

The Conspirators

- Make sure your device uses Samsung Memory



**Battery
Brutus**

**Fiona
Freeze**

**Loading Ball
Larry**

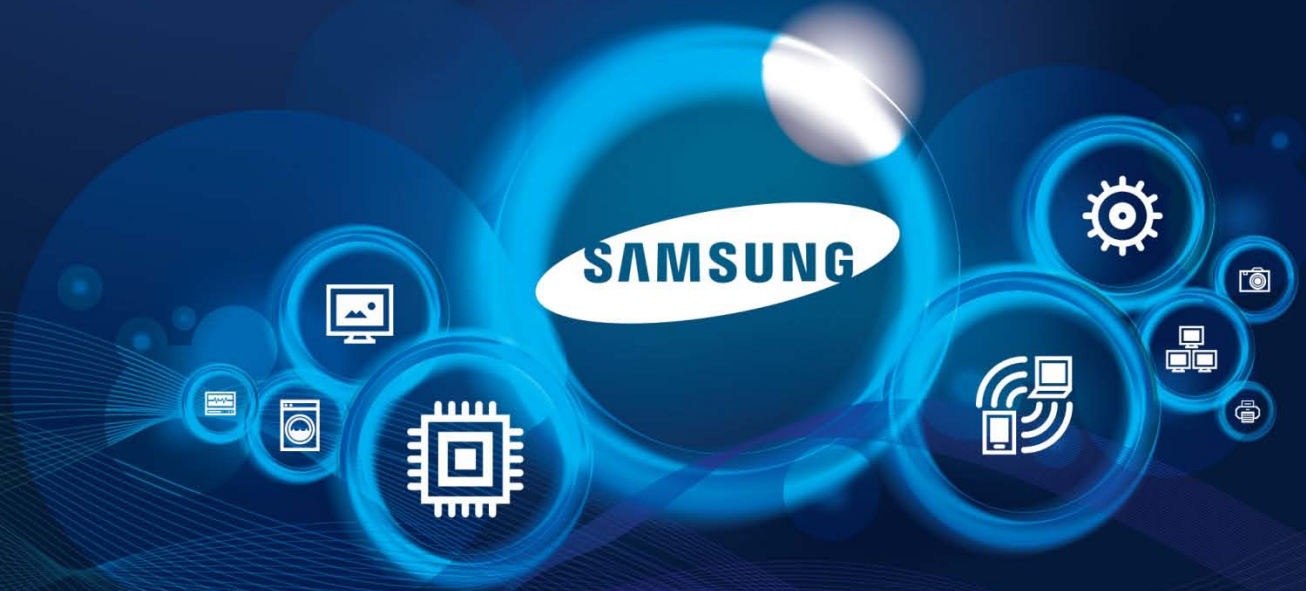
Memory Business

SAMSUNG
ANALYST DAY 2013



Dong Soo Jun

President of Memory Business



SAMSUNG
ELECTRONICS



DISCLAIMER

The materials in this report include forward-looking statements which can generally be identified by phrases such as Samsung Electronics (SEC) or its management "believes," "expects," "anticipates," "foresees," "forecasts," "estimates" or other words or phrases of similar implications. Similarly, such statements that describe the company's business strategy, outlook, objectives, plans, intentions or goals are also forward-looking statements. All such statements are subject to certain risks and uncertainties that could cause actual results to differ materially from those in the presentation files above.

For us, particular uncertainties which could adversely or positively affect our future results include:

- The behavior of financial markets including fluctuations in exchange rates, interest rates and commodity prices
- Strategic actions including dispositions and acquisitions
- Unanticipated dramatic developments in our major businesses including CE (Consumer Electronics), IM (IT & Mobile communications), DS (Device Solutions)
- Numerous other matters at the national and international levels which could affect our future results

These uncertainties may cause our actual results to be materially different from those expressed in this report.



1. Paradigm Shift

- Transition from PC's to Mobile

2. Strategic Direction

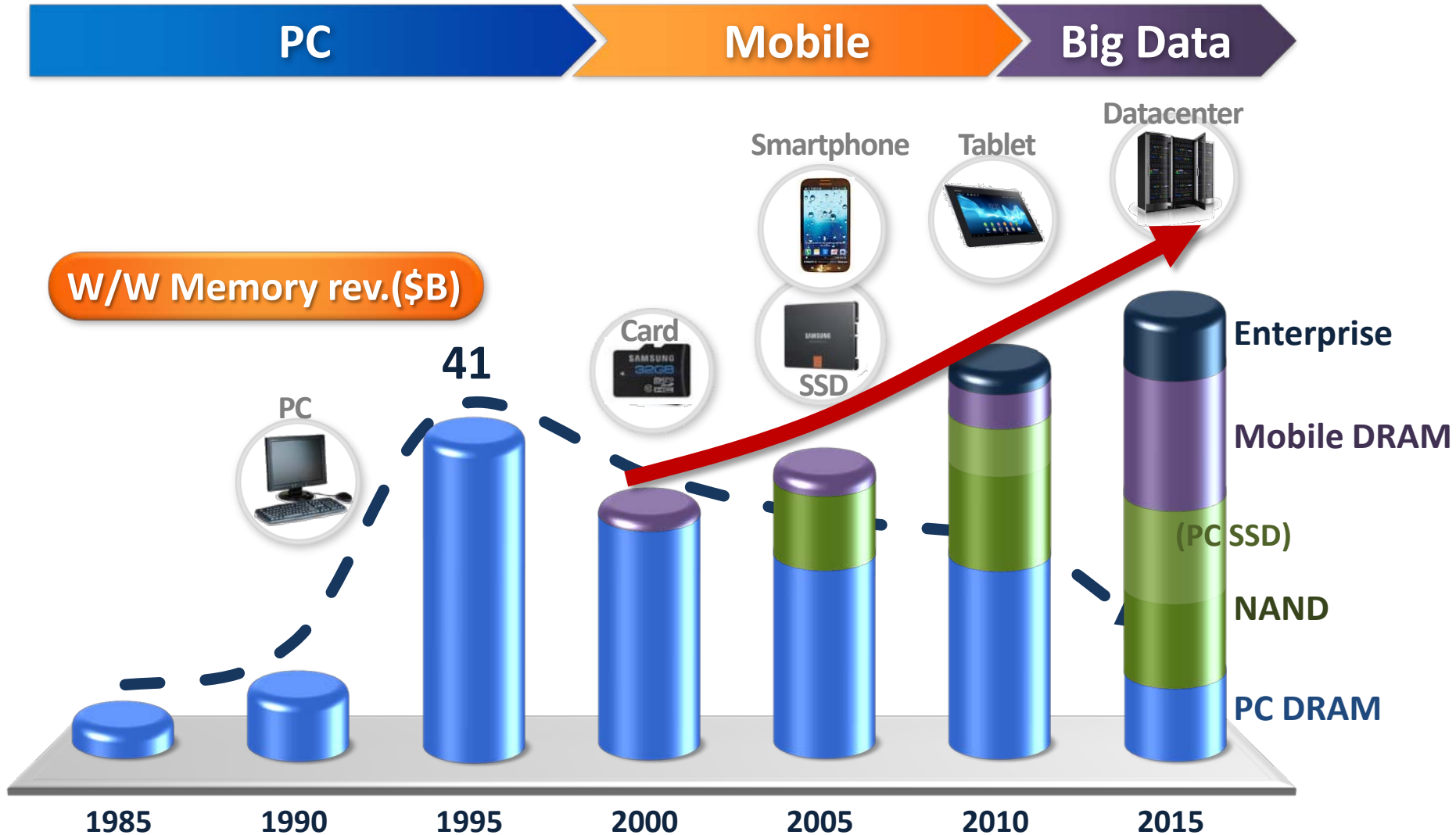
- Stay "One Step Ahead" as Ecosystem Leader
- Exploit Breakthroughs in Technology
- Extend Core Competencies



Paradigm Shift

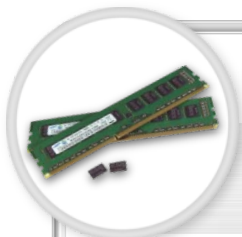
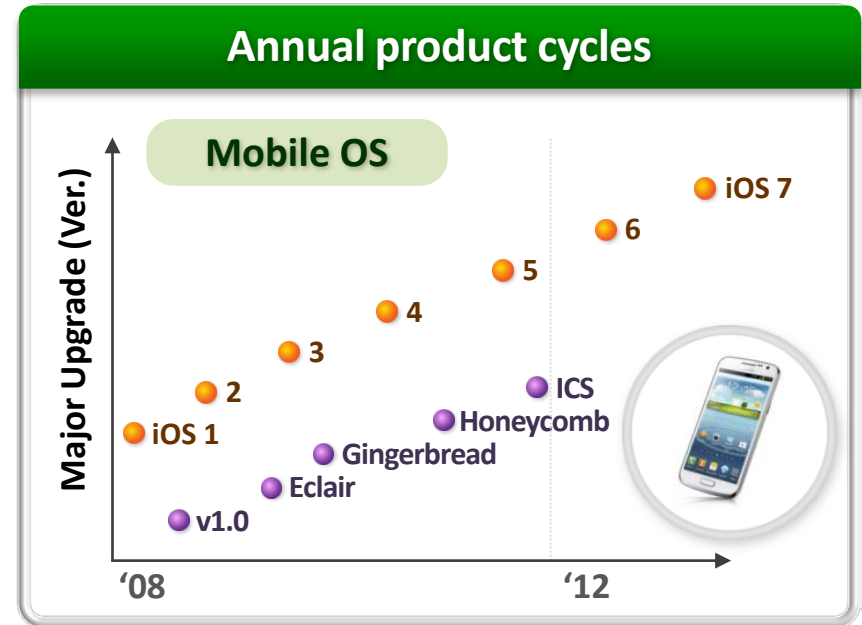
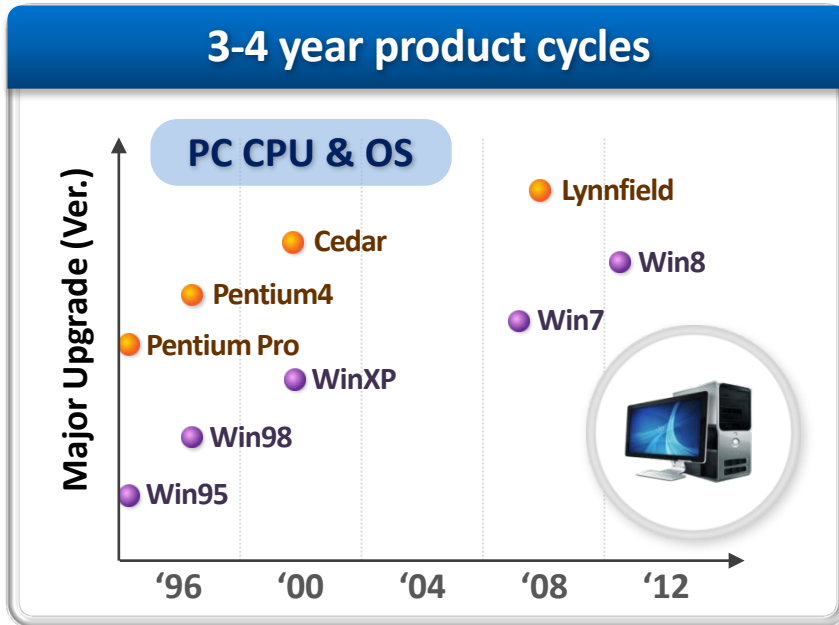


Memory Market Evolution



(Source: isuppli, Samsung)

