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# SAMSUNG FOUNDRY



Investor Presentation

2019

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**BUSINESS UPDATE**

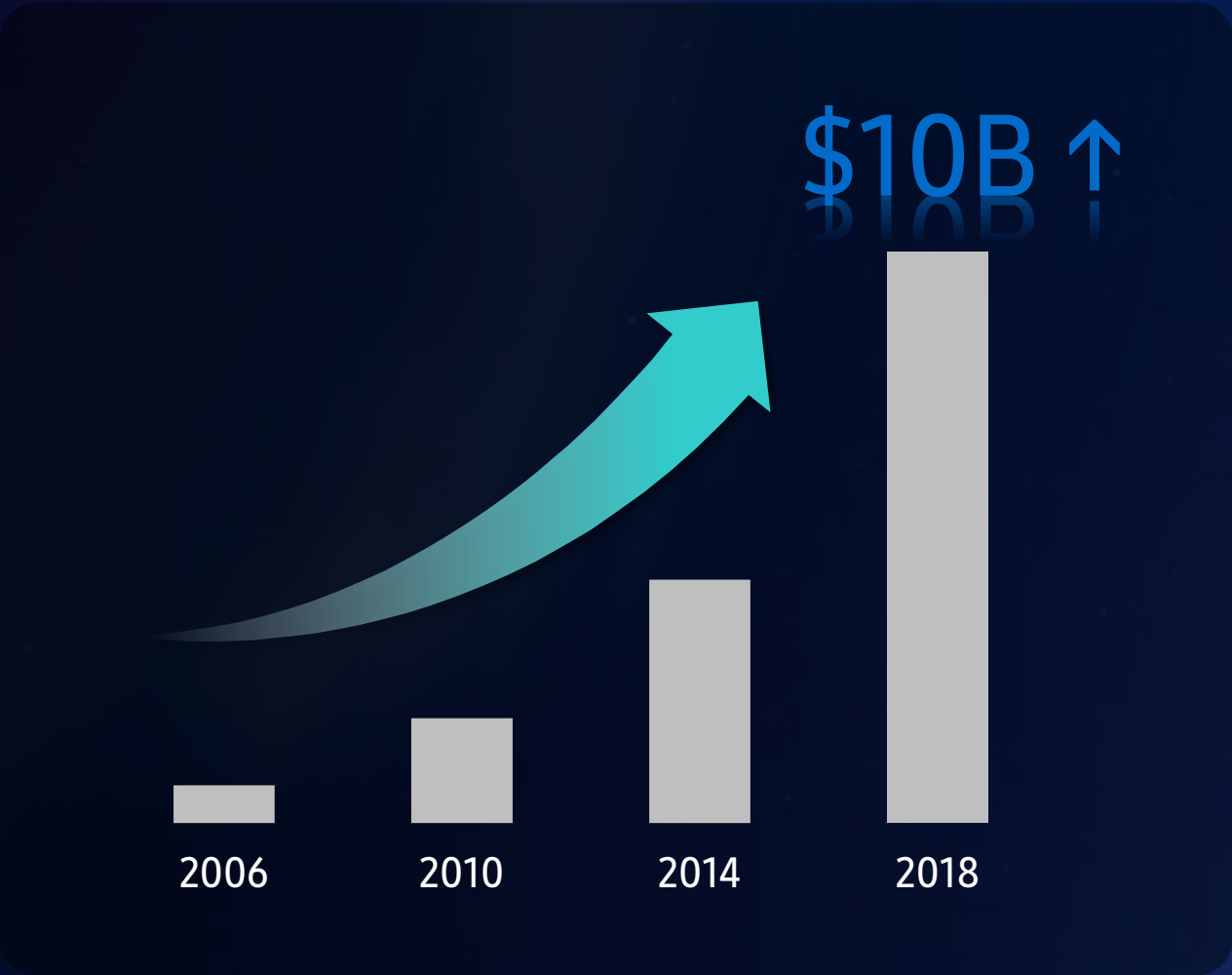
MARKET OPPORTUNITIES

SAMSUNG STRATEGY

KEY TAKEAWAYS

# Financial Highlights

Continuous revenue growth, achieved more than \$10 billion in 2018






# Business Milestones

**Business Start**


S1-Line Construction



2005

Foundry 1<sup>st</sup>  
**HKMG**  
\* High-K Metal Gate  
