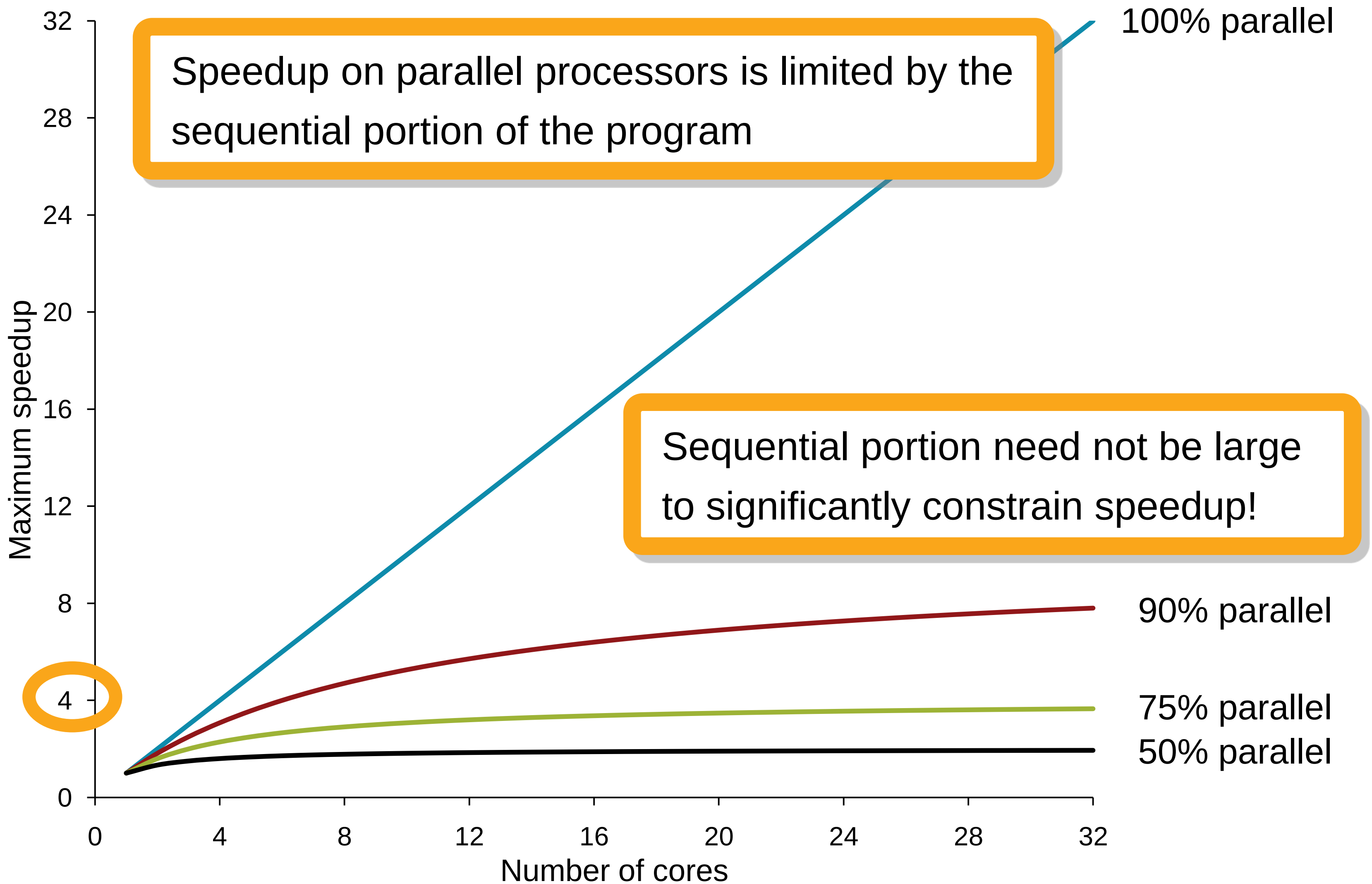
0.07mm x 0.07mm

1/10,000th size

So why not 10,000 processors in a chip?