- Business cycle accelerates in mobile era



PC DRAM

SDR → DDR → DDR2



Mobile DRAM

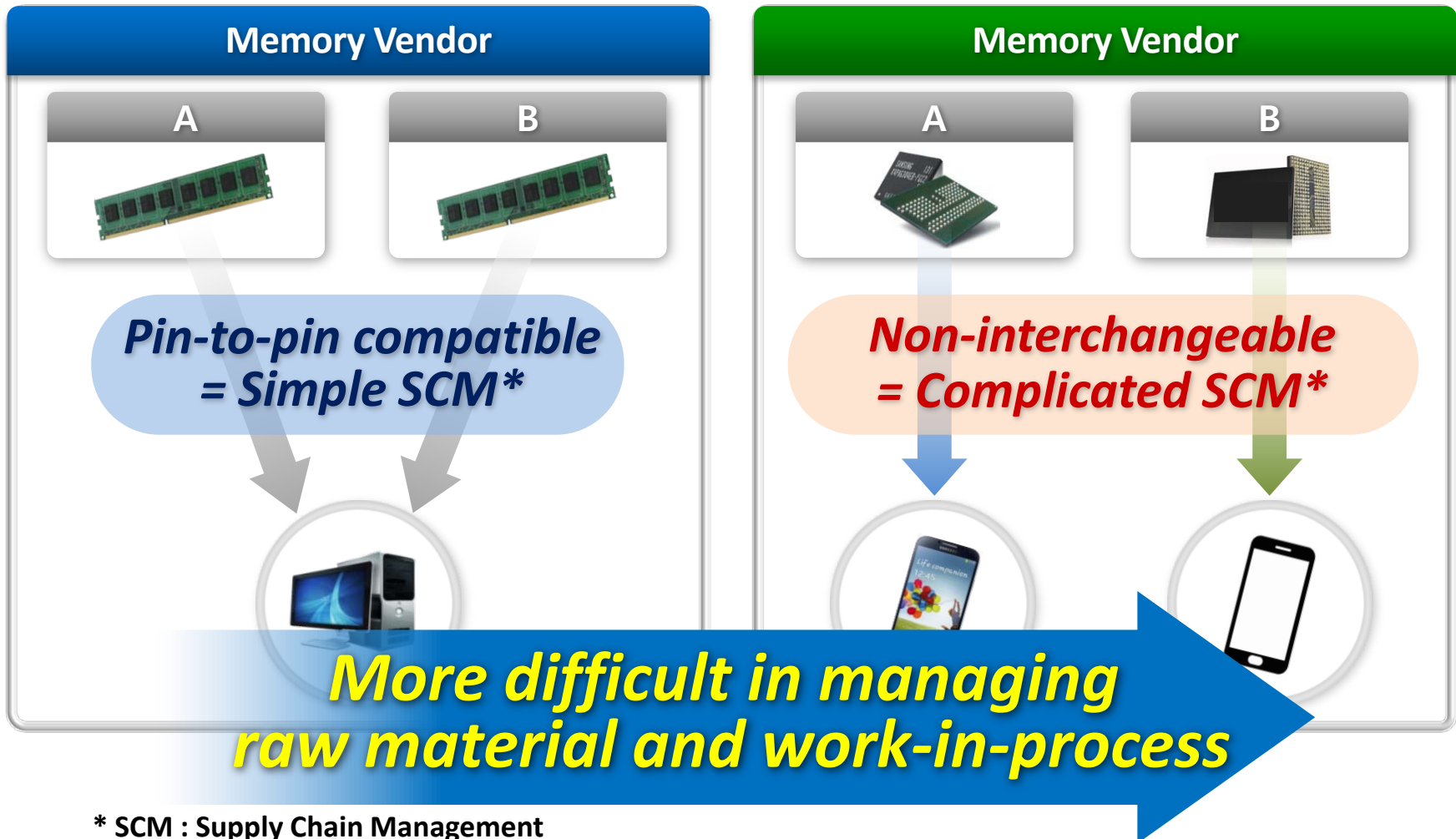
LP3 → LP4

Faster standardization, development and enabling

Changes every

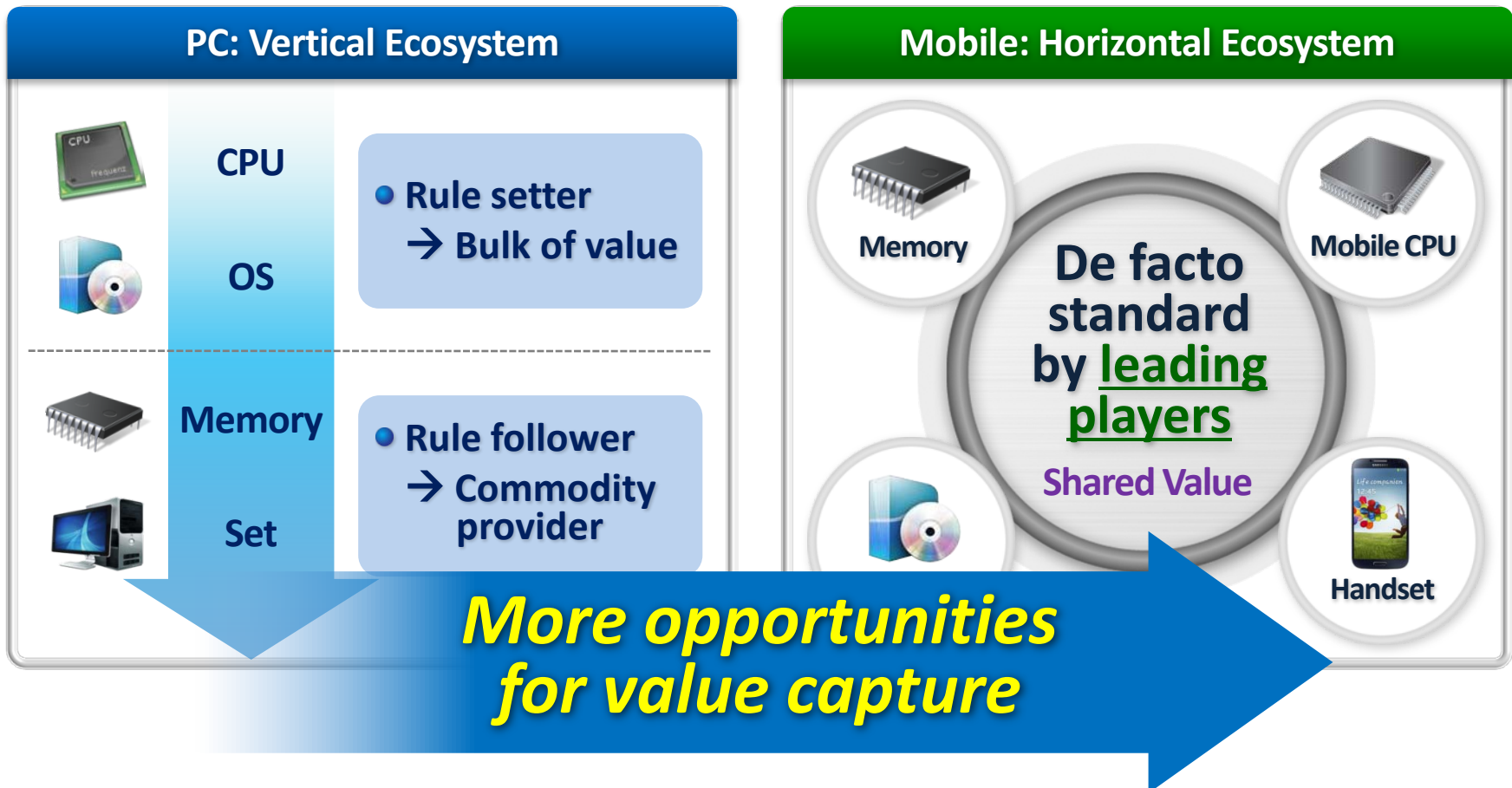
Product Compatibility

- Interchangeable → Customized



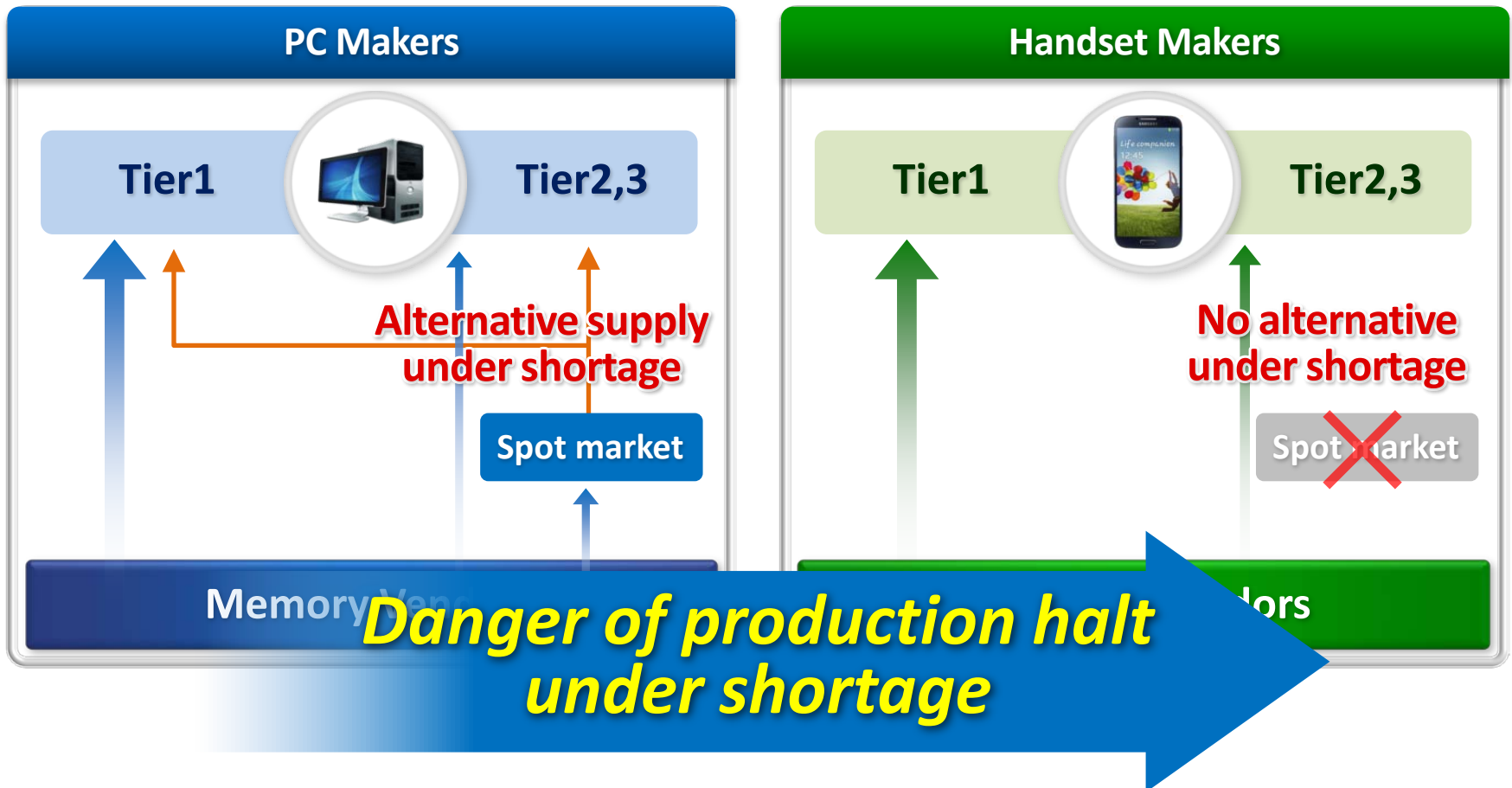
* SCM : Supply Chain Management

- The mobile value chain is more horizontal
 - Value more evenly distributed amongst key players