**Mass Production**

S2-Line Ramp up



2011

Foundry 1<sup>st</sup>  
**FinFET**  
**Mass Production**



14LPE

2015


Industry 1<sup>st</sup>  
**10nm**  
**Mass Production**

8-inch Business Start



2016

**New Business Unit**



2017

**S3-Line Ramp up**



2018

**7nm EUV**  
**Mass Production**

EUV Line Construction



2019



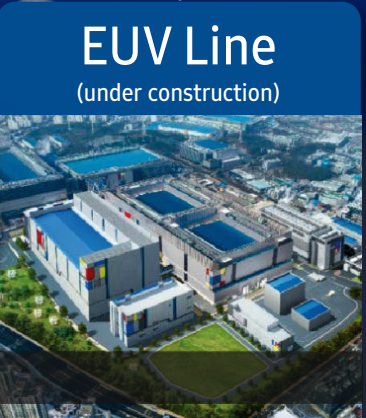
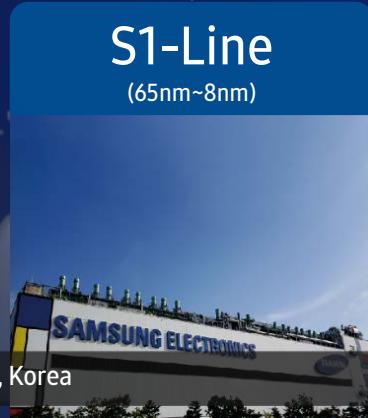
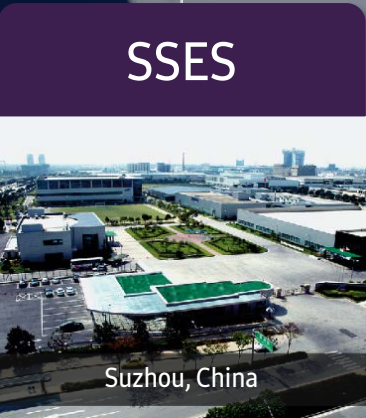
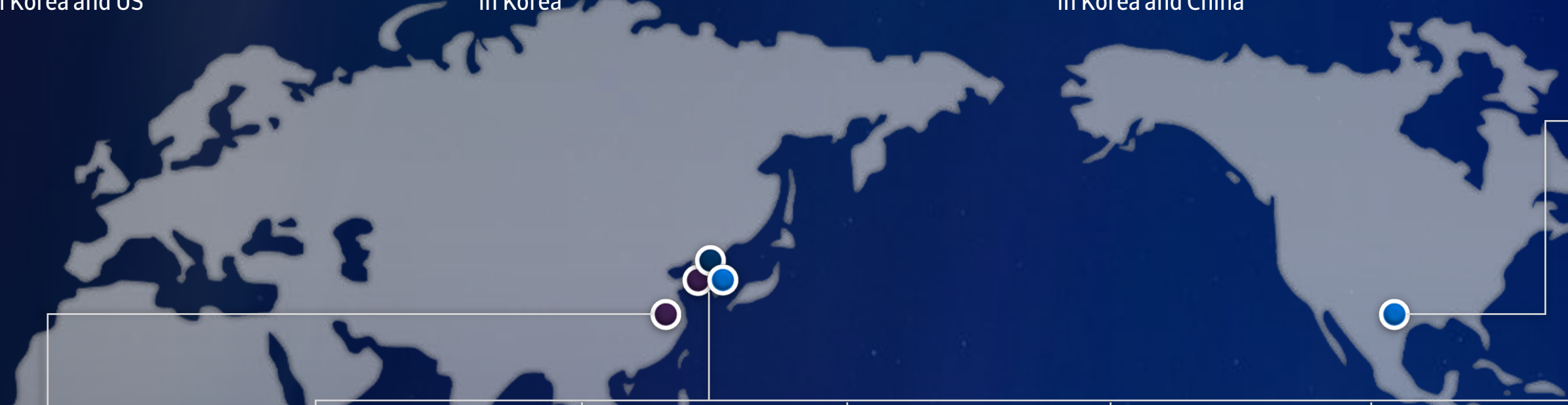
# Global Manufacturing Sites

