



ADVANCING  
THE  
HUMAN  
INTERFACE

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# Analyst & Investor Day

Dec 12, 2017

# Disclosure

This presentation contains forward-looking statements that are subject to the safe harbors created under the Securities Act of 1933, as amended, and the Securities Act of 1934, as amended. Forward-looking statements give our current expectations and projections relating to our financial condition, results of operations, plans, objectives, future performance and business, and can be identified by the fact that they do not relate strictly to historical or current facts. Such forward-looking statements may include words such as "expect," "anticipate," "intend," "believe," "estimate," "plan," "target," "strategy," "continue," "may," "will," "should," variations of such words, or other words and terms of similar meaning. All forward-looking statements reflect our best judgment and are based on several factors relating to our operations and business environment, all of which are difficult to predict and many of which are beyond our control. Such factors include, but are not limited to, the risks as identified in the "Risk Factors," "Management's Discussion and Analysis of Financial Condition and Results of Operations" and "Business" sections of our Annual Report on Form 10-K for the fiscal year ended June 24, 2017, and other risks as identified from time to time in our Securities and Exchange Commission reports. Forward-looking statements are based on information available to us on the date hereof, and we do not have, and expressly disclaim, any obligation to publicly release any updates or any changes in our expectations, or any change in events, conditions, or circumstances on which any forward-looking statement is based. Our actual results and the timing of certain events could differ materially from the forward-looking statements. These forward-looking statements do not reflect the potential impact of any mergers, acquisitions, or other business combinations that had not been completed as of the date of this filing.

# Non-GAAP Results

- In evaluating our business, we consider and use non-GAAP net income, which we define as net income excluding share-based compensation, acquisition related costs, and certain other non-cash or recurring and non-recurring items we do not believe are indicative of our core operating performance as a supplemental measure of operating performance.
- Non-GAAP net income is not a measurement of our financial performance under GAAP and should not be considered as an alternative to GAAP net income. We present non-GAAP net income because we consider it an important supplemental measure of our performance since it facilitates operating performance comparisons from period to period by eliminating potential differences in net income caused by the existence and timing of share-based compensation charges, acquisition related costs, and certain other non-cash or recurring and non-recurring items.
- Non-GAAP net income has limitations as an analytical tool and should not be considered in isolation or as a substitute for our GAAP net income. The principal limitations of this measure are that it does not reflect our actual expenses and may thus have the effect of inflating our net income and net income per share as compared to our operating results reported under GAAP.
- Please see our first quarter fiscal 2018 press release for additional discussion of our use of non-GAAP financial measures, and the tables attached to the end of this presentation for a complete reconciliation of GAAP to non-GAAP financial measures used in this presentation.



# Agenda

**8:30 – 9:00**

## **DEMOS**

**9:00 – 9:20**

WELCOME

Synaptics 3.0

Rick Bergman

**9:20 – 10:00**

MOBILE

Infinity Displays Driving Growth

Kevin Barber

**10:00 – 10:40**

CONSUMER IoT

Boundless Opportunities

Huibert Verhoeven

Saleel Awsare

**10:40 – 11:00**

## **BREAK**

**11:00 – 11:15**

AUTOMOTIVE

The Road Ahead

Sunil Thomas

**11:15 – 11:30**

INNOVATION

Achieving Our Founders' Vision

Patrick Worfolk

**11:30 – 11:45**

FINANCE

Multiple Vectors to Growth

Wajid Ali

**11:45 – 12:00**

## **Q&A**

**12:00 – 1:00**

## **DEMOS**





ADVANCING  
THE  
HUMAN  
INTERFACE

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# Synaptics 3.0

Rick Bergman, President & CEO

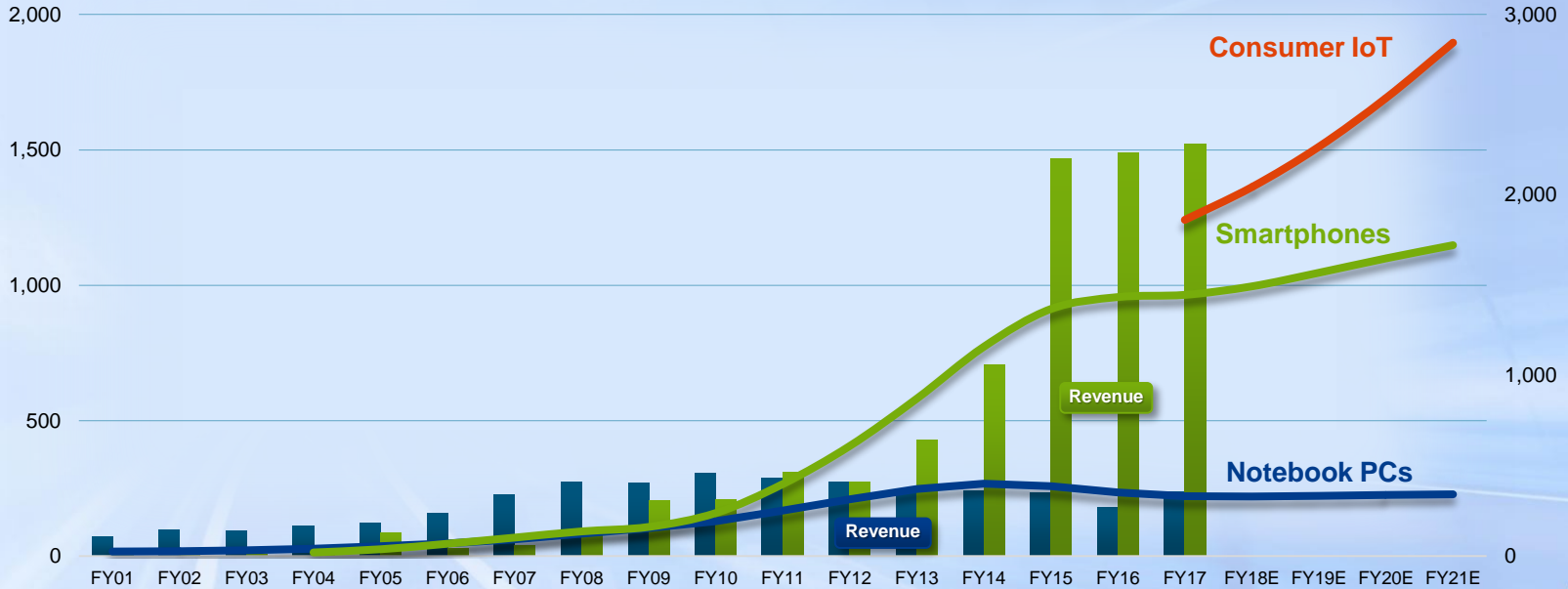
# Adding Intelligence to the Edge And Delivering Richer Human Interface



# Boundless Opportunities in Consumer IoT

Synaptics Annual  
Revenue  
per Market Segment  
(\$M)

Market Segment  
TAM  
End Units  
(Millions)



Source: IHS, IDC & internal estimates  
IHS Markit, IoT Devices & Connectivity Intelligence Service, May 2017  
Bars represent Synaptics annual revenue per market segment  
Lines represent market segment TAM

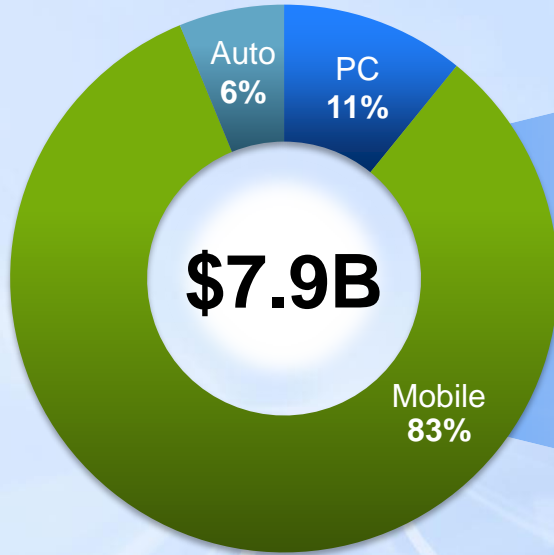


# Latest Acquisitions Transform the Company... Again



# Expand Addressable Market

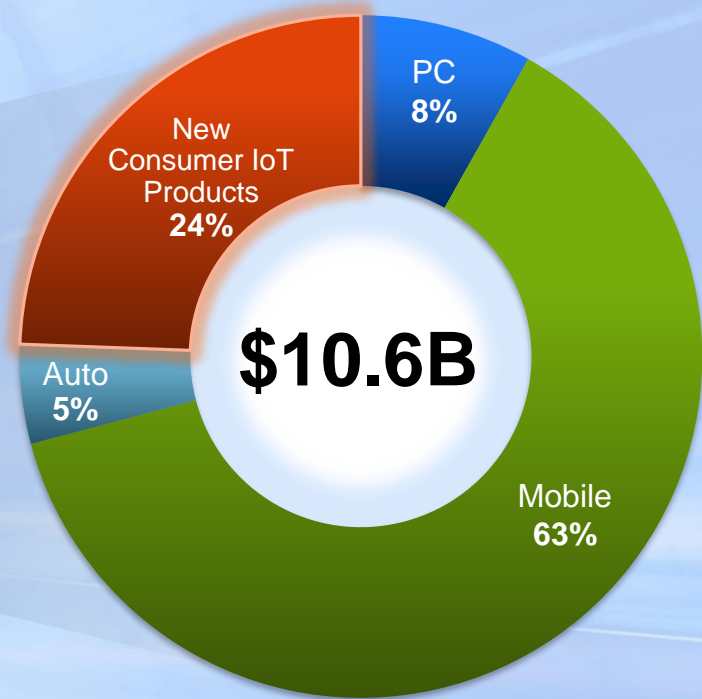
**CY2020**



**PRE-ACQUISITIONS**

**\$7.9B**

**34% Growth**

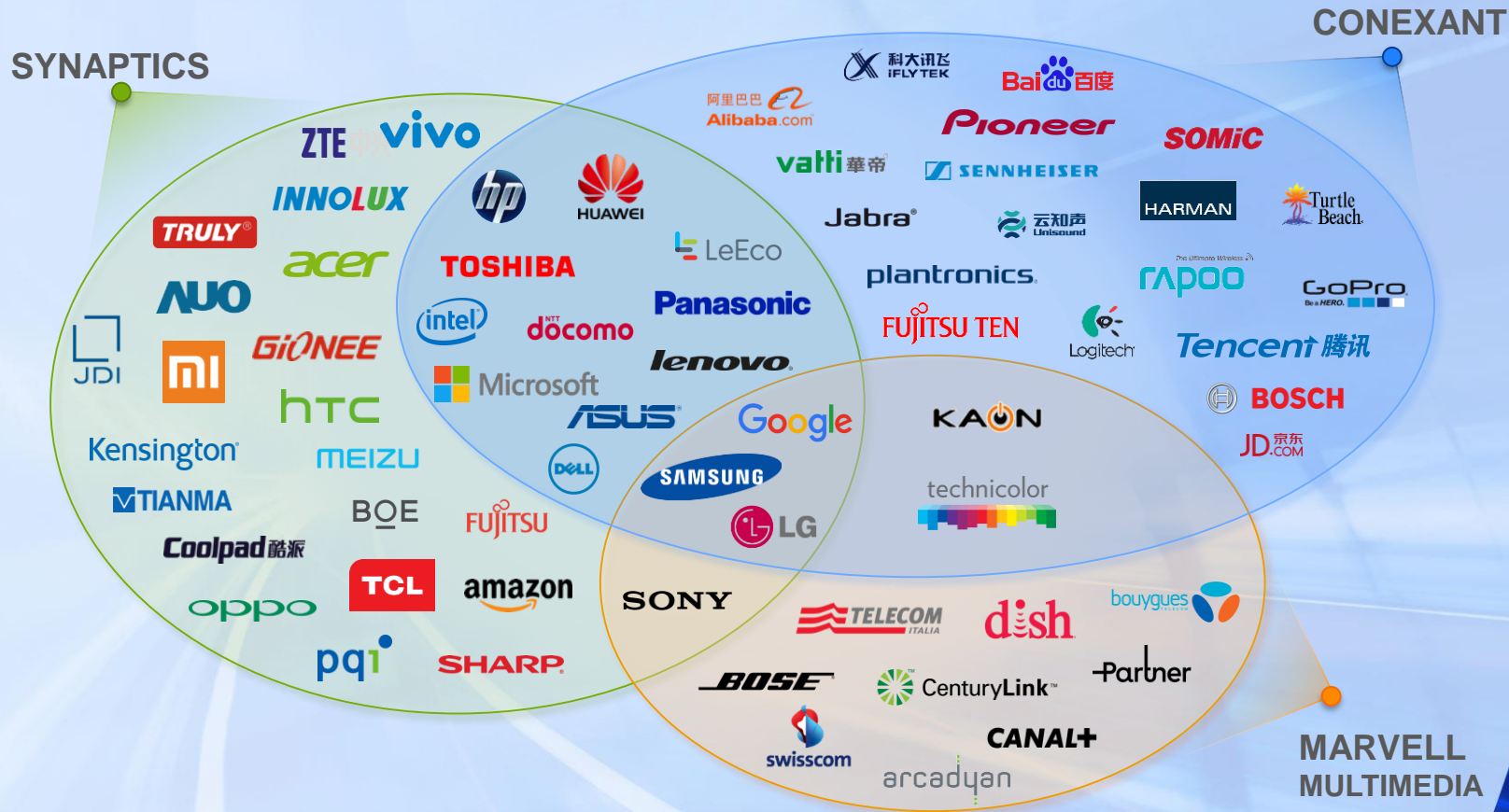


**POST-ACQUISITIONS**

**\$10.6B**

Source: IHS, IDC & internal estimates; excludes Apple units for Touch and Fingerprint market