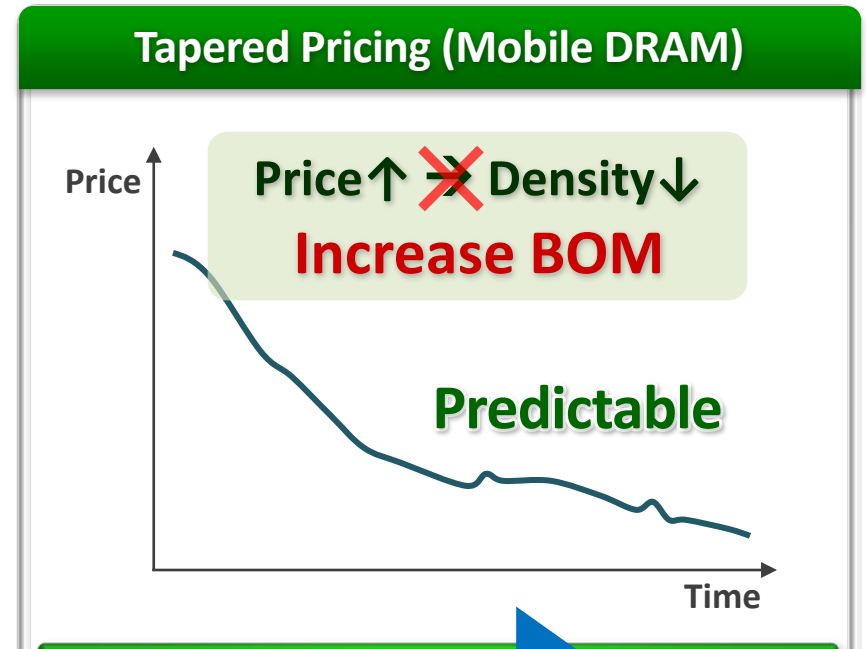
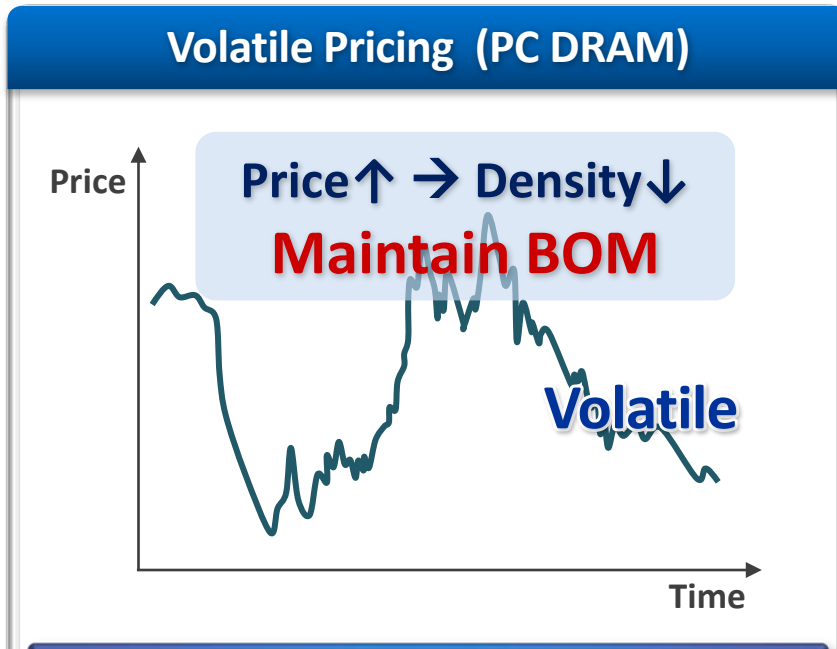


Selective Relationship

- Supply interruptions possible during memory shortages



- “Tapered Pricing” for visible and predictable memory supply

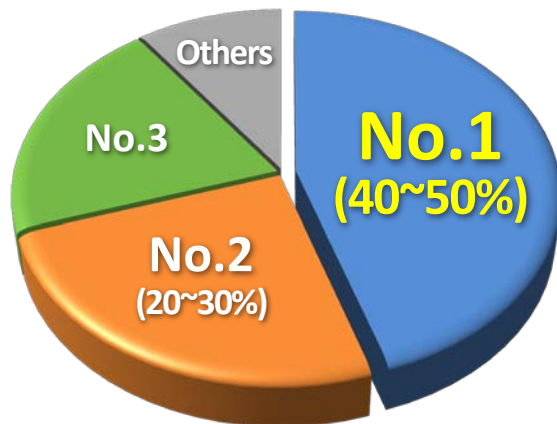


Commodity price **Predictable price and continued cost innovation required**

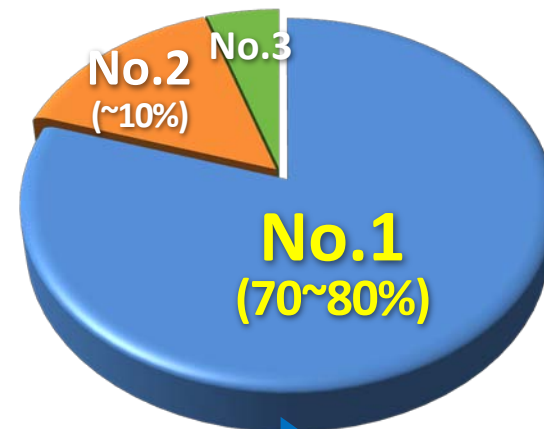
Winner Takes All

- Design-in at each vendor, 1st mover takes all

Memory vendors' share
for PC maker 'A'

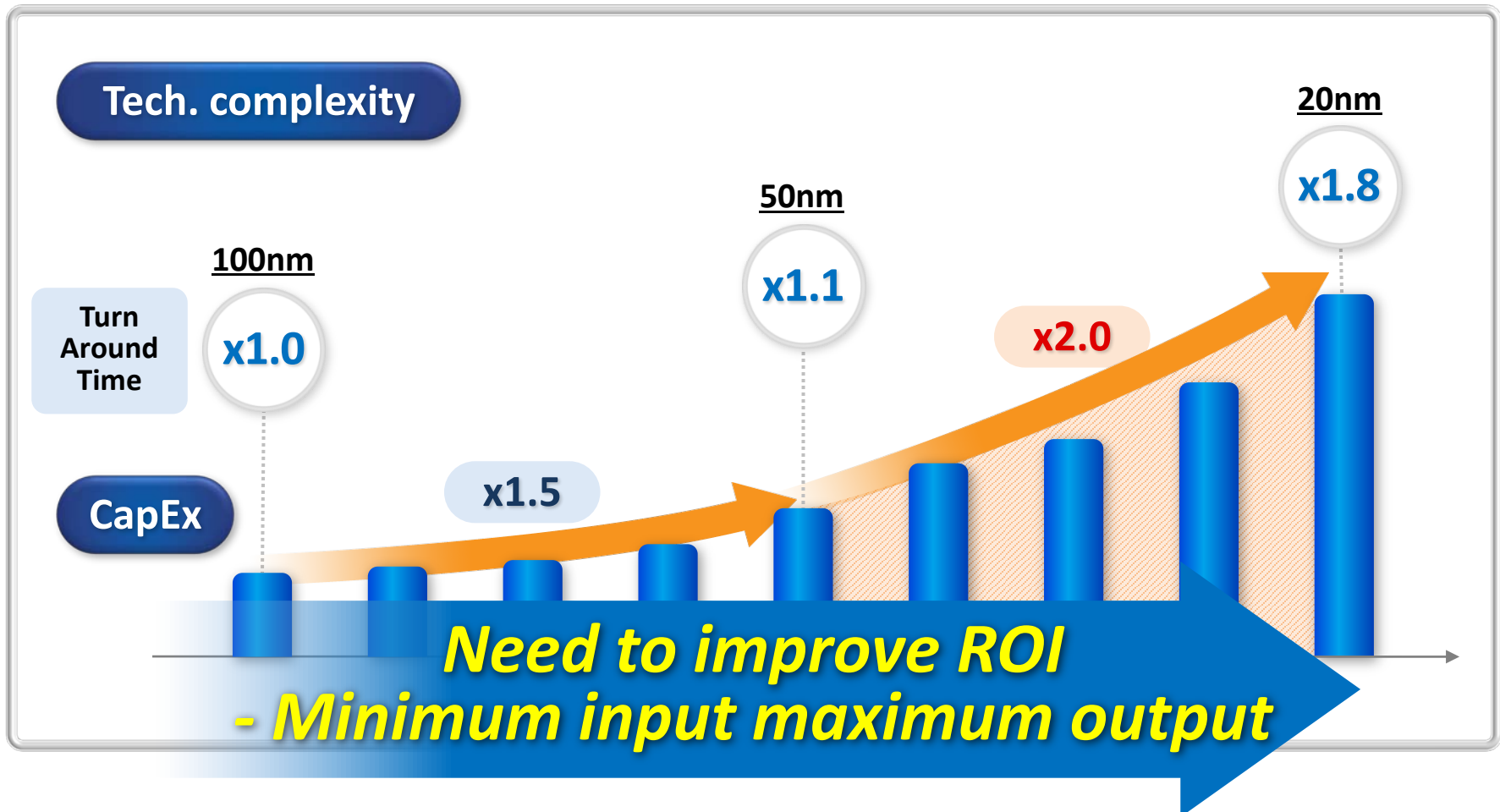


Memory vendors' share
for handset maker 'B'



***Need to be a first mover,
Not just fast follower***

- Technology complexity driving greater CapEx



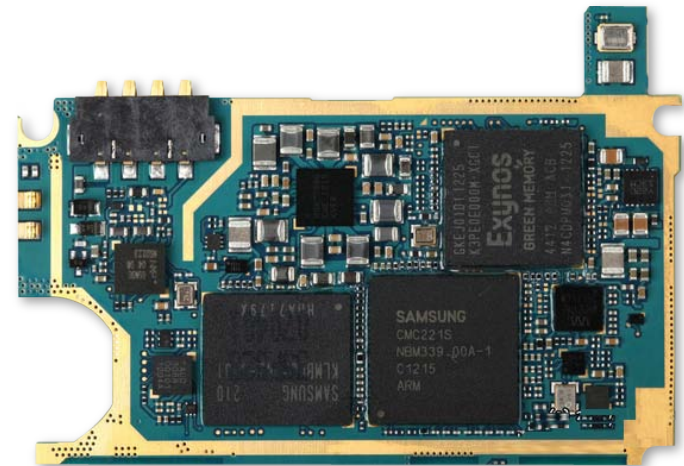
- PC memory is modular, but Mobile memory is embedded
- Product quality becomes more important