December 2010

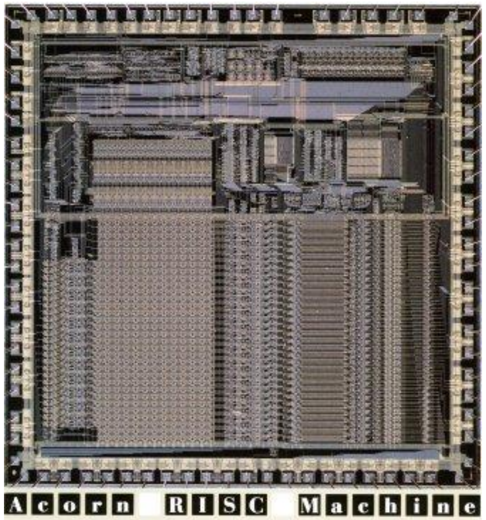
Amdahl's Law is Alive and Well



Building Better Systems-on-Chip

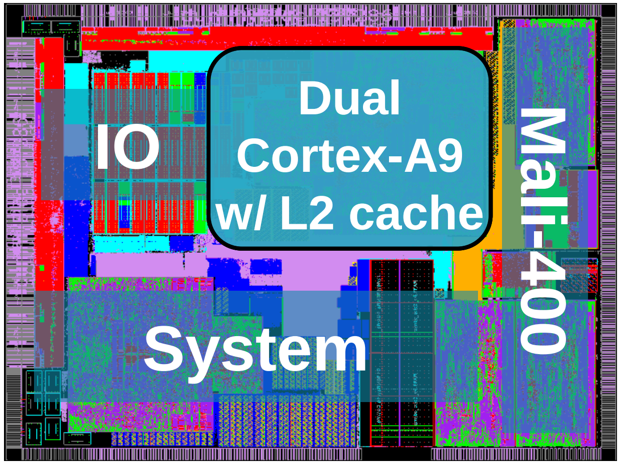
ARM1 3μ 6k gates

7mm x 7mm = 49mm^2



Cortex-A9 SOC 40nm

7.4mm x 6.9mm = 51mm^2

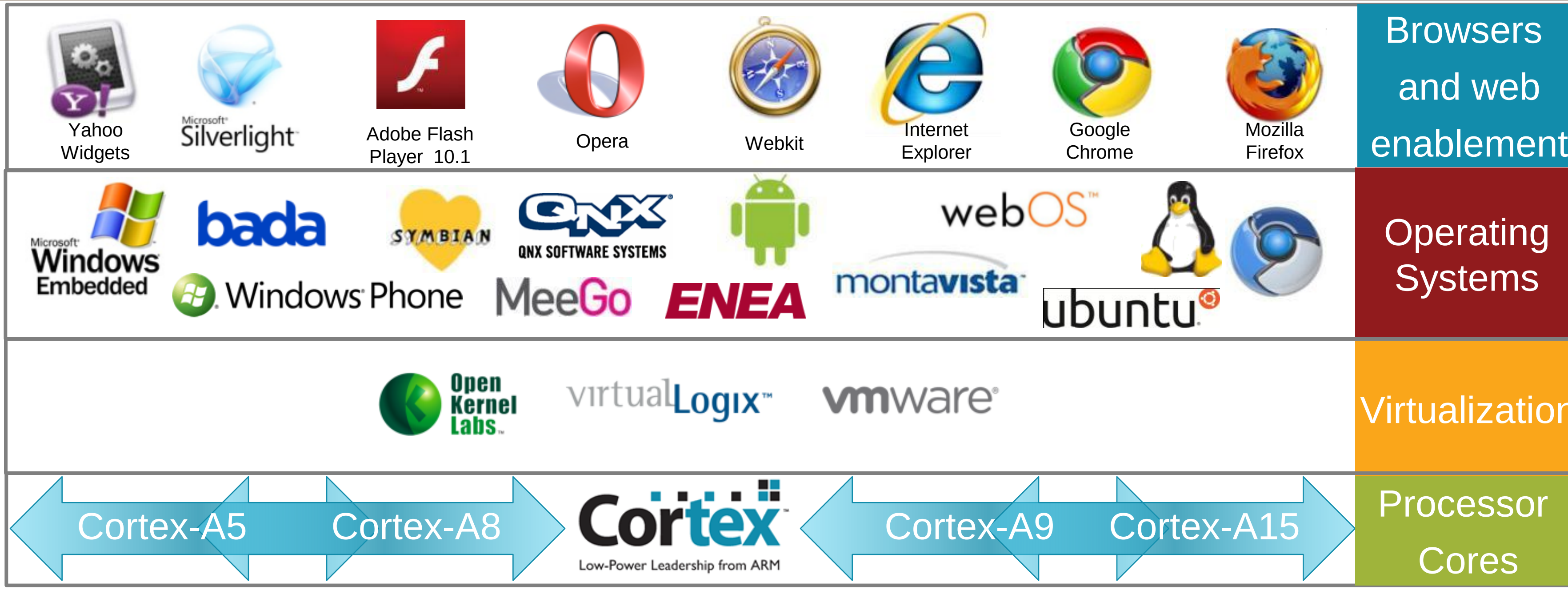


Sony Xperia Play | **LG Optimus 3D** | **Motorola Atrix**

ARM Physical IP Processor Optimization Packages (POPs)

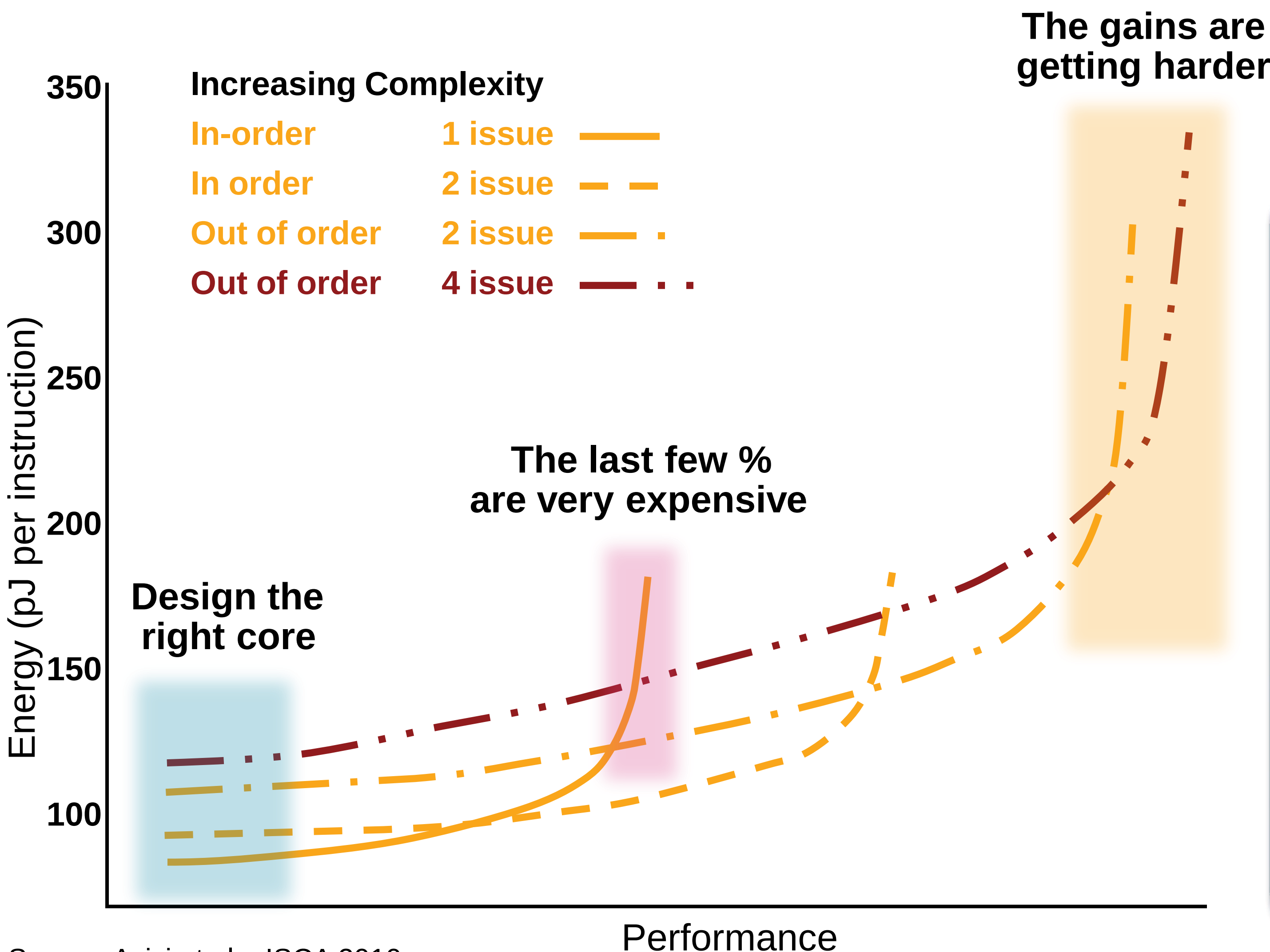
0.9 GHz	1.3 GHz	2.0 GHz
SVt, SS	SVt, SS	Mixed Vt, TT
0.81V, 125C	0.81V, 125C	1.0V, 105C
	POPs	POPs

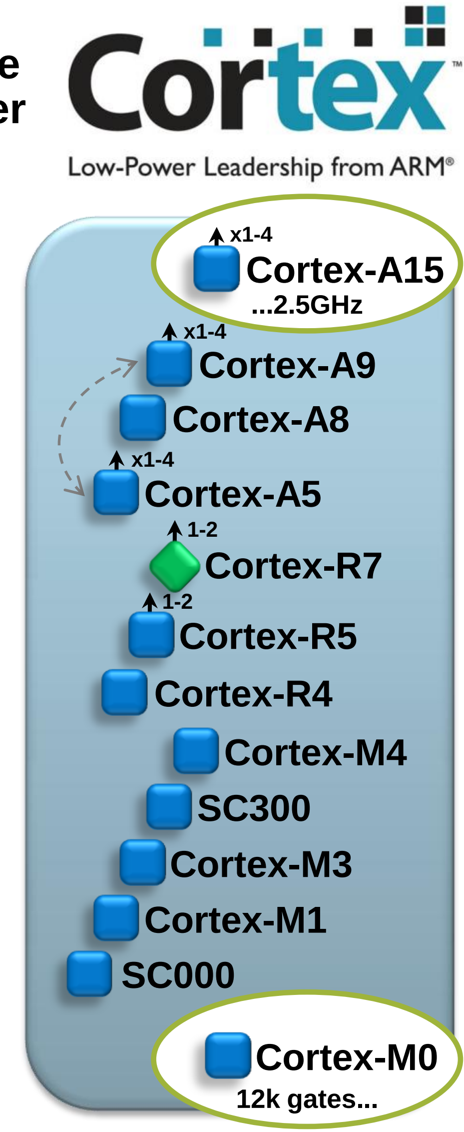
The Software is Hard Too



- Linaro – kernel and tools to accelerate product development
  - Founding Partners: ARM, Freescale, IBM, Samsung, ST-Ericsson and Texas Instruments
- ARM Connected Community application support with tools, codecs, targeted libraries, middleware, OS, training, design services