## Diversify Customer Base





# Foster New Ecosystem Relationships



# Synaptics Winning Strategy

1

SCALE &  
TECHNOLOGY



PC

AUTOMOTIVE

AR / VR



3

LEVERAGE TO  
ADJACENT MARKETS

2

DIVERSIFICATION &  
GROWTH



# Position of Strength

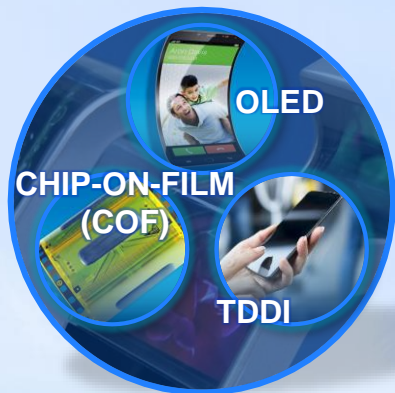
- Mobile TDDI
- OLED Touch\*
- Mobile LCD DDIC
- Notebook PC Touchpad
- Notebook PC Fingerprint
- Far-field Voice\*
- Android Service Provider Platform SoCs
- Display Processing for Virtual Reality
- Imaging for Fax and Modem



\* Non-captive



# Growth Priorities



**DISPLAY SOLUTIONS**



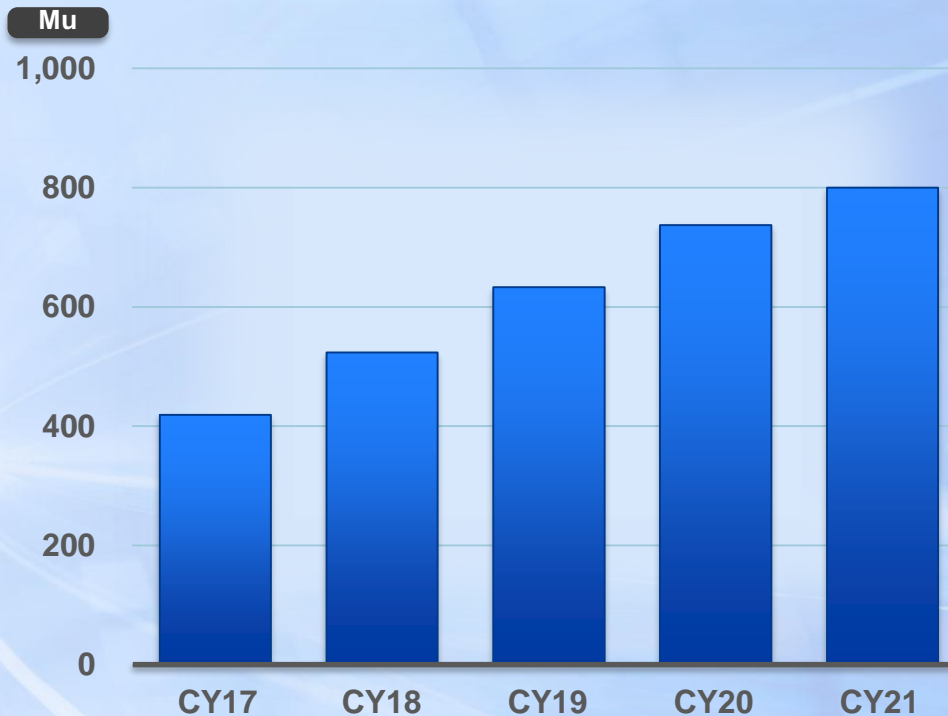
**IN-DISPLAY  
FINGERPRINT**



**CONSUMER IoT**

# Growth Priority: OLED DDIC SAM

CAGR  
**18%**

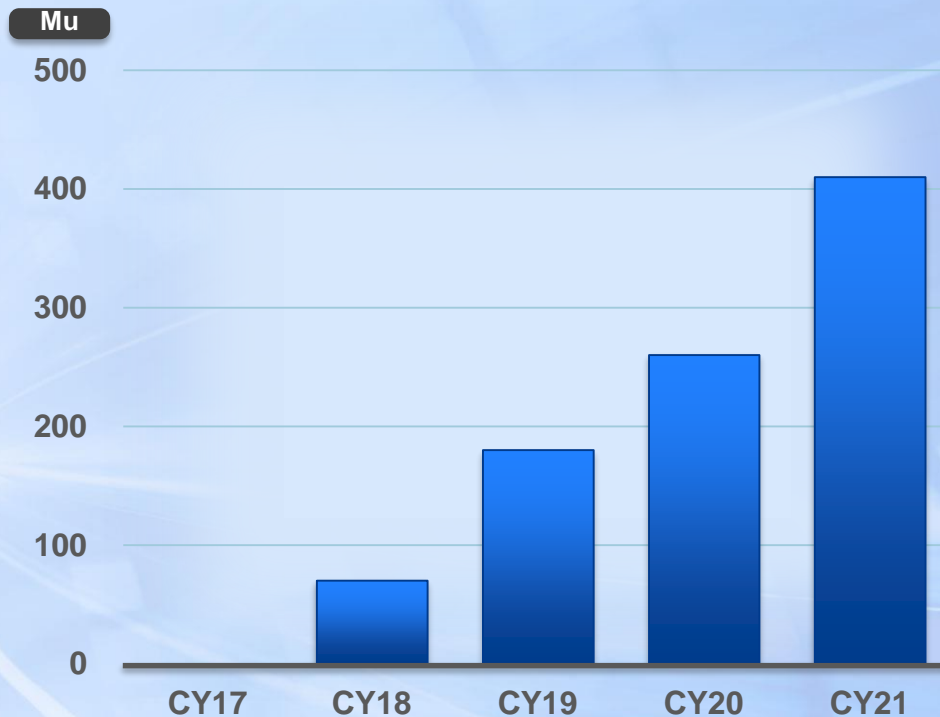


Source: IHS, internal estimates

# Growth Priority: In-Display Fingerprint SAM

CAGR CY18-21

80%

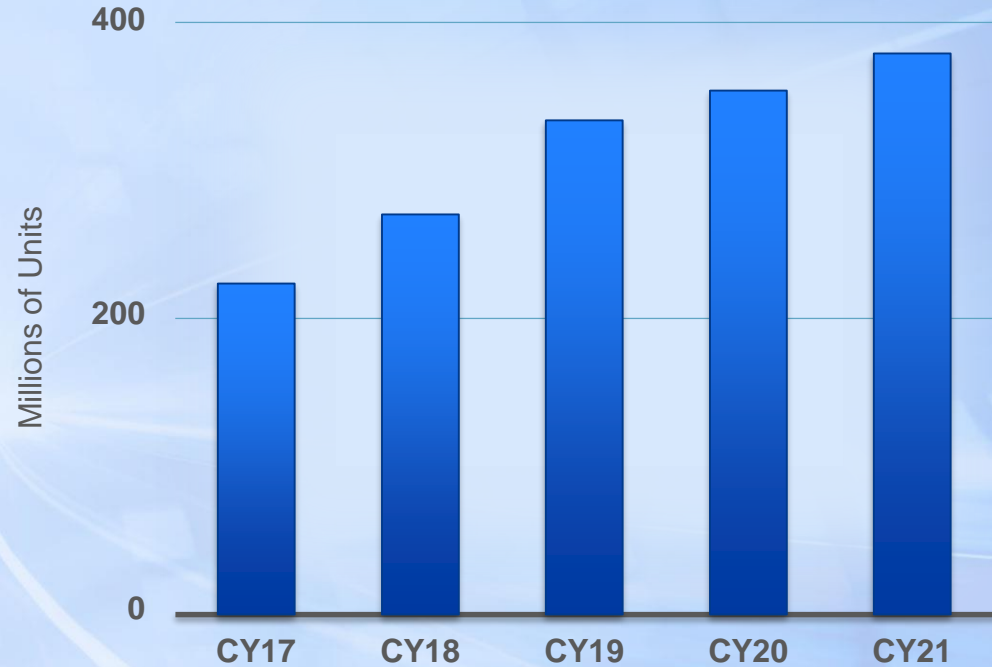


Source: IHS, internal estimates



# Growth Priority: Automotive SAM

CAGR  
**16%**



Source: IDC & internal estimates

# Growth Priority: Consumer IoT SAM

CAGR  
**23%**

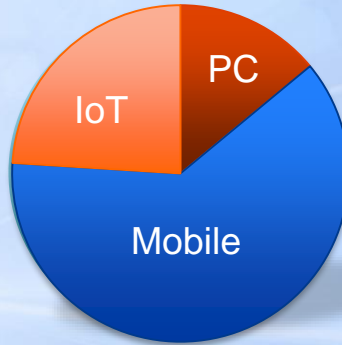


Source: IHS Q1-2017 Devices and Connectivity Intelligence, Synaptics Internal Estimates

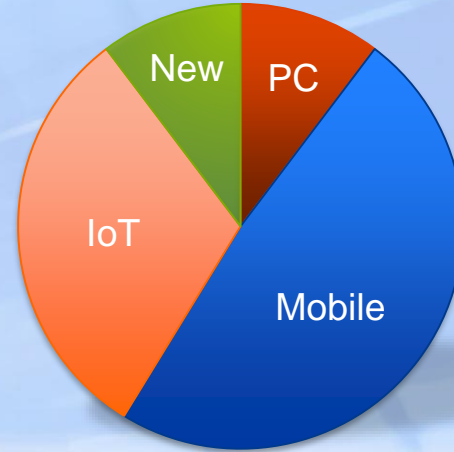
# Changing Revenue Mix



**THEN**



**NOW**



**FUTURE**

# Synaptics 3.0 Winning Formula

ADVANCING  
THE  
HUMAN  
INTERFACE

1

## Transformation

- Strong Sustainable Business Model
- Differentiated Technology Portfolio

2

## Diversification

- Customer
- Product

3

## Growth

- Core Business
- Consumer IoT





ADVANCING  
THE  
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# Infinity Displays Driving Growth

