Market Perspective & Strategy

SAMSUNG
ANALYST DAY 2013

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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.

Contents

Display Market History

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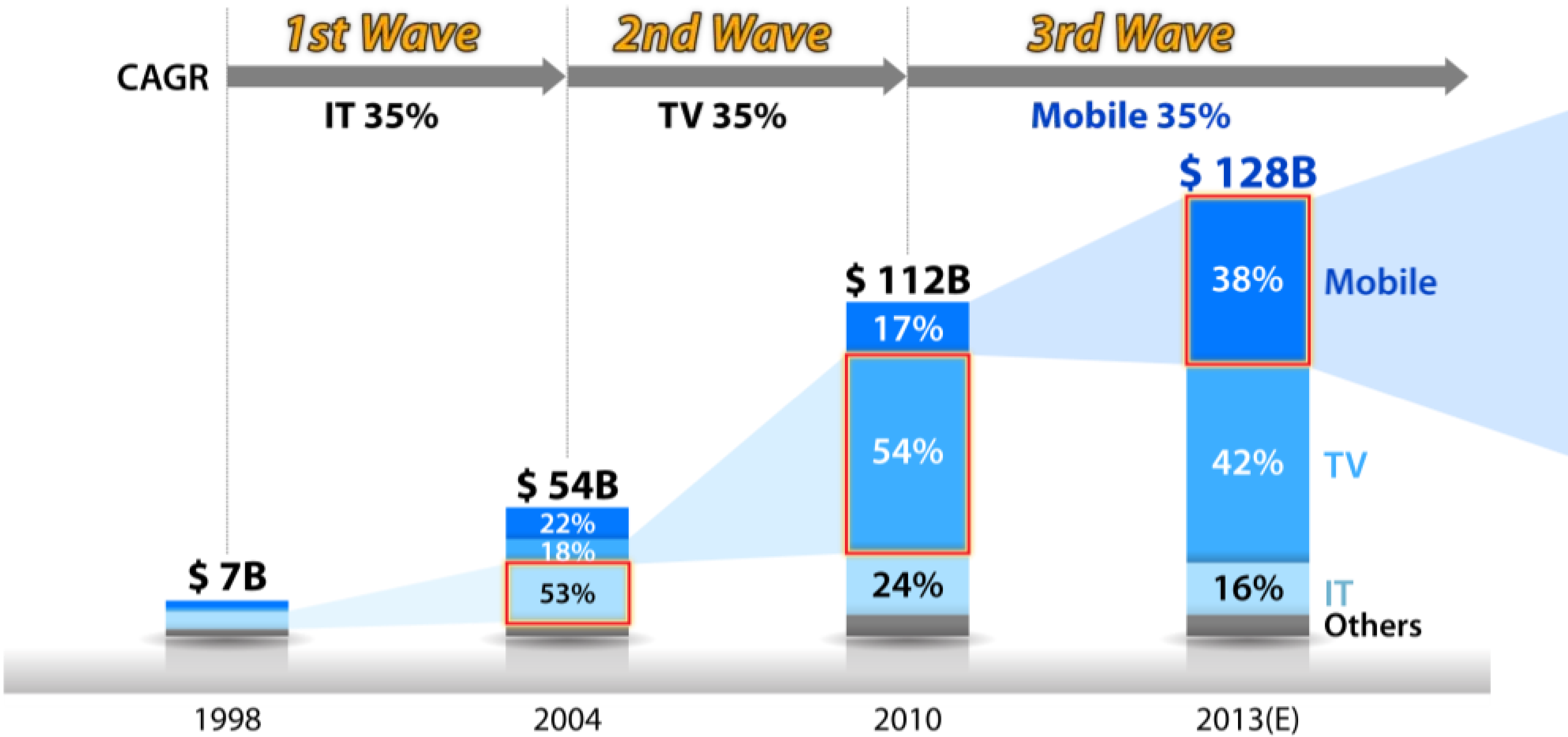
Growth Engine : IT→ TV → Mobile