Designing the Right Core

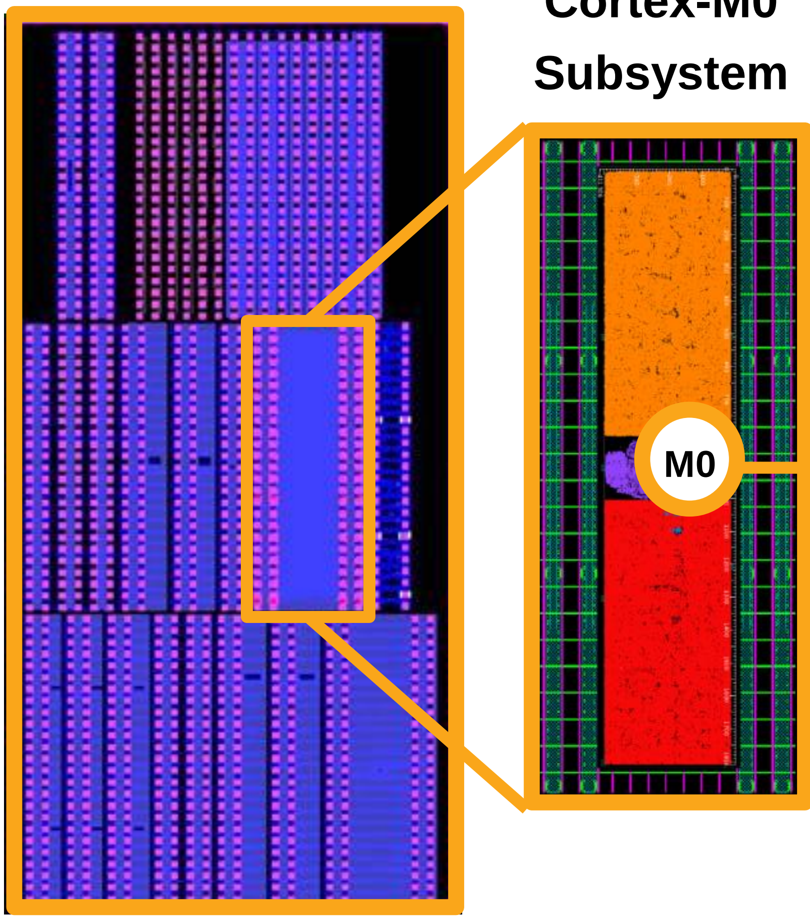




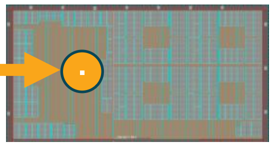
Source Azizi et al... ISCA 2010

20nm Cortex-M0 and Cortex-A15

Cortex-M0 Subsystem



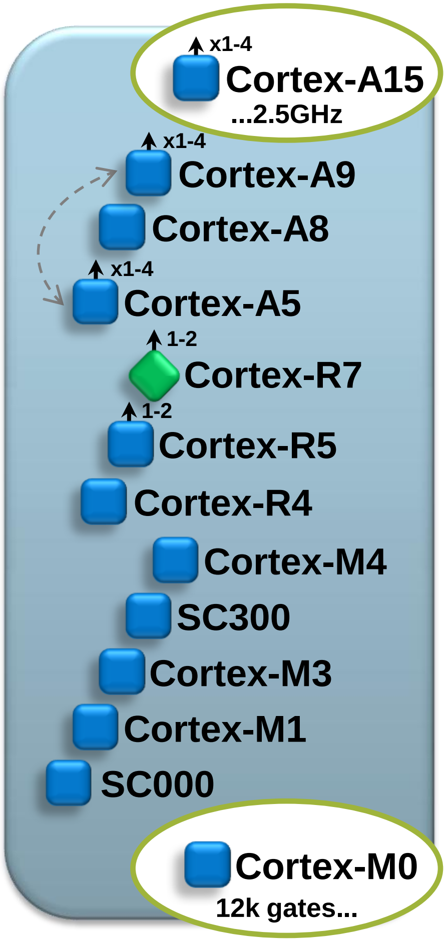
Dual Cortex-A15 20nm with L2 cache



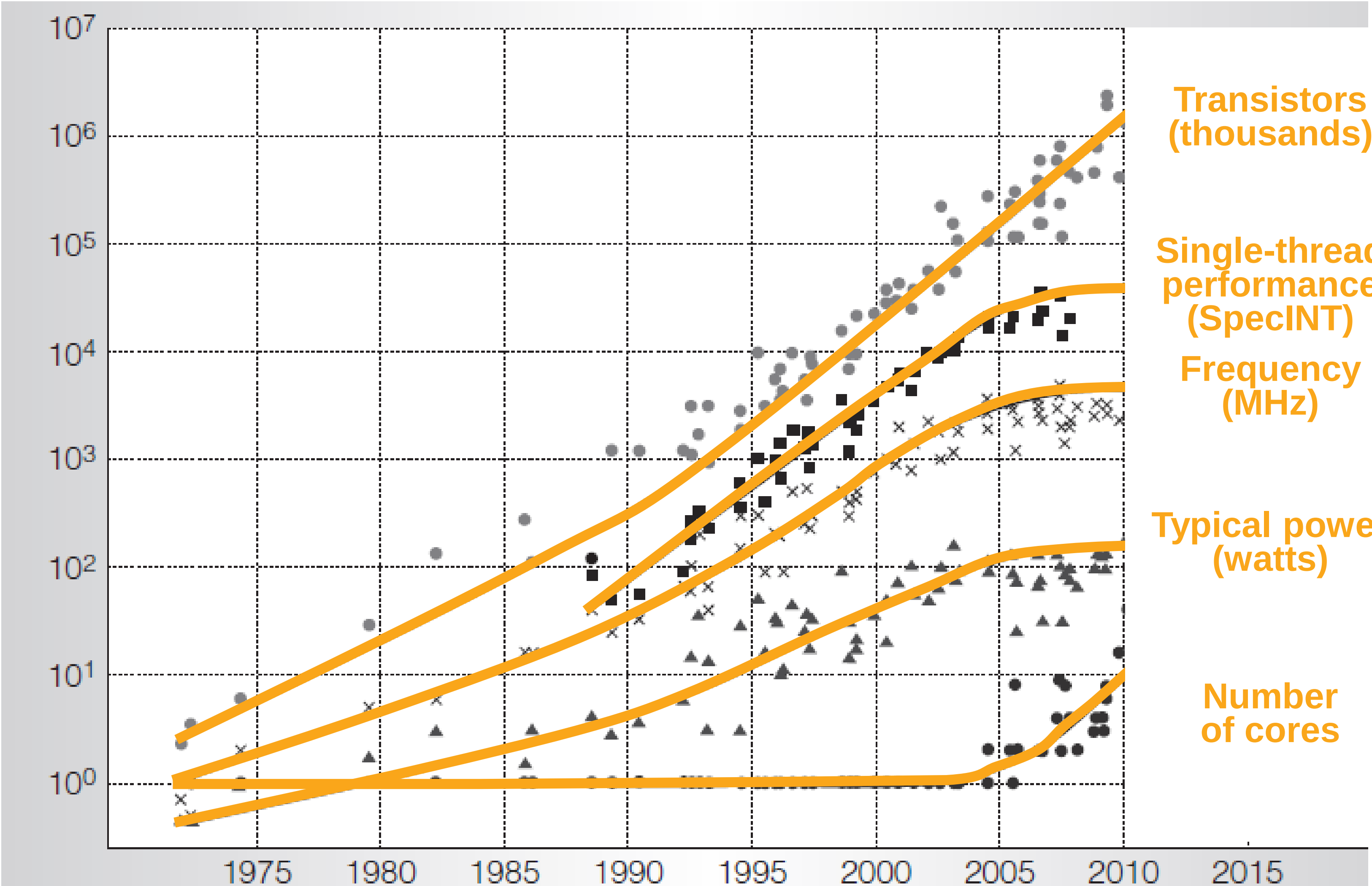
Cortex M0 20nm
0.07mm x 0.07mm

December 2010

Cortex
Low-Power Leadership from ARM®



The Future for Servers



C Kozyrakis, A Kansal, S Sankar, K Vaid, C Batten, M Horowitz, F Labonte, O Shacham, K Olukotun, L Hammond, C Batten

The Server Opportunity

- Today ~50M servers are deployed ~10M added per year
  - Power is up to 30% of OPEX for an internet company
  - Current model is inefficient on simple work, low utilization or idle*
- 15% of market is Search, Web hosting and Social networking
  - Datacenter power growth related to internet usage
  - Scale-out and TCO matters with “black box” software eco-system
  - Perfect fit for ARM technology and partner SOC integration skills