Kevin Barber, SVP & GM, Mobile Division

# Leadership and Innovation Across Our Product Lines

Shipping First  
Production  
In-Display  
Solution

FINGERPRINT

#1  
OLED  
Discrete  
Touch\*



DISCRETE  
TOUCH

10+  
OLED DDIC  
Design-Ins

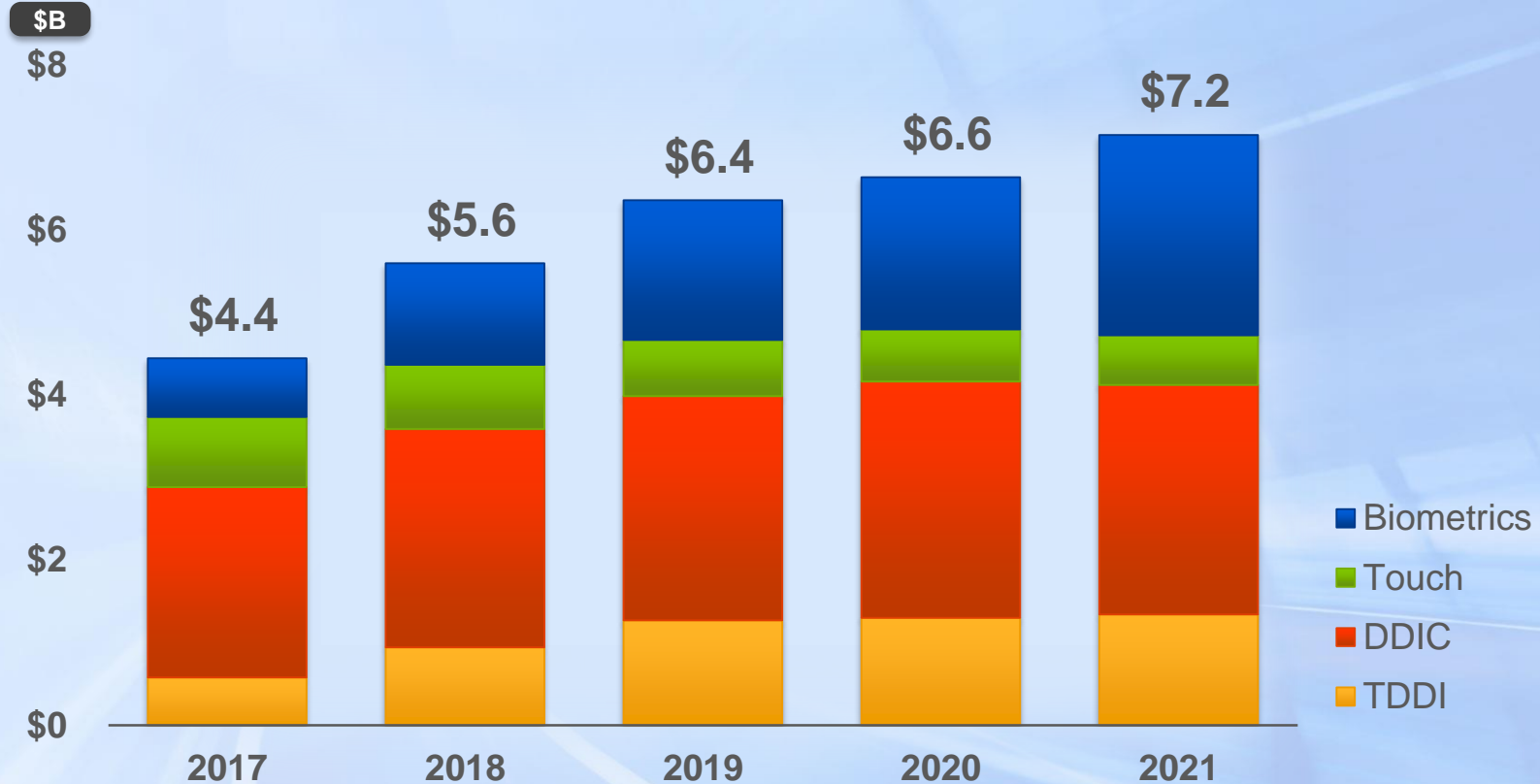
DISCRETE  
DISPLAY

200Mu  
shipped\*\*  
60% of market

TDDI

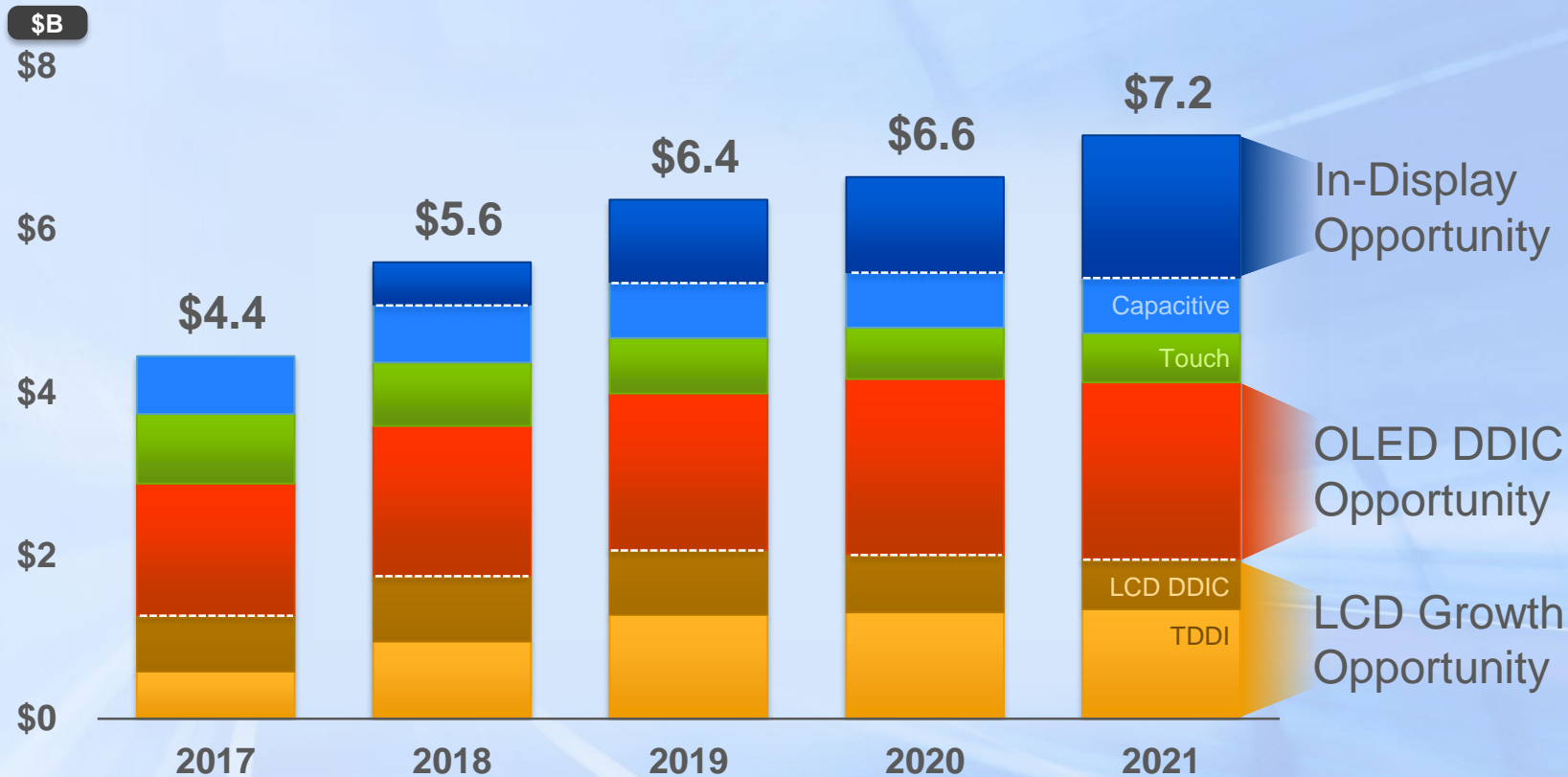
\*Non-Captive | \*\*Cumulative 2016/2017

# Mobile Market Opportunity Large – and Still Growing



Source: IHS, IDC, internal estimates  
Smartphone estimates excludes Apple except DDIC

# Mobile Market Opportunity Large – and Still Growing

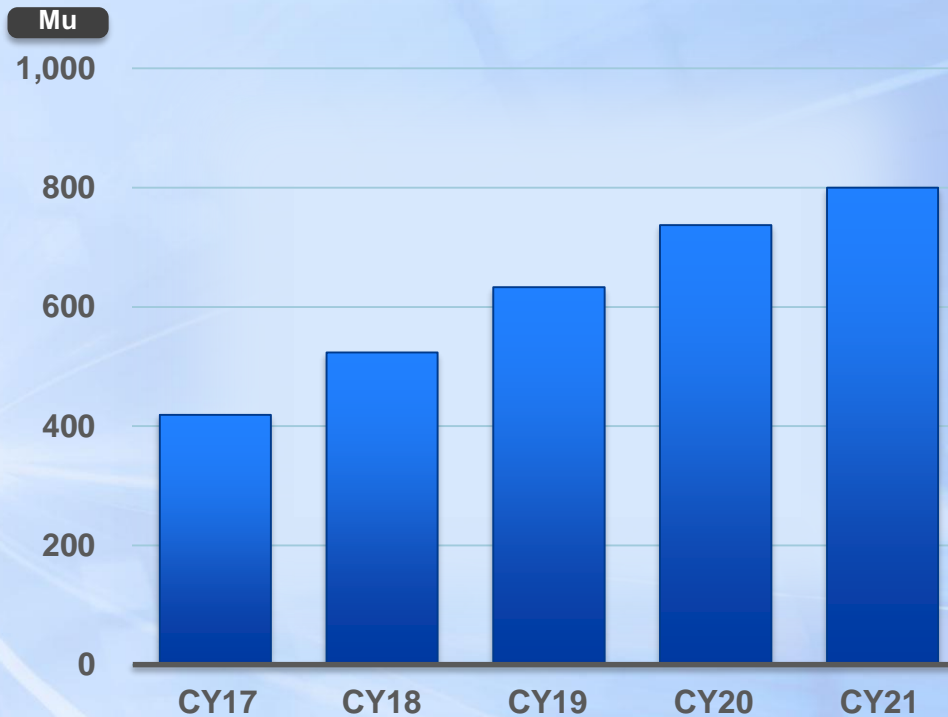


Source: IHS, IDC, internal estimates  
Smartphone estimates excludes Apple except DDIC



# Growth Priority: OLED SAM

CAGR  
**18%**



Source: IHS, internal estimates

# OLED Inflection Touches All of Our Technologies



**FINGERPRINT**



**TOUCH**



**DISPLAY**

# Racing Towards Infinity

Percent of front surface covered by screen



**2011**  
Galaxy S2

**64%**



**2013**  
Galaxy S4

**72%**



**2015**  
Galaxy S6

**77%**



**2017**  
Galaxy S8

**84%**



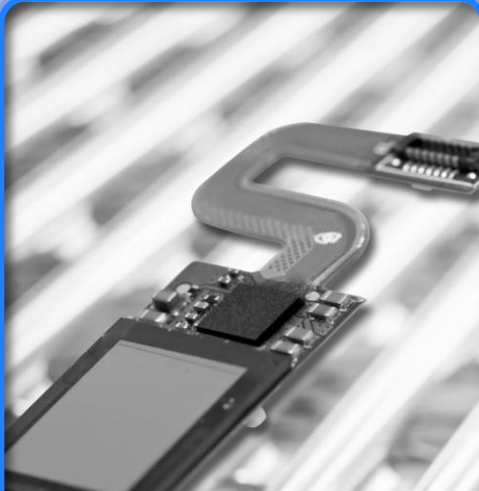
**2017**  
iPhone X

**83%**

Source: [www.gsmarena.com](http://www.gsmarena.com)



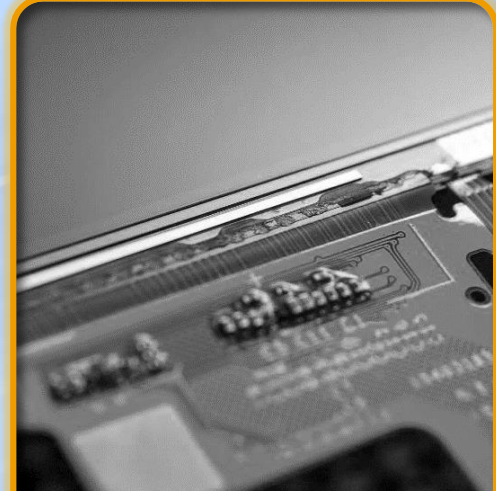
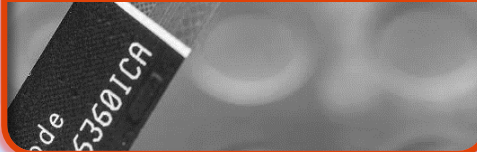
# OLED Inflection Creates New Growth Opportunities



**IN-DISPLAY  
FINGERPRINT**



**OLED  
DISPLAY**



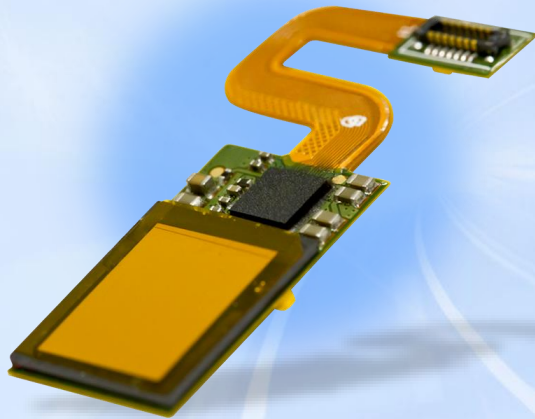
**LCD  
GROWTH OPPORTUNITIES**





# Synaptics Brings World's First In-Display Fingerprint Sensors for Smartphones to Mass Production with a Top Five OEM

*Clear ID Optical Sensors are Faster,  
More Convenient and Secure than Alternative Biometrics*



- Enables true infinity display
- One touch secure identification
- Works with flexible and rigid OLED displays