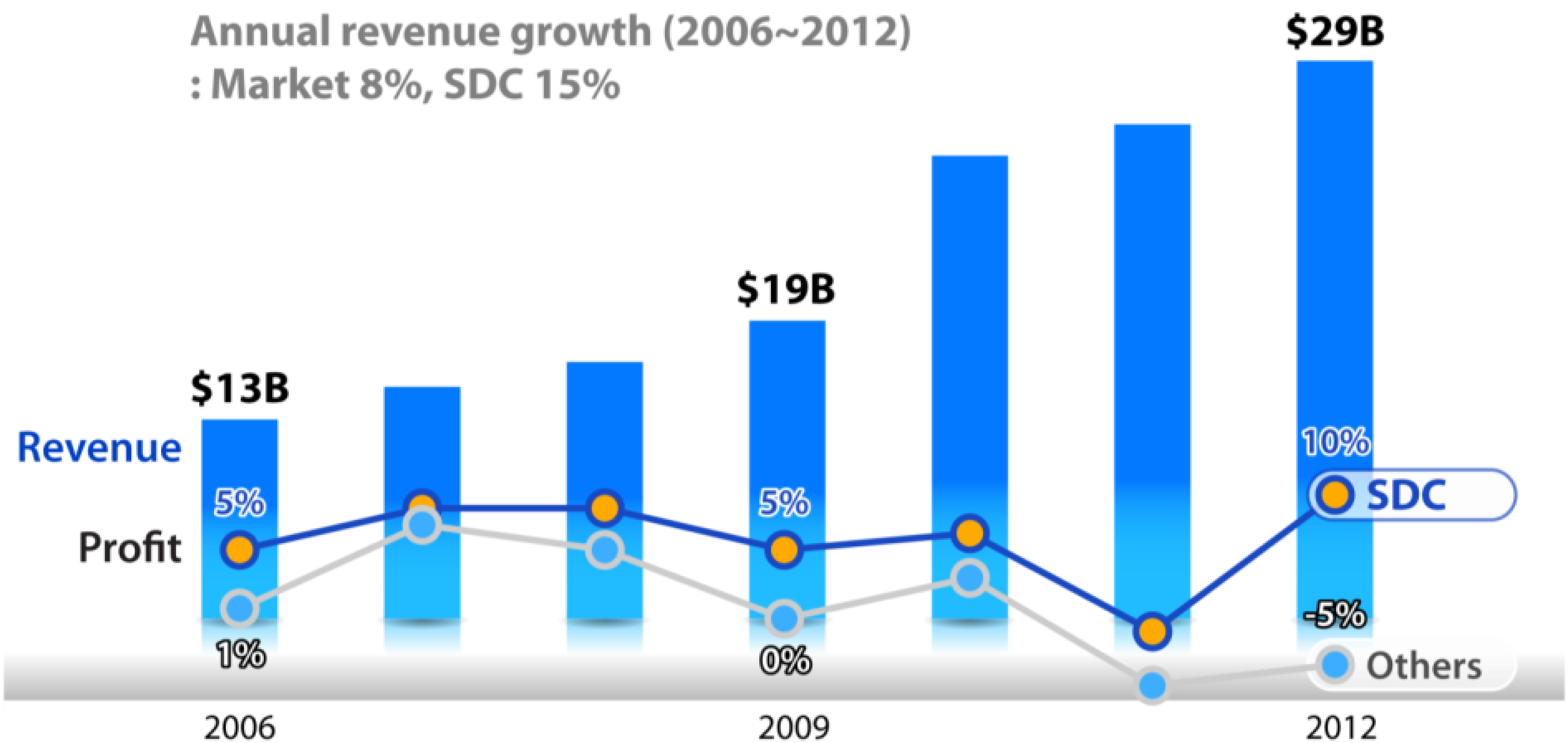


※ Source : Display Search

※ Tablet is included in mobile

SDC Excellence : Revenue & Profit

SDC has been continuously outperforming

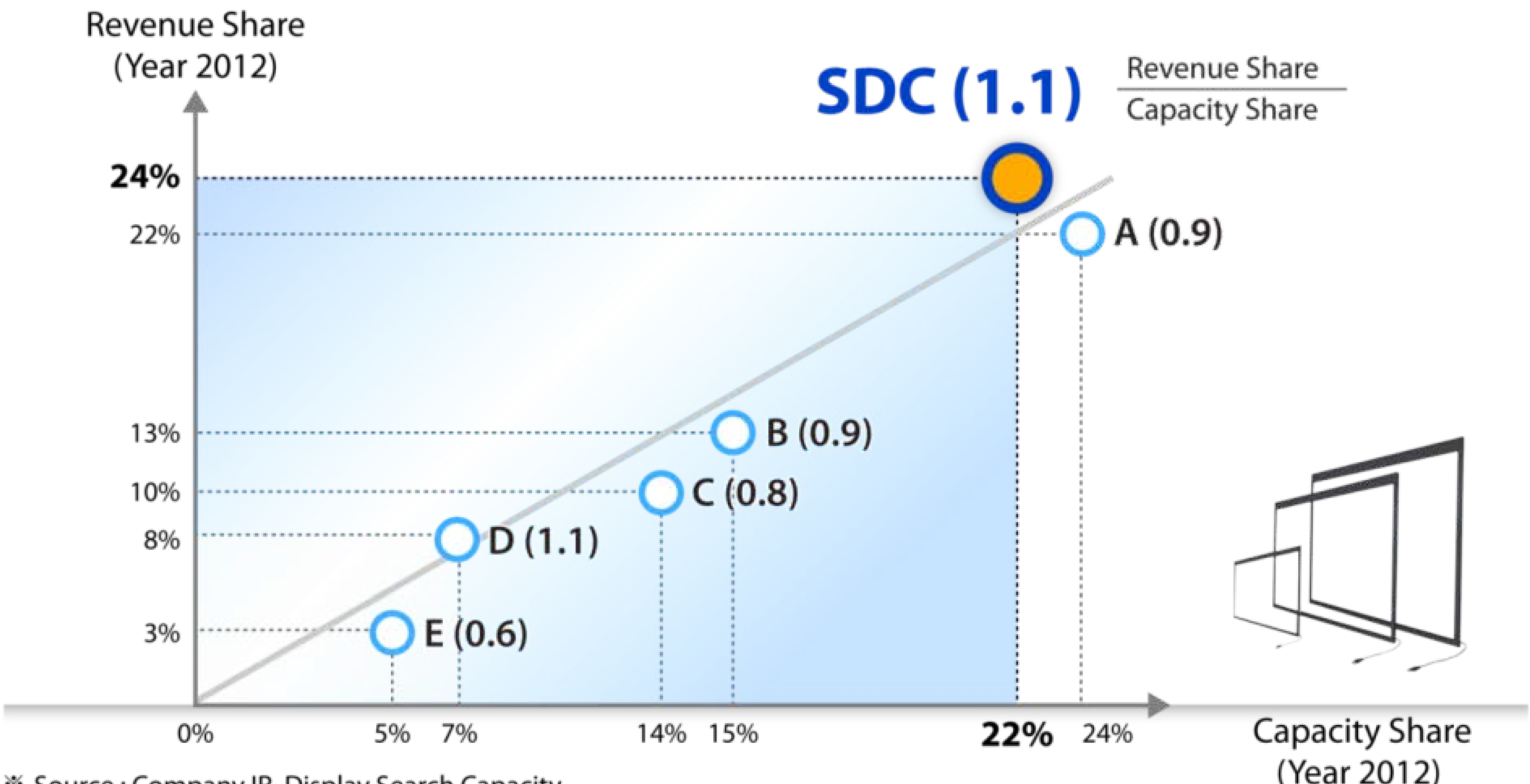


※ Source : Company IR

※ Avg. of top 4 players

SDC Excellence : Operation

SDC has been operating the capacity efficiently

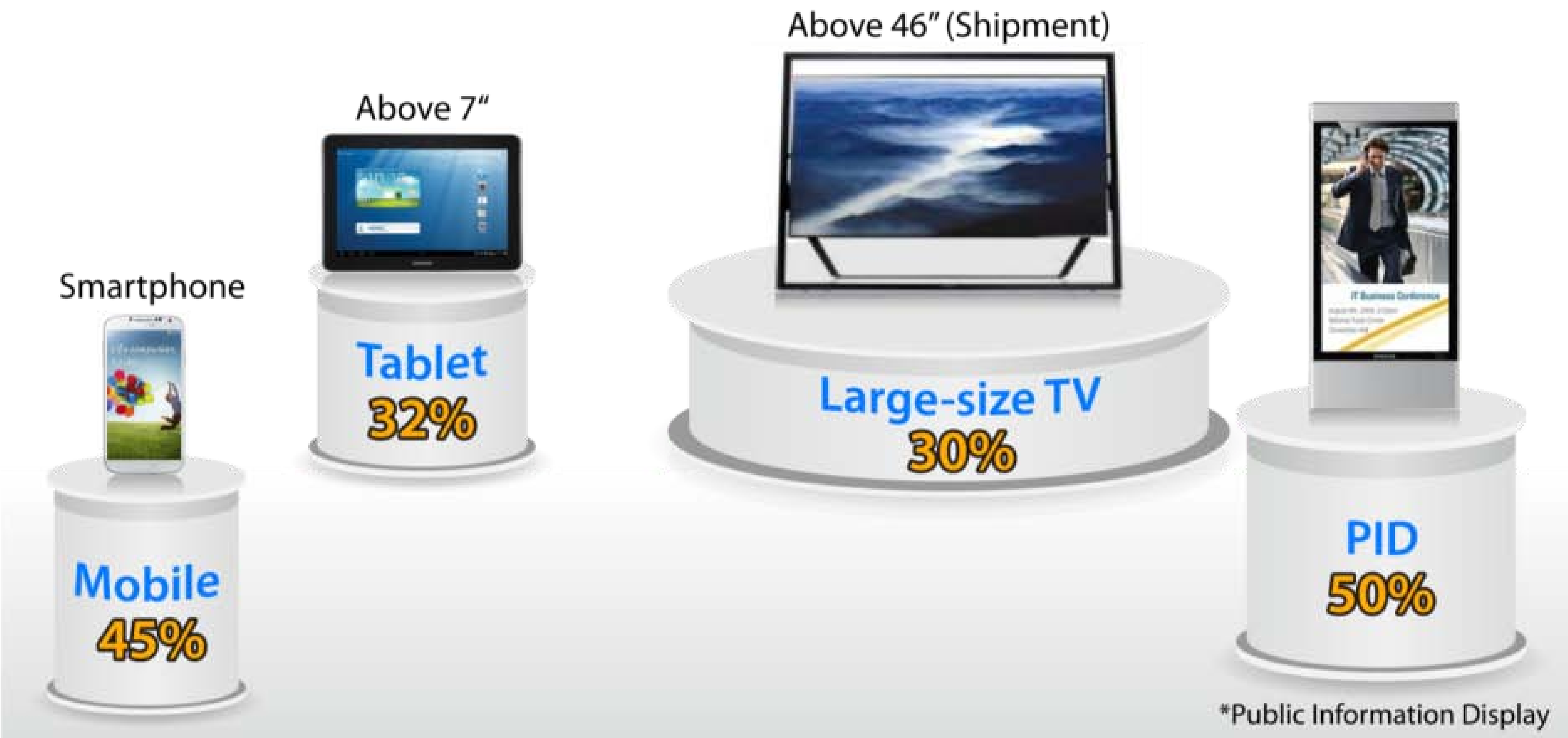


※ Source : Company IR, Display Search Capacity

SDC Excellence : Market Leadership

SDC is the No.1 in 4 major applications

(2013.1H Revenue)



※ Source : Display Search

SDC Excellence : Technology Leadership

Ultra Large LCD TV

- FHD (65"/75" 240Hz)
- UHD (65"/85" 120Hz)

55" Curved AMOLED TV

- Smart Dual View (240Hz)
- Deep Black / High Contrast
- Vivid Color

Ultra Slim (Edge-LED TV) Best Picture Quality (240Hz)	Ultra Large (75"FHD) Ultra Slim Bezel (3.95mm)	Ultra Large (65"/85"UHD)	Curved AMOLED TV (55"FHD)
2009	2011		2013

※ FHD : 1920 X 1080, UHD : 3840 X 2160

SDC Excellence : Technology Leadership

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Curved & Wearable

- World 1st FHD Flexible Display
  : Display on plastic film

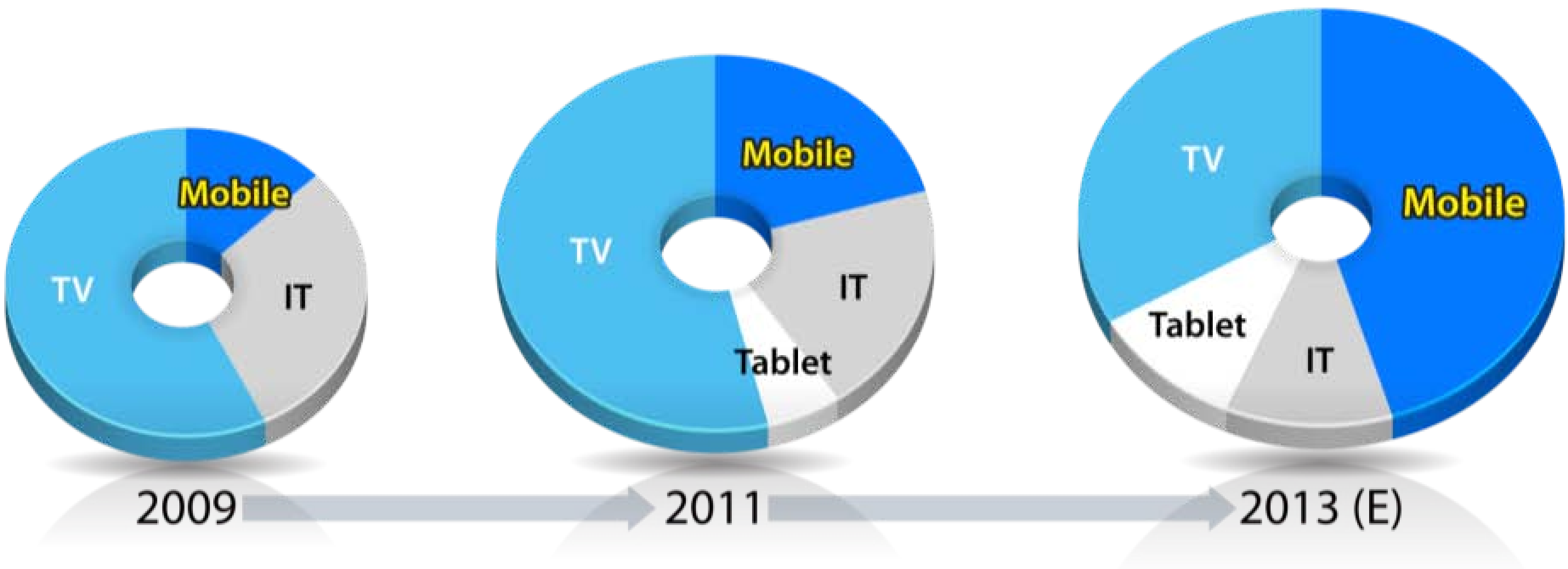
On Cell Touch (OCTA)	High resolution (FHD : 440ppi)	Flexible & Wearable
2010	2013.1H	2013. 2H

※ OCTA : On Cell Touch AMOLED

Business Portfolio

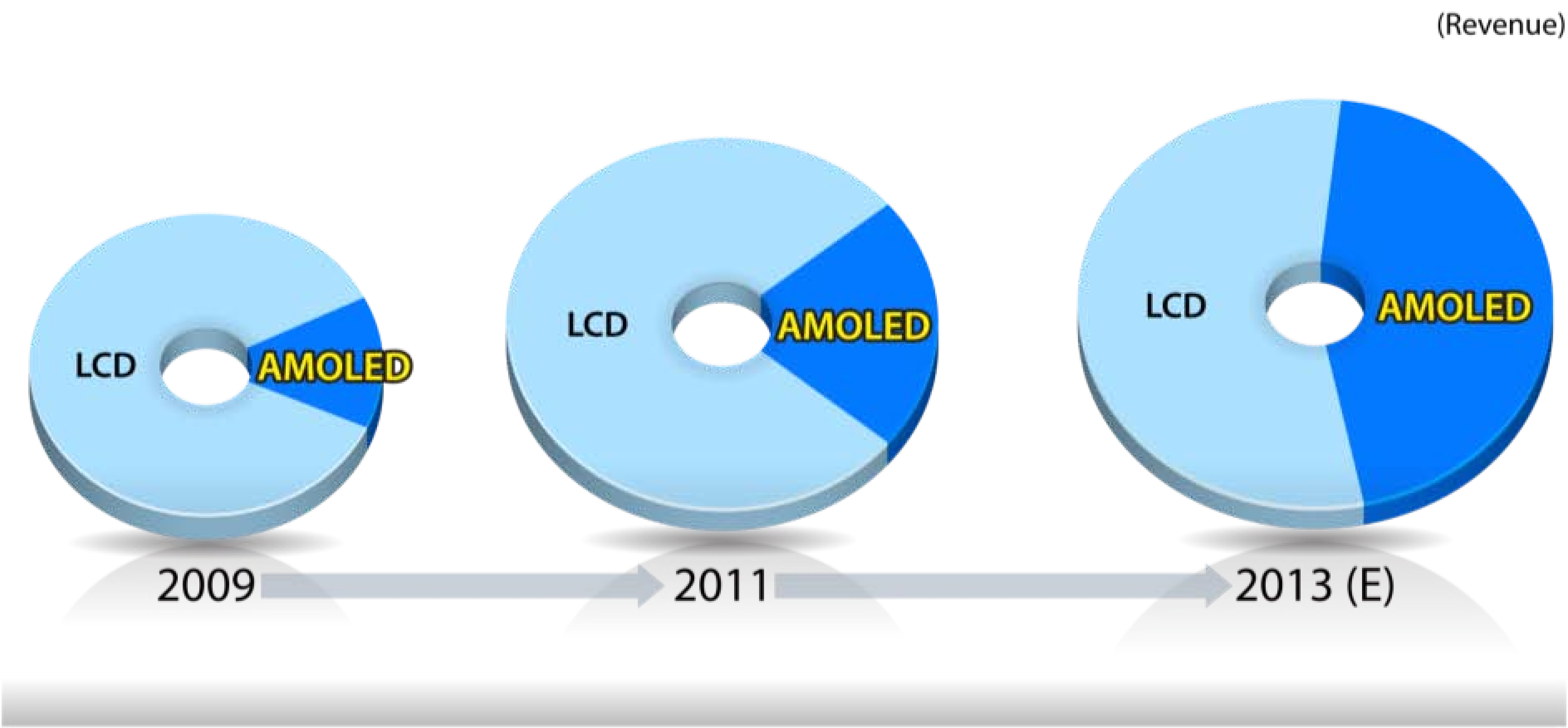
SDC evolves to well-balanced portfolio

(Revenue)



