# ARM Holdings plc. Overview

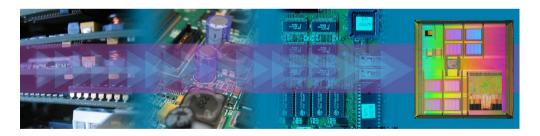
# Cautionary Statement Concerning Forward-Looking Statements

- This presentation contains forward-looking statements as defined in section 102 of the Private Securities Litigation Reform Act of 1995. These statements are subject to risk factors associated with the semiconductor and intellectual property businesses. When used in this document, the words "anticipates", "may", "can", "believes", "expects", "projects", "intends", "likely", similar expressions and any other statements that are not historical facts, in each case as they relate to ARM, its management or its businesses and financial performance and condition are intended to identify those assertions as forward-looking statements. It is believed that the expectations reflected in these statements are reasonable, but they may be affected by a variety of variables, many of which are beyond our control. These variables could cause actual résults or trends to differ materially and include, but are not limited to: failure to realize the benefits of our recent acquisitions, unforeseen liabilities arising from our recent acquisitions, price fluctuations, actual demand, the availability of software and operating systems compatible with our intellectual property, the continued demand for products including ARM's intellectual property, delays in the design process or delays in a customer's project that uses ARM's technology, the success of our semiconductor partners, loss of market and industry competition, exchange and currency fluctuations, any future strategic investments or acquisitions, rapid technological change, regulatory developments, ARM's ability to negotiate, structure, monitor and enforce agreements for the determination and payment of royalties, actual or potential litigation, changes in tax laws, interest rates and access to capital markets, political, economic and financial market conditions in various countries and regions and capital expenditure requirements.
- 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, 2005 including (without limitation) under the captions, "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations," which is on file with the Securities and Exchange Commission (the "SEC") and available at the SEC's website at <a href="https://www.sec.gov">www.sec.gov</a>.

# What is ARM

## **Background – Semiconductor Market**

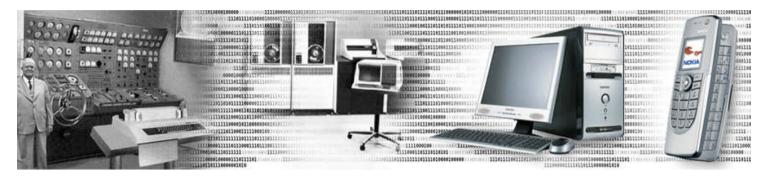
- ARM is a secular growth story with a 25+ year time horizon
- Industry is 50 years old and looks set to continue for another 50 years
- Several waves of semiconductor technology
  - Now in the middle of CMOS
  - CMOS has enabled MSI>LSI>VLSI>SOC
- Technical progress brings a basis for industry evolution
  - Miniaturisation
  - Reductions in costs
  - Increases in complexity



- Vertical integration gives way to horizontal specialisation
  - Creates a sub-sector: Semiconductor IP

# **Background – Computing Market**

 Computing has evolved in parallel with the Semiconductor market over a similar but slightly longer period



- Semiconductor technology is now allowing computing to become embedded into everyday products
  - Enhancing existing products
  - Enabling the creation of new ones