Module type



\$00 for DRAM mo

Embedded type



board

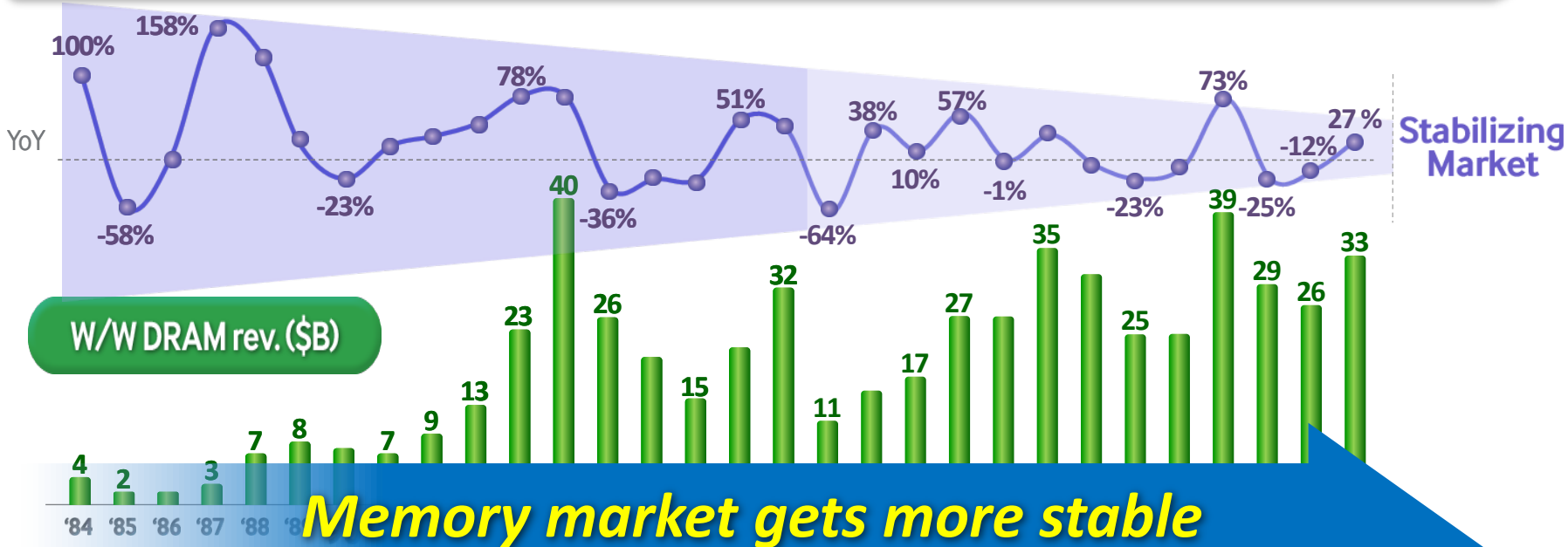
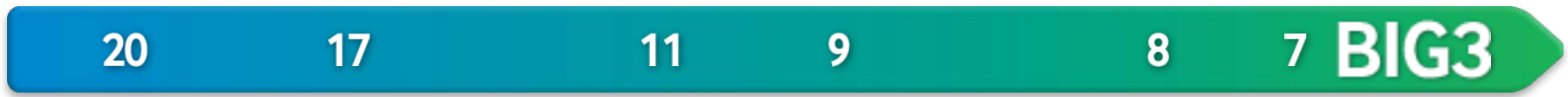
**High risk of
RMA* cost and lost business**

* Return Material Authorization

Memory Market

- Paradigm shift is reflected in memory market

of DRAM Vendor



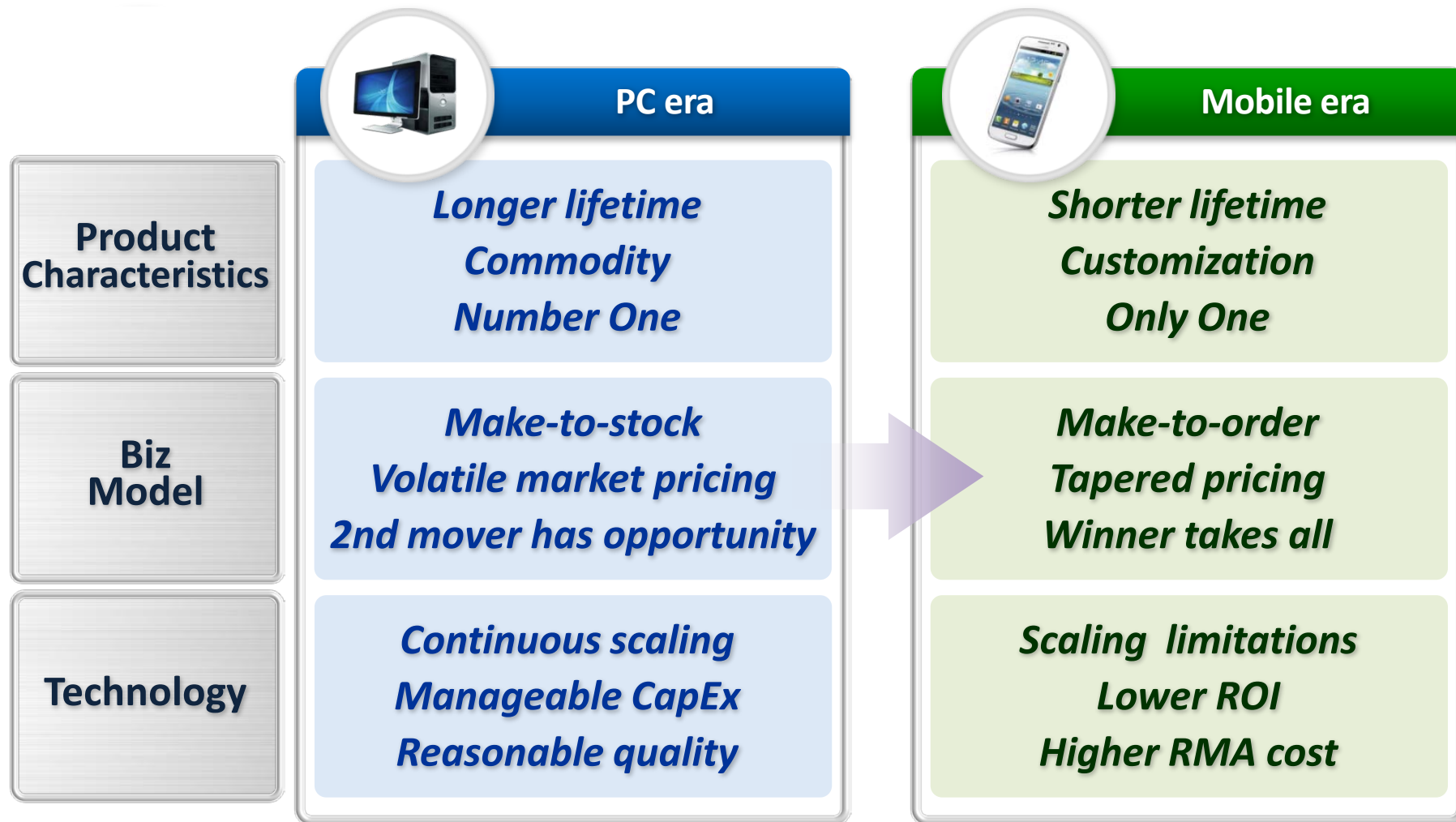
W/W DRAM rev. (\$B)

(Source: isuppli)

Memory market gets more stable due to diminished players and PC DRAM portion

Paradigm Shift

- Radical change of business paradigm





Strategic Direction

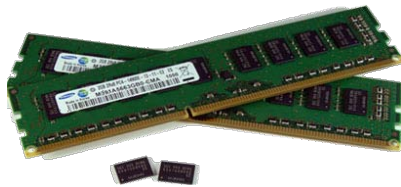
- Stay "One Step Ahead" as Eco-system Leader

Solutions for One Step Ahead

- Green Memory
 - Value maximizing solution for datacenters

5th Generation

SAMSUNG
GREEN
MEMORY



DRAM

20nm class
DDR4



SSD

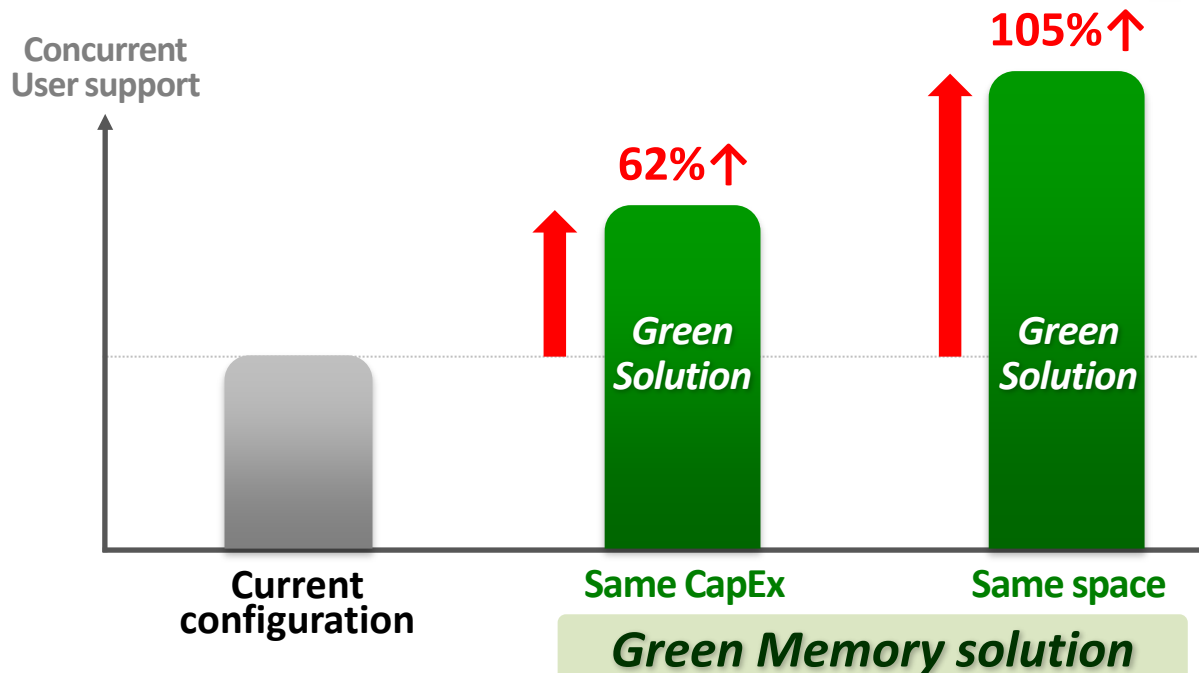
10nm class
PCIe SSD

Green Memory Benefits

- Combined benefits of Green Memories provide up to 105% greater operational efficiency