※ Source : SDC

AMOLED drives the growth of the company



※ Source : SDC

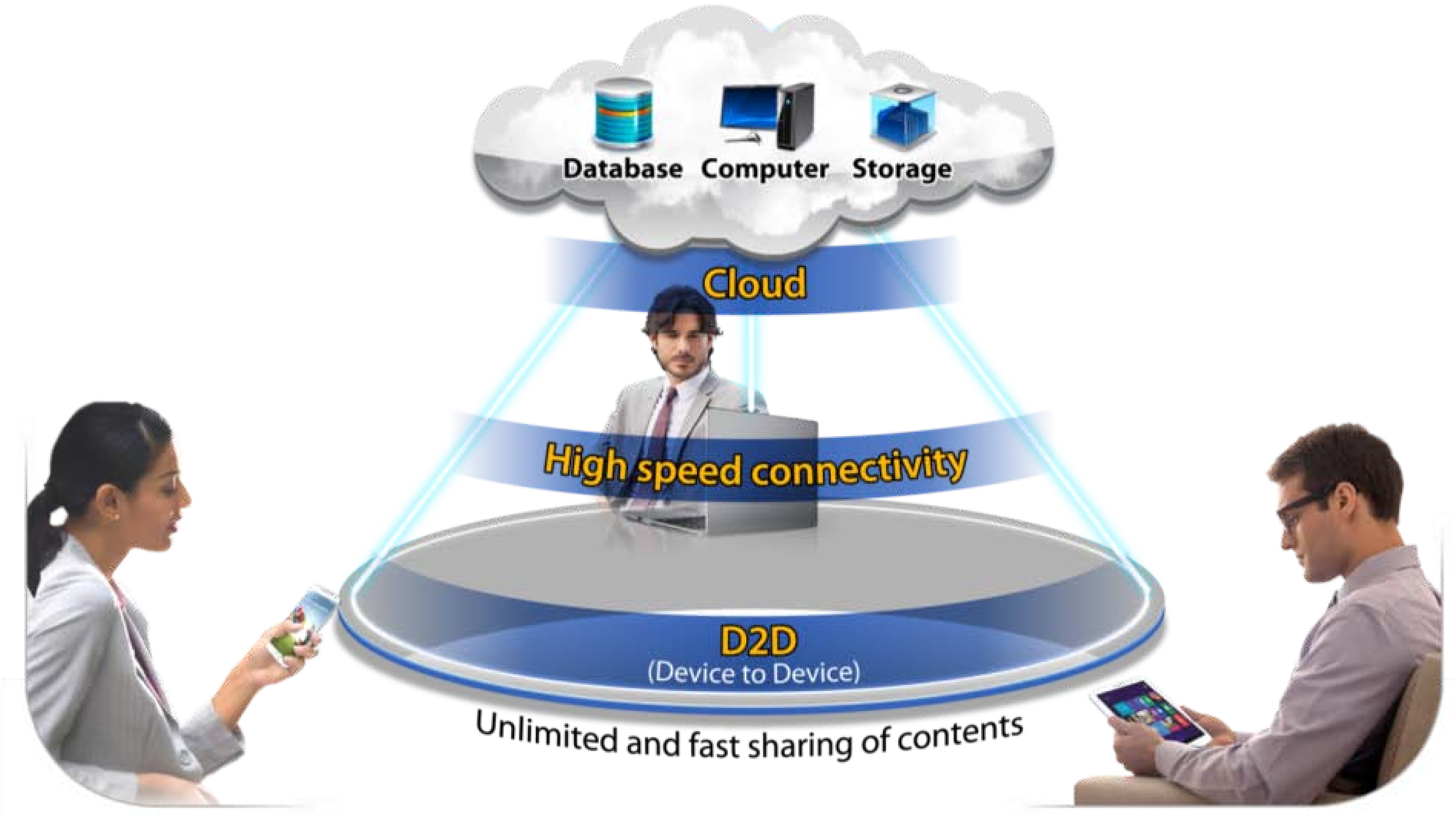
Contents

Hyper Connected

Everyone and everything are connected seamlessly

"HomoMobilians"

Key Elements of Hyper Connected World



Cloud

Display is the key component of smart devices in the cloud environment

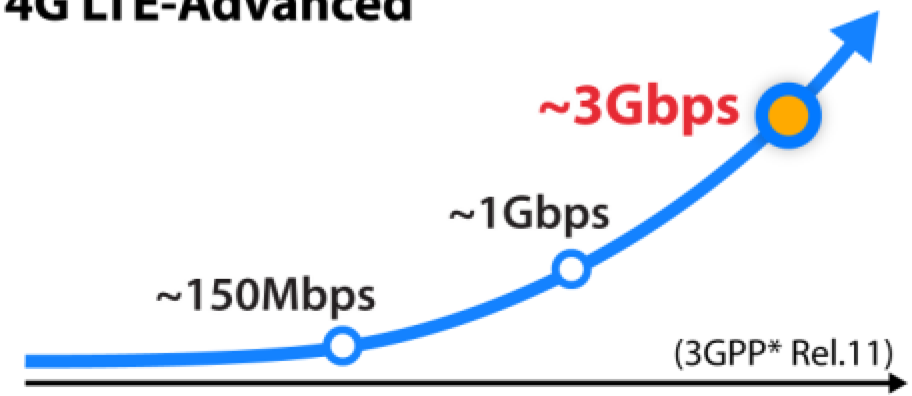
	Standalone Smartphone	Cloud
Computing	Quad 2.3Ghz	∞
Storage	32GB	∞

Both value and demand of display will increase

High Speed Connectivity

Network revolution → Multimedia experience : High performance display

4G LTE-Advanced

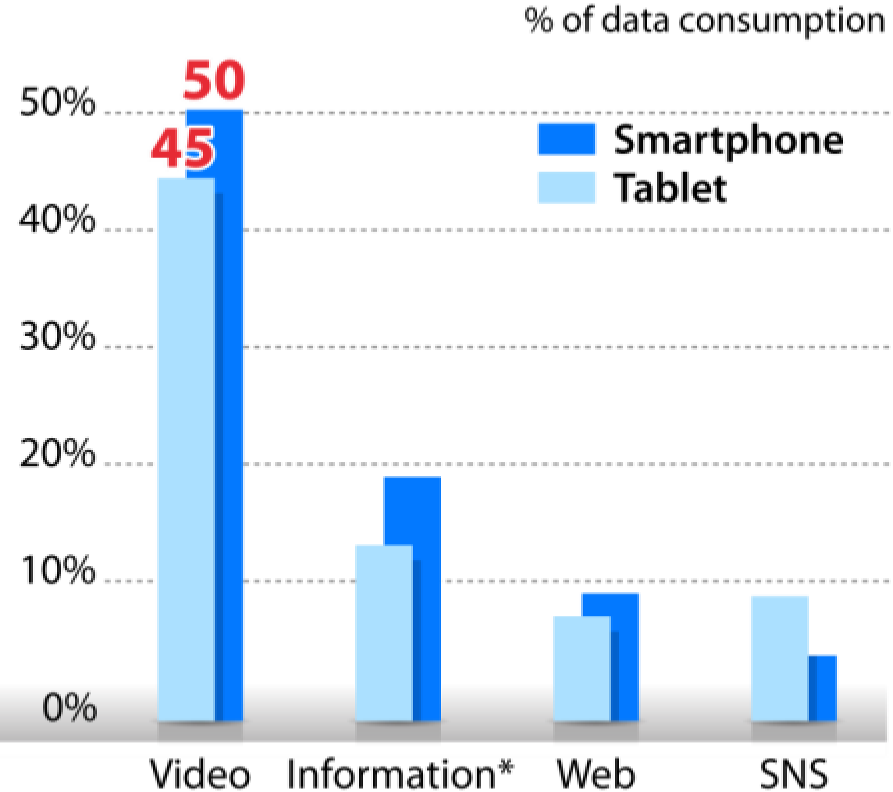


	2013	2014	2015~
2 hours movie data	Full HD	WQHD	UHD
Download time	280sec	65sec	35sec

※ 3rd Generation Partnership Project

※ WQHD : 2560 X 1440

(Source : Cisco Data Meter, 2013)



※ App. & Push Information

Device to Device

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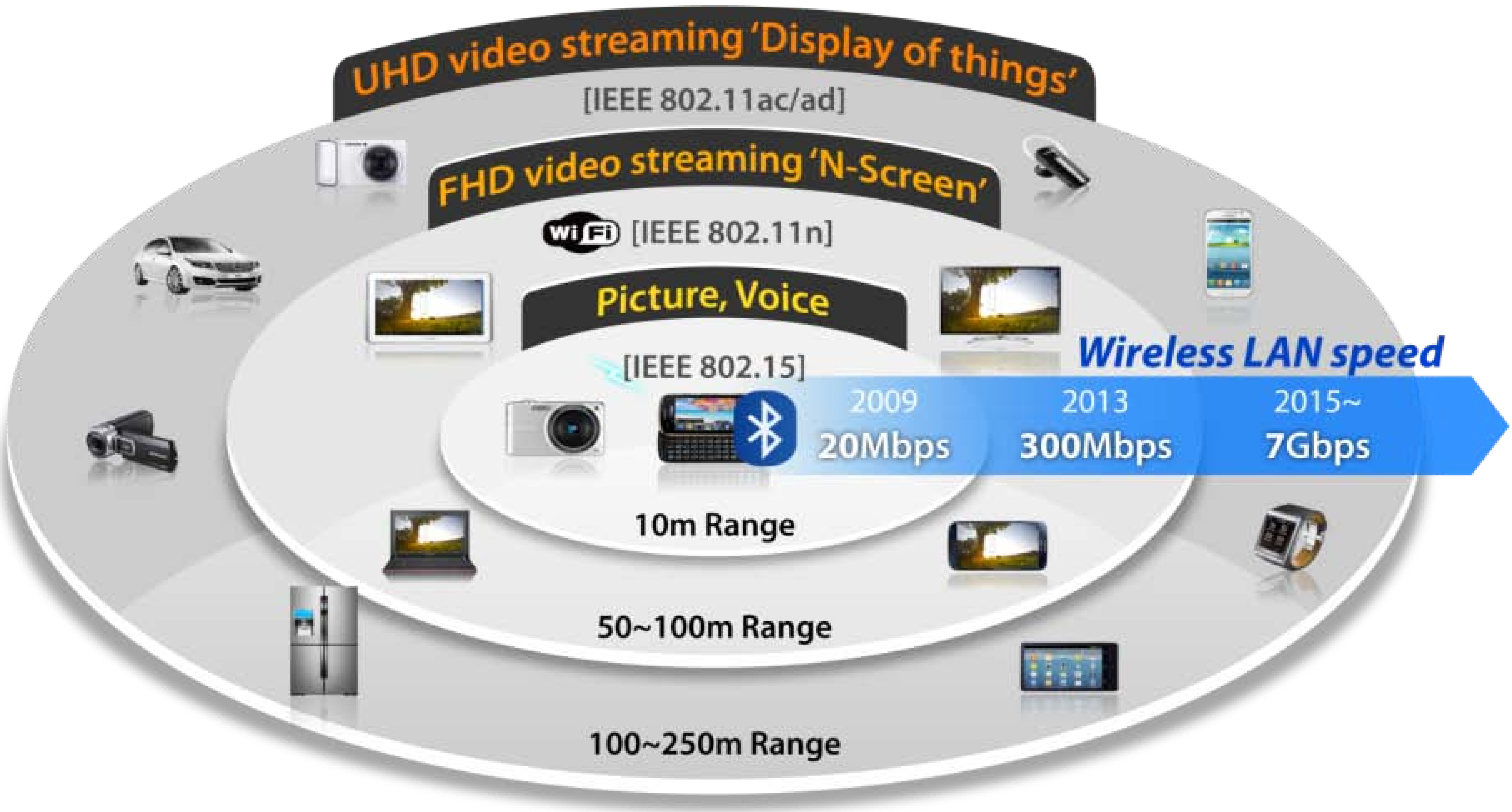
Trillion devices will be connected, display is the window



Display Centric World

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Display is the window for the world. "5 Every..."