## ARM develops technology at the heart of ...





Epson P-2000 PMP





MOBILE

**Nokia 770 Internet Tablet** 

**SpotME Portable Wireless Contact Manager** 







**Nintendo Gameboy Micro** 

Sonv Playstation Portable - PSP



Panasonic - PT-56DLX75 HDTV





**Reciva Internet Radio** 





Airspan EasyST



**Alvarion BreezeMax** 



Linksys: Compact Wireless-G Broadband router



XKey 2.0 USB Memory Stick



DrewTech - ScanDaq



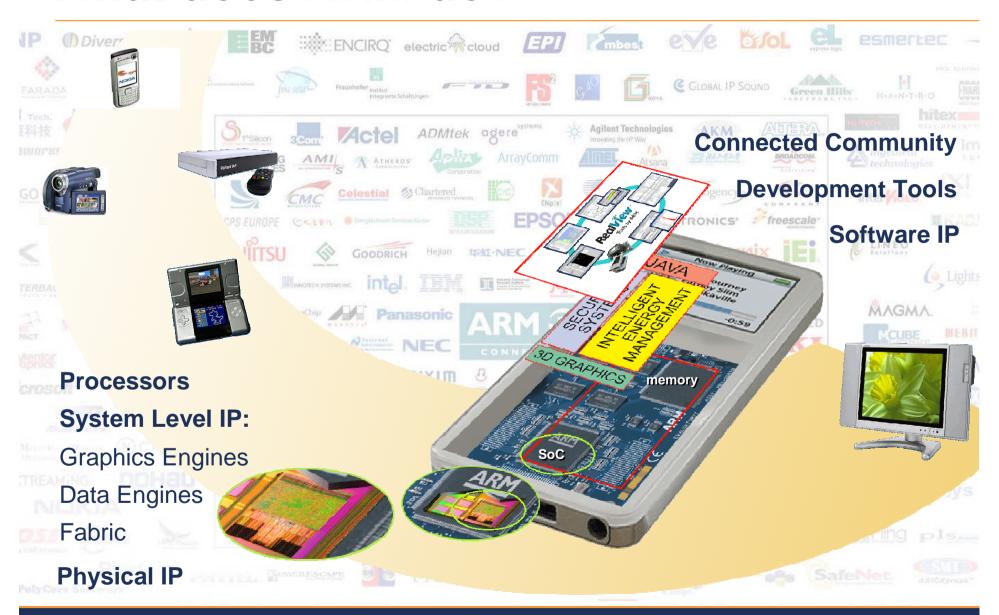




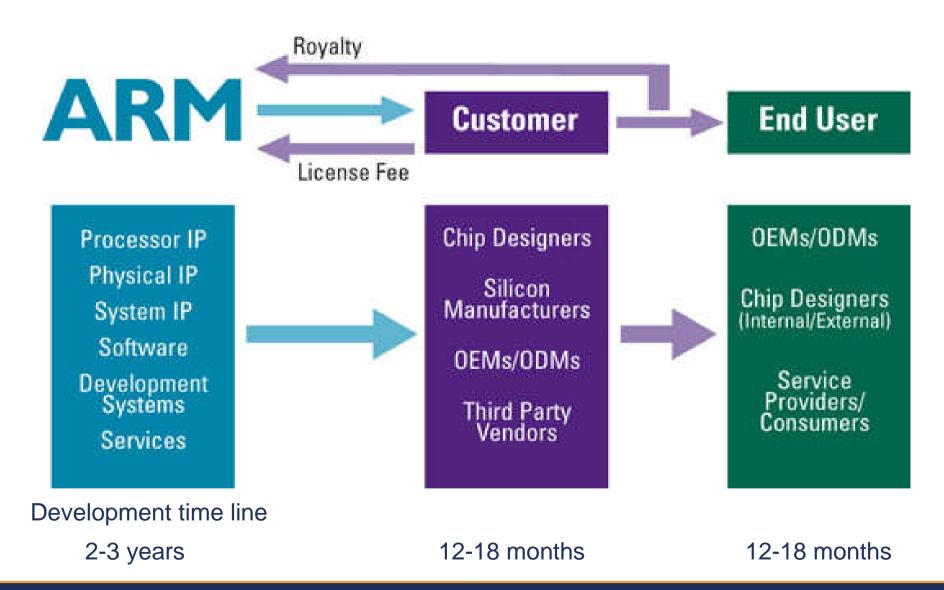
**Dynon Avionics - EFIS-D10A** (Electronic Flight Information System)