Balanced system design & integration

Higher performance per $

Higher performance per watt

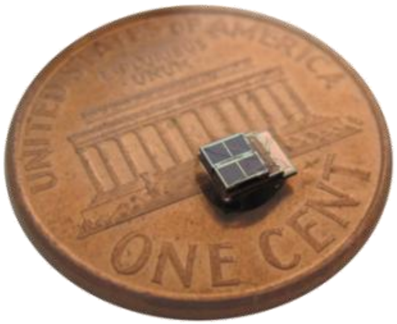
lower total cost of ownership

Reduced CAPEX and OPEX

Increased existing data center utilization

*Google reports average CPU utilization of 17-20%; Uptime Institute between 5 and 25%

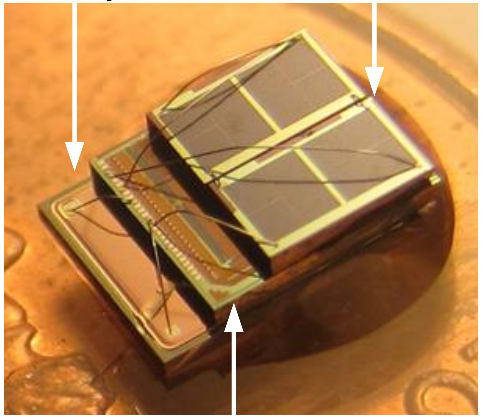
From 1mm^3 to 1km^3



University of Michigan

Battery

Solar Cells

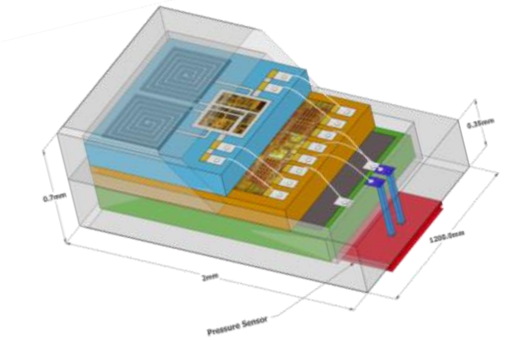


Processor, SRAM and PMU

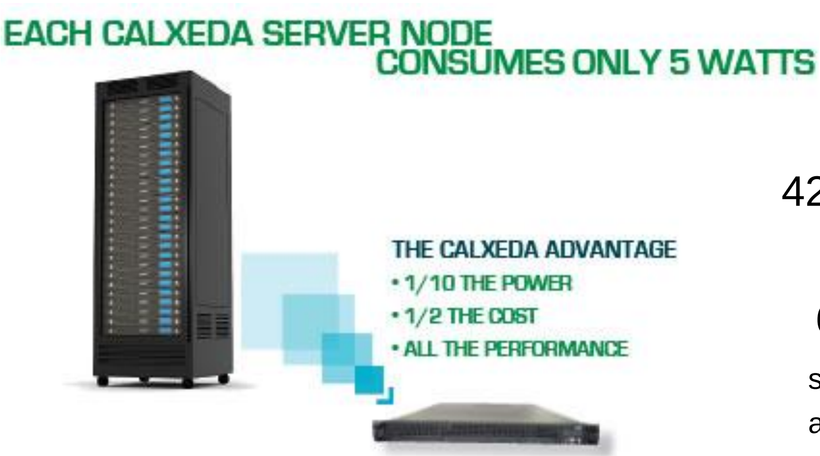
8.75mm^3 platform

solar cell 0.18µm
Cortex™-M3
12µAh Li-ion battery

1mm^3 platform

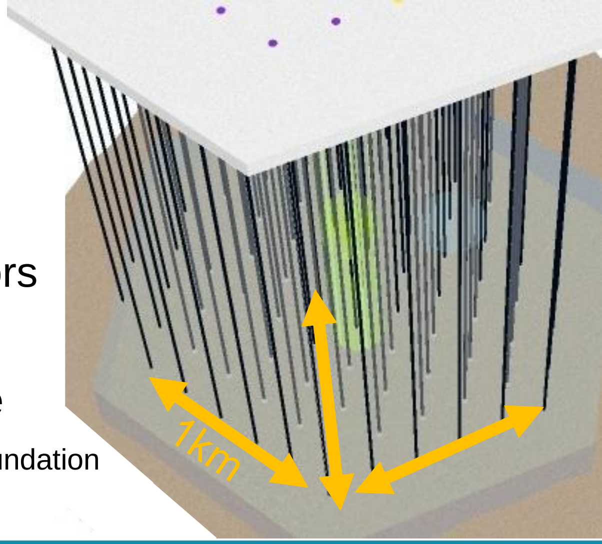


1km^3 platform



4200 ARM Neutrino Detectors
70 bore holes 2.5km deep
60 detectors per bore hole

supported by the National Science Foundation and University of Wisconsin-Madison



Future Technology Drivers

?

$$\frac{\text{Functionality}}{\text{Energy} \times \$}$$

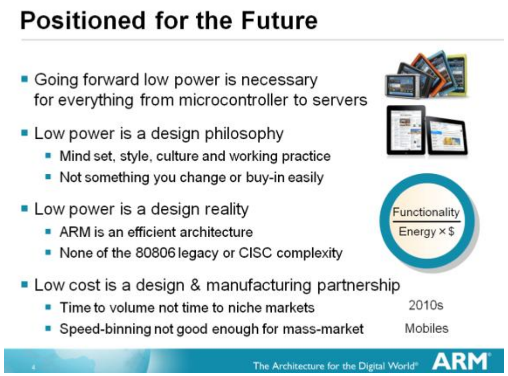
$$\frac{\text{Functionality}}{\text{Available Energy}} \times \$$$

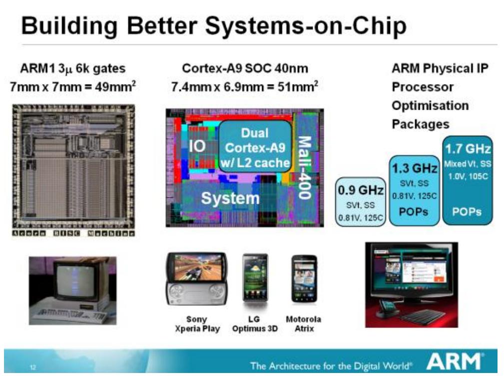
$$\frac{\text{Functionality}}{\$}$$

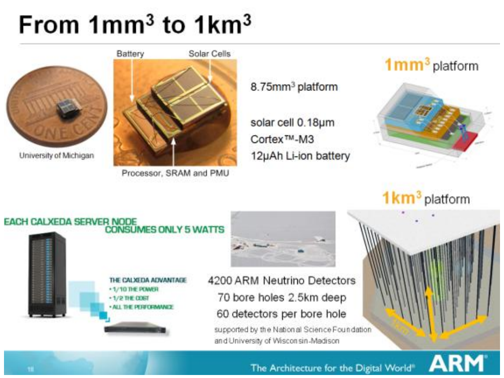
2010s	Soon	Breakthroughs?
Mobiles	Pervasive Devices	Si technology
	Ubiquitous Environments	Battery technology
		Charging speed

Summary

- Low Power positioned for the future
  - Low power is a requirement going forward
  - A design philosophy and time to Volume
- Building fetter Systems-on-Chip
  - From Processor Optimisation Packs to GPU
  - Partnership & innovation in systems architecture
- From 1mm^3 to 1km^3
  - From the Internet of Things to Servers
  - The Architecture for the Digital World