5th Generation

SAMSUNG
GREEN
MEMORY



Creating Shared Value

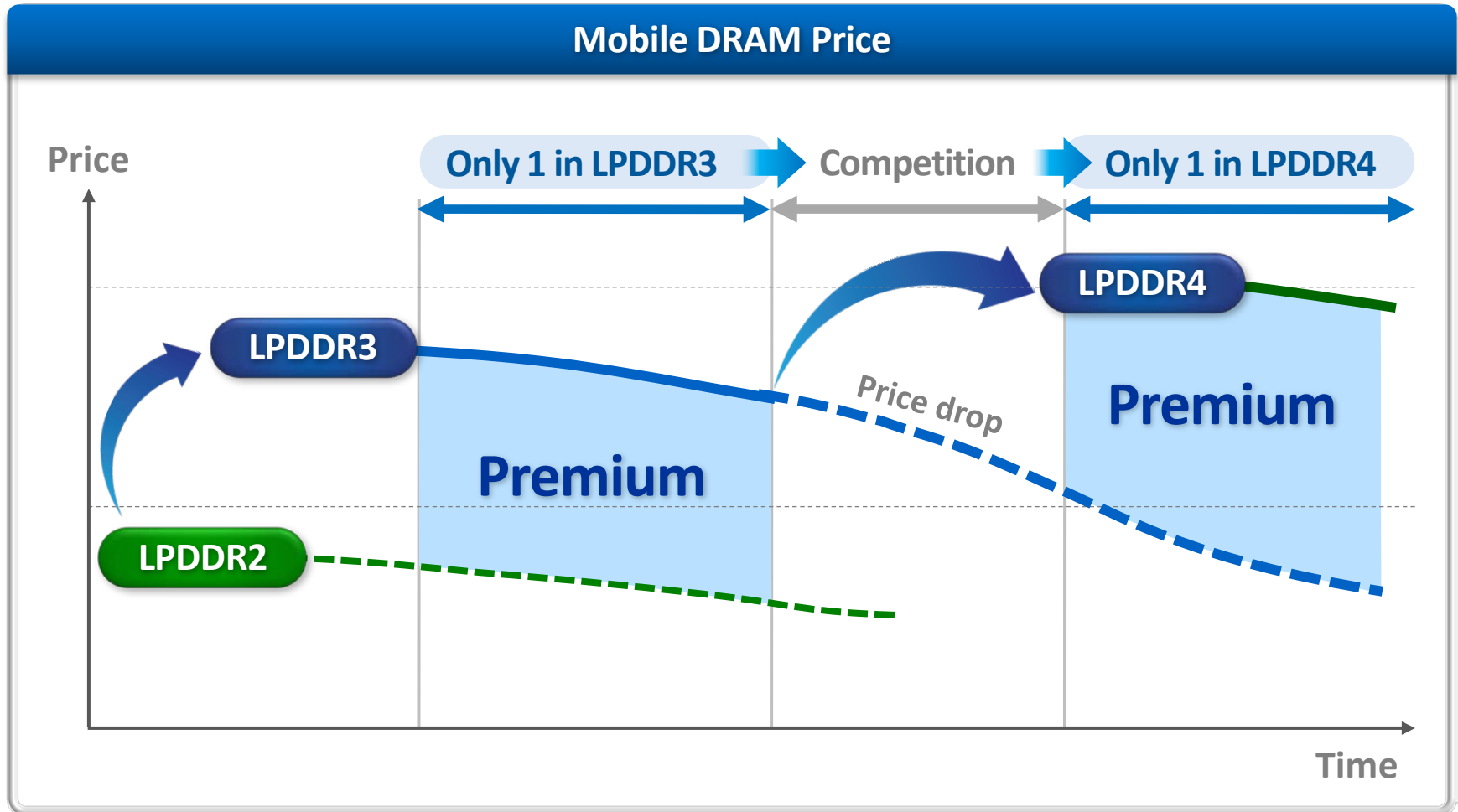
- Creating \$3 Billion value



* Assumes '14 W/W Server & high-end storage change to 100% Green Memory

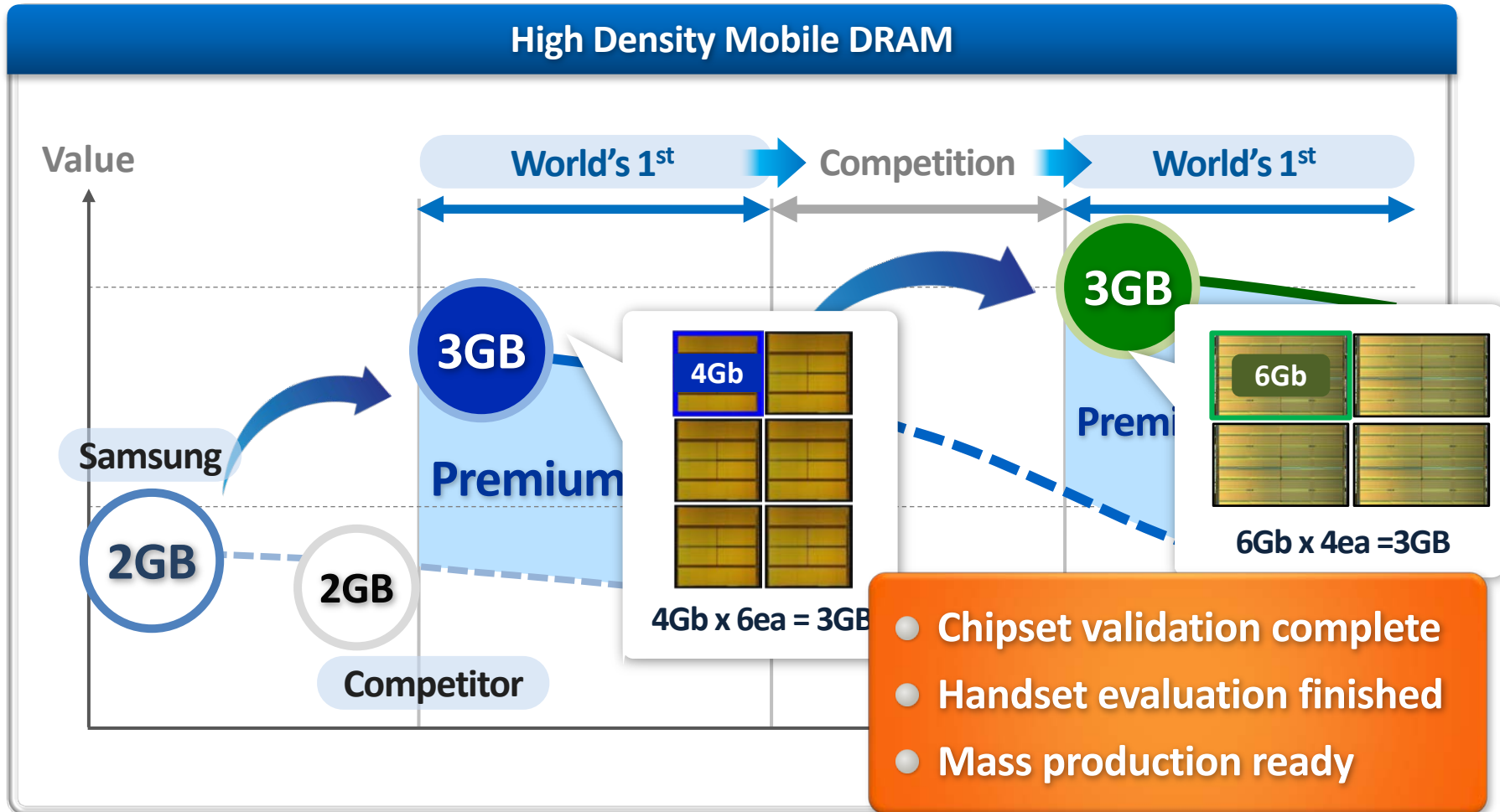
One Step Ahead

- Continue to secure price premium via tech leadership



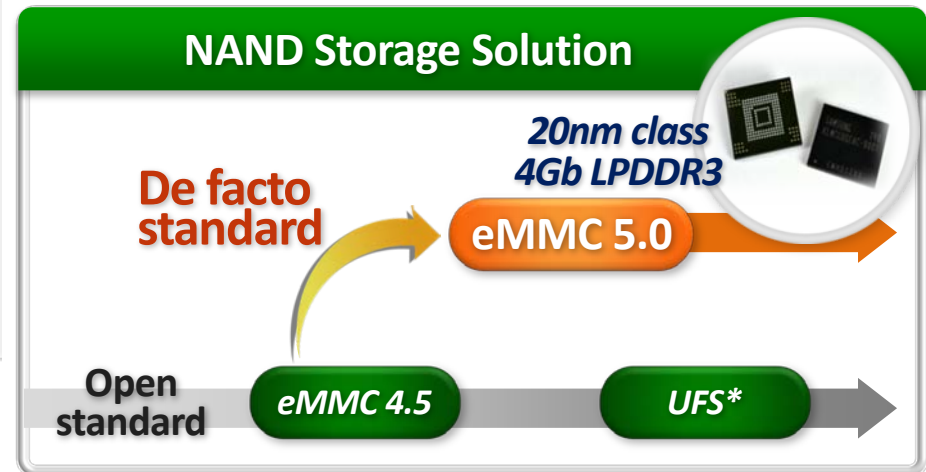
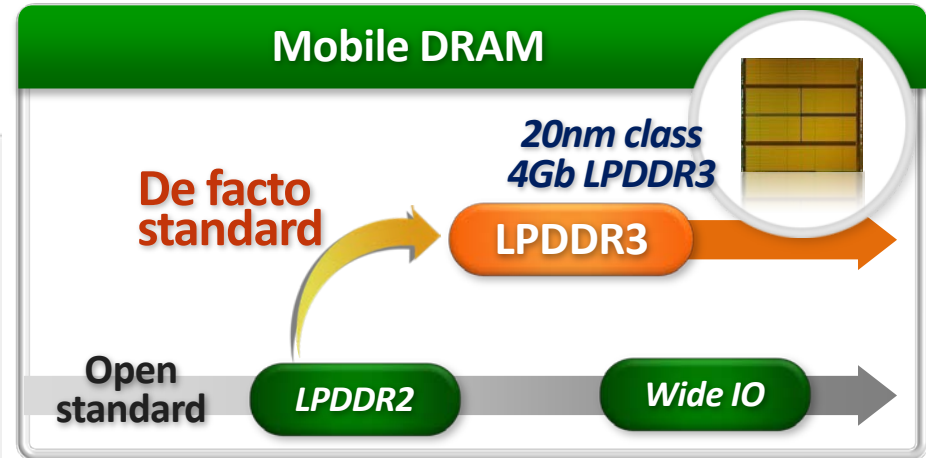
One Step Ahead

- Continue to secure price premium via tech leadership



De facto Standard

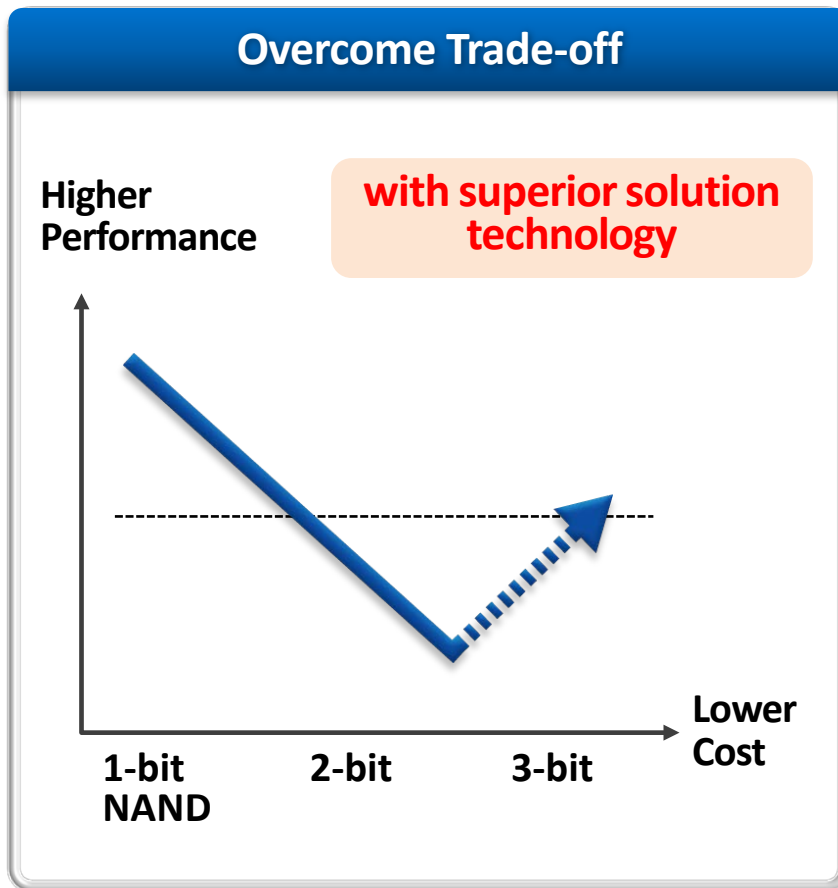
- Cultivate de facto standard via ecosystem leadership



*Universal Flash Storage

Enabling Tech for One Step Ahead

- World's first 3-bit NAND flash SSD
 - Comparable performance at a value price



840 ('12)
840 EVO ('13)



“I’m continually amazed by Samsung's rise to power in the SSD space.” - Anandtech -

“The performance increase is profound. Writes shoot up, while the read results shoot up as well.”
- Tom's Hardware -