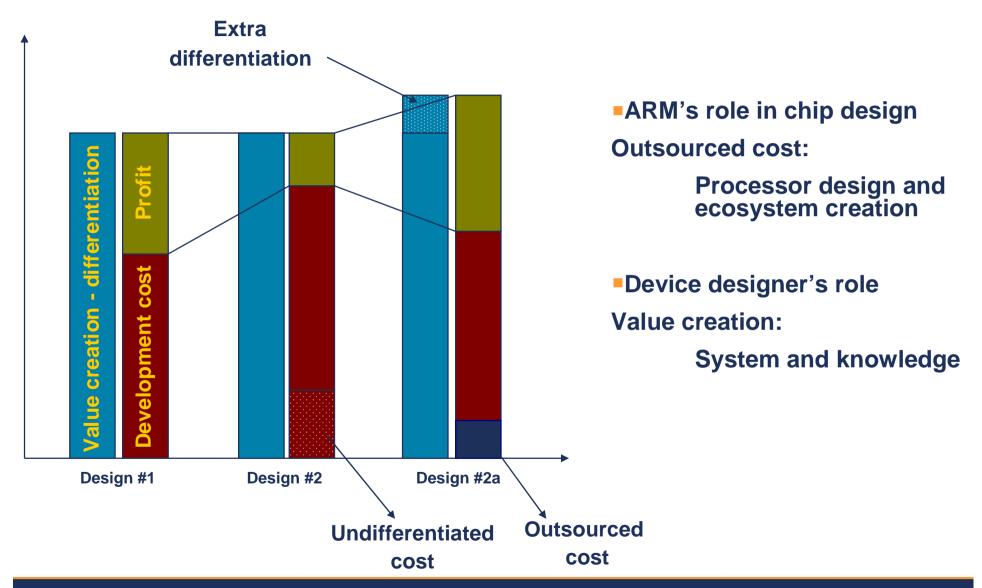
### What does ARM do?