# Evolution of Unlocking Phones

**PIN**



**Draw**



**Swipe**



**Capacitive**



**Facial**



**In-Display**



# Synaptics Clear ID™ is...

**FAST**

**2x**

faster compared to  
3D facial recognition\*

**CONVENIENT**

**Discreet &  
Flexible**

**SECURE**

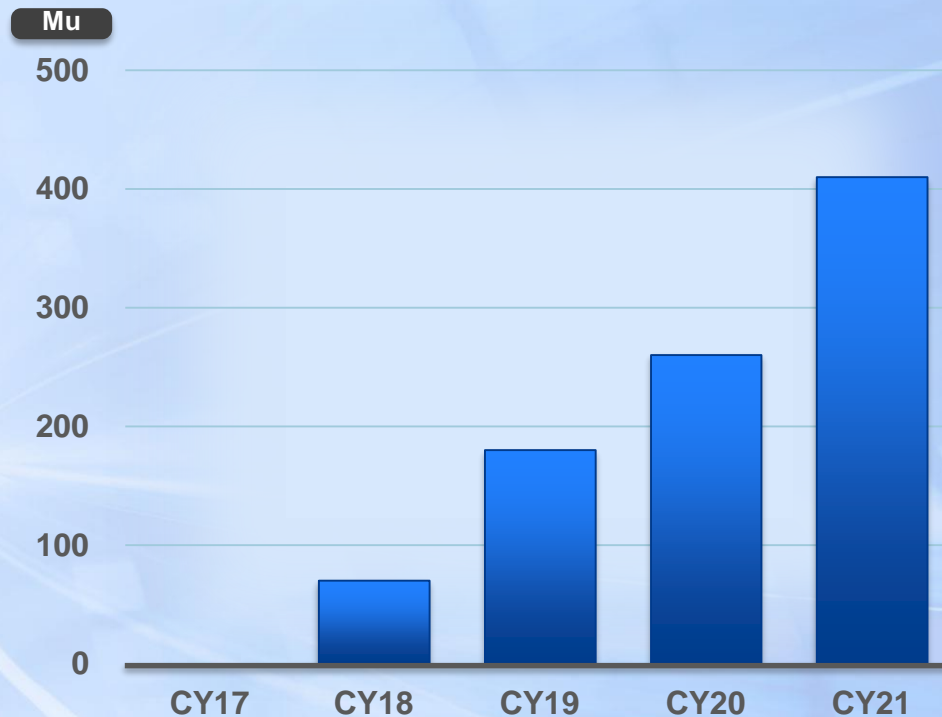
**Adaptive  
Quantum  
Matcher™**

\*Internal Studies

# Growth Priority: In-Display Fingerprint SAM

CAGR CY18-21

**80%**



Source: IHS, internal estimates



# Comprehensive Optical Fingerprint Strategy

All Solutions Support Rigid and Flexible OLED

**World's First**

2017

**Cost  
Optimized**

(In Development)

2018

**Fingerprint  
Anywhere**

2019+

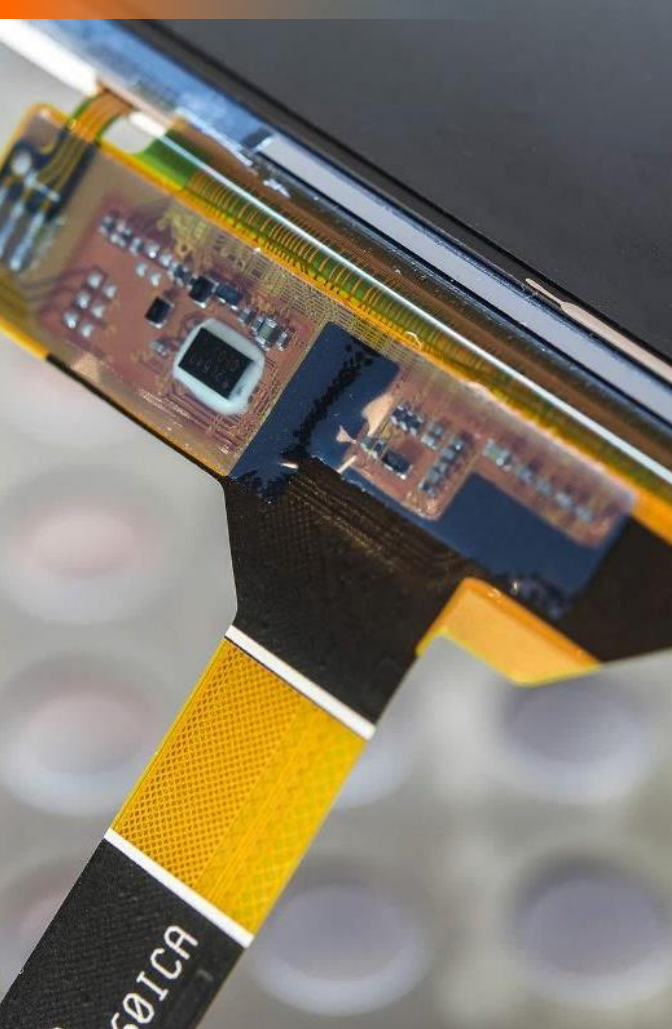
# Key Takeaways: In-Display Fingerprint



**INFINITY DISPLAYS  
ARE HERE**

**CLEAR ID™  
ANOTHER  
WORLD FIRST**

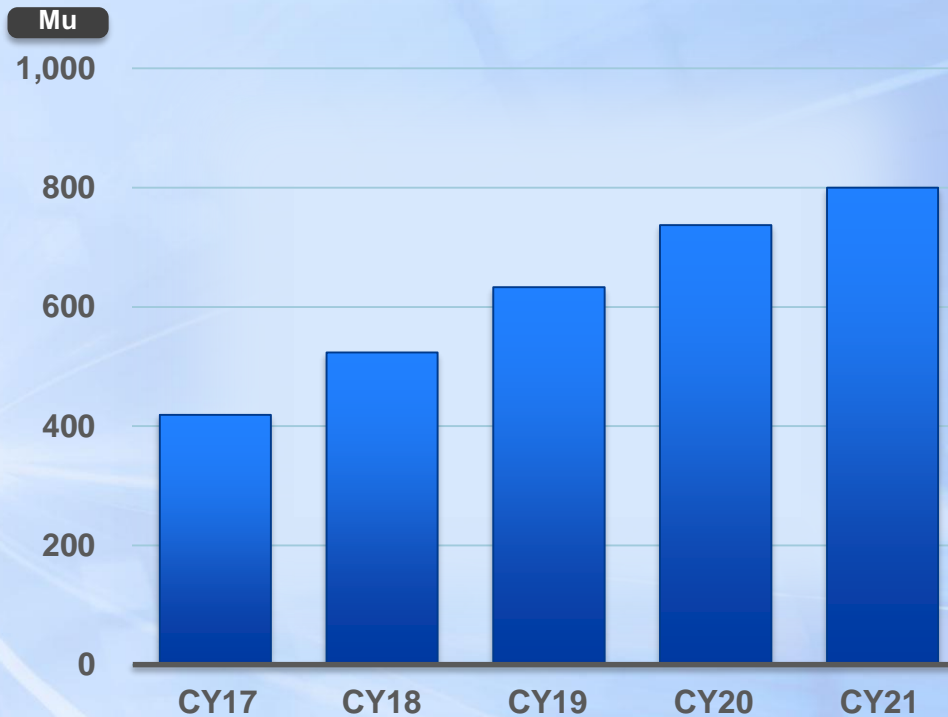
**TRUE INFINITY  
EXPERIENCE**



# OLED Display

# Growth Priority: OLED SAM

CAGR  
**18%**

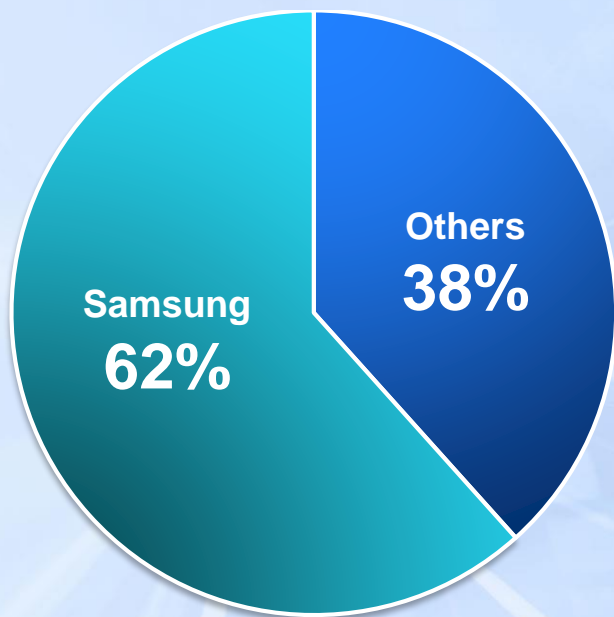


Source: IHS, internal estimates



# OLED Display Capacity Build-up

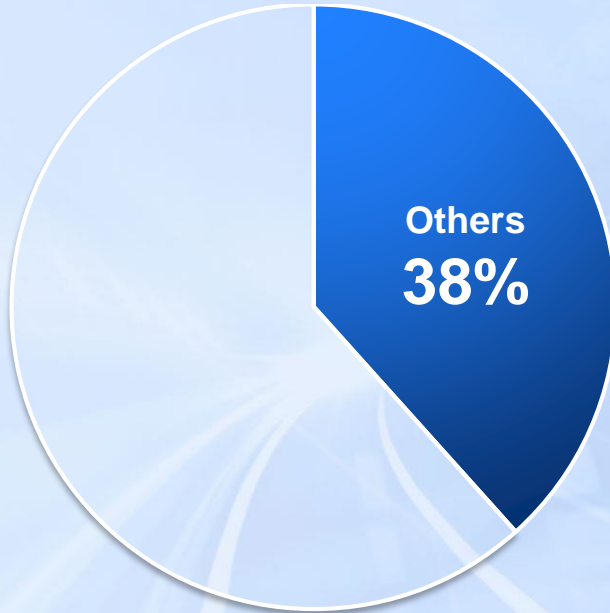
2019



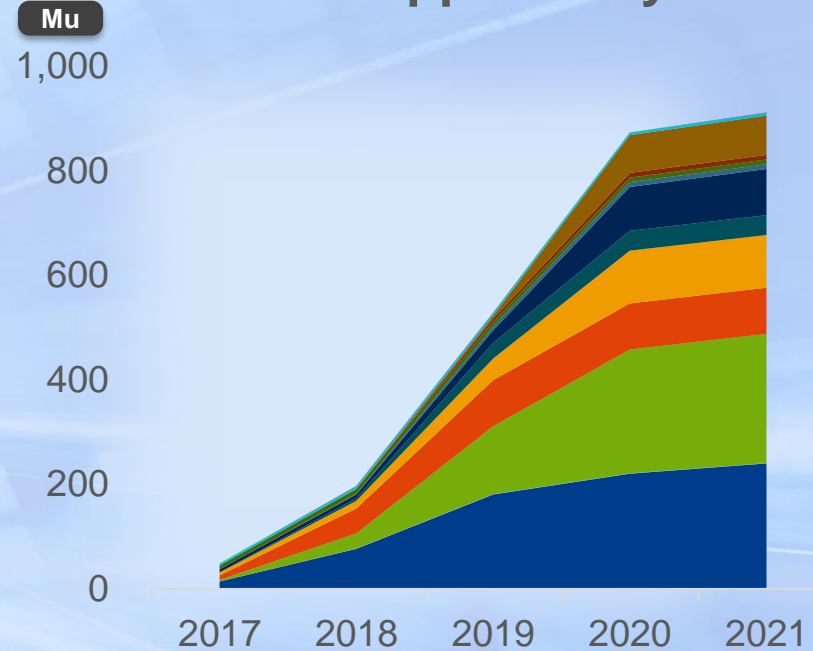
Source: IHS, internal estimates  
Yielded 5.5" Phone Capacity per Year