## Advanced 300mm Fabs, Matured 200mm Fab, Test/Package Facilities

in 3 Locations in Korea and US

in Korea

in Korea and China



\* SSES: Samsung Electronics Suzhou Semiconductor

\* TSP: Test and System Package

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# Smart and Connected World

New applications emerge with 5G, bringing greater demand for semiconductor  
Foundry will be a pathfinder in realizing unforeseen technology



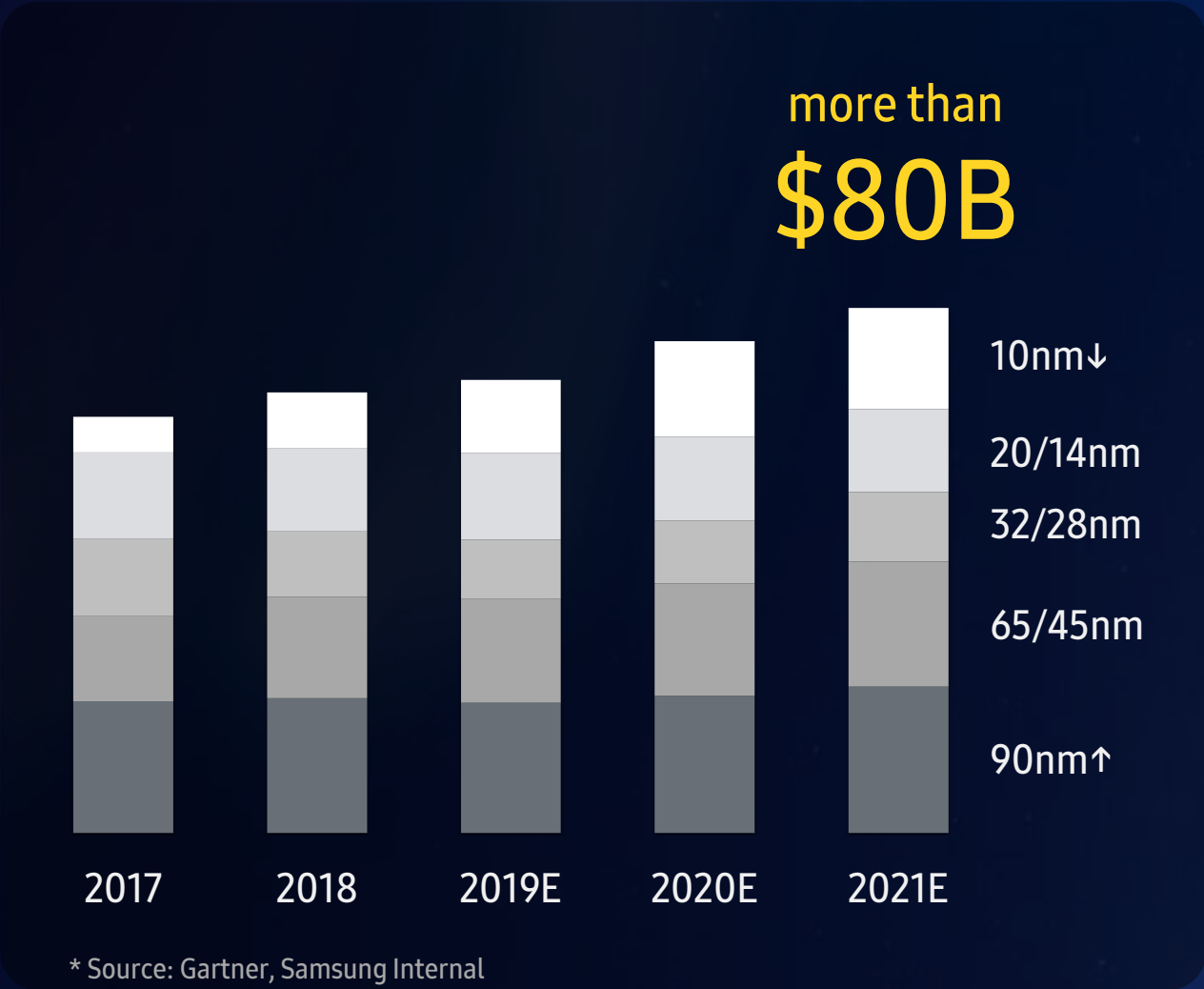
\* DSP: Design Solution Partners / EDA: Electronic Design Automation / OSAT: Outsourced Semiconductor Assembly and Test