One day with display

Display Centric World

Contents

SDC Core Competency

Legacy

Distinguished track record in display and semiconductor

Advanced Technology

World largest AMOLED & Flexible IP portfolio
Technology readiness for Flexible AMOLED

Operational Capability

AMOLED, the 1st commercialization to 500M cumulative units produced

Eco-System Leadership

Vertical integration:
Samsung affiliates & other partners

Legacy

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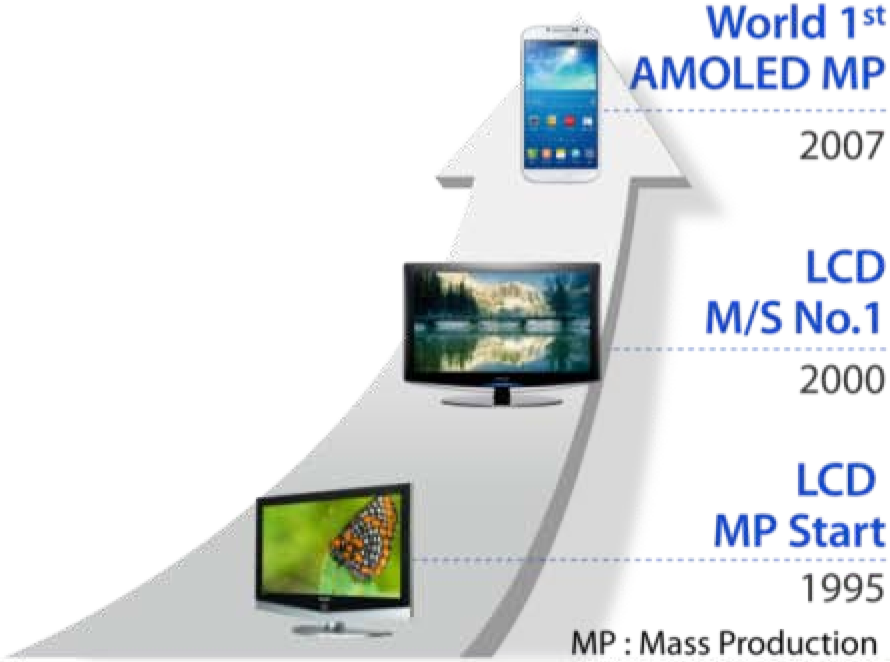
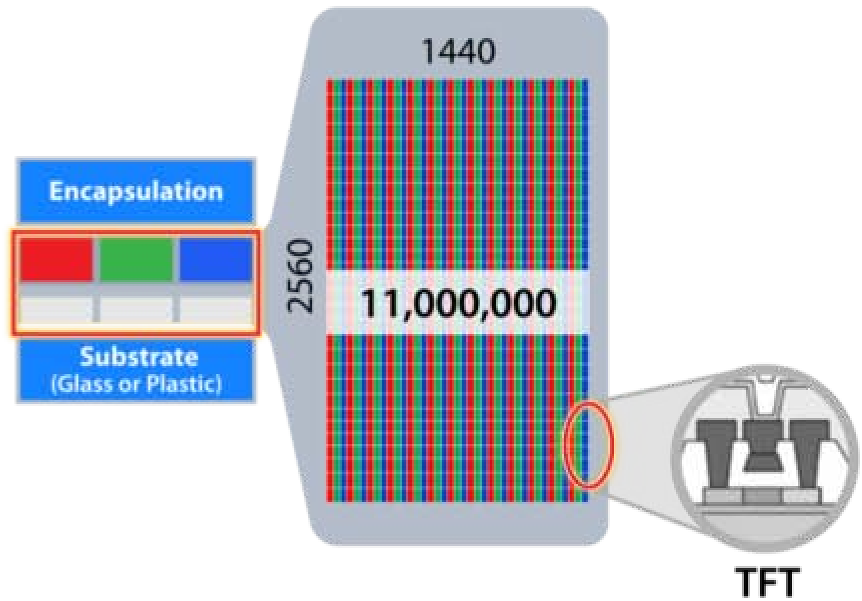
Distinguished track record in display and semiconductor

World Best Display



No1. in Market share since 2000

World Best High Density Technology



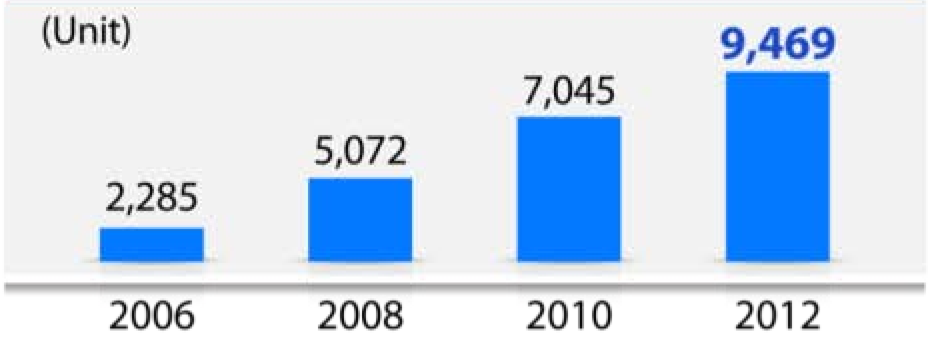
No.1 Fine Patterning Technology
Synergy with Semiconductor Tech.

Advanced Technology ①

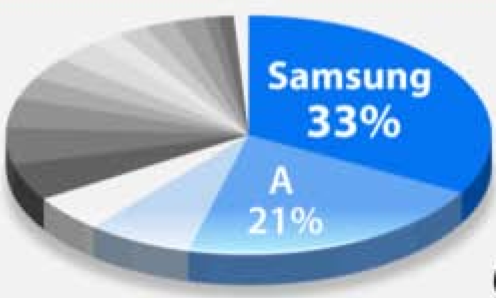
World largest AMOLED & Flexible IP portfolio

Strong IP* Portfolio

SDC AMOLED Patents



Flexible related Patents



(2013. Sep. US)

Dedicated Line for New Technology

Able to validate manufacturability
for 'Design for Manufacturing'

※ IP : Intellectual Property

Advanced Technology ②

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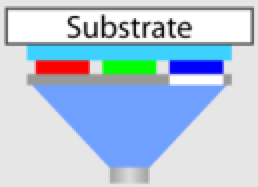
Technology readiness for flexible AMOLED

Evaporation



World 1st
RGB evaporated
AMOLED
Mass Production

45 um
(560ppi)

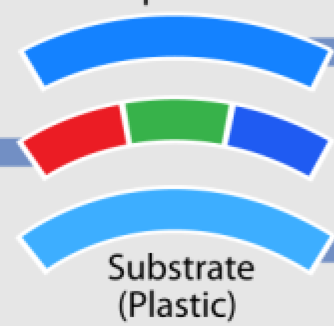
X4 times

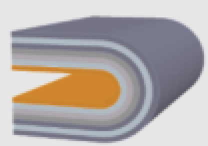
160 um
(160ppi)

2007 2014

※ High ppi (pixel per inch) = High resolution

Key Technology for Flexible





Thin Film Encapsulation

VITEX SYSTEMS

Acquisition of essential patents for TFE (Sep.2010)

※ TFE : Thin Film Encapsulation

Plastic Substrate

UBE

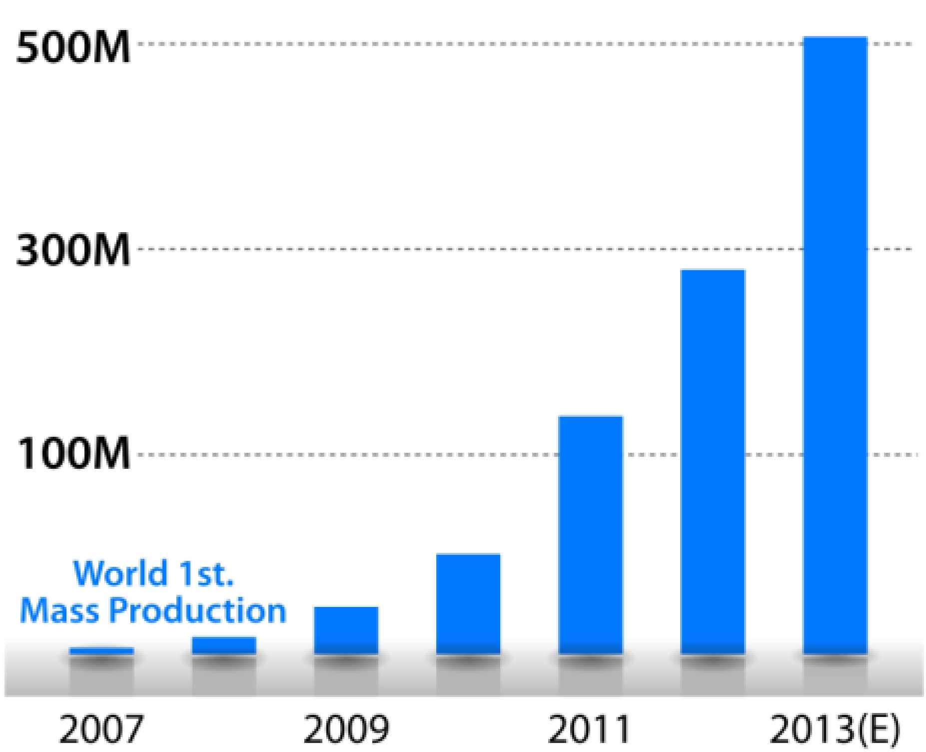
Establishment of Joint Venture, SUM (Aug.2011)