# OLED Display Capacity Build-up

2019

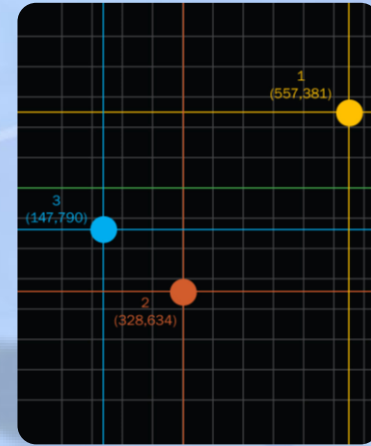


## Growth Opportunity



Source: IHS, internal estimates  
Yielded 5.5" Phone Capacity per Year

# OLED Displays Bring Unique Challenges



**THIN & FLEXIBLE  
DISPLAYS**

**UNBOUNDED  
INDUSTRIAL  
DESIGNS**

**IMAGE QUALITY &  
MANUFACTURING**

# Synaptics OLED Display Technologies

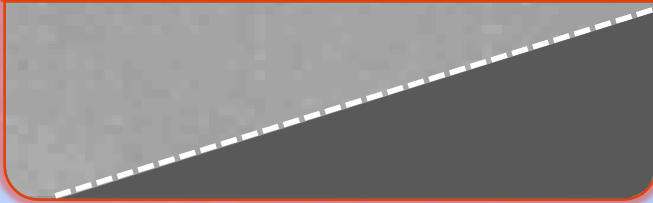
## Round Corner Processing

Smoothing Edge Geometries



## deMura & IR Drop

Improving Yields & Manufacturability



## Multi-SPR

Superior Color Control



A



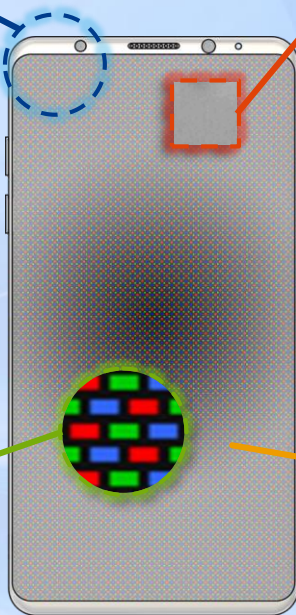
B



C



D



## Smooth Dimming

User Experience





# Announcing the Launch of our First OLED DDIC Solutions

**R66451**

WQHD+

Up to **20:9** aspect ratio

Supports **flexible and rigid** displays

**10 design-ins** with China/Japan LCMs

Initial revenue expected **1H'CY18**

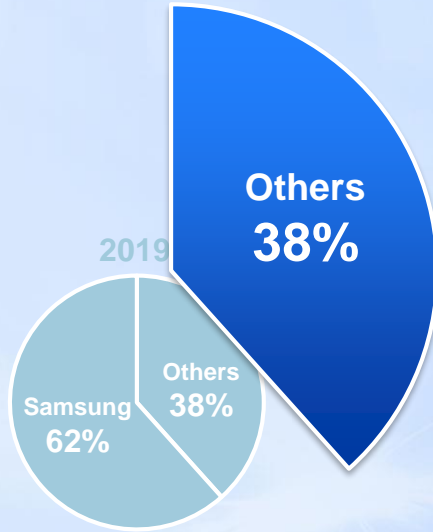
**R66455**

FHD+

# Expanding and Innovative OLED Portfolio



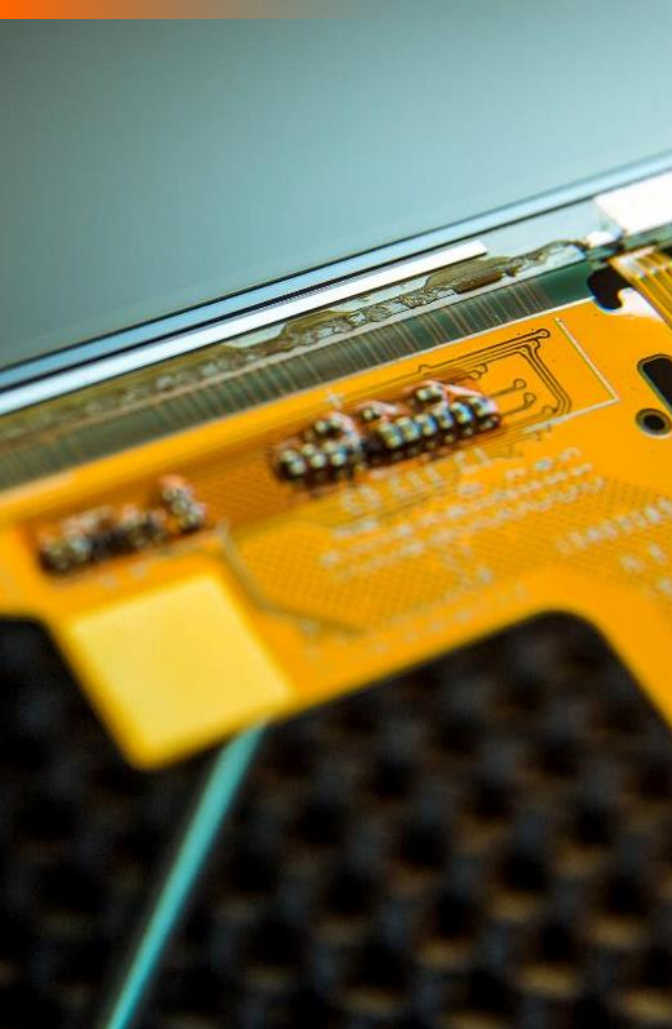
# Key Takeaways: OLED Display



**GROWING MARKET  
OPPPORTUNITY**

**LEADING OLED  
TECHNOLOGY**

**GENERATING  
REVENUE IN 2018**



# LCD Growth Opportunities

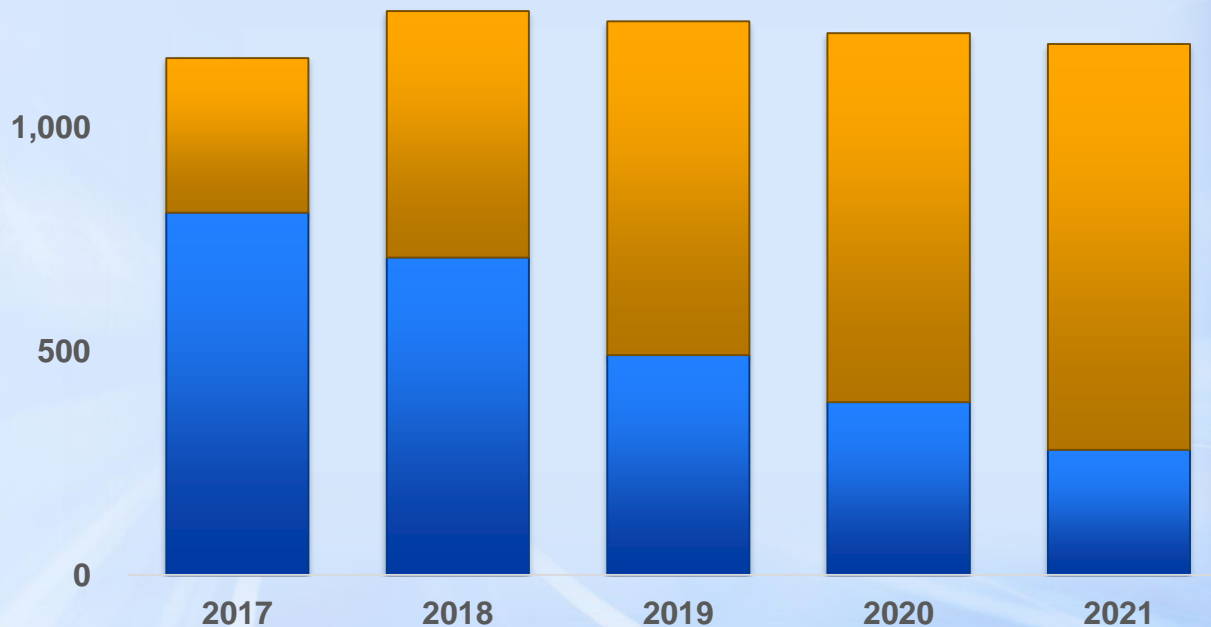


# Successfully Created Growing TDDI Market for LCD

Mu

1,500

SAM Market



**200 Mu**

Synaptics  
TDDI Units Shipped  
(Cumulative 2016-2017)

**9 of top 10**

Smartphone  
Manufacturers Buy  
TDDI from Synaptics

■ TDDI  
■ DDIC

Source: IHS, internal estimates

# Infinity Display Demand Expanding to LCD

**LCD Manufacturers** motivated to extend existing capacity

**OLED** facing supply constraints & price premiums

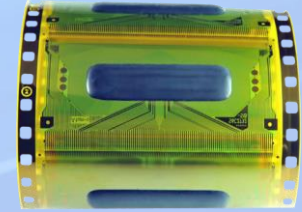
**Major customers** requesting infinity LCD

# TDDI Portfolio Coverage Through 2018

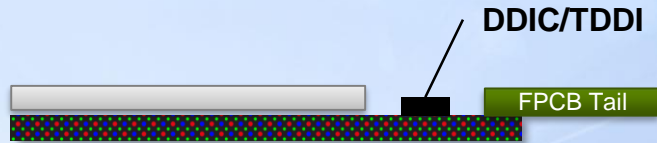
(# of solutions indicated)



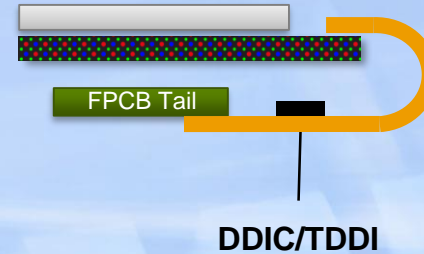
# Chip-On-Film Enables Narrower Borders



## Chip-on-Glass



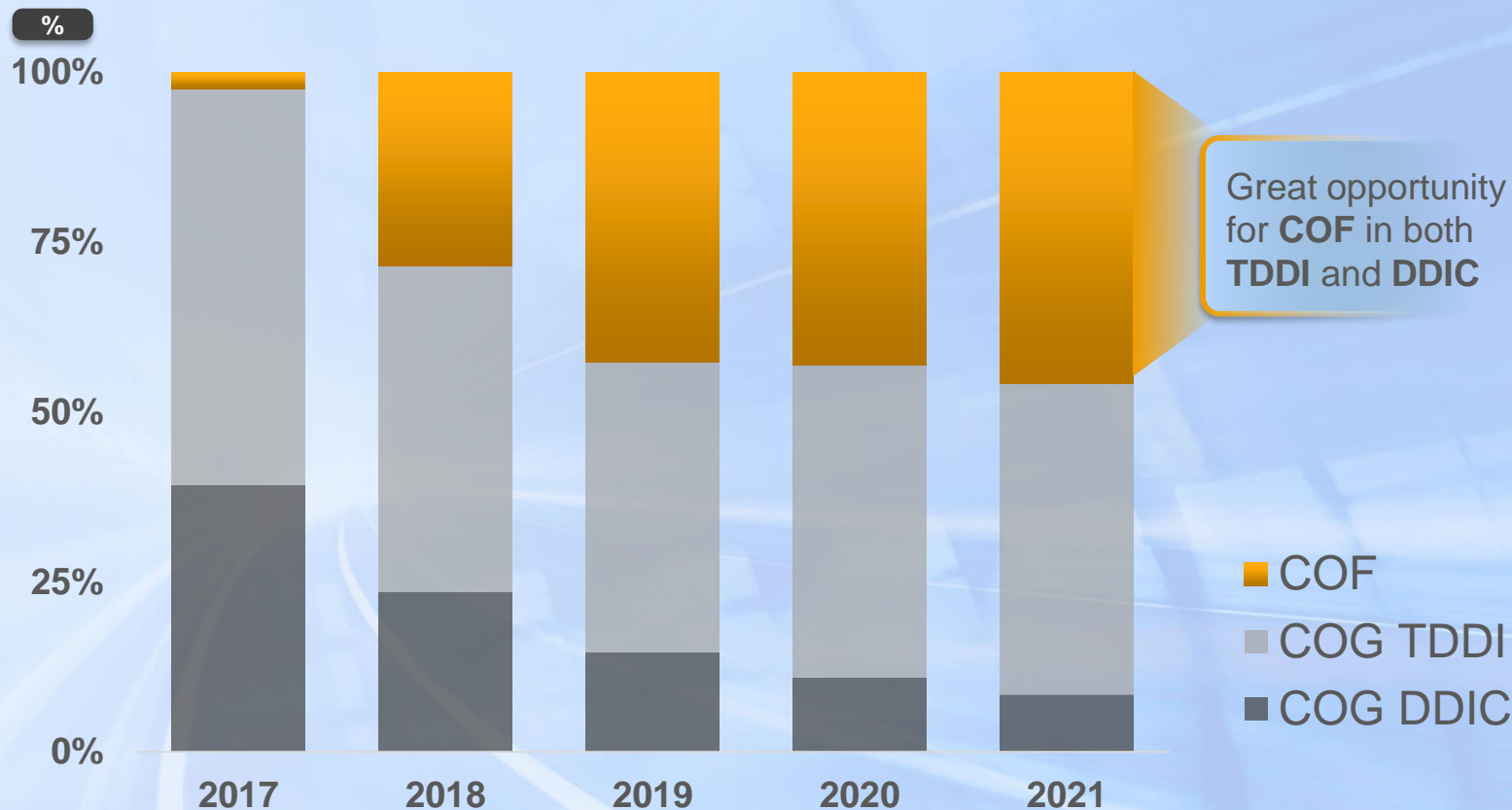
## Chip-on-Film



**20 COF Engagements; First COF Design in Production**



# COF Creates a New Growth Opportunity in LCD



Source: Internal estimates

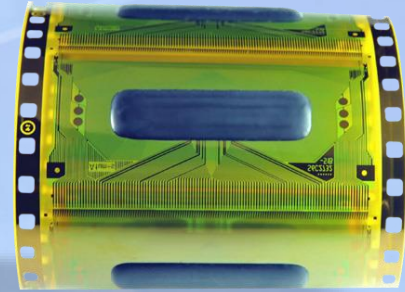
# Key Takeaways: LCD Growth Opportunities



**TDDI SUCCESS**

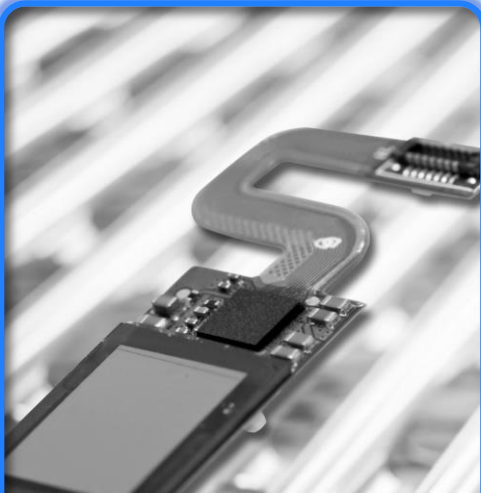


**INFINITY DISPLAY  
FOR LCD**



**NEW OPPORTUNITY  
CHIP-ON-FILM**

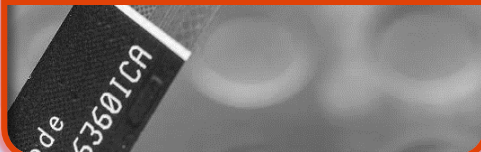
# Infinity Displays Driving Growth



**IN-DISPLAY  
FINGERPRINT**



**OLED  
DISPLAY**



**LCD  
GROWTH OPPORTUNITIES**





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# Boundless Opportunities

Huibert Verhoeven, SVP & GM, IoT Division

Saleel Awsare, VP & GM, Audio & Imaging



# Accelerating Consumer IoT Strategy

- **Acquired Leaders in Voice/Audio and Video**
- **Providing Systems, Silicon and Software**
- **Expanding and Diversifying Customer Base**