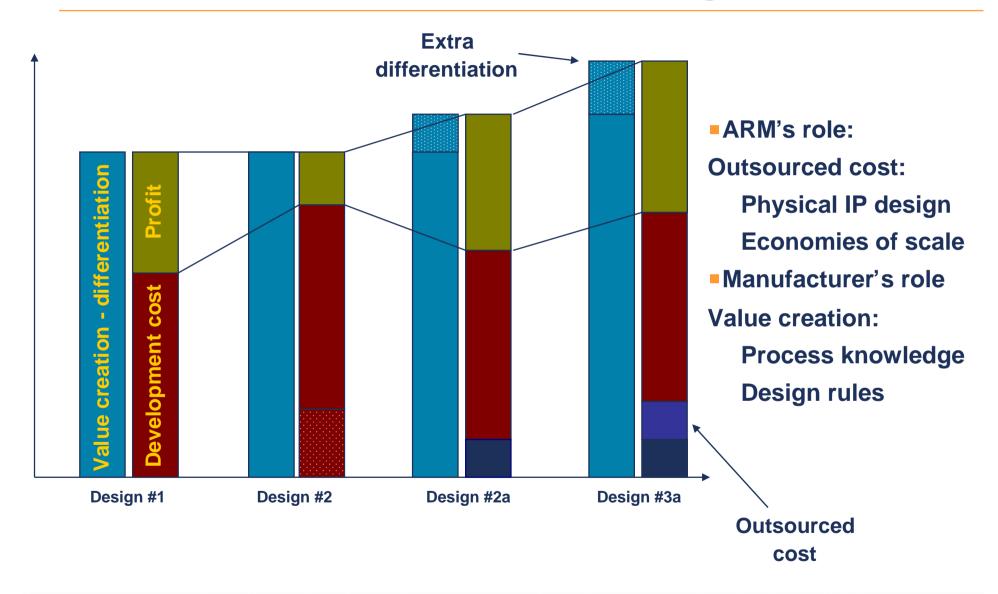
#### **ARM Business Model**



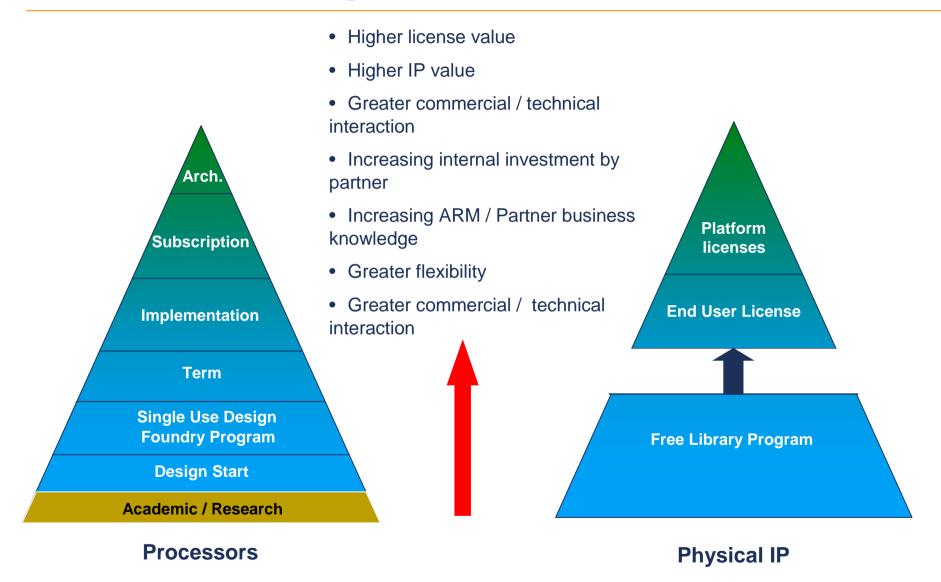
# **Economics of IP Outsourcing**



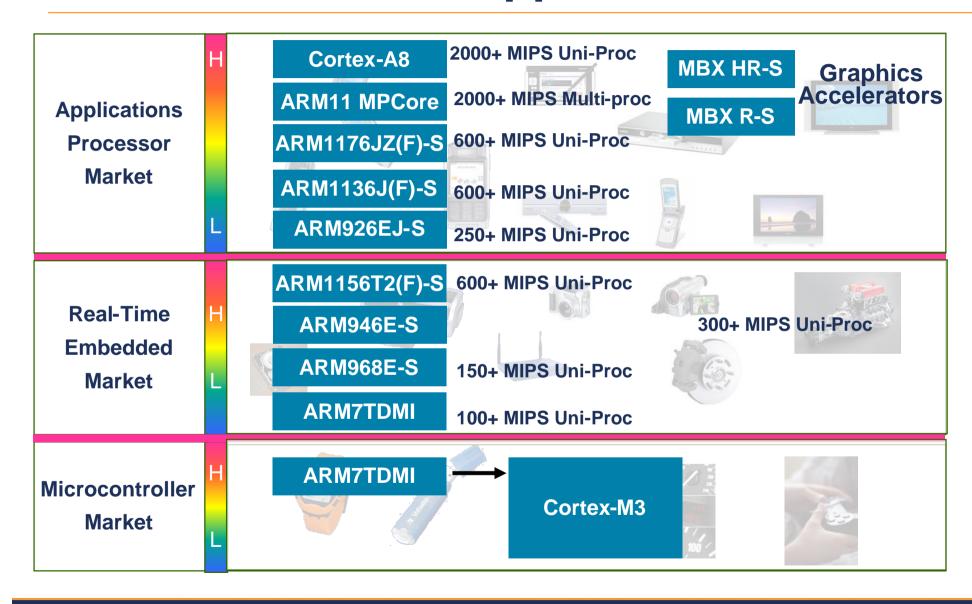
## **Economics of IP Outsourcing - PIPD**



# **ARM Licensing Models**



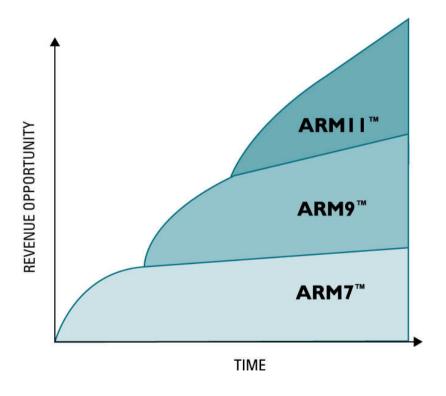
## **Processors for All Applications**



# ARM: A very profitable business model

- Multiple applications drive long microprocessor lifecycles
- Licenses have a 25+ year lifetime
  - 6-10 licenses to breakeven per development
  - 413 processor licenses signed to date
- Royalties = f(n) cumulative licenses
  - ~ 50% of licenses are yielding royalty
  - 4+ years between licensing and noticeable royalty
- Highly profitable business
  - Build once → Sell multiple times