※ SUM : Samsung Ube Materials

Operational Capability

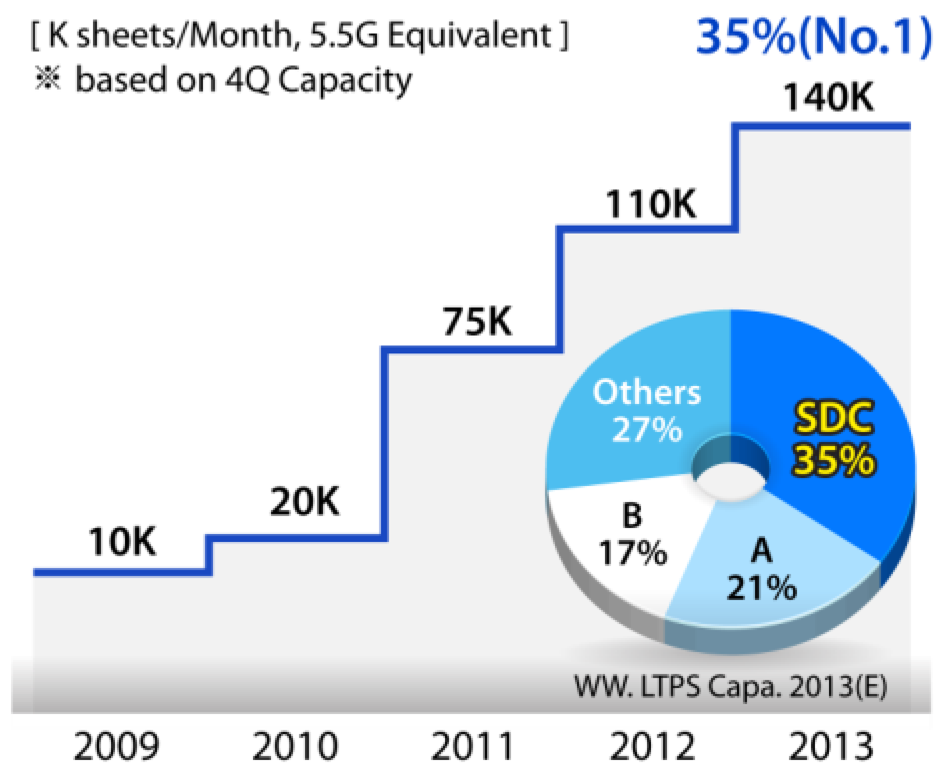
SDC has proven capability to bring the new technology to the large scale mass production

SDC AMOLED Cumulative Prodcution

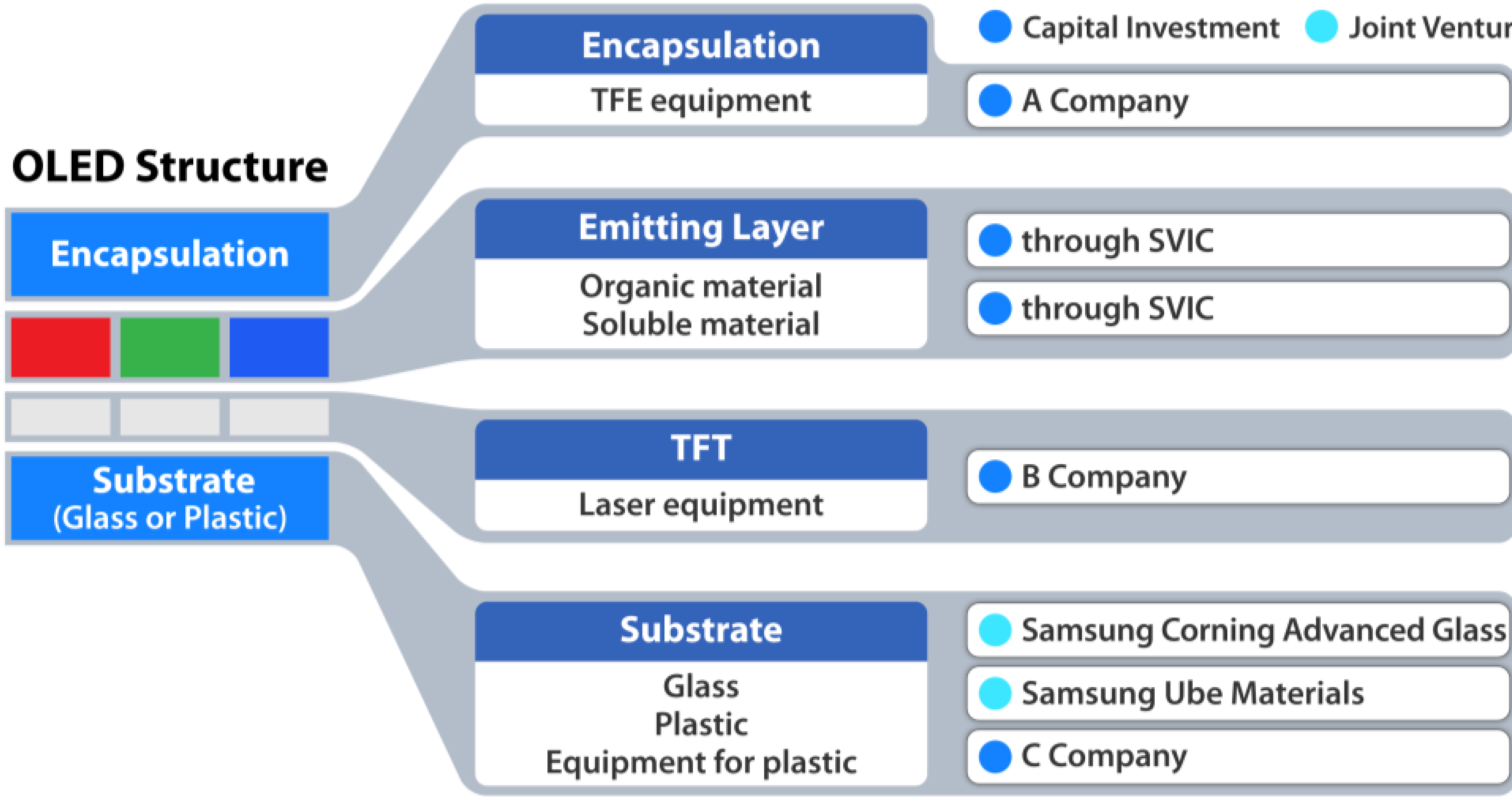


SDC AMOLED Capacity Ramp-Up

[K sheets/Month, 5.5G Equivalent]
※ based on 4Q Capacity



Organize AMOLED ecosystem through JVs & capital investment



※ SVIC : Samsung Venture Investment Corp.

Contents

Strategy Framework

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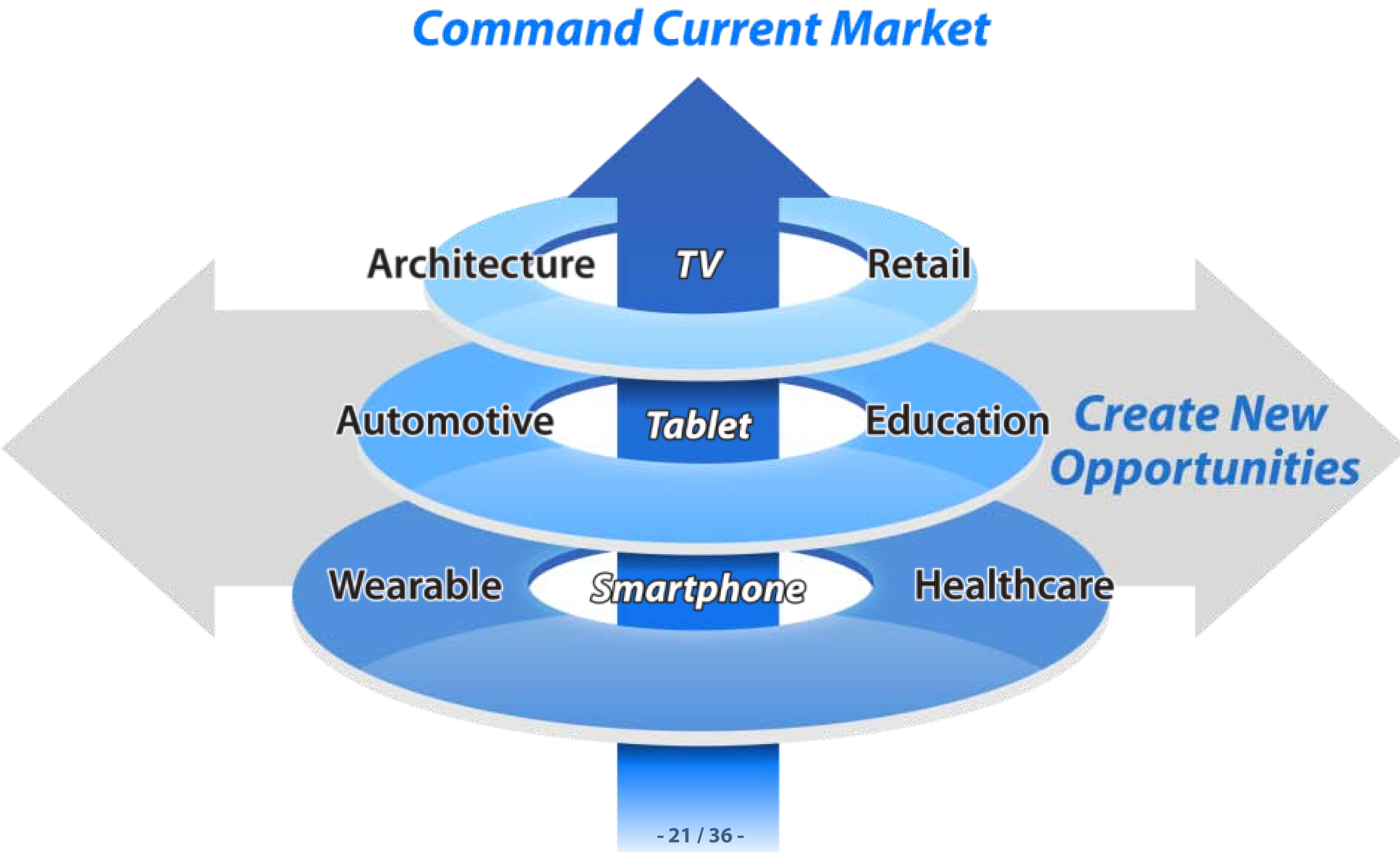
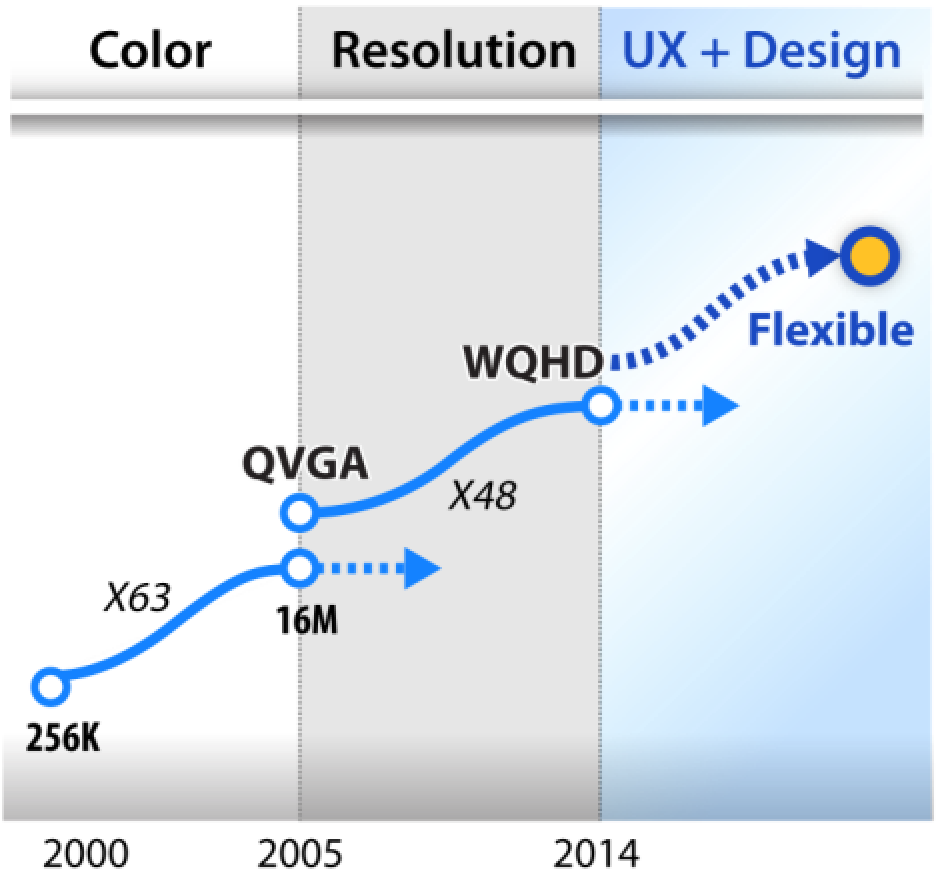