# Enabling the Intelligent Edge with Smart Devices

## AudioSmart™



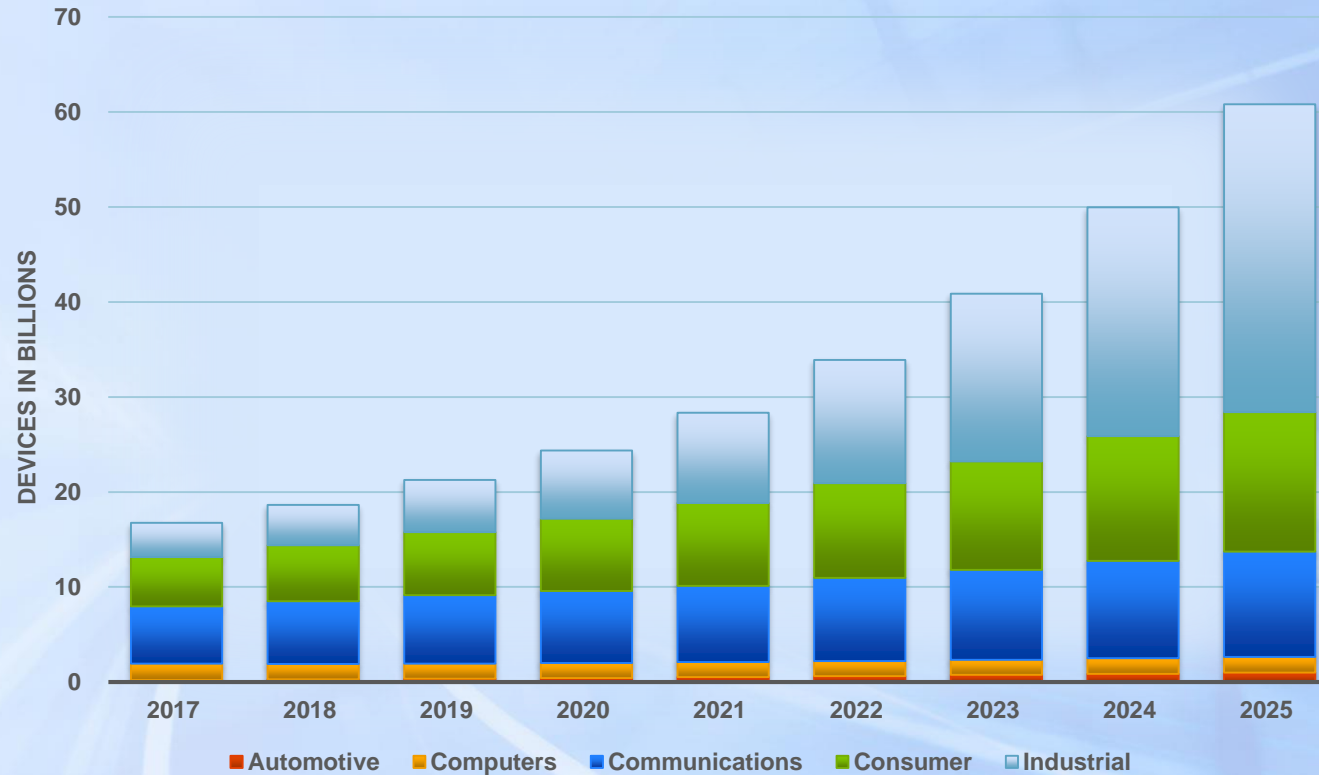
## VideoSmart™



## ImagingSmart™

# Rapidly Growing IoT Installed Base

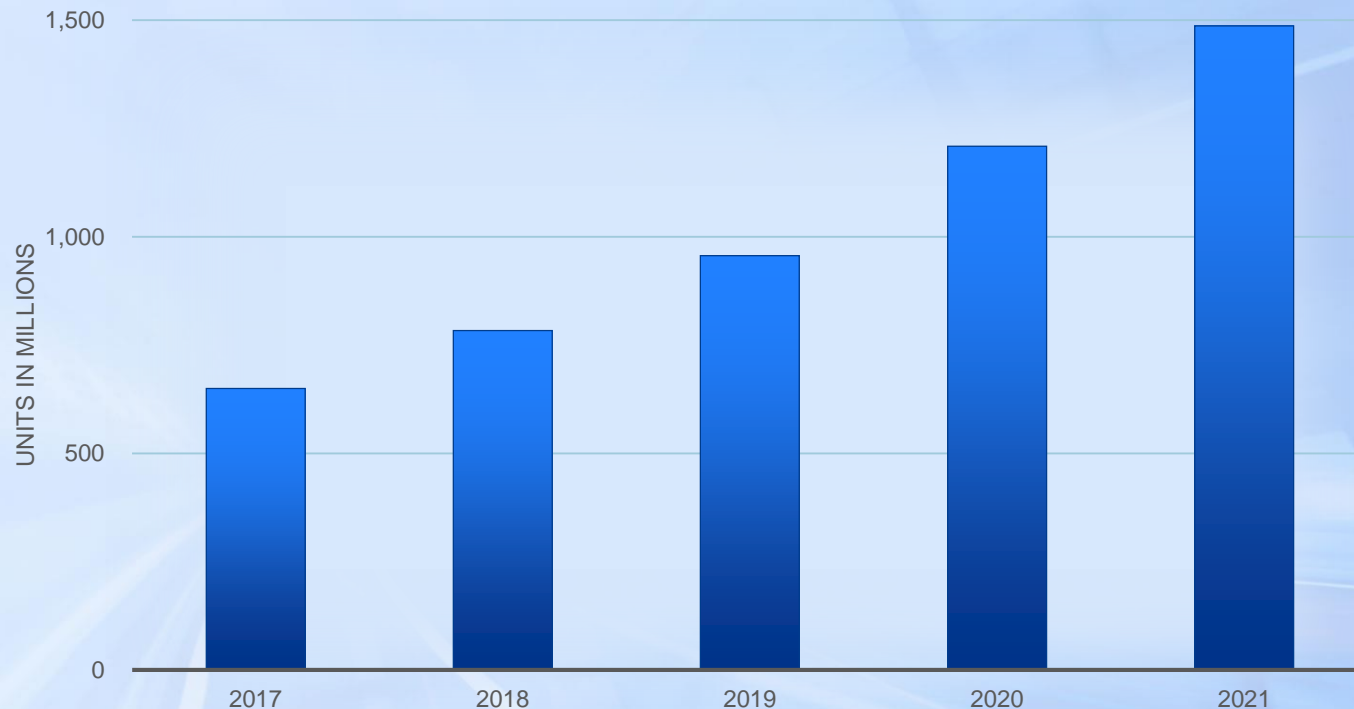
CAGR  
**18%**



Source: IHS Q1-2017 Devices and Connectivity Intelligence

# Smart Home SAM Approaches 1.5B Units

CAGR  
**23%**

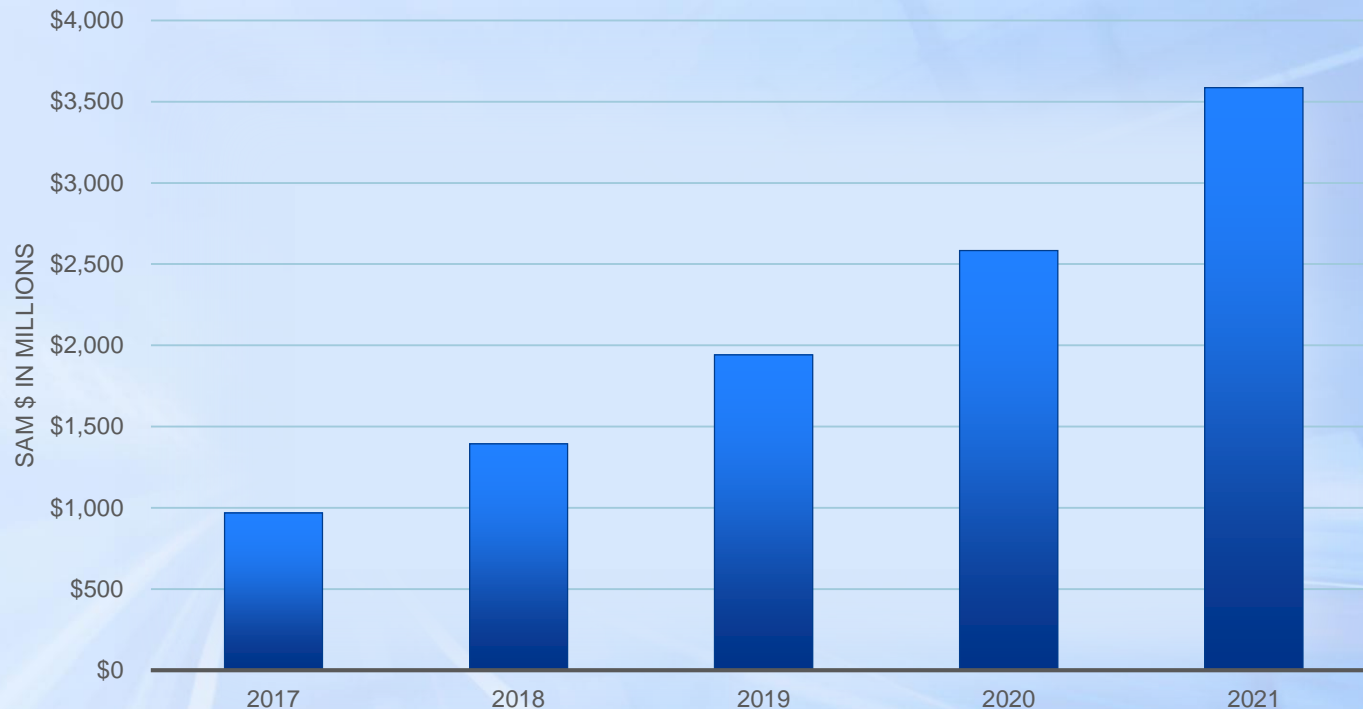


Source: IHS Q1-2017 Devices and Connectivity Intelligence, Synaptics Internal Estimates



# Smart Home SAM \$ Growth Accelerating

CAGR  
**39%**

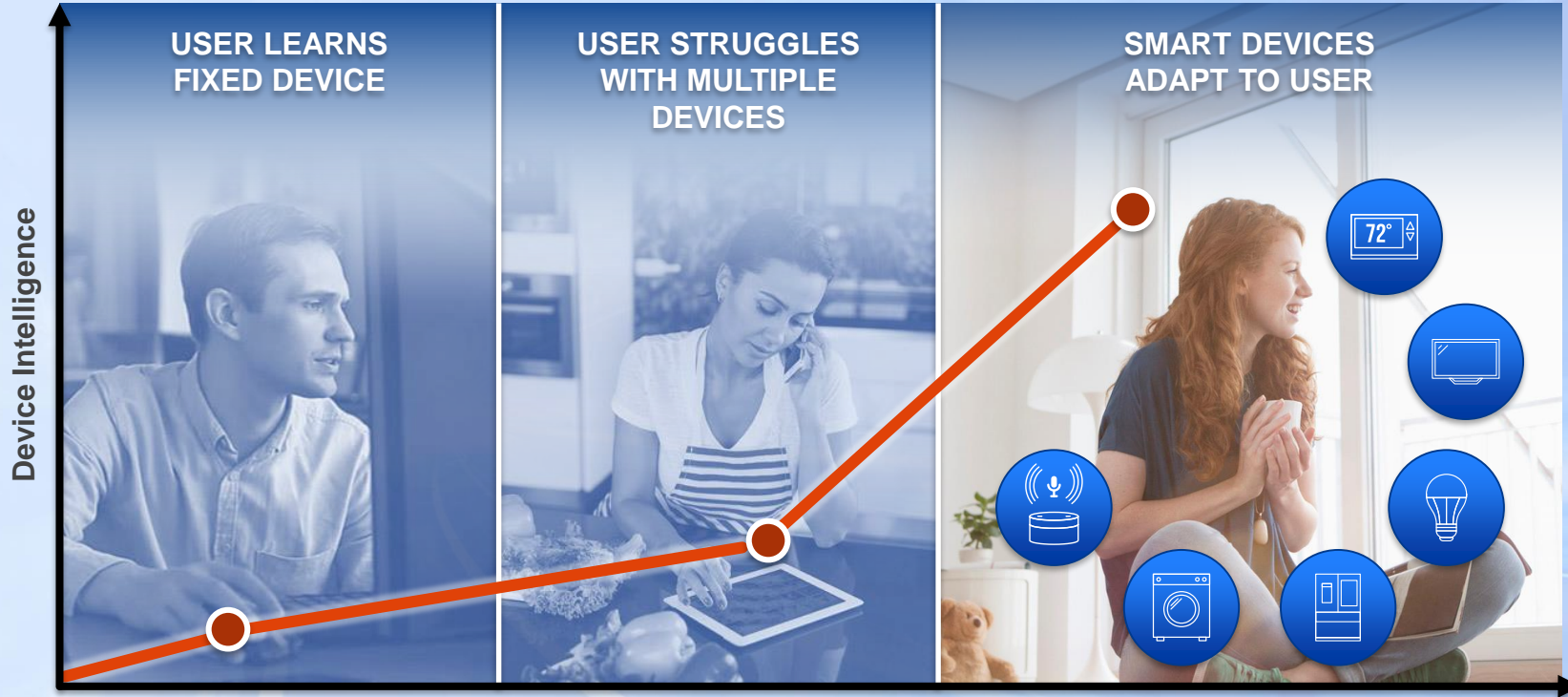


Source: IHS Q1-2017 Devices and Connectivity Intelligence, Synaptics Internal Estimates