## **Additional SoC Royalty Opportunity**



#### Voice phone

BOM <\$50 Cellular network



#### Feature phone

BOM >\$50 Cellular network







#### Smart phone

Uses OpenOS









Base Business: ARM Processor

Software: + TrustZone™ Security

+ Swerve Engine & Content

+ JTEK Media

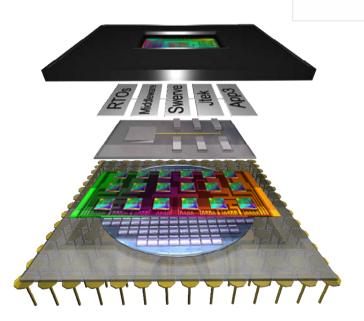
+ IEM Battery

Hardware: + MBX 3D games

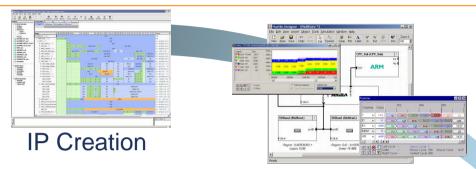
+ OptimoDE™ algorithmic tasks

Physical IP: + Libraries (per wafer)

Total royalty processor plus + items



# RealView® Tools for Entire Design Flow



**Architectural Exploration** 

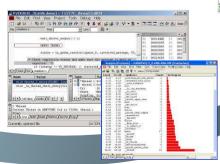




Applications Development



Microcontroller Software Development



Pre-silicon Software Development

Hardware/Software Integration



# RealView® Tools for Entire Design Flow





**Architectural Exploration** 



RealView

DEVELOPMENT KIT

Development

**Applications** Development



Pre-silicon Software Development

RealView

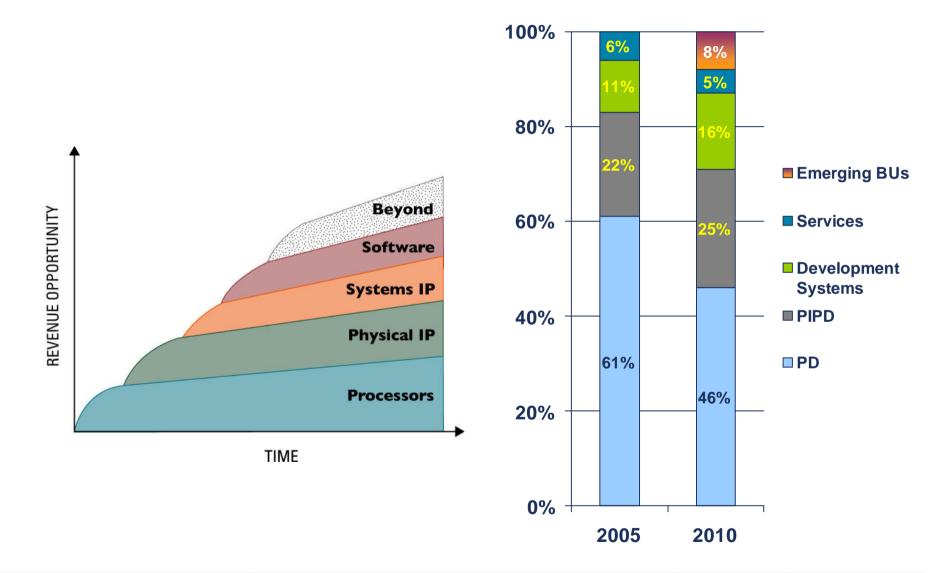
**ARM** 

RealView

DEVELOPMENT

Hardware/Software Integration

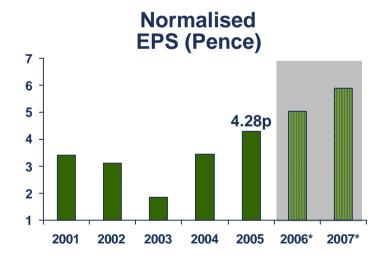
## The Shape of ARM in Future



### **ARM Financials**









\* Consensus estimates as of 1st July 2006

# **Long-term Summary**

- Early stage in the digital revolution
  - Intelligence and functionality driving growth
- ARM is not a standard semiconductor company
  - Revenue received at multiple points in a product life time
  - Highly leveraged profitable business model
  - Predictable long-term growth story
- Further semiconductor IP outsourcing will occur
  - Physical IP follows Microprocessors
- ARM is executing well and has a bright future