Trend : Smartphone

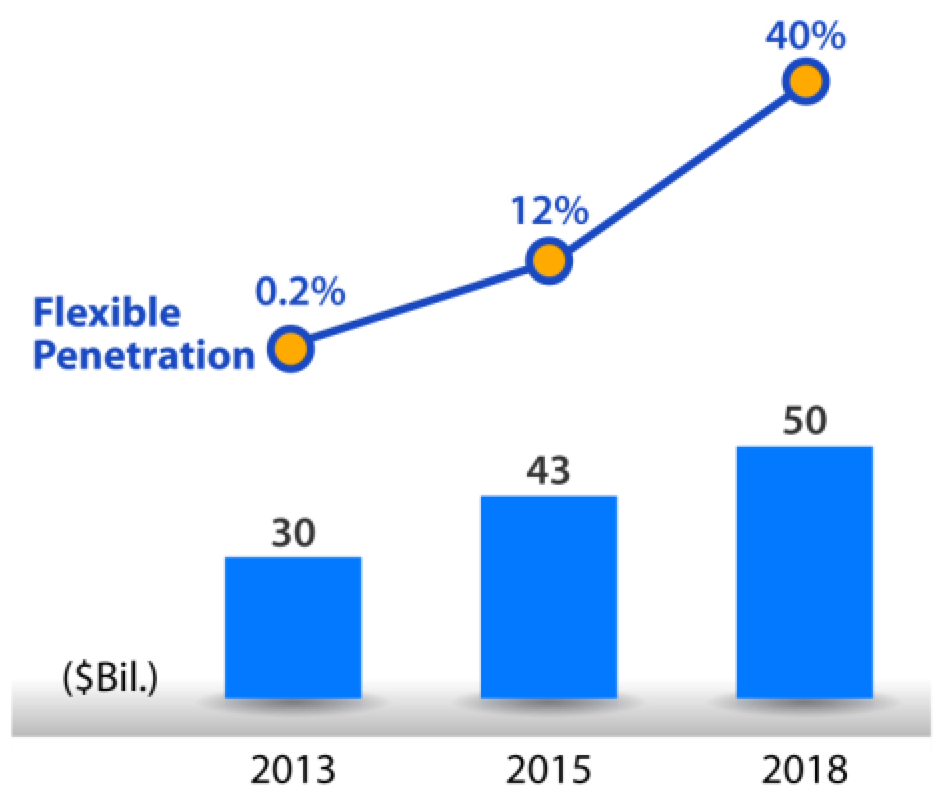
Competition : Color → Resolution → Design Innovation

Change of Differentiation Factors in Mobile



※ QVGA : 320 X 240

Smart Phone Market



※ Source : Display Search, SDC

Strategy : Smartphone

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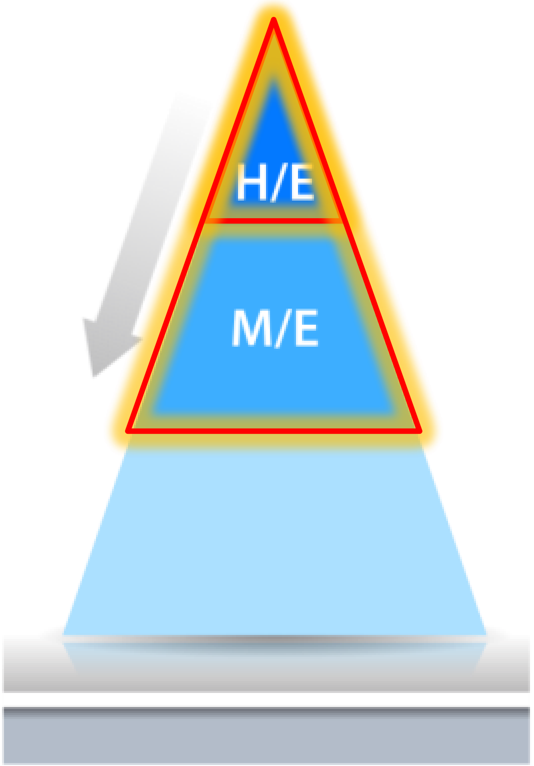
H/E value up with Flexible, M/E penetration with AMOLED



AMOLED Base Benefit

- **Contrast** (2,000,000:1 vs 1,000:1)
- **Color gamut** (100% vs 70%)
- **Response Time**
- **Thin & Light**
- **Power Efficient**

×

Flexible

Profit Maximization

×

Cost Performance

Scale Economy

Material Innovation

Trend : Tablet

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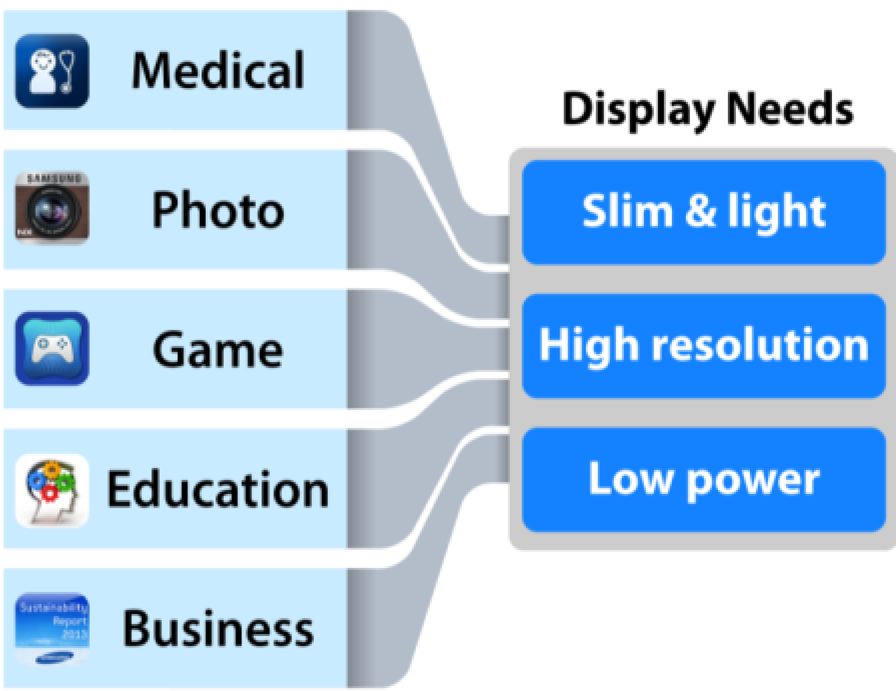
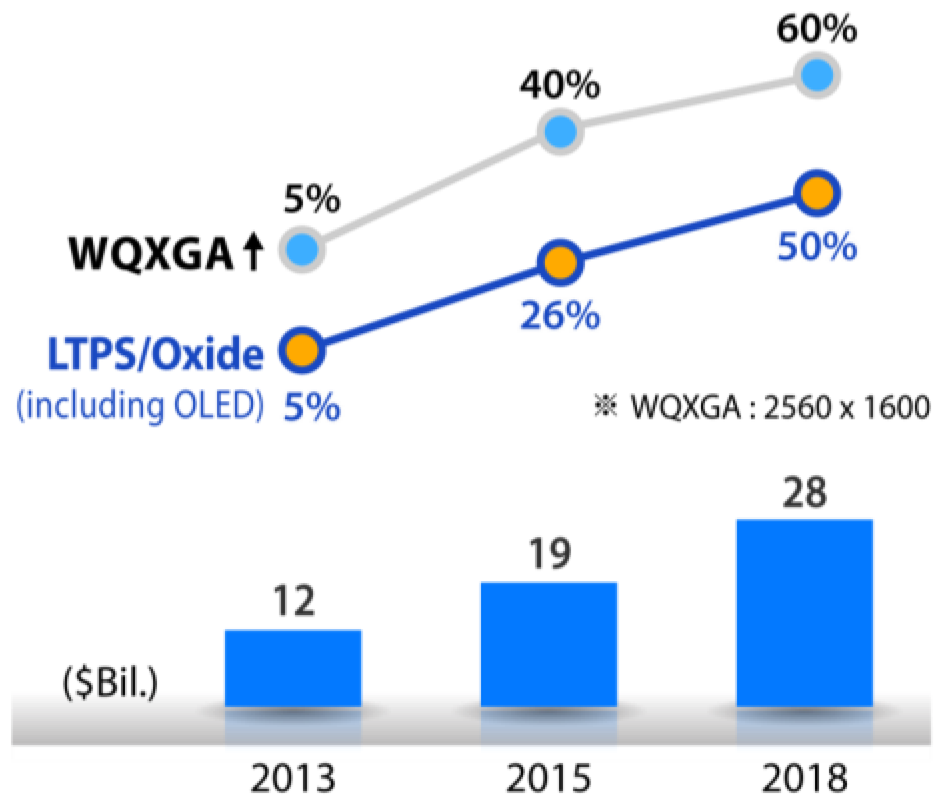
High resolution and low power display for various usages

Trend

"Usage Diversification"



