

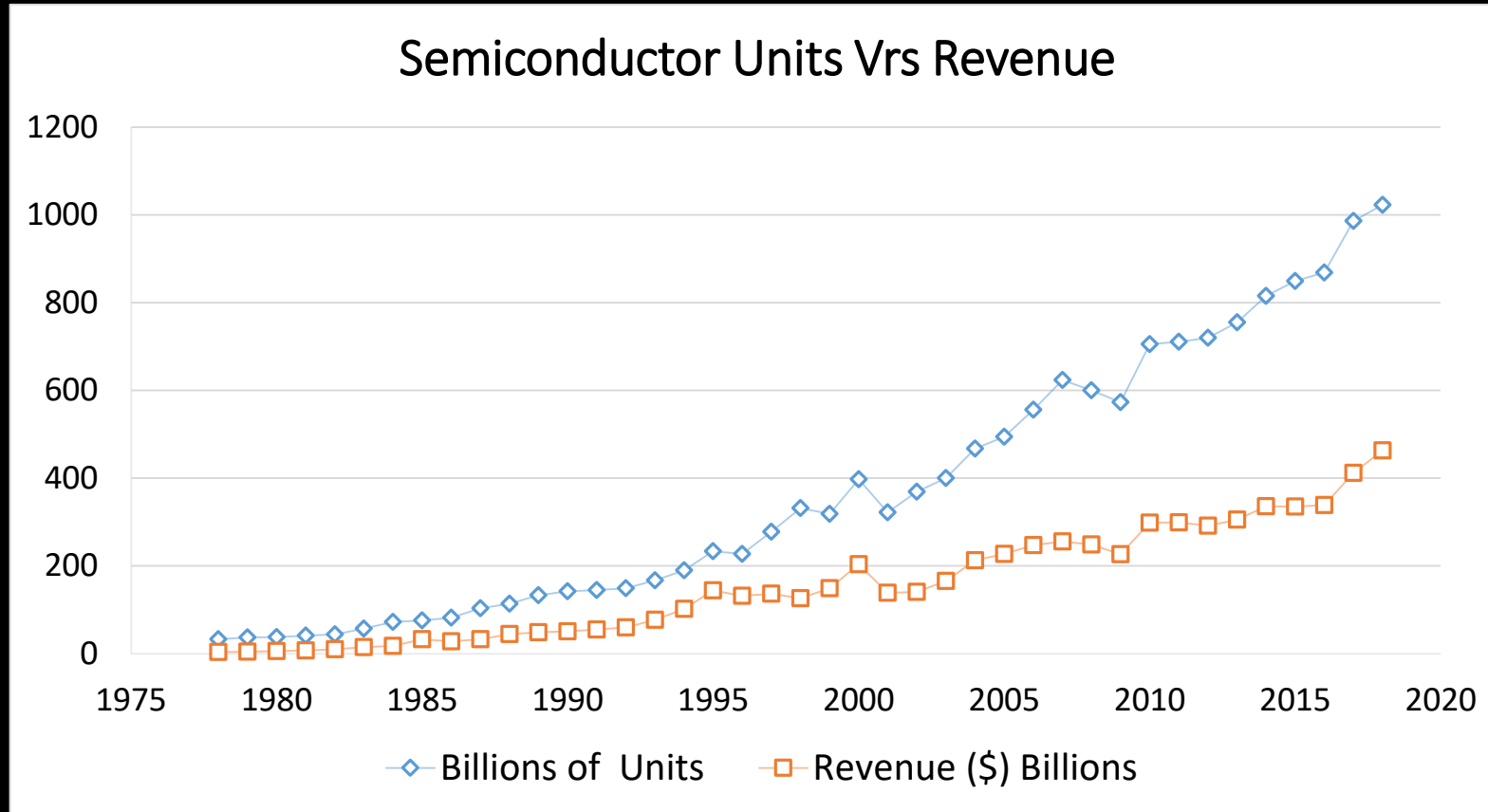
The Changing Technomics of Chip Design

13th September - D&R IPSoC 2018, Shanghai

Samir Patel - CEO Sankalp Semiconductor



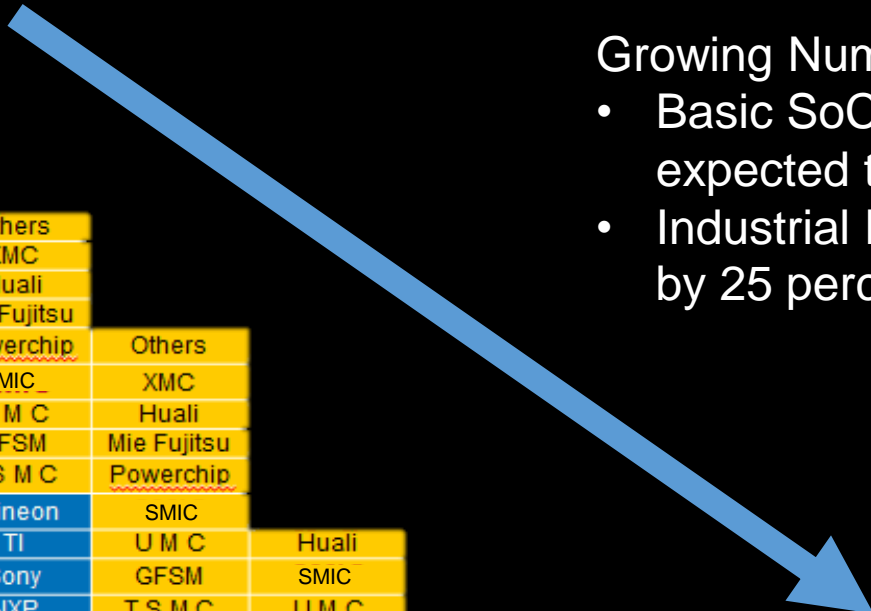
Industry Trends



Industry to find newer efficiency models

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

Wide Selection of Technology & Node



Others	Others								
CSMC	XMC								
Xfab	Huali								
ASMC	Mie Fujitsu								
Altis	Altis								
VIS	VIS								
Dongbu	Dongbu	Others							
HHG	Altix	XMC							
TowerJazz	TJ	Huali							
Powerchip	Powerchip	Mie Fujitsu							
SMIC	SMIC	Powerchip	Others						
U M C	U M C	SMIC	XMC						
GFSM	GFSM	U M C	Huali						
T S M C	T S M C	GFSM	Mie Fujitsu						
Seiko Epson	Seiko Epson	T S M C	Powerchip						
Infineon	Infineon	Infineon	SMIC						
TI	TI	TI	U M C	Huali					
Sony	Sony	Sony	GFSM	SMIC					
NXP	NXP	NXP	T S M C	U M C					
Renesas	Renesas	Renesas	Renesas	GFSM					
Fujitsu	Fujitsu	Fujitsu	Fujitsu	T S M C					
IBM	IBM	IBM	IBM	IBM	GFSM	SMIC			
Toshiba	Toshiba	Toshiba	Toshiba	Toshiba	T S M C	U M C			
STM	STM	STM	STM	STM	STM	GFSM			
Samsung	Samsung	Samsung	Samsung	Samsung	Samsung	T S M C	T S M C	SMIC	
Intel	Intel	Intel	Intel	Intel	Intel	Intel	Intel	GFSM	
								T S M C	T S M C
130nm	90nm	65/55nm	45/40nm	32/28nm	22/20nm	16/14nm FinFET	10nm FinFET	7nm FinFET	5nm FinFET