Many short-term moving parts

But long-term growth story



# How ARM Drives its Business

# **Target Market Applications**



**MOBILE** SOLUTIONS



**HOME** SOLUTIONS



ENTERPRISE SOLUTIONS



**EMBEDDED** SOLUTIONS

Smart Phone
Feature Phone
Voice Phone
Cordless Phone
PDAs
Portable Audio
Portable Media

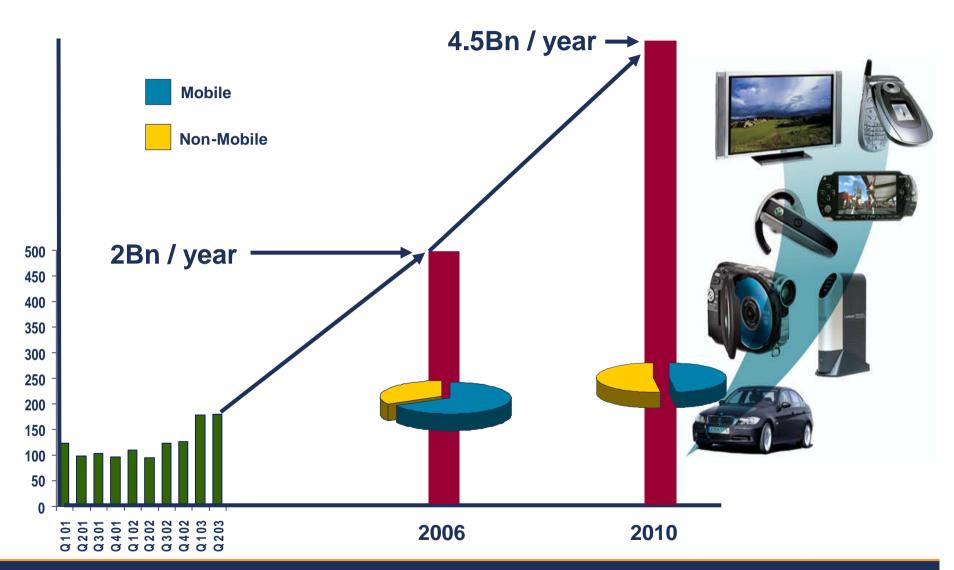
STB
DTV/HDTV
DSC/DVC
DVD
Tethered Gaming
Portable Gaming

VoIP, V<sup>2</sup>OIP
Storage
Printers
PC Peripherals
Wireless Connectivity
Home Networks
Enterprise Networks

Chassis Systems
ABS
Powertrain
Infotainment
Industrial pdts.
MCUs
Smartcards

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# **Driving Momentum: 4.5Bn Units by 2010**



## **Mobile**









ENTERPRISE SOLUTIONS



**EMBEDDED** SOLUTIONS

## **Battery Operated, On the Move**

#### **Applications**

- Smart Phone
- Feature Phone
- Voice Phone
- Cordless Phone
- Bluetooth (Headset etc.)
- PDAs
- Portable Media Players

#### **Segment trends**

- Operators roll out services
- Battery life remains critical
- 3.5G becomes a reality
- WiFi/VoIP is here
- Mobile TV gaining momentum
- Hacking of phones increases

Note: Sources Semico, Strategy Analytics,
ARC Group, IDC, IMS, Gartner, and ARM Estimates









<b>TAM 2006</b>	<b>TAM 2011</b>	Avg. SoCs per Product (2010)*
100M	350M	3.0
395M	420M	1.5
405M	330M	1.0
130M	165M	1.0
110M	350M	1.0
10M	16M	2.0
150M	250M	1.5