Market



※ Source : Display Search, SDC

Strategy : Tablet

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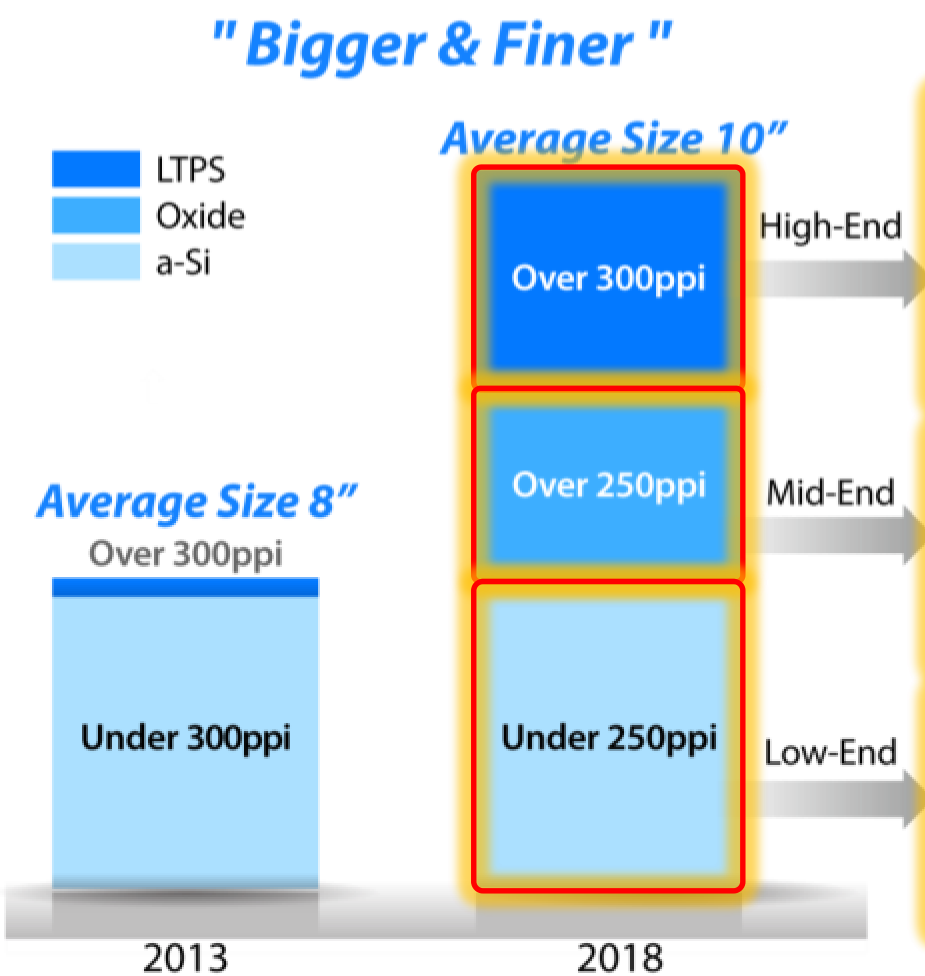
Cover all segments : AMOLED for H/E, Oxide for M/E, a-Si for L/E



	Key Value
AMOLED (LTPS-Based)	**Excellent Performance** Flexible Slim & Light (40 ~ 45%) Color Gamut (1.4 times larger)
Oxide LCD	**Optimized Performance & Cost**
a-Si LCD	**Competitive Cost Structure**

Trend : TV

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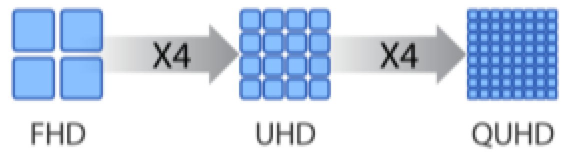
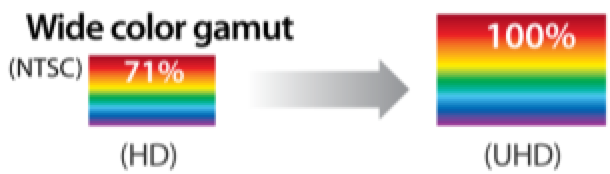
Real Image, Large size and Immersive Design

Trend

Resolution



Color (Broadcasting)

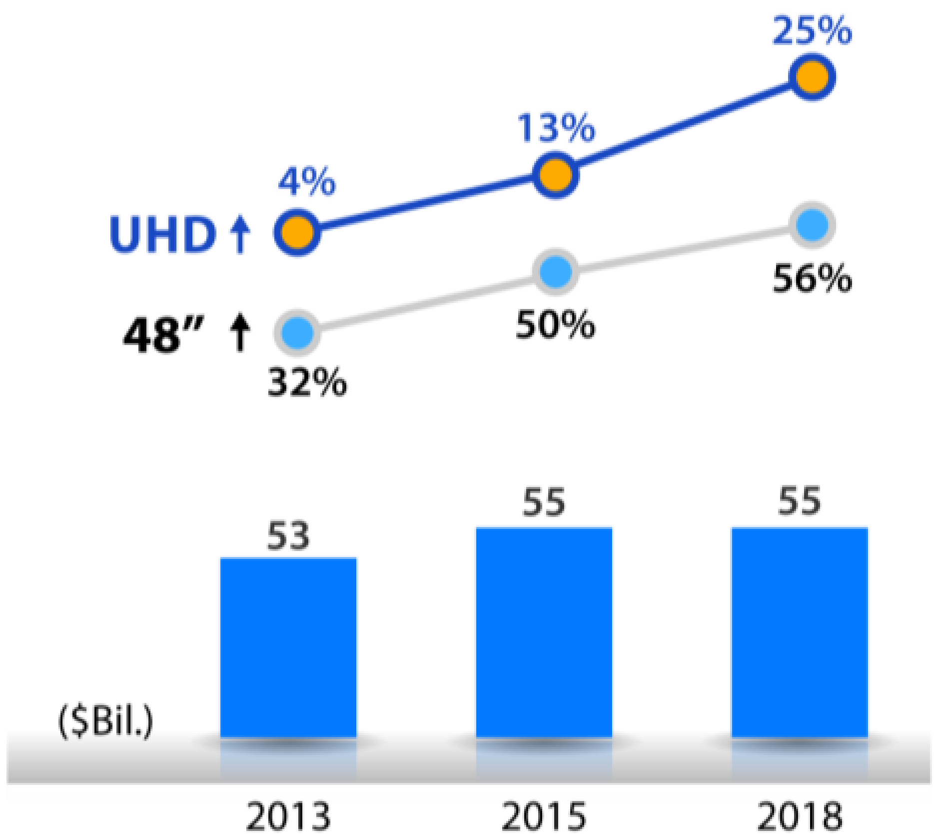


Size

Design

※ QUHD : 7680 X 4320

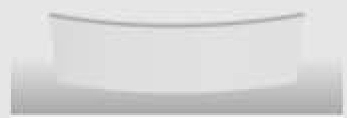
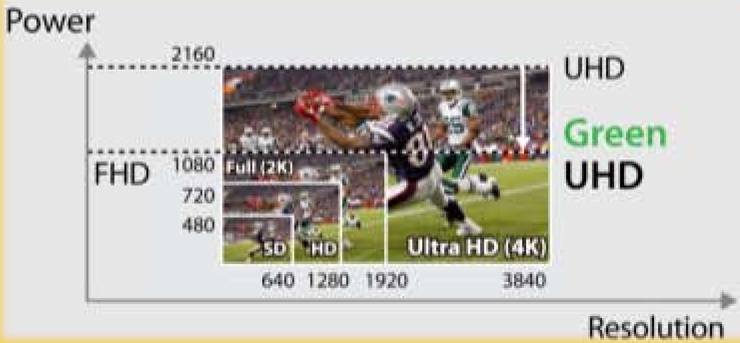
Market



※ Source : Display Search, SDC

Strategy : TV

Dominate market with leading edge technology

	Advanced Performance	Superb Design
Premium	**High Picture Quality**	**Immersive Curve**
	 Motion blur-less 240Hz  Super Large UHD/QUHD	7000~8000R  Industry · Ideal Curvature  SDC
Main stream	**High Resolution with Low Power**	**Slim Display with Narrow Bezel**
		 D - LED Narrow bezel  Slim D - LED Super Narrow Bezel

Create New Opportunities

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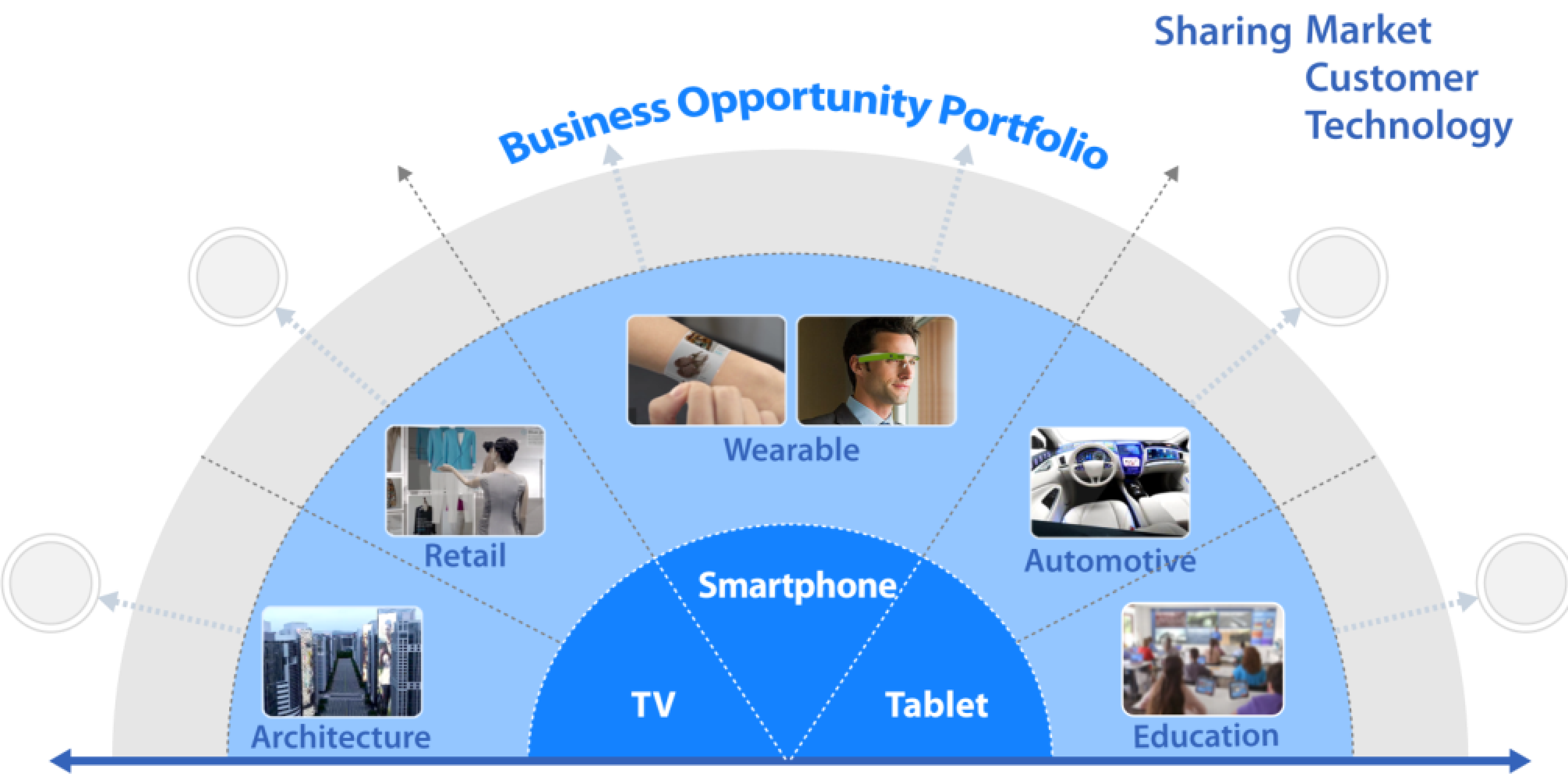
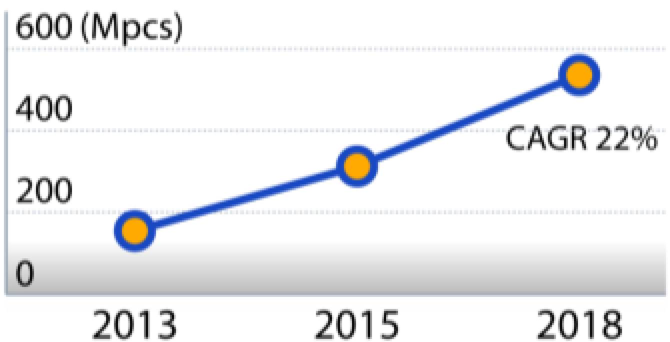
Continuously expanding to different applications