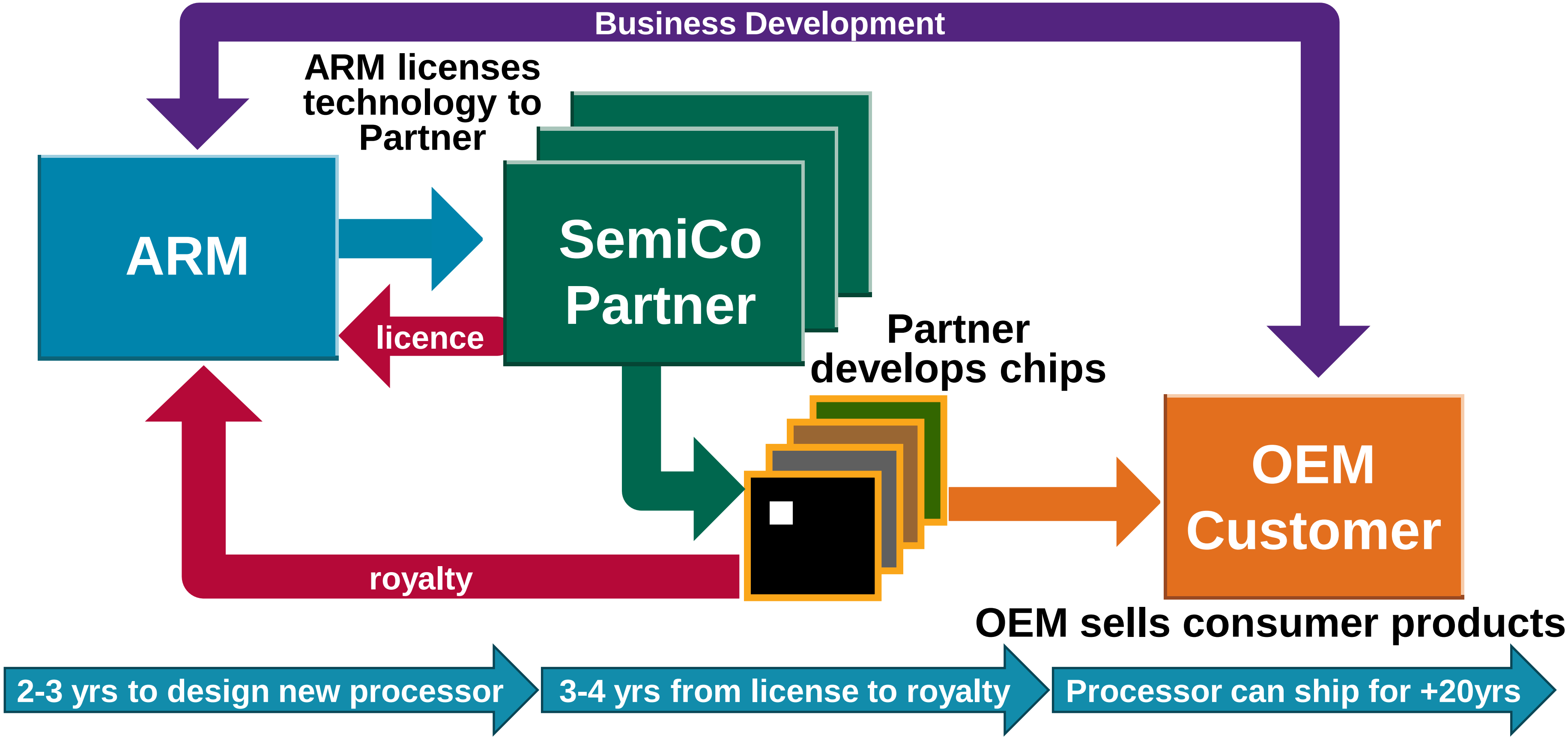


Ecosystem and Software

James McNiven

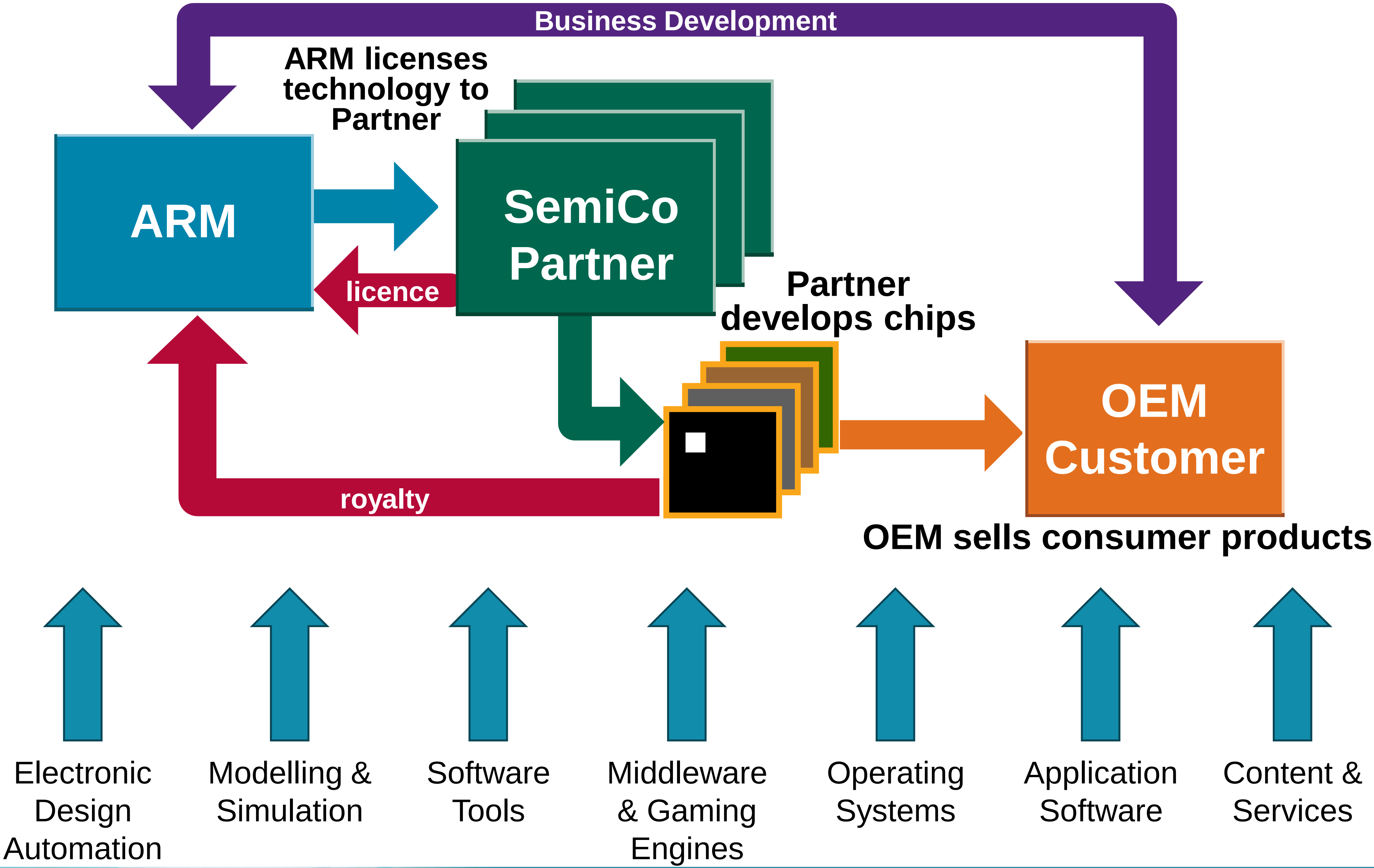
VP of Software Alliances

The ARM Business Model



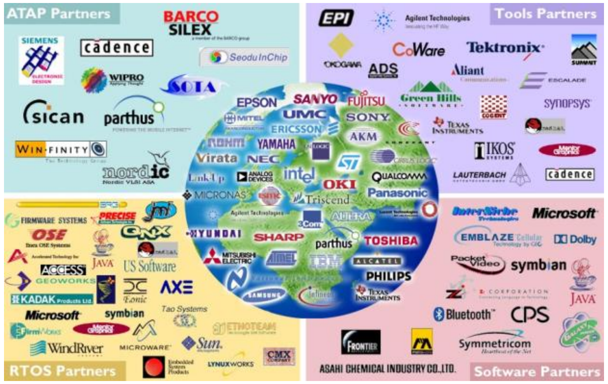
- Innovative business model yields high margins
  - Upfront license fee – flexible licensing models
  - Ongoing royalties – typically based on a percentage of chip price
  - Technology suitable for multiple applications – can ship for decades

