The Changing Techonomics of Chip Design

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Industry Trends

Industry to find newer efficiency models

- Do more with less
- Address Just-in-Time needs

Semiconductor Units Vrs Revenue

0 200 400 600 800 1000 1200


Billions of Units Revenue ($) Billions
Wide Selection of Technology & Node

Growing Number of Design Starts
- Basic SoC design starts in the consumer segment are expected to grow at a 19 percent CAGR
- Industrial IoT ASIC design starts are projected to grow by 25 percent through 2021

Source: Semico report

Manufacturing choice explosion

Source: ARM, SMIC internal studies
ASoC Explosion

- DAC
- GPIO
- ADC
- I2C
- SPI
- PWM
- 13C
- Sensor / Actuator Interface
- Special IP
- HW Accelerators
- Security
- DSP
- WiFi
- LoRa
- Wireless Communication
- HART
- Edge Alliance
- Protocols
- CoAP
- LWM2M
- CPU / DSP
- MIPS
- CEVA
- ARM
- Synopsys
- ANDES
- Cadence
- SANKALP Semiconductor

- App SW
- Medical Automotive Control Systems Human interface
- Automotive
- Medical
- Control Systems
- Human interface
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- Human interface
Market Drivers & Industry Response

Market Drivers

• Variety explosion
  • IoT, AI, Cloud & 5G
• Just-in-Time demand
• Huge increase in demand in China

Industry response

• Preference for building System on Chip (SoC)
• Emphasis on REUSE
• Contract Design
Need for Accelerated Time to Market

ASoC Companies

• Derivatives – Size reduction, product line management, features enhancement
• IP & IP Customization Services– Porting to newer technologies nodes

Systems Companies

• End-to-End Chip Design
• Enabling through out the chip ecosystem
  • Test Vehicles
  • Prototyping & Fabrication
Your ASoC Realization Partner

SPEC Definition
RTL Design & Verification
SoC Implementation
IP Choice
Analog & Mixed Signal Design
Custom Layout and Place & Route
Technology Foundation & Foundry Interface
Validation & Characterization

Cooperative business models
to help solve your problems
Thank You

谢谢 你