# Foundry Market Opportunities

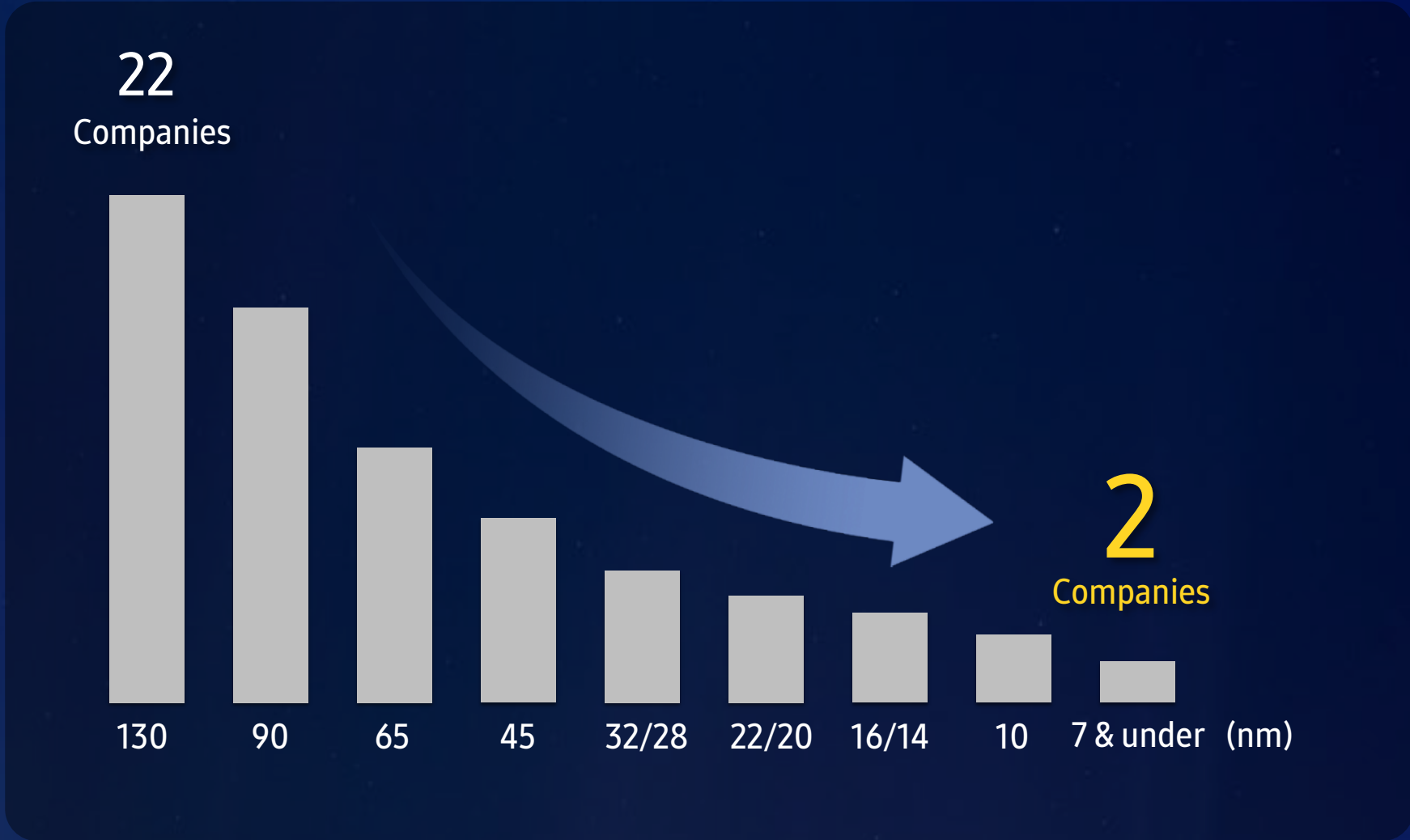
## Foundry Market by Node

Expected to grow more than 4% per year on average by 2021



## # of Foundry Providers by Node

Now only 2 companies, including Samsung, provide leading-edge foundry services



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# Our Vision

**The Most Trusted Foundry,**  
providing creative solutions for customers' innovation needs

## Technology

- Unrivaled process technology
- Customer-friendly design infrastructure
- Semiconductor 'One stop shop'

## Operation

- Flawless supply chain management
- Unparalleled execution to deliver our commitment
- Highest level of visibility & flexibility

## Service

- Service beyond expectation