The ARM Business Model

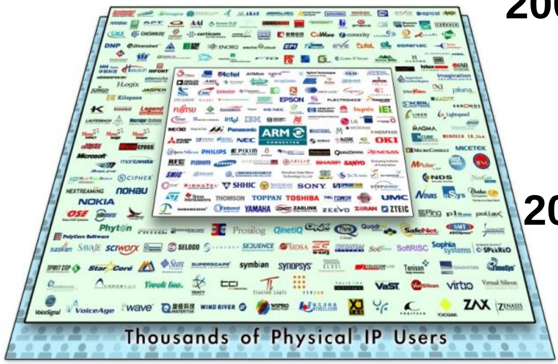


Consequences of the Business Model

- ARM is only profitable if our customers are successful
  - ARM leaves space for other companies to add value and to be profitable
  - Creating a nurturing ecosystem requires an understanding of what our customers need
- Ecosystems are built and evolve over many years
  - Close collaboration with thought leaders
  - Enable and optimize a broad ecosystem
- Every company that joins the ecosystem increases its breadth and richness
  - Investments from existing ecosystem can be reused into new markets



2000

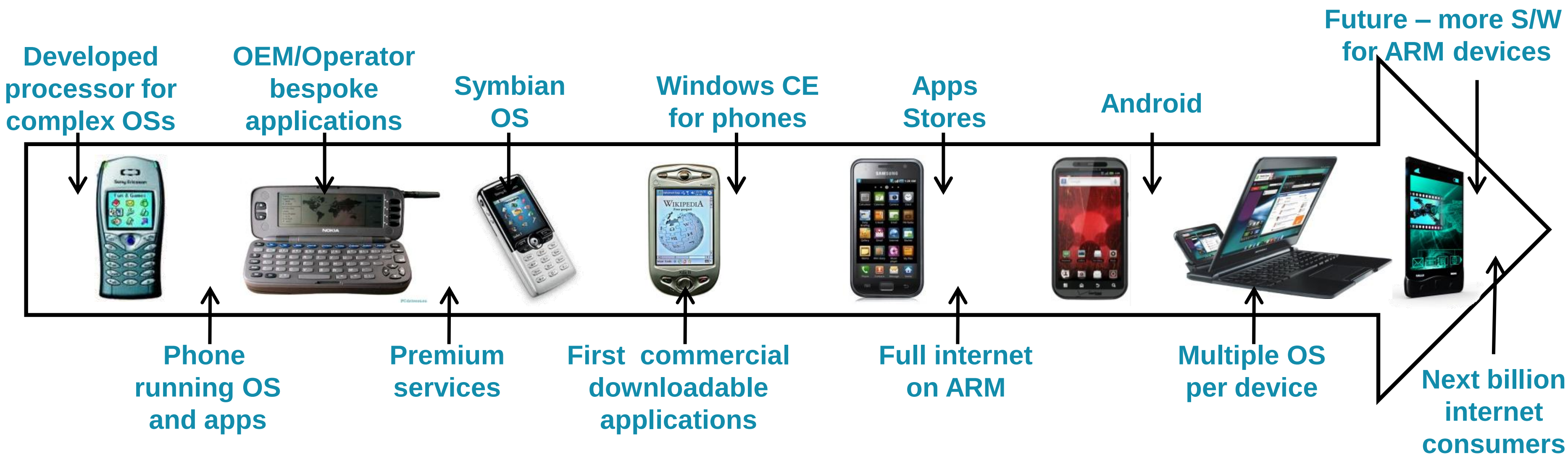


2005

2010

Smartphone – Value of the Ecosystem

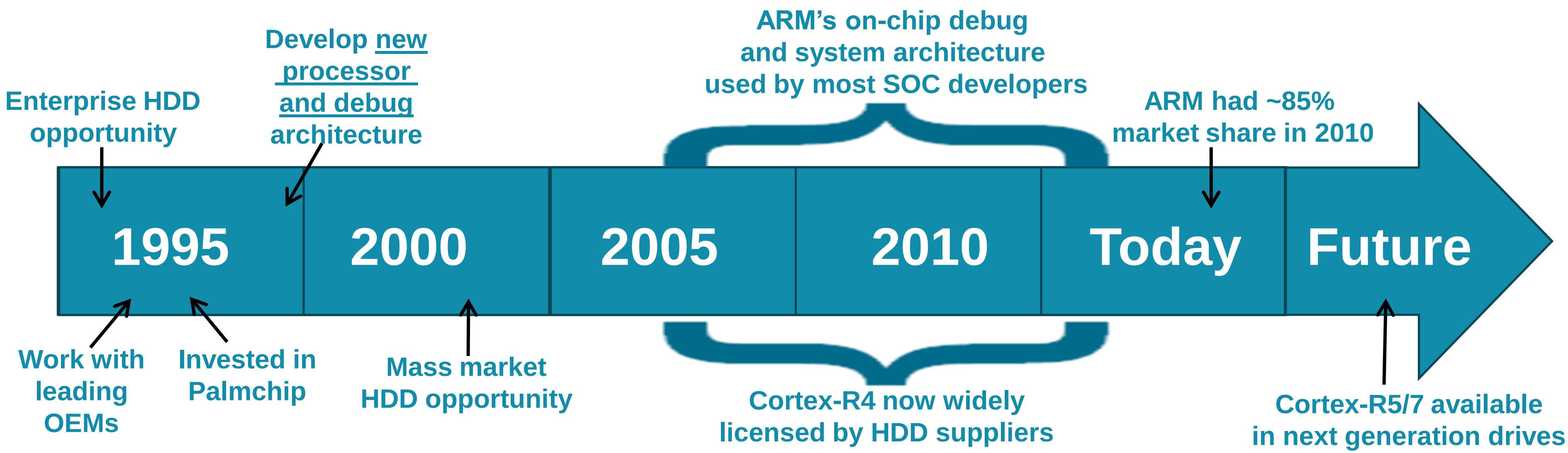
- ARM has worked with OEMs and software developers to create an ecosystem around the evolving smartphone



- ARM-based devices benefit from a broad and rich ecosystem
  - Ecosystems are hard to replicate: 20-year technology roadmap, experienced engineers, established supply-chains and relationships
  - ARM technology is the starting point for any new product or service
  - Companies can create value by being “best on ARM”

HDD – Listening to the Developers

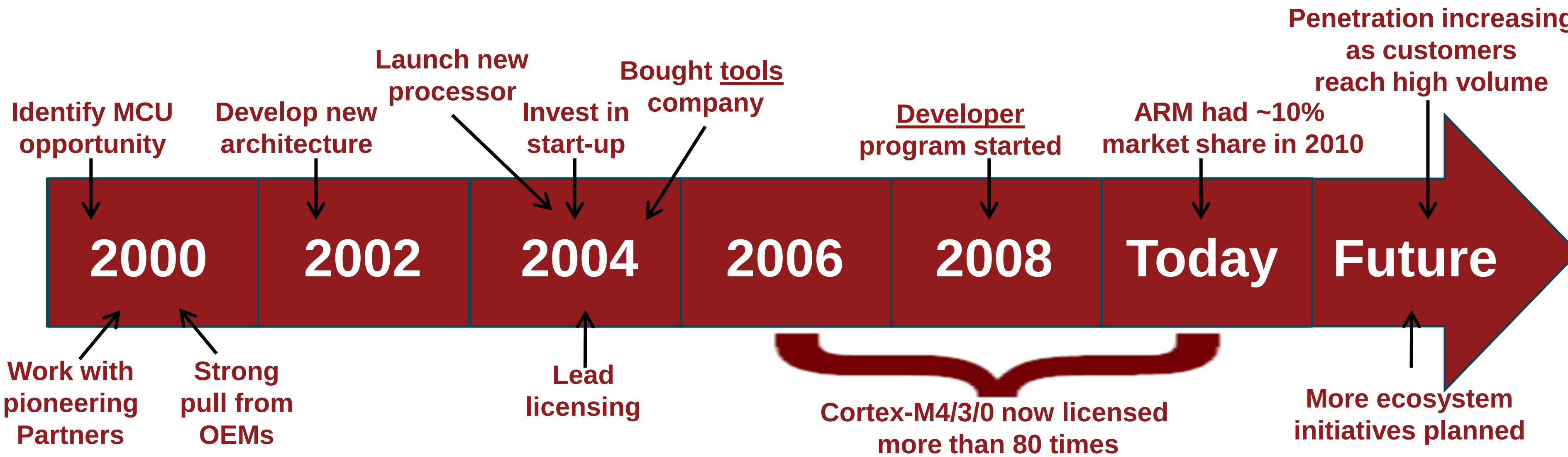
- Over the last 15 years ARM has become the architecture of choice within disk drives