# Boundless Opportunities



# Revolutionary Jump in Intelligence at the Edge



# Insightful Adaptation – Combined Edge and Cloud Intelligence

## SMART DEVICES



## SMART CLOUD





# Complete Solutions Accelerate Customer Time-to-Market



Superior Human Interface



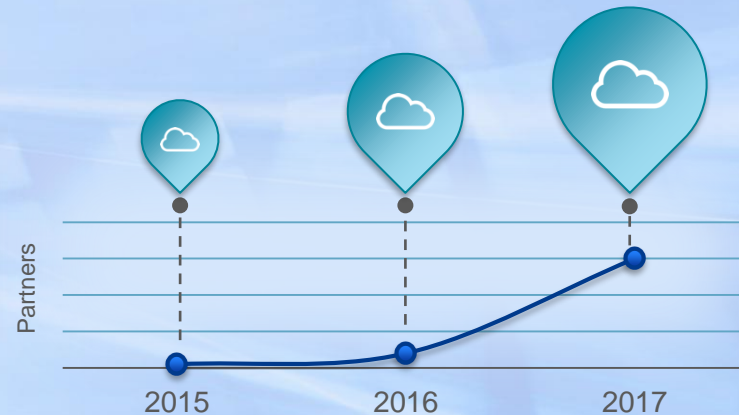
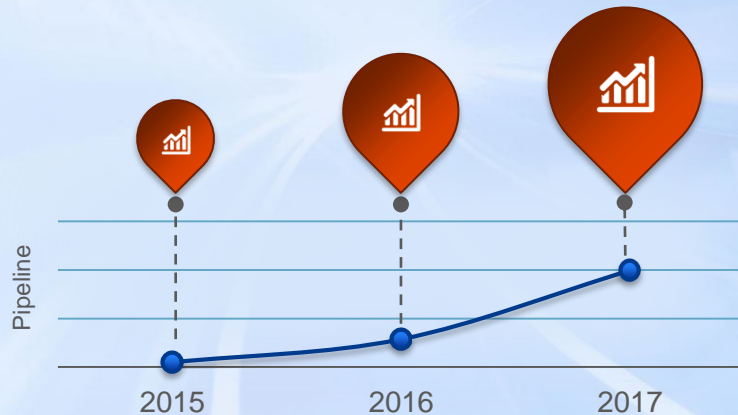
Solution-level Focus



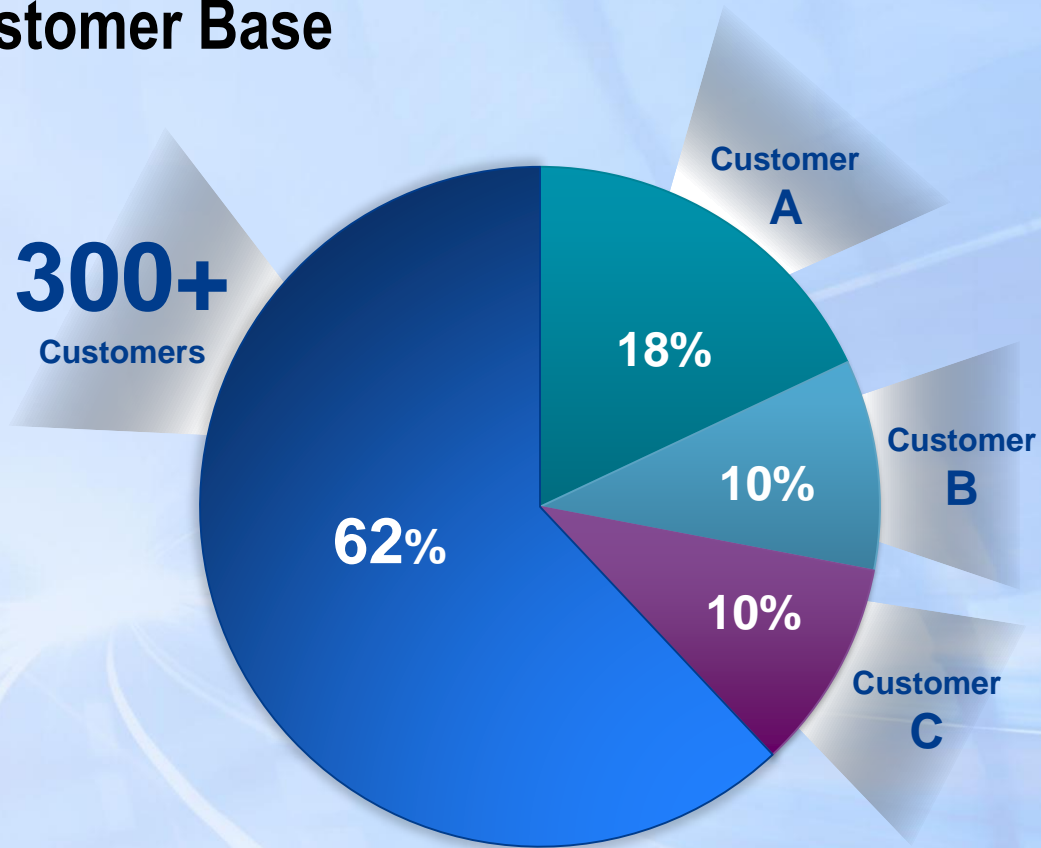
Ecosystem Partnerships

# Enabling Broad Market

- Ecosystem and Channel
- Global Distribution Channels
- Turnkey Solutions/Kits
- Scalable Customer Acquisition and Support



# Diverse Customer Base



Source: FY18 Revenues

# Converged Solutions for the Intelligent Edge

## AudioSmart™



## VideoSmart™



## ImagingSmart™



# AudioSmart® – Voice is a Key IoT Interface



## Far-Field Voice Solution

- Leading Supplier of Voice and Audio Solutions
- Delivering a Compelling End-user Experience



## Personal Voice Solution

- Leading Transition from Analog to Digital Headsets
- Enabling Voice Solutions for a Personal Audio Experience

# Ecosystem Partners

## N. America

**amazon**

**Google**

**Microsoft**

**IBM**

## ASIA

**Baidu** 百度

**Alibaba**

**Tencent** 腾讯

**科大讯飞**  
**iFLYTEK**

**Mobvoi**

**kt**

**SAMSUNG**

**LG U+**

**SK telecom**

**KAKAO**

**NAVER**

**NTT docomo**

# Far-Field Stickiness and Differentiation

## DEVICE

Acoustic Design

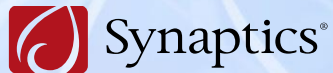
Hardware

Firmware

Voice Algorithm

Software

Wake Word



## CLOUD

Cloud ASR

Natural Language Processing

Services



**Only Vendor with Devices across All Partners**

# Far-Field Voice Key Engagements

SMART  
SPEAKERS



ANKER

iHome

ONKYO



PCs



lenovo



ASUS

SERVICE  
PROVIDER  
PLATFORMS



kt



SMART  
APPLIANCES



AUTOMOTIVE

Pioneer





# Major Inflection Point in Personal Voice

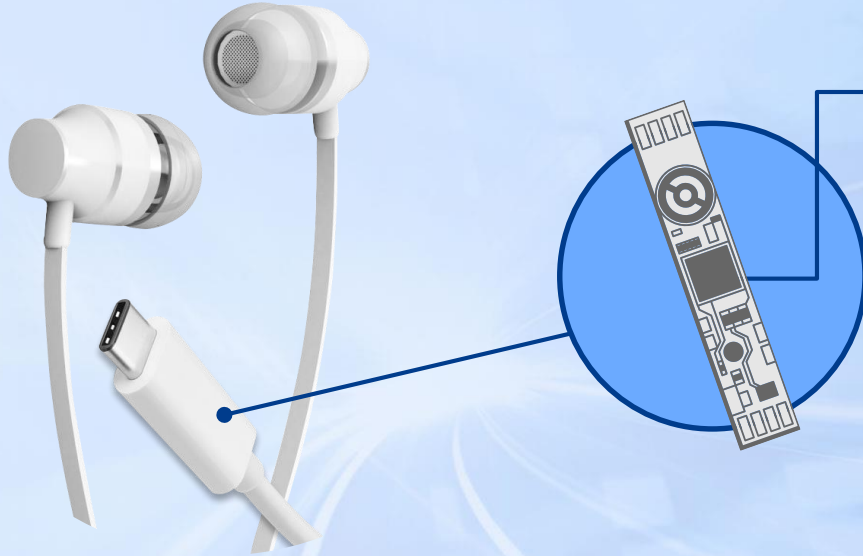


- Headset Transforming to Active HMI device
- Expected to Exceed 410Mu by 2020\*
- Uniquely Positioned Technology Portfolio
- Established Market Leader



\* Wall Street Sources, Synaptics Internal Estimates

# Personal Voice Stickiness and Differentiation



Integrated Hardware and Firmware

Single Chip with Minimal Form-Factor

Best-in-Class Power Performance

Active Noise Cancellation

Noise Suppression and Voice Pickup

Wake Word

Certification and Audio Tuning

Customizations and User Experience

# Personal Voice Key Customers



GAMING



USB-C



ACTIVE NOISE  
CANCELLATION



UNIFIED  
COMMUNICATIONS



DOCKING,  
MONITORS AND  
OTHERS



# ImagingSmart™ – Printer and Fax/Modem



## Printer Solution

- Portable and Photo Printers Driving Growth
- Leveraging Optimized Printer SoCs for Photo, Inkjet, and Laser



## Fax/Modem Solution

- Leading Supplier of Fax/Modems
- Increasing Market Share



# VideoSmart™ – Transforming Media Consumption Paradigm



## New Experience Consumer Platforms

- Enabling Media Consumption Anywhere
- Driving Video and Voice Experience



## Service Provider Platforms

- Leading Supplier of Open Platforms
- Increasing ARPU with Higher Edge Intelligence

# Multimedia Solutions Stickiness and Differentiation



Best Video Quality

Mature Unified SDK for Multiple Platforms

Pre-certified / Reference Design with Google

Open Standard Software – Android TV/ RDK

Carrier Grade Security Engine

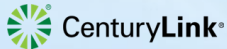
Fast Time-to-Market

# Multimedia Solutions Key Customers and Partners

## SERVICE PROVIDERS



swisscom



## OEMs



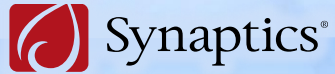
SONY



## ECOSYSTEM



# Uniquely Positioned to Define the New Reality



**VIDEO  
INTERFACE**



**DISPLAY  
DRIVER**



**VOICE/  
AUDIO**



**VIDEO  
PROCESSING**



**TOUCH**

**The Complete Human Interface Solution for  
Augmented and Virtual Reality**





# Key Takeaways

- **Highly differentiated solutions**
- **Deep ecosystem partnerships**
- **Leadership in technology convergence**



Source: IHS Q1-2017 Devices and Connectivity Intelligence, Synaptics Internal Estimates