- Deep knowledge and expertise to solve customer challenges
- Agile collaboration for customers' success



# Advanced Technology

Maintain Firm Technology Leadership through Continuous Node Scaling

Ready to support a wide variety of applications and customers



# Differentiated Platform, FD-SOI

## 28/18FDS, Solution for IoT, Security, Industrial, and Automotive

- RF : Supports 110GHz mmWave
- eMRAM : Extremely small bitcell, superior write speed and endurance time

### FDS Technology Offering

	Logic	RF	eMRAM
28FDS	●	●	●
18FDS	○	○	○

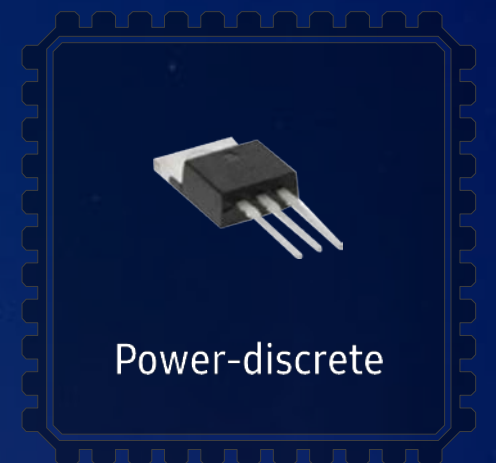
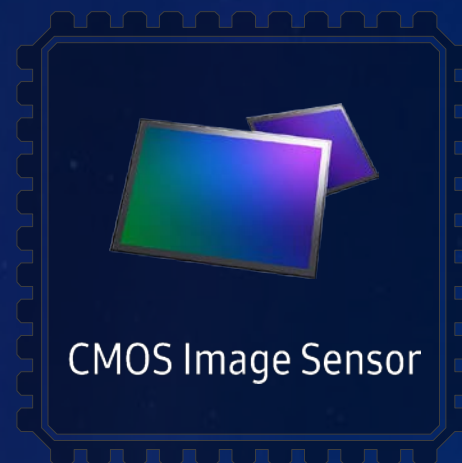
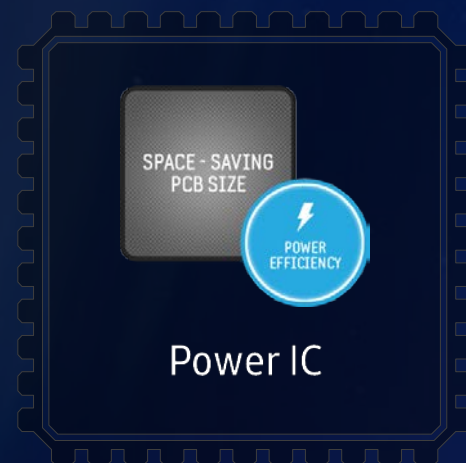
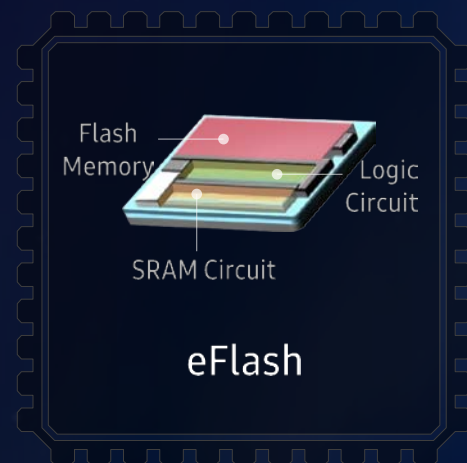
● Available ○ Under Development