- ARM's marketing and development teams identify opportunities and plan a multi-year strategy
  - Listen to thought leaders and agree on solution suitable for industry
  - Not just about the processor – OEMs, software engineers and service providers are often key to making technology decisions

MCU – Creating a Nurturing Ecosystem

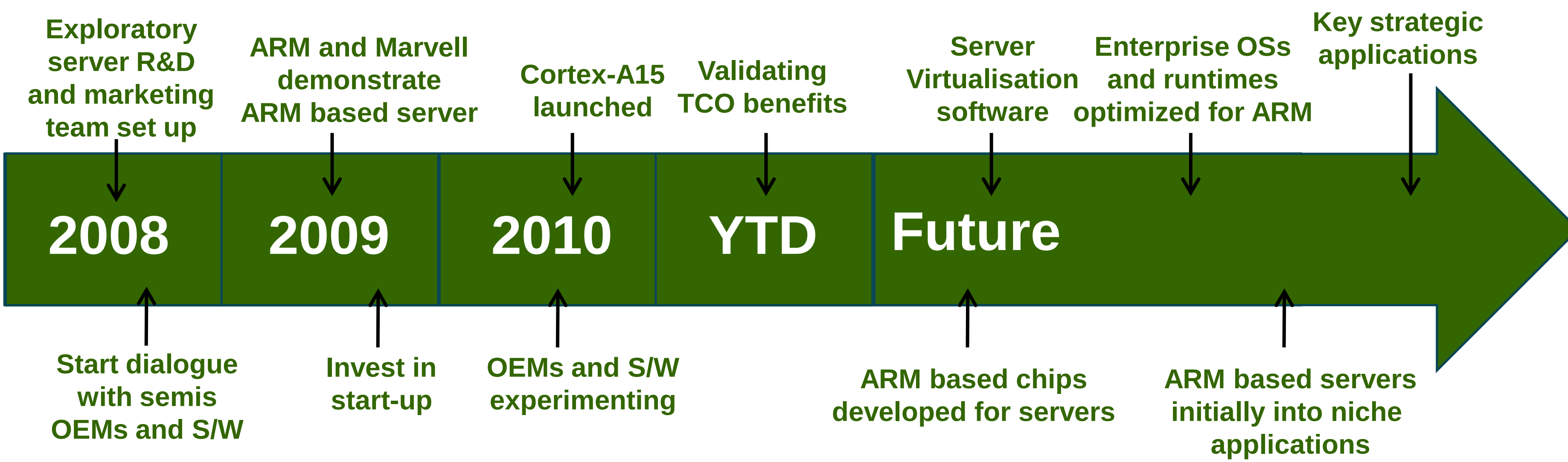
- Over the last 10 years ARM has created an ecosystem to access the opportunity in microcontrollers



- ARM's marketing and development teams identify opportunities and plan a multi-year strategy
  - Learn from the pioneers, understand the market
  - Invest money, time and effort into ecosystem initiatives
    - Seed-funding, acquisitions, collaborations and developer programs

Servers – Creating a New Ecosystem

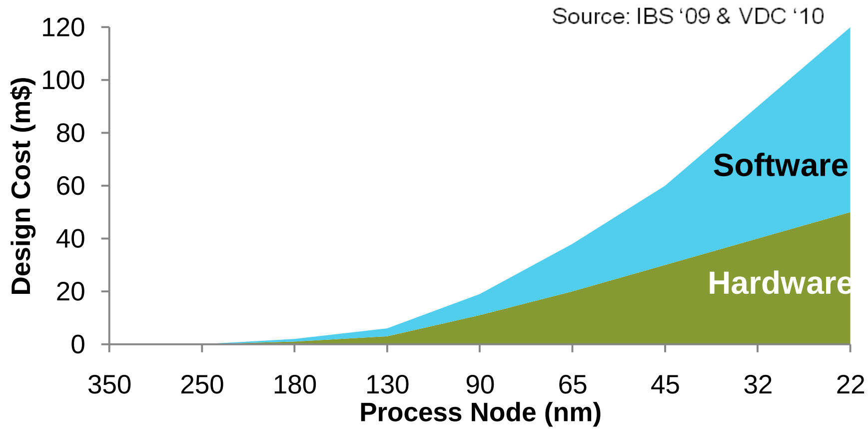
- To gain share in servers ARM is partnering and investing with thought leaders to create a new ecosystem



- Ecosystems are built and evolve over many years
  - Identify, educate, and create relationships with enterprise S/W cos
  - Invest in the s/w components not covered by existing ecosystem
  - Reuse our existing ecosystem to expand our software reach

Software and the ARM Ecosystem

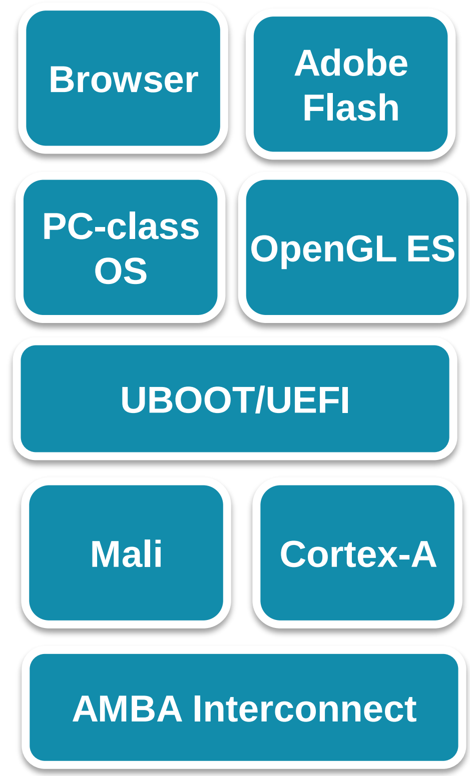
- Software development costs rising faster than hardware
  - Drives increased reuse across multiple platforms and segments
  - Expands market for third party developers - initially OSs and middleware, now applications



- Consumer devices “slipstreaming” mobile software ecosystem
  - Broad, rich ecosystem lowers cost of entry
  - Virtuous circle of development and investment

License Reuse Enables Software Reuse

- Cortex-A series and Mali graphics processors are suitable for applications processors in smartphones, mobile computers and digital TVs
  - Licensee can develop for multiple end-applications
  - OEM can reuse software across mobile/consumer
  - Software developer can sell same application into multiple markets



- Driving convergence between smartphone, mobile computer and home platforms
  - High performance multi-core processor and graphics, and on-chip interconnect and interfaces
  - Differentiation is moving to consumer services that best utilise the hardware and software

OS, Web and Apps – Optimized for ARM

- PC-class OSs are being optimized for ARM based chips
- Browsers, middleware and plug-ins deliver complete internet, more efficiently than desktop PCs
- 100,000’s of apps run natively on the ARM architecture
  - Enriching the ecosystem as more apps are launched every day
  - When was the last time you were excited about an app for your desktop PC?