#### **ARM** meeting the trend

- Efficient design of processors
  - Maximum performance/min power
  - Disruptive computing power
- System-level design tools
- Application driven technology
  - Media
  - Signal processing
  - Security
  - Battery life



<sup>\*</sup> ARM Estimate

#### **Market Trend: Multimedia Device**



## Home



**SOLUTIONS** 









**EMBEDDED SOLUTIONS** 

#### **Visual Content**

#### **Applications**

- DTV and iDTV
- DVD and HD-DVD
- Set-top box
- Portable gaming
- DSC and DVC



#### **Segment Trends**

- Battle for the home
  - Media gateways vs STB
  - HD-DVD vs Blue-Ray
  - New business models and quad play
- Analogue TV to digital
  - Mandated by governments
- Distribution of protected content around the home.



ГΑ	M 2006	<b>TAM 2010</b>	Avg. Cores per Product (2010)	
	18.5M	65M	4.0	
	120M	122M	2.0	
	72M	132M	3.0	
	53.5M	73M	2.0	
	89M	106M	2.0	

\* ARM Estimate

#### **ARM: Meeting the Trend**

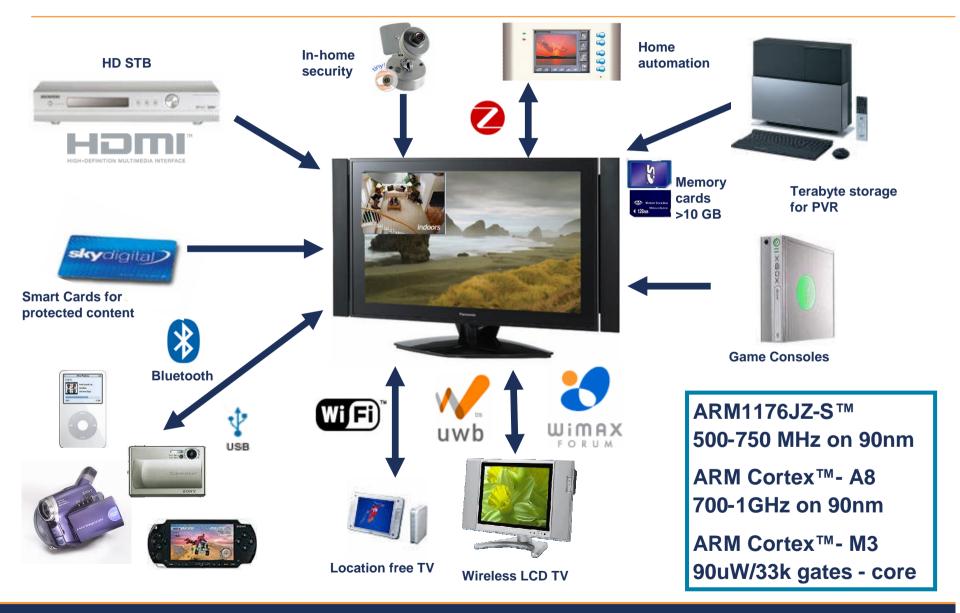
- Efficient design of processors
  - GHz of performance
- Low power / high performance
  - Ergonomic designs
  - Fanless
- Java technology
  - Delivers performance improvement on applications like MHP/OCAP/Blu-Ray
- TrustZone<sup>™</sup> technology
  - Secure content and DRM



Note: Sources Semico, Strategy Analytics,

ARC Group, IDC, IMS, Gartner, and ARM estimates

### **Home is Primed for Transformation**



# **Enterprise**



**MOBILE** SOLUTIONS



**HOME** SOLUTIONS





## Data Handling in the Home and Office

#### **Applications**

- Storage (HDD, flash memory)
- Printing
- Home networking (BB, dial-up)
- Enterprise networking
- Wireless connectivity (WiFi, UWB, WiMax)