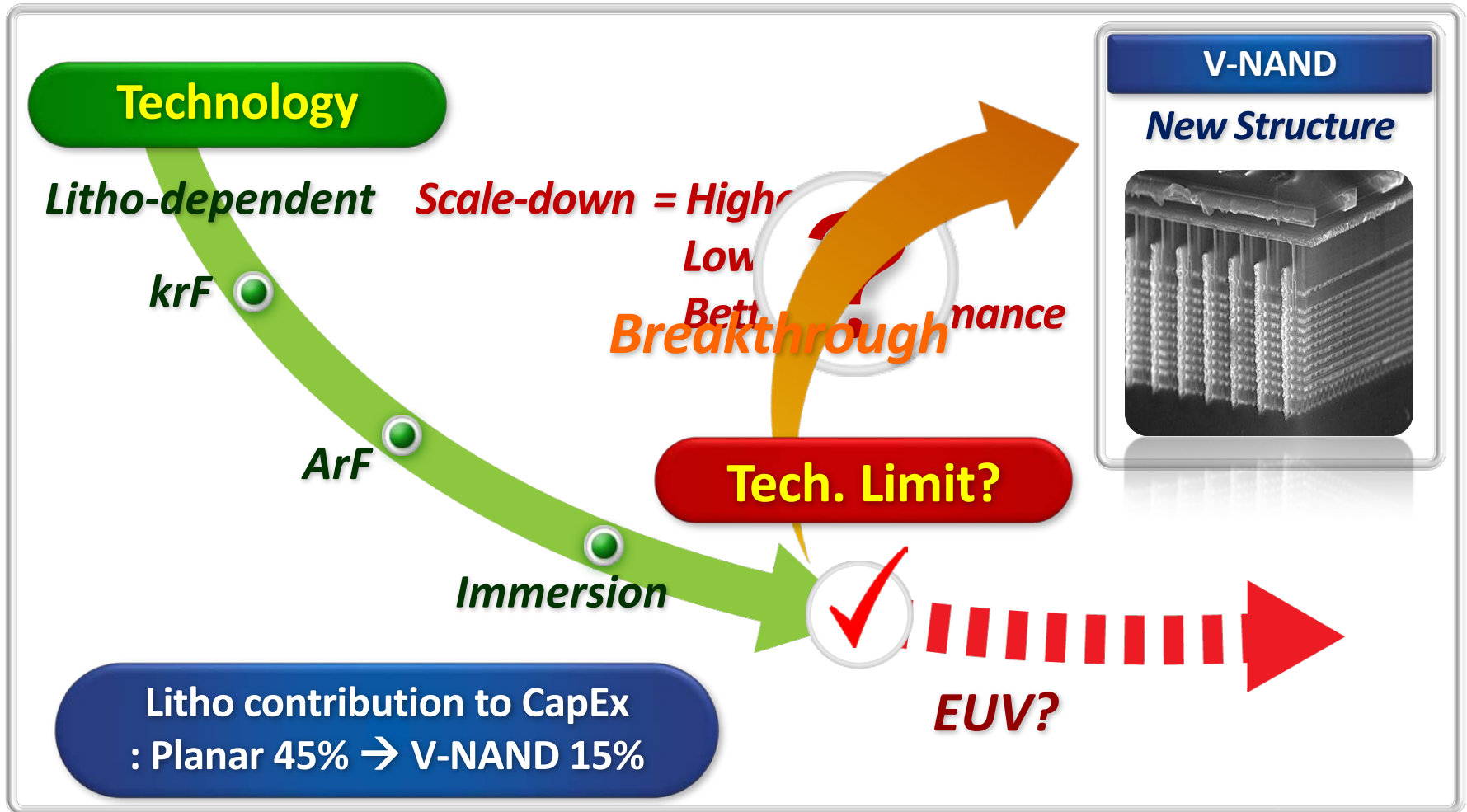


Strategic Direction

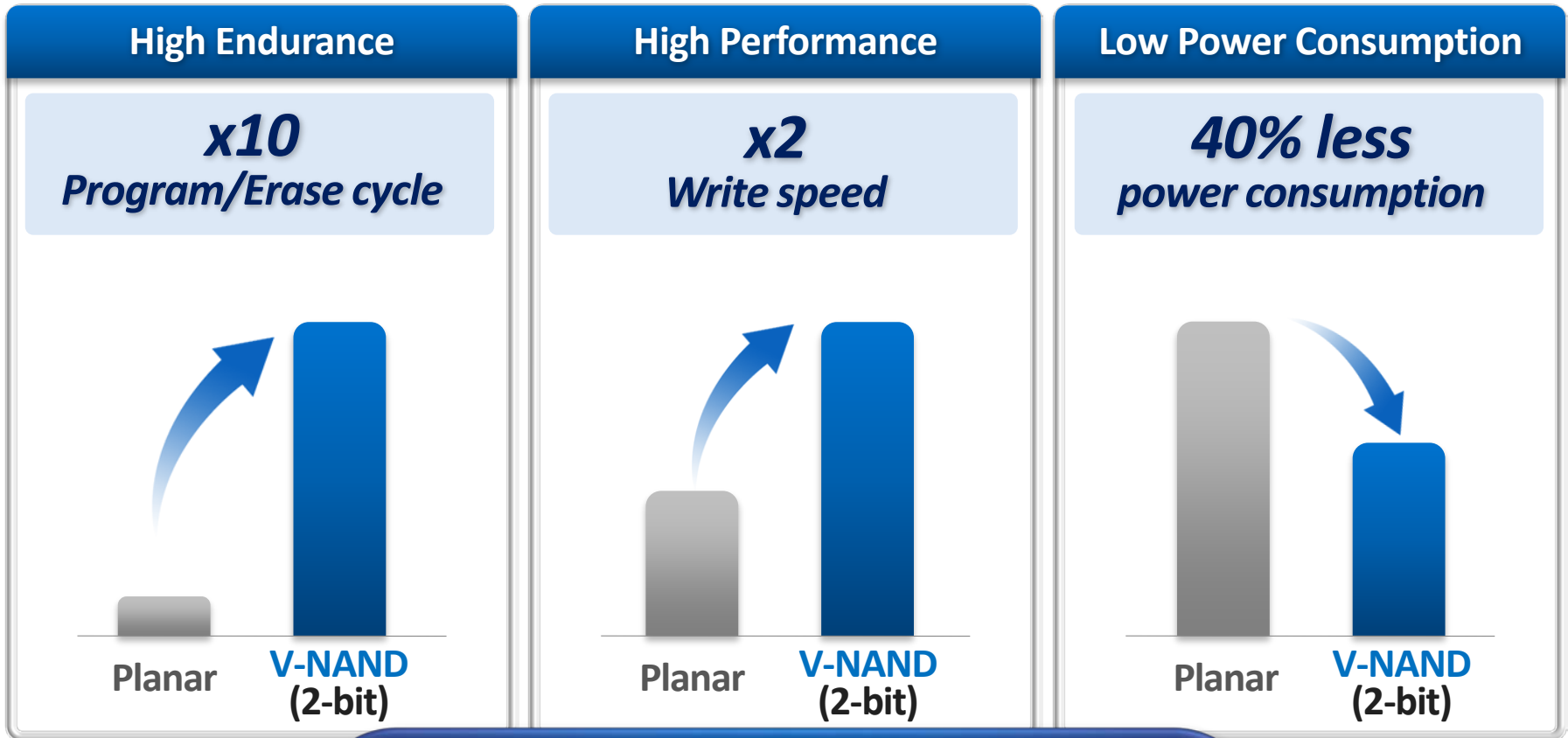
- **Exploit Technology Breakthroughs**

Technology Paradigm Shift

- Memory process technology no longer lithography dependent



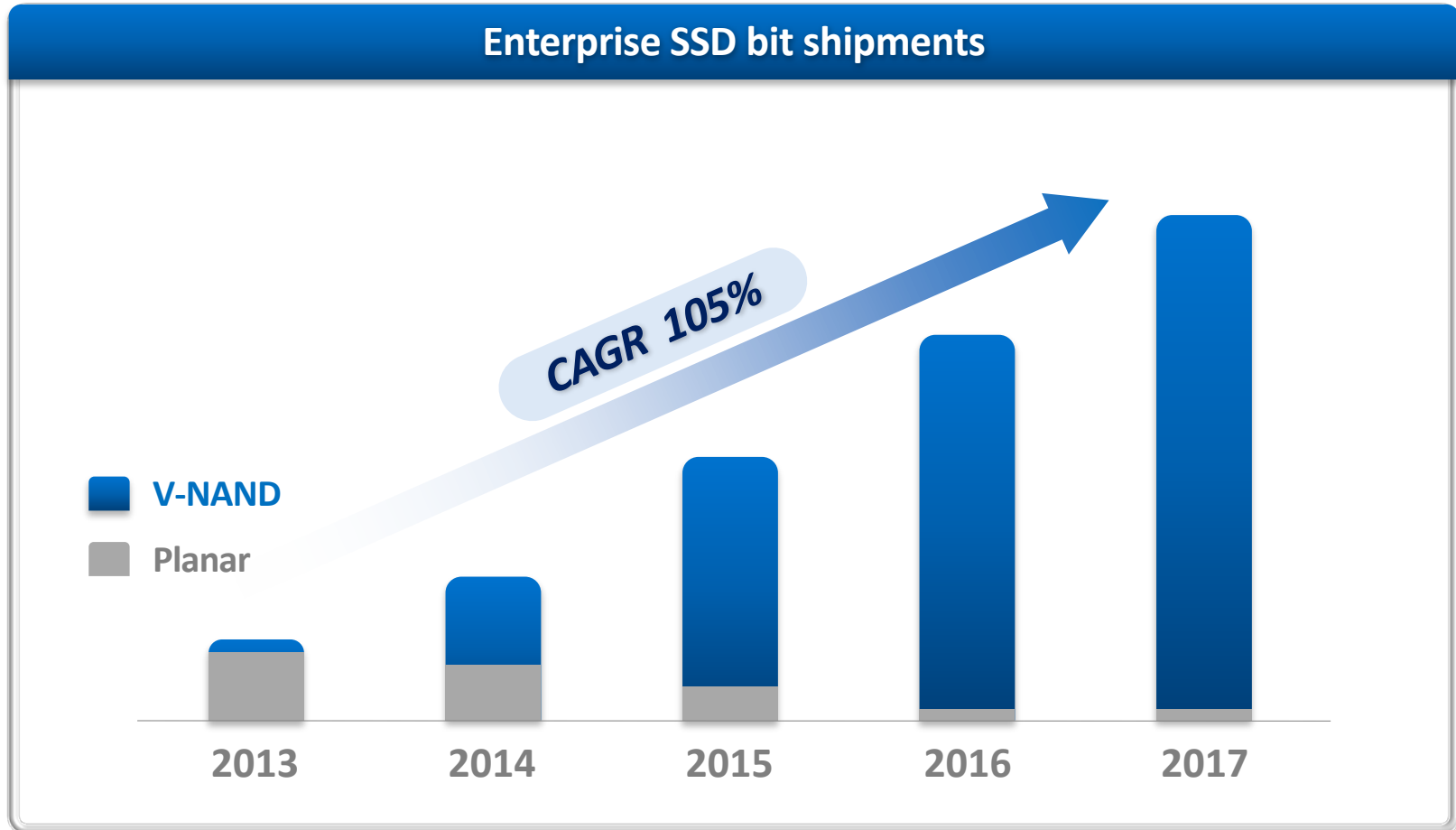
Value Proposition of V-NAND



Shipping to datacenter customers and receiving positive feedback

V-NAND in Enterprise SSD

- V-NAND will change the server storage industry



- V-NAND can be the most cost effective solution

V-NAND
Premium Quality



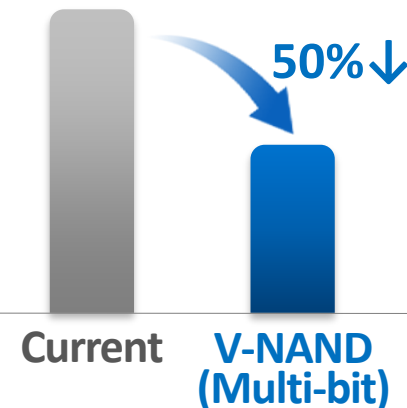
Samsung's
Multi-Bit Solution
Technology

2-bit → 3-bit → ...