Growing Number of Design Starts

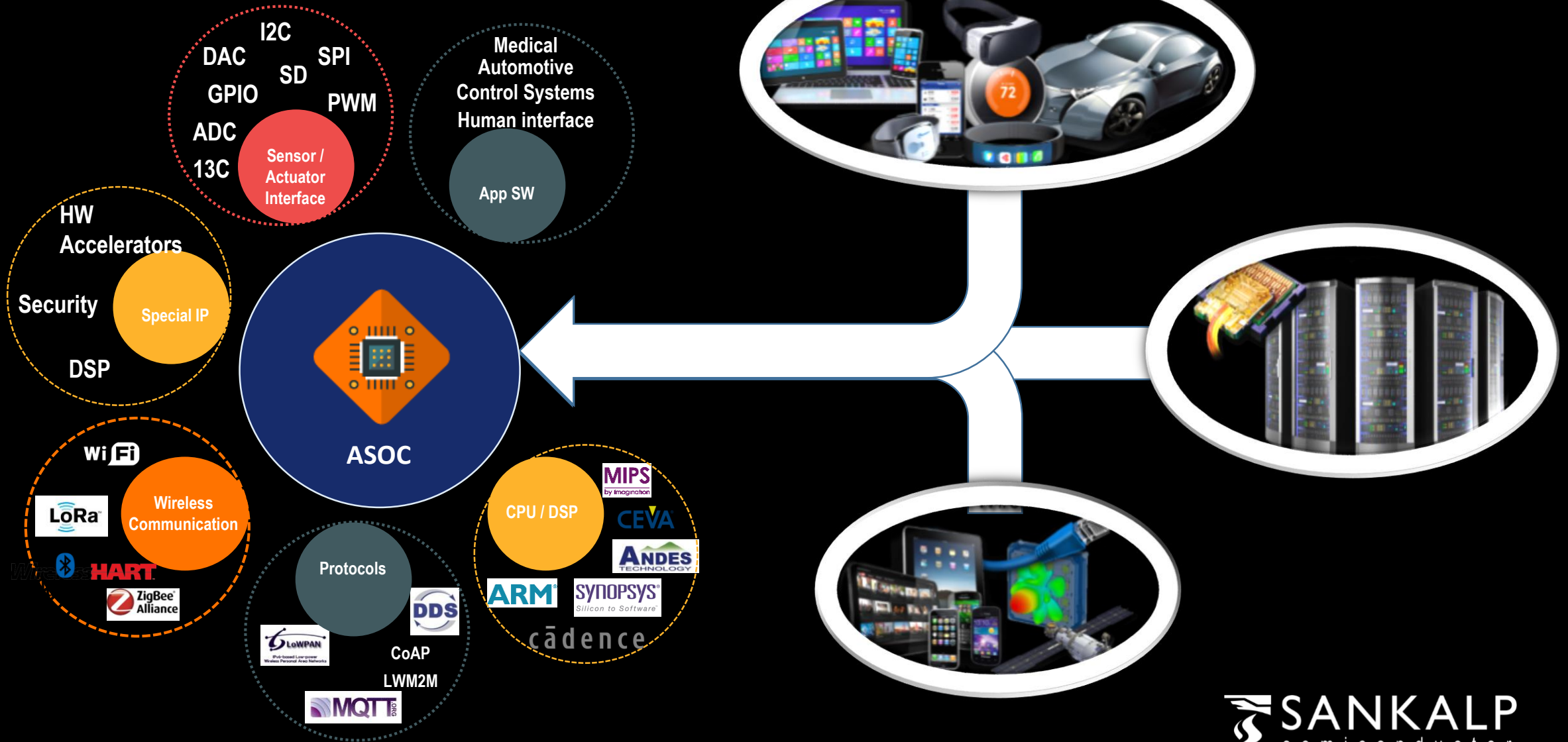
- Basic SoC design starts in the consumer segment are expected to grow at a 19 percent CAGR
- Industrial IoT ASIC design starts are projected to grow by 25 percent through 2021

Source: Semico report

Manufacturing choice explosion

Source: ARM, SMIC internal studies

ASoC Explosion



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*



谢谢你

THANK YOU