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# Automotive

Sunil Thomas, VP, Automotive

# Strategy to Address Automotive HMI Evolution

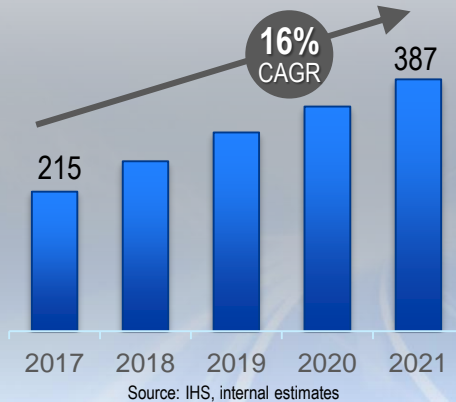




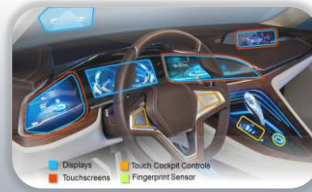
# Automotive: Growing Penetration

## GROWING MARKET

**Display, Touch and FPS  
Automotive Unit Shipments**  
(Millions of Units)



## HMI PENETRATION



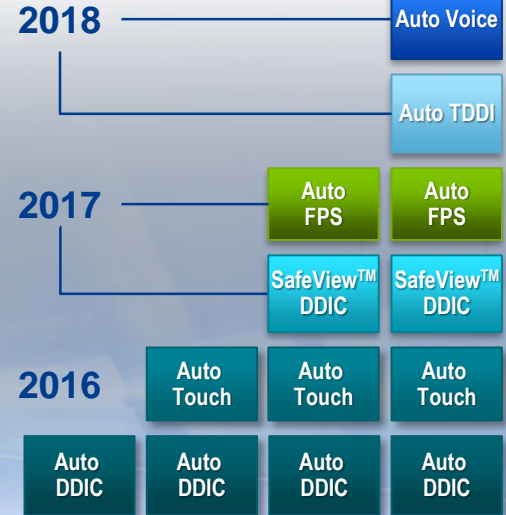
**Display Driver, Touch  
& FingerPrint**

**2017**

**Worldwide Design Ins**



## EXPANDING PORTFOLIO



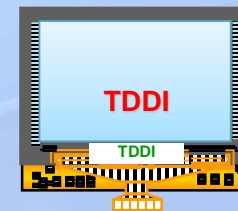


## Introducing Automotive TDDI

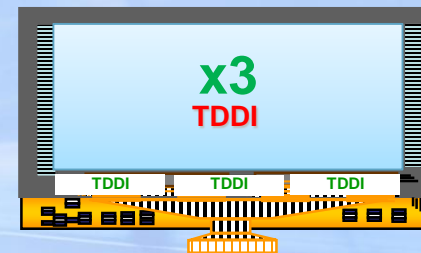


# Automotive TDDI

- Only semiconductor supplier with both automotive display and touch experience
- In partnership with six major automotive display manufacturers
- \$10-15 system savings, simplified supply-chain and better optical performance
- Flexible chip addresses 8-15" display size and various resolutions
- Start of production: 2020/21



1920RGB x 1080  
(FHD)



Up to 3840 x 2K  
(UHD)



## Voice Control in Cars



# Customer Opportunities



# Synaptics Automotive Penetration 2015: LCM Driven

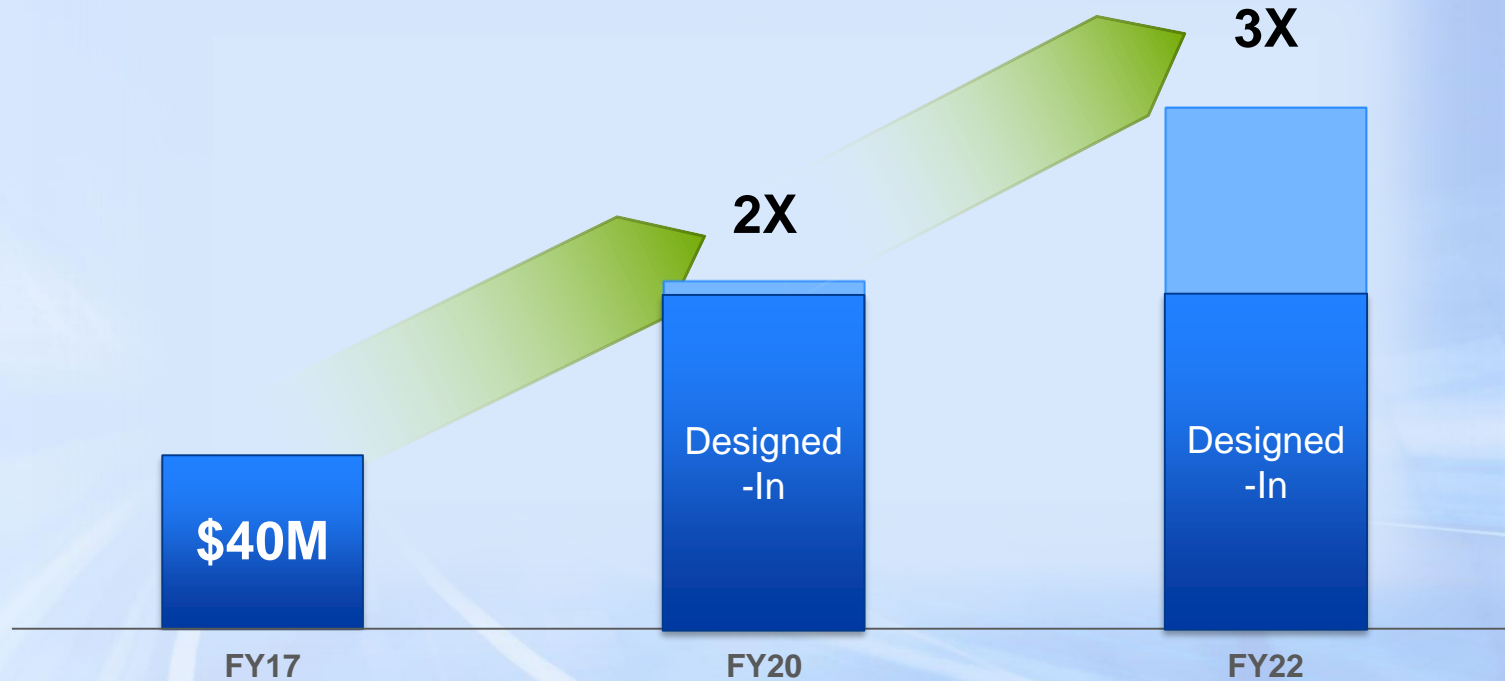




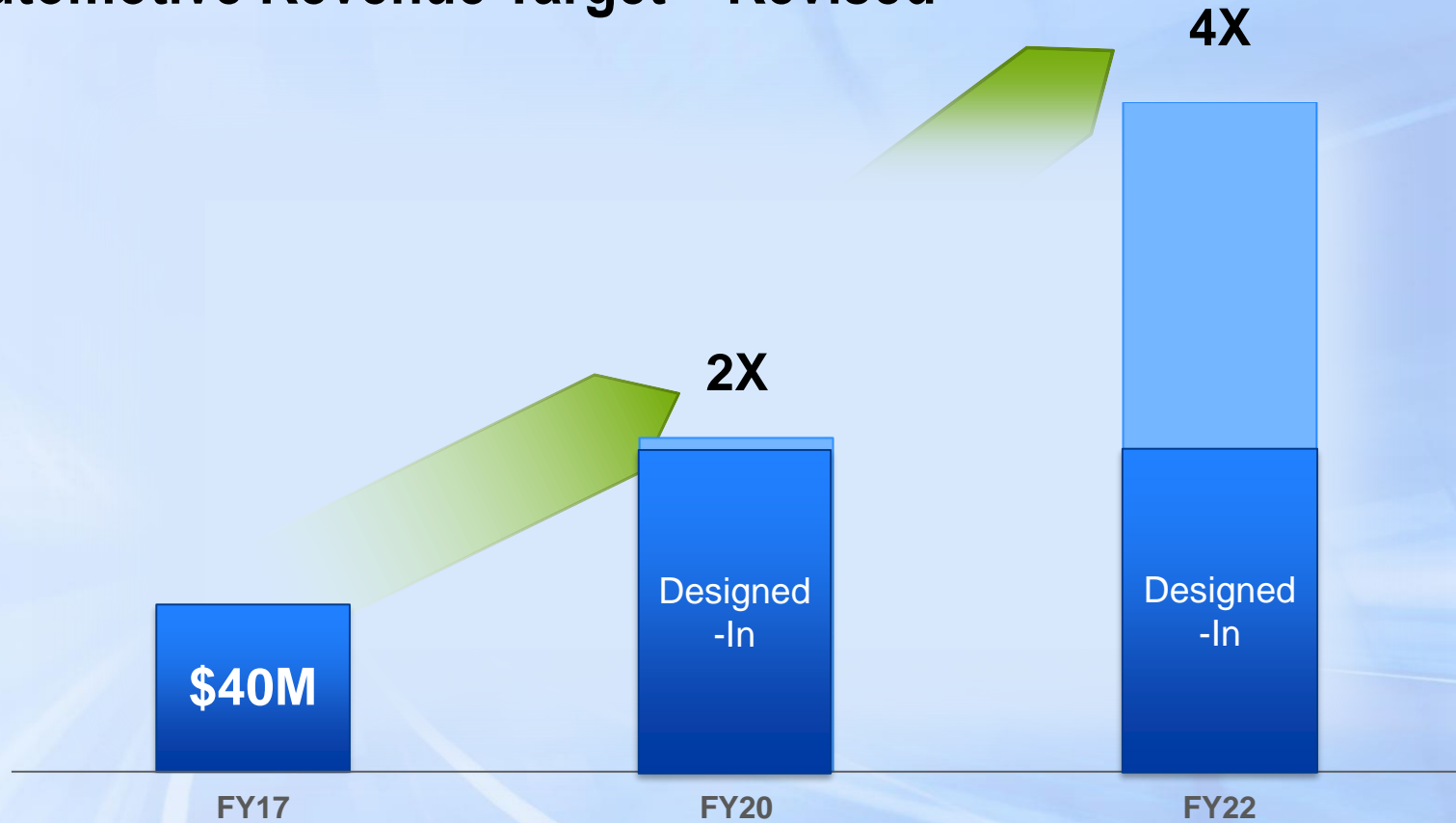
# Accelerating Customer Base in 2020: Tier-1s and OEM Driven



# Automotive Revenue Target From Last Year



# Automotive Revenue Target – Revised





ADVANCING  
THE  
HUMAN  
INTERFACE

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# Achieving Our Founders' Vision

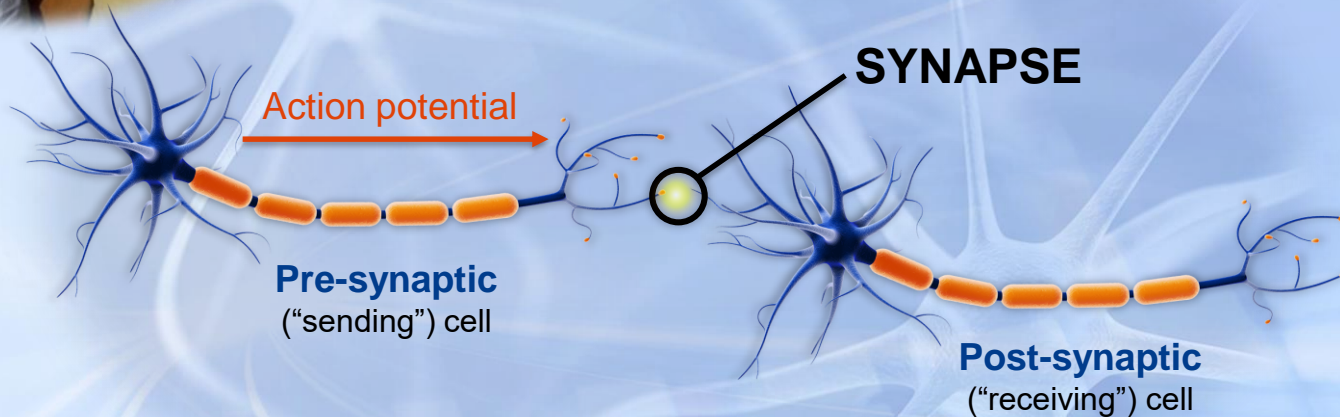
Patrick Worfolk, SVP & CTO



# vision

## Synaptics HMI Vision

**Human machine interface** so ubiquitous, intuitive and natural that **we lose conscious awareness of our interactions**



**1986** - Synaptics founded to commercialize analog neural network chips for ultra-low power pattern matching

# The Evolution



**1992** – Leveraged our analog circuits and pattern recognition expertise to develop the **World's first** touchpad

# The Evolution

**2007** - First mobile phone with a capacitive touchscreen

**Touch has continued to get smarter**

- Multitouch
- Gestures
- Proximity
- Glove activation
- Pressure
- Moisture suppression
- Pen





# The Evolution

## 2013 - Acquired Validity Sensors



# The Evolution

**2017** - Acquired Conexant as we enter the era of digital personal assistants



# The Evolution






# The Evolution







**HUMANS** making  
an effort to **LEARN**  
to use machines

TRANSITION to

Making **MACHINES**  
**LEARN** to communicate  
with humans

# Conclusions

Our founders' vision for ***ultra-low power pattern matching*** is as relevant today as it was then.

Synapticians are still inspired by the **mission to develop and refine world-class human machine interface solutions to unleash the inherent power of the human-machine relationship.**

Human machine interface so ubiquitous, intuitive and natural that we lose conscious awareness of our interactions



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# Multiple Vectors to Growth

Wajid Ali, SVP & CFO

# FY17 Non-GAAP Financial Results





# Non-GAAP Operating Results