Operating Systems

Microsoft announced future Windows OS for ARM based SoCs

Google developing Chrome OS for PCs using low power ARM chips

Browsers / Plug-ins

Optimizations have increased ARM Javascript performance by 5x in the past year

Web performance a key CPU design performance measure

Apps

Most apps created using ARM native development tools for best performance and lowest power

Highly optimized ARM JIT compiler performance for non-native code applications

ARM Leadership on Android

- >400k ARM processor based Android devices shipping daily

- Android is ARM optimized
  - Many libraries are written in optimized ARM assembler code
  - Browser optimized for Cortex-A
  - Reduces time-to-market for OEMs and ARM silicon partners

Phones, tablets, netbooks and digital TV's are running Android on ARM Cortex-A Processors

>300 ARM Powered, Certified Android Devices

Accelerating the Software Ecosystem

- PC ecosystem includes third-party software and also device drivers for plug-in peripherals
  - Peripherals are becoming cloud-based as compute platforms expand reach to tablets, TVs and smart phones
  - ARM-based mobile computers present great opportunities for apps and peripheral developers

- ARM is investing in tools for developers supporting ARM-based devices
  - Developer Suite 5 (DS-5) for porting and optimising software
  - Linaro consolidating Linux open-source software and tools efforts for wide range of OSs

Mali Graphics Ecosystem

- Mali now shipping in high volume, mainstream products
  - Benchmarks demonstrate technology is very competitive
- Actively working to provide the best graphics ecosystem
  - Broadest range of software partnerships
  - Best-in-class tools, documentation and support for developers

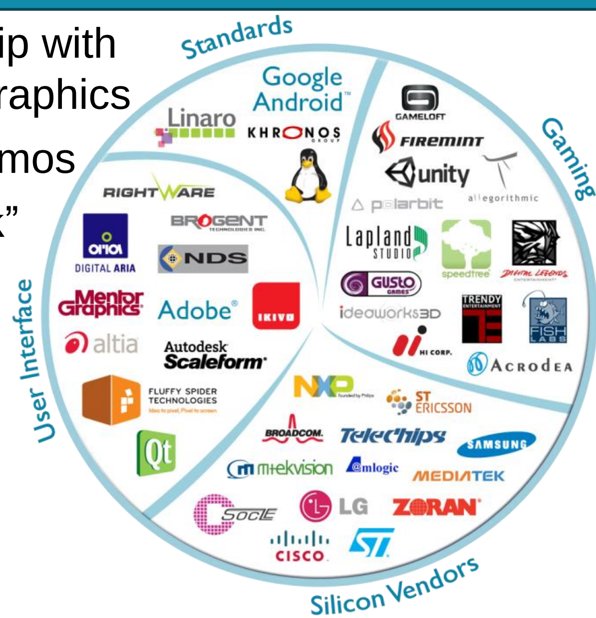
Software Partnerships

Strategic approach to partnership with thought leaders in PC and TV graphics

- Educate, optimise, create demos
- ARM has best “address book” in mobile to introduce software providers to OEMs

Content we are focusing on

- User Interface / Games
- Middleware frameworks



Services / Games

Framework / Engines

OS/Middleware

ARM’s Mali Drivers

Android Games Run Better on Mali

- Majority of Android games support OpenGL ES interface which ARM has optimized for Mali
  - Enables easy portability between handsets
- Over 300 popular games successfully tested on multiple Mali-based devices
- Google and Apple now recommend the open standards used by ARM

Android Games Run Better on Mali

Samsung Galaxy S2 smashes speed tests ahead of launch

Techradar.com

... astonishingly fast ...
3D games never looked so good

fonehome.co.uk

... this is the most powerful mobile handset we've yet tested

engadget.com

GLBenchmark

Home | Community | Results | Software | Services

Results database | Latest results | Unprocessed results | All results of Samsung GT-i9100 Galaxy S2 | Compare

Samsung GT-i9100 Galaxy S2 performance

GLBenchmark Team Tested | Community Uploads

GLBenchmark 1.1 | GLBenchmark 1.0 | GLBenchmark 2.0 New

High performance mobile benchmark for OpenGL ES 2.0 environment   Version: Latest (2.0.3) | All

Overall performance | Low Level 3D | GL Environment | EGL Environment | System Information

Top | Average | Median

High-level 3D Performance	
GLBenchmark 2.0 Egypt Fixed Time :	57581 ms
GLBenchmark 2.0 Egypt High :	5705 Frames (50.5 Fps)
GLBenchmark 2.0 Egypt Offscreen :	No result yet
GLBenchmark 2.0 Egypt Standard :	5997 Frames (53.1 Fps)
GLBenchmark 2.0 Pro Fixed Time :	21154 ms
GLBenchmark 2.0 Pro High :	2959 Frames (59.2 Fps)
GLBenchmark 2.0 Pro Offscreen :	No result yet
GLBenchmark 2.0 Pro Standard :	2967 Frames (59.3 Fps)

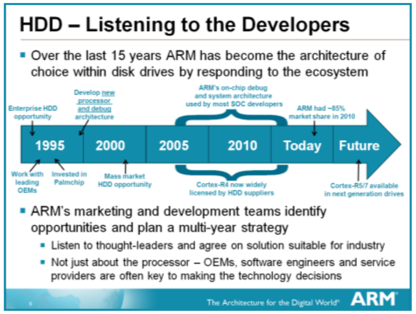
Compare this device with others

The Architecture for the Digital World®

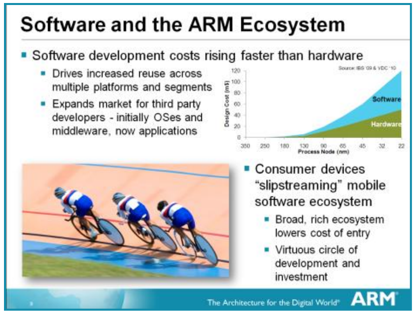
ARM®

Building the Best Ecosystems

- ARM's ecosystems are diverse, differentiated and healthy
  - Exceptional Mobile, HDD and MCU ecosystems
  - Applying experience to new growth markets



- Software reuse and critical mass is enabling ARM in new markets and driving existing markets



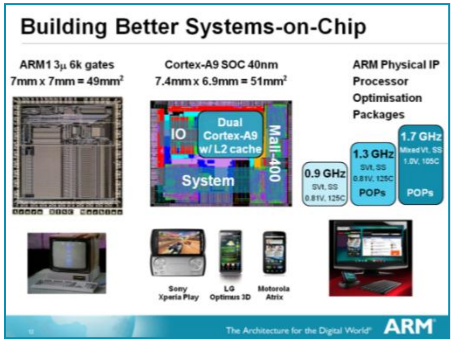
- Mali graphics ecosystem already includes many key thought leaders
  - Content proven to run on Mali

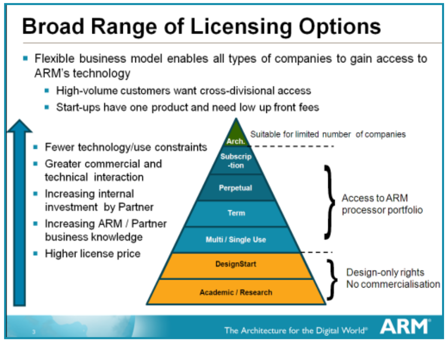
Concluding Remarks

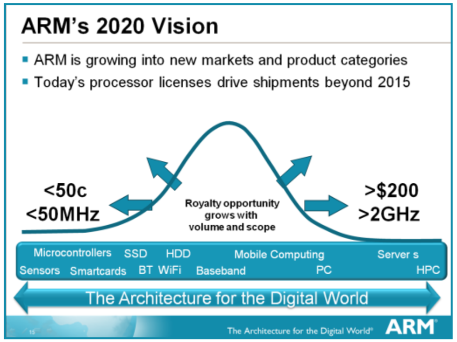
Warren East

Chief Executive Officer

The Architecture for the Digital World







Best Technology

Best Business Model

Best Ecosystem

Growing Opportunity

Q&A