<b>TAM 2010</b>		
1170M		
147M		
139M		
247M		
429M		

#### **Segment Trends**

- Wireless connectivity taking off
  - UWB, WLAN: ethernet replacement
  - WiMax: broadband replacement
- Telco "triple play" increases bandwidth & QoS needs in home
- Storage goes into everything
- Printers need more embedded performance
  - Color laser printers now below \$300
  - Photo printers operate stand-alone without a PC





#### **ARM: Meeting the Trend**

- Low-power, high-performance devices required to meet demand
  - Processors, standard cells, security framework → platform & content protection
- Almost all WiMAX, VoWLAN chipset suppliers on ARM platform
- Most popular CPU arch. for UWB
- ARM11<sup>™</sup> MPCore<sup>™</sup> into high-end laser;
   Cortex-R4 into inkjet
- Every major HDD vendor now shipping ARM processor-based drives



### **Embedded**



**MOBILE** SOLUTIONS



**HOME** SOLUTIONS



ENTERPRISE SOLUTIONS



### **Software Standardisation**

Applications	<b>TAM 2006</b>	<b>TAM 2010</b>	Avg. SoCs per Product (2010)*
<ul><li>Body and Convenience</li></ul>	1084M	1711M	1.0
<ul> <li>Telematics and Car Multimedia</li> </ul>	115M	119M	1.0
Powertrain Rear Plansanger 6 PCIs Of PCIS	84M	101M	1.0
Chassis Systems  Chassis Systems		54M	73M
32 bit MCUs and Smartcards Control Mercy Property States Control M	nent Control	788M	1464M
* ARM Estimate  * Arm Estimate  * Arm Estimate			

#### **Segment Trends**

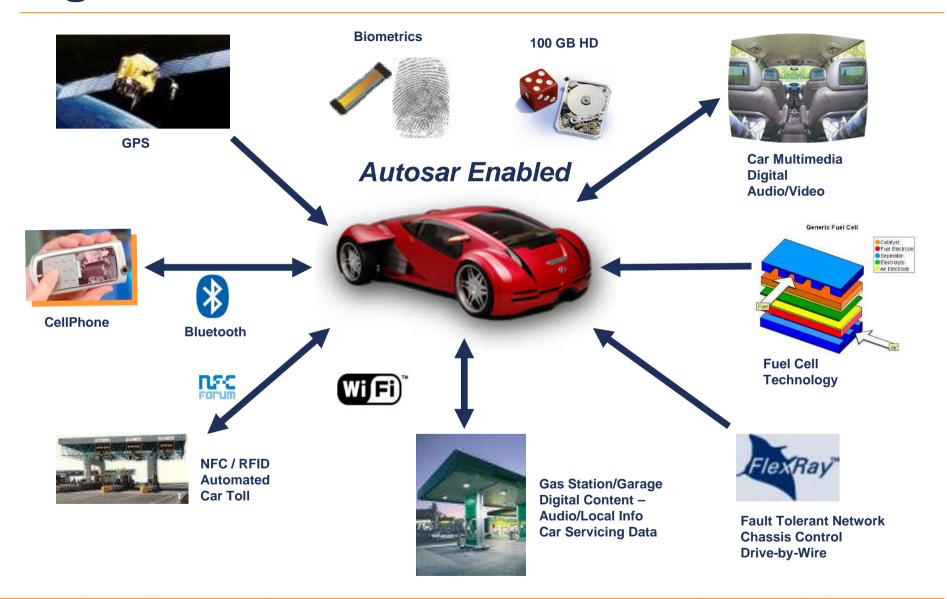
- Software reliability is critical in automotive
- Supply chain and IT simplification
- MCU and Smartcard require efficient
   Software Engine as memory >64kb
- MCU applications shift 8→ 32-bit as Software Complexity Grows and Geometries Shrink

#### **Gart ARM meeting the trend:**

- Open standards Autosar
  - More testability for higher reliability
- Tools: Complex thru to entry level
  - Realview -> Keil RVMDK
- Low-cost 32 bit solution
  - Cortex-M3
  - Smartcard
- FPGA Model

Note: Sources Semico, Strategy Analytics, ARC Group, IDC, IMS, Gartner, and ARM Estimates

## **High-End Car of 2012**



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# **2010 Shape**