### Next Generation eMRAM Strategy

- 28FDS eMRAM solution's Commercial Shipment Started in 2019
- 1Gb eMRAM Development on Track
- eMRAM on FinFET Technology under development

# 8-inch Value-Added Offerings

Portfolio Expansion from eFlash, Power IC, DDI, CIS, MS/RF to Power-discrete Technologies extensively optimized through many years of product manufacturing

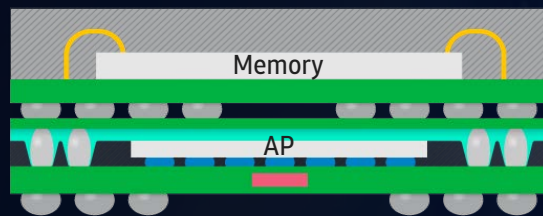




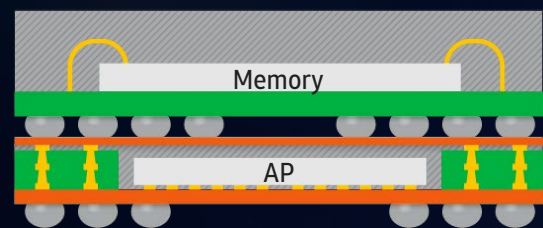
# Advanced Package Solutions

Advanced Package Technology Drives System Level Performance Improvement by Enabling More Integration and Better Performance

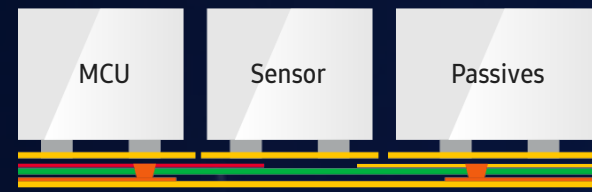
## Mobile Package



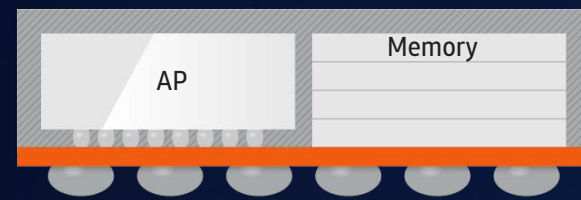
iPoP



Fan-Out PLP-PoP

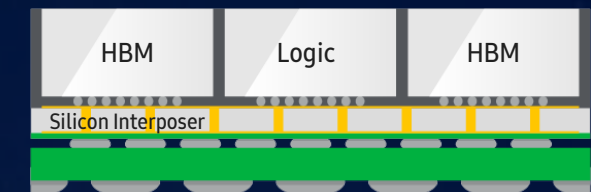


System-on-Film

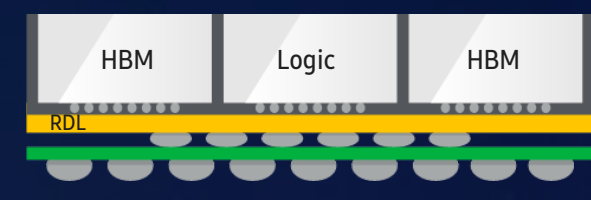


Fan-Out SiP

## HPC Package



2.5D Si Interposer



RDL Interposer

\*iPoP : integrated Package-on-Package / PLP: Panel-Level-Package / SiP: System-in-Package

# Foundry Ecosystem

'SAFE', the Ecosystem that Samsung Foundry has Built with its Partners, is Always SAFE



\* IP : Intellectual Property / EDA: Electronic design automation / DM: Design Methodology

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# Key Takeaways

- ✓ Maintain firm leadership in advanced node technology
- ✓ Expanding differentiated offerings and solutions for various applications
- ✓ Enhancing state-of-the-art operations to satisfy customers' needs
- ✓ Providing best products and services to enable customers' success

# SAMSUNG

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