Multi-bit V-Solution

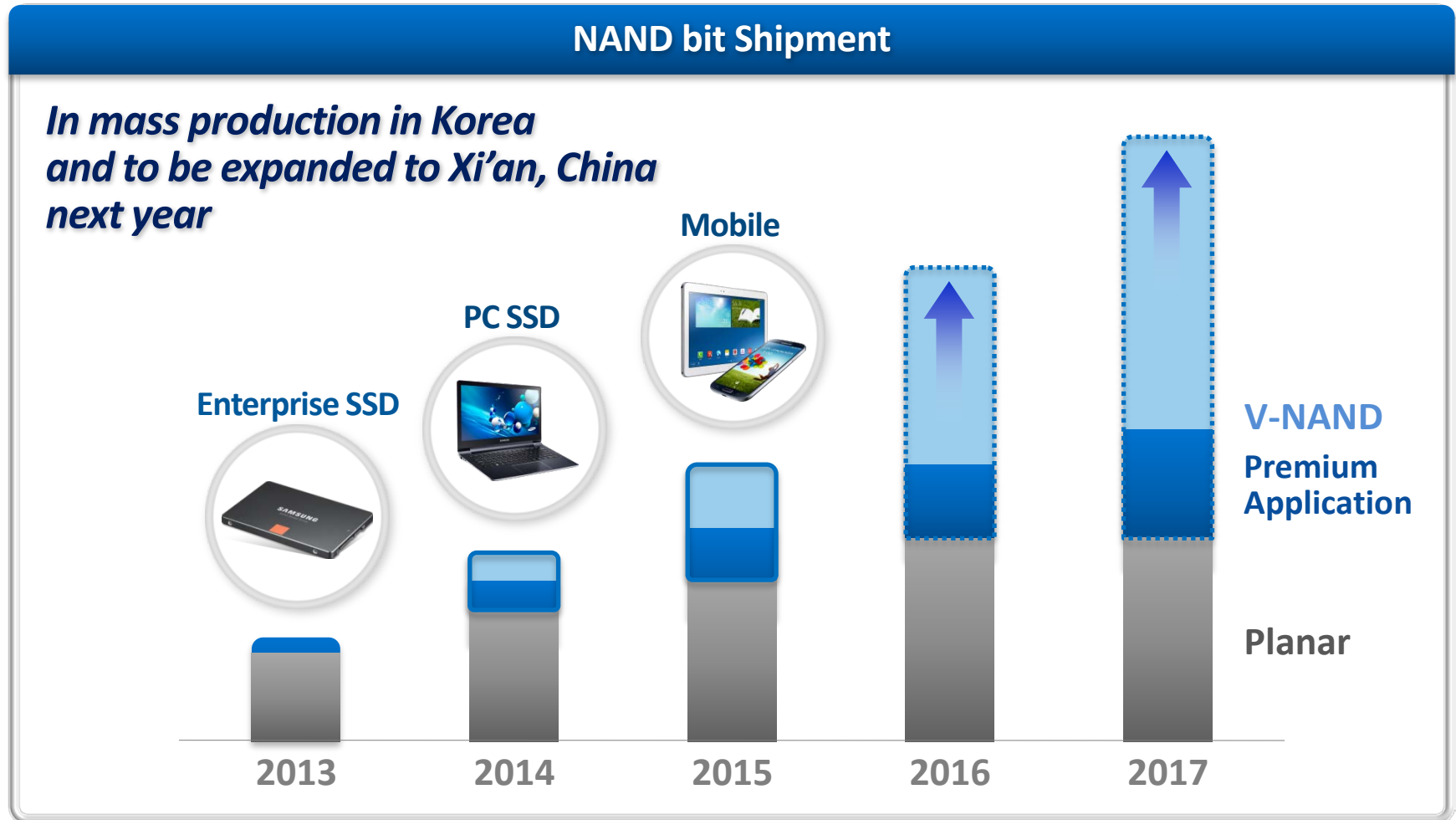
Most Cost Competitive Solution

SSD Price



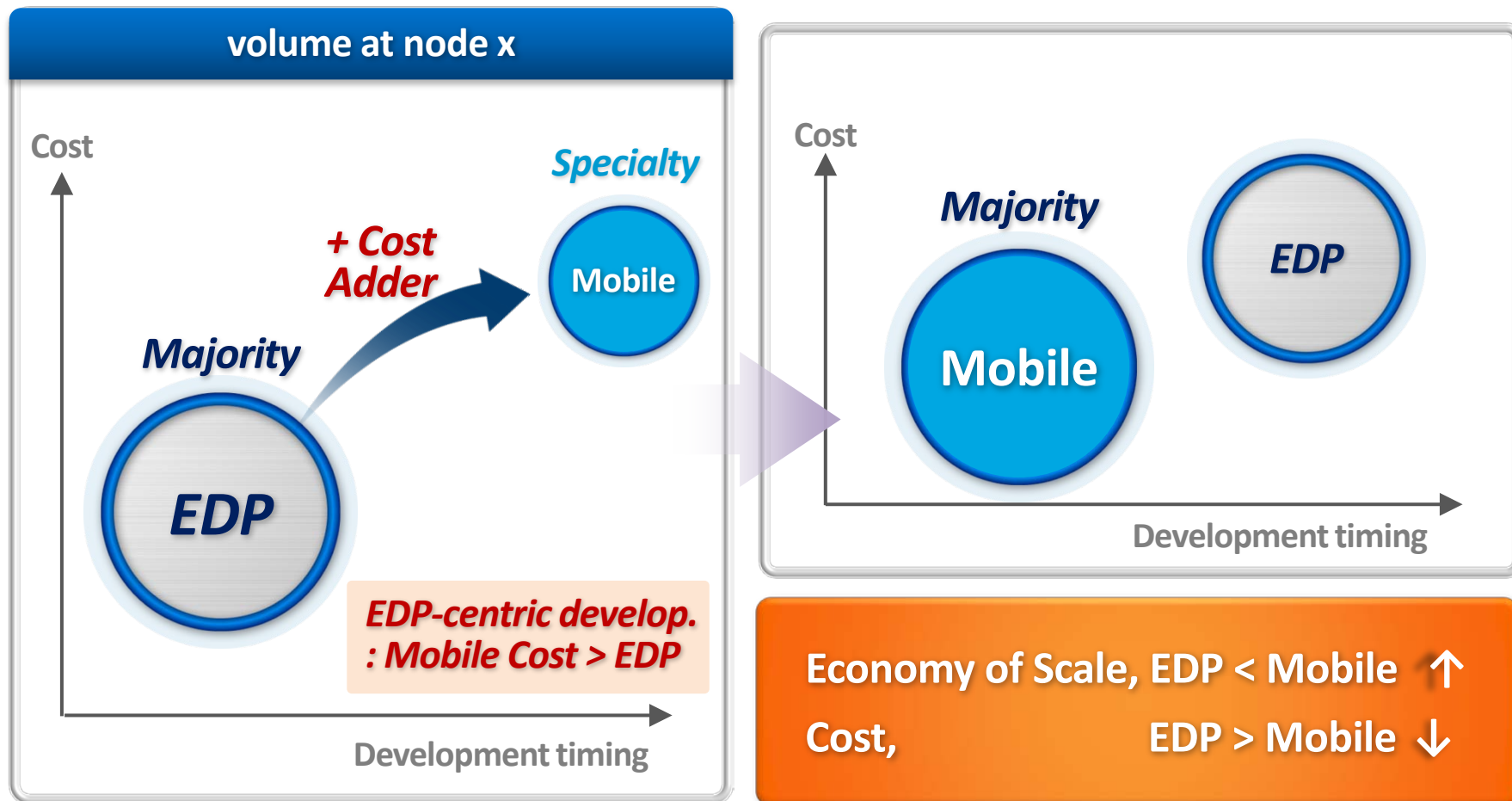
Creating new demand with V-NAND

- V-NAND will boost NAND demand



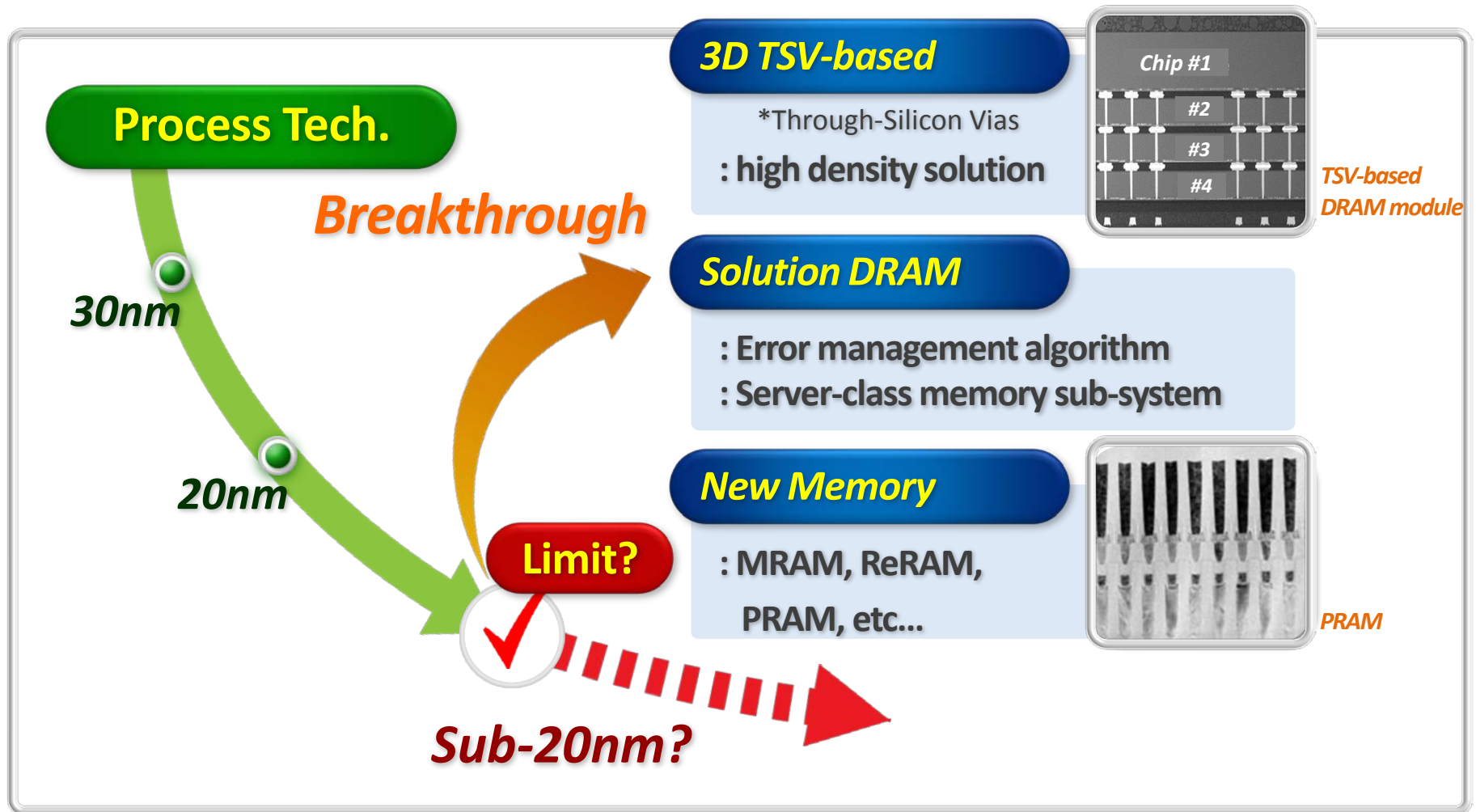
How to Sustain DRAM Growth?