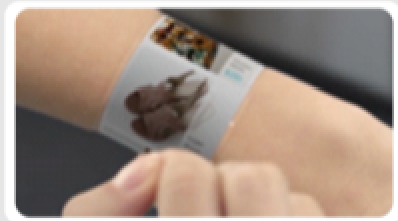
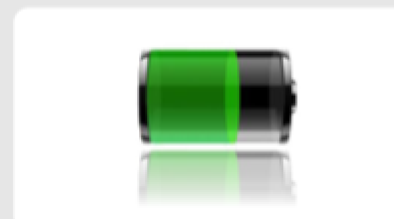
Trend : Wearable

Wearable usage increase in always connected world

Wearable Device Market Forecast



※ Source : Allied Business Intelligence Research

Trend in Wearable	AMOLED Value	
Adaptive Design	**Flexible** Ergonomic Design Innovation	
	Slim & Light 40% Thinner & Lighter	
Longer Battery Life	**Low Power Consumption** About 65% of LCD's	

※ 2.5" WQVGA (400X240), 52% On Pixel Ratio

Strategy : Wearable

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Create wearable market with Flexible and sensor integration

Design Evolution	Sensor Integration	Application
 Curved	**Position & Motion Sensor** GPS, Gyroscope Accelerometer	 **Watch** (2013~)
 Bended		 **Fitness & Healthcare** (2015~)
 Foldable	**Bio Sensor** Blood glucose, Pulse, Temperature	 **Fashion** (2018~)
 Stretchable		

Trend : Automotive

In the near future, AMOLED will replace TFT LCD

"Nothing flat inside & Unbreakable"

Trend in Automotive	AMOLED Value
Smart & Safe	**Contrast** (2,000,000:1 vs 1,000:1) 'True black', Less eye fatigue
	Color Gamut (100% vs 70%) Natural, saturated, consistent color
	Low Temp. Response Time No staggering in extreme coldness
Eco-Friendly	**Power Consumption** (for EV) About 60% of LCD's
Design	**Flexible** Design innovation, Unbreakable

Strategy : Automotive

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Enter the market with AMOLED based differentiation from 2016

RSE & CID
(2016~)
Exellent video quality

Cluster
(2017~)
Vivid color, true black

Flexible & new application
(2018~)
Innovative design
Safe for collision
e-mirror

Trend : Education

E-textbook will evolve to Vook, rapidly replacing paper book

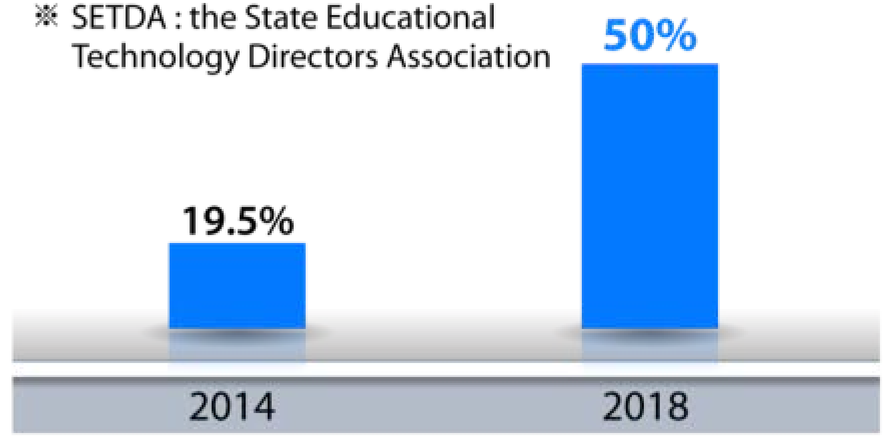
※ Video Book

US Digital Textbook Adoption

(Source : SETDA)

※ SETDA : the State Educational Technology Directors Association

(Contents based)



Total Cost of Ownership

$ 2,100
Paper Textbook

High school 3 Years (USA Today)

$ 1,250
Digital Text Book
(Contents + H/W)

(Gartner, OnlineEducation)

Strategy : Education

Create video book market with AMOLED

VOOK (Video + Book)

1 Color in **Printed Media**

= **AMOLED** (Adobe RGB 97%)

≠ **LCD** (Adobe RGB 74%)

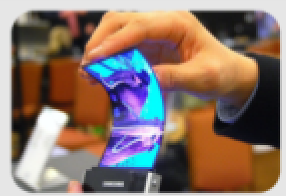
2 High Contrast ratio & Resolution for **Readability**

3 Fast Response time for **Video Contents**

Flexible

1 Safety (Unbreakable)

2 Mobility (Carrying Small Seeing Big)



Investment Strategy

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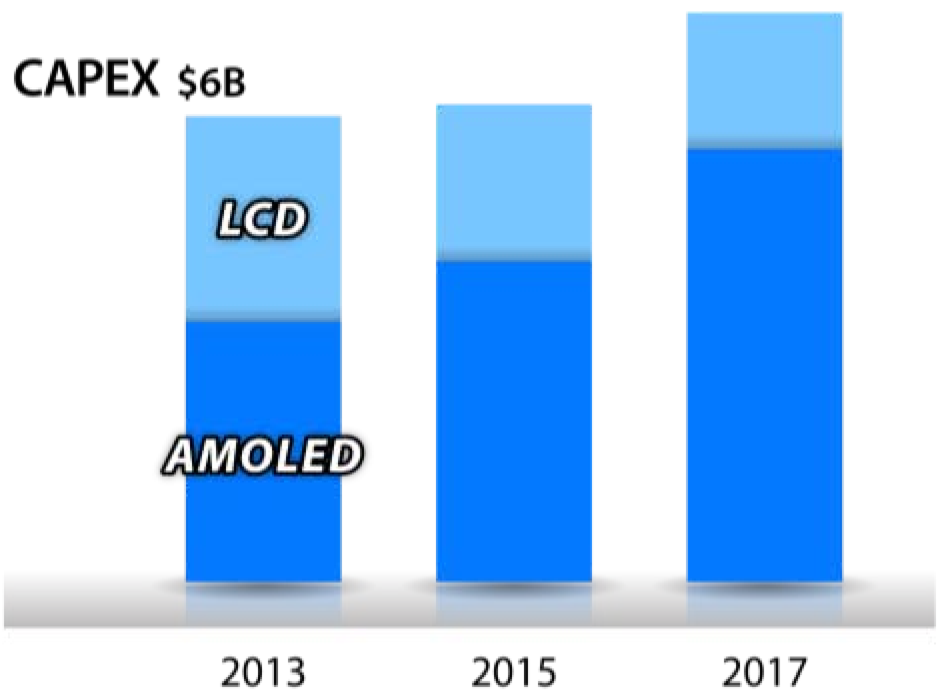
Strategic investment will secure growth momentum

CAPEX Plan



Strategy

Secure AMOLED growth

Asan (Korea)

Sustain growth momentum for LCD

Suzhou (China)

SDC Vision

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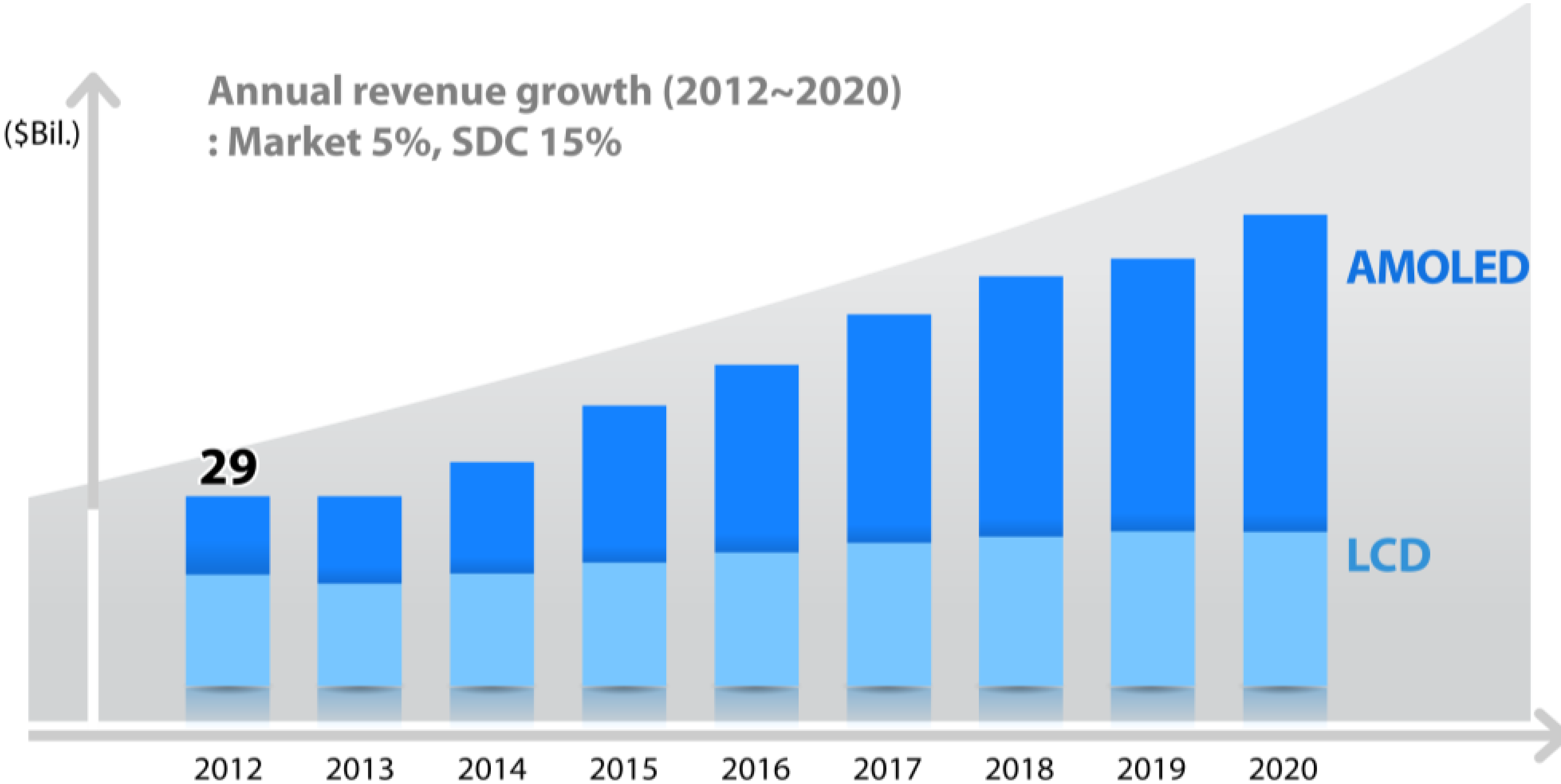
"What is seen is all of our business area!"



Final Remarks

Display industry's outlook is brighter than ever as potential market for displays will be immeasurable in the future.

SDC will continue to lead the industry's growth through innovative products enabled by our technology leadership.

The innovative ways of SDC will create new opportunities, which will allow the realization of

"Display Beyond Imagination"

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Thank You