- Leading technologies will be applied to mobile first as necessitated by increased scale



* EDP : Electronic Data Processing

- Three-pronged approach to sub 20nm breakthrough





Strategic Direction

- **Extend Core Competencies**

- To extend core competencies...



Organization

More customer and market-oriented
Reinforcing solution engineers



Capabilities

System knowledge
Competitive SCM, Quality

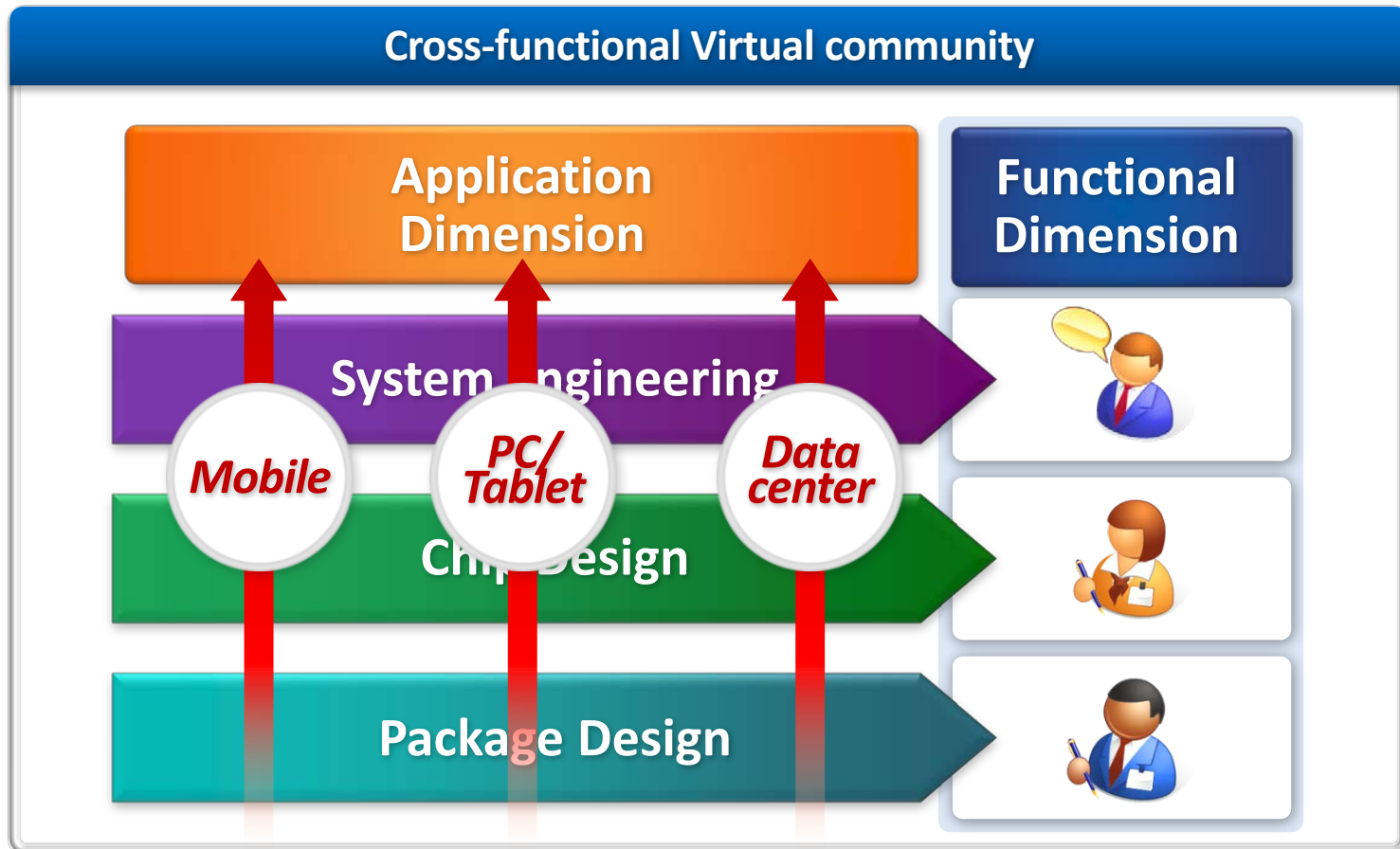


Collaboration

Open innovation

Re-align Organization

- Establish application/market-oriented organization

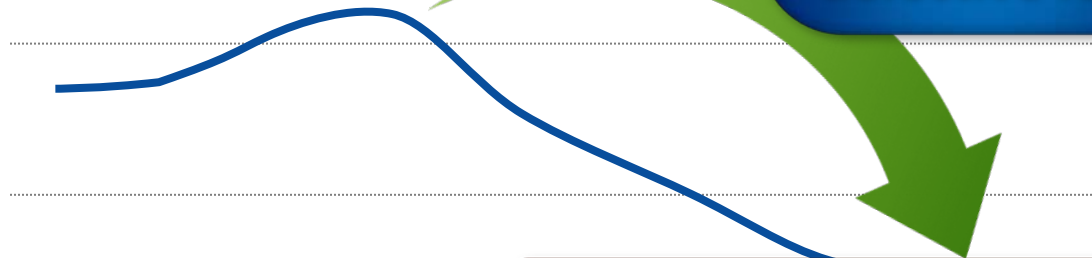


- Samsung's Server DRAM, Top-notch quality

Low Server DRAM fraction defective

- Statistical methodology, Big data mining
- Root-cause finding through cross-functional collaboration

[ppm]

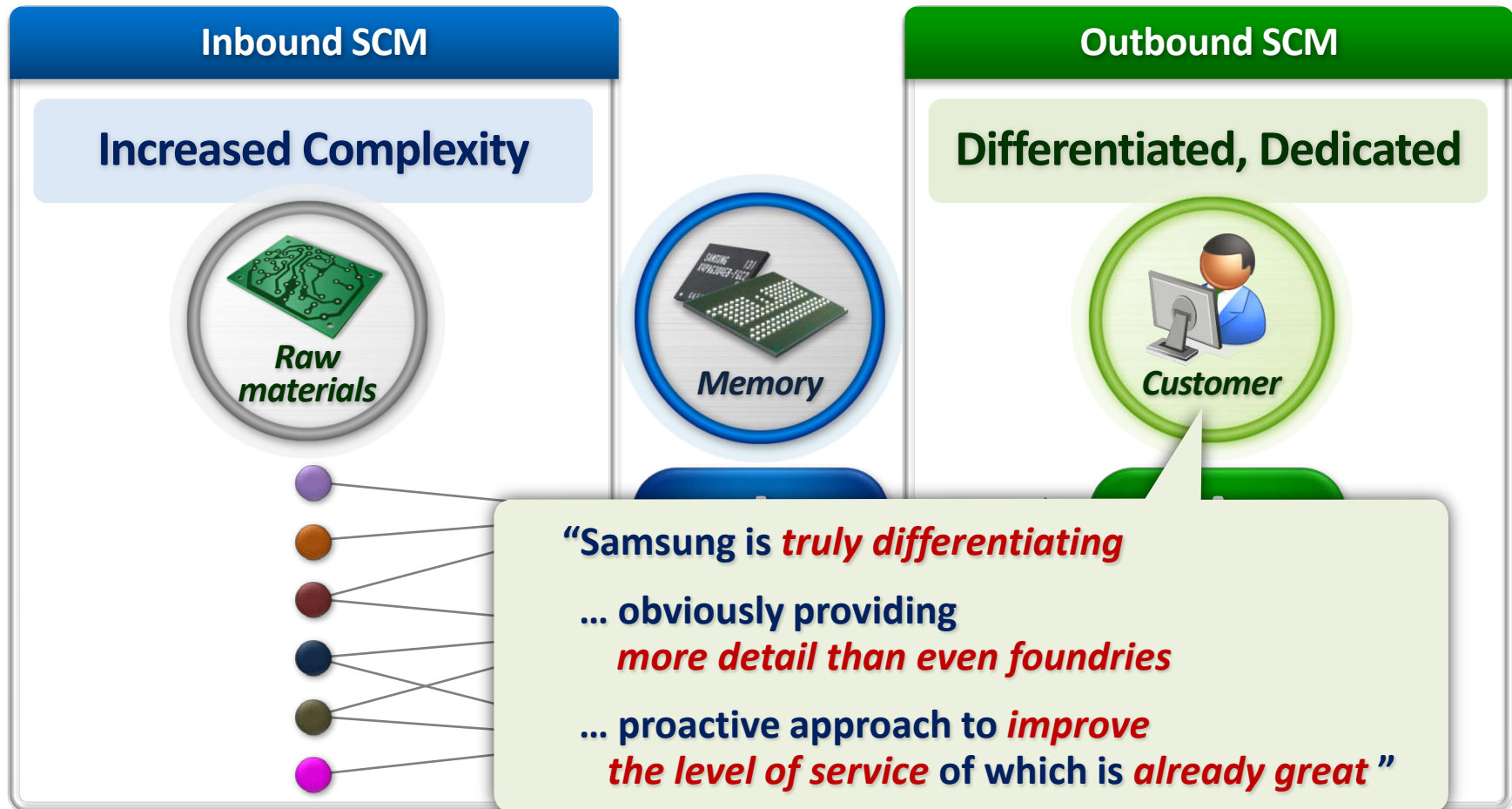


**x10 lower
defective rate**

Top-notch quality

**→ Leverage for
competitive mobile DRAM**

- Right product, time and place through improved SCM
 - Transformation into manufacturing service provider



- Smart online service & support

Service Portal

Samsung MemoryLink

PRODUCTS APPLICATIONS DESIGN SUPPORT PRODUCT SEARCH

Smart Service & Support With Samsung Mobile Memory

Work with MemoryLink to make your mobile device greater.

WELCOME! JungWoo Lee

MY POSITION

Message 0 Project Updates 6 Sample Programs 11

New Products

Offering most cost effective and space saving MCP product available for the Smartphones.

Related Resource

[MCP] ME4G32CC0_KINX0000R4-E207 Documents File | 2013/05/27

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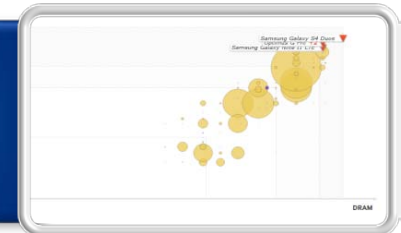
Video

Samsung Smart Memory, Complete mobile edition

Memorylink.samsung.com

Information

Smartphone trend



Customize

Smart architecture design tool

Recommend

Alignment with memory solution



Sample Request

Sample order and feedback

- Improve solution development capability



More Values via Open Innovation

- System, Solution and Software to unlock value



System Knowledge
→ Identify opportunities



Solution Engineering
→ Create opportunities



Software Capability
→ Maximize opportunities

M&A

- Nvelo (SSD S/W), etc.

Equity Investment

- Storage system start-ups

Overseas R&D Center

- Tech. sensing, Product enabling

Academia Collaboration

- Memory system architecture

- To align with the paradigm shift...



Transformation in progress...

Unpredictable
& Fluctuating Biz



Stable & Steady
Growth





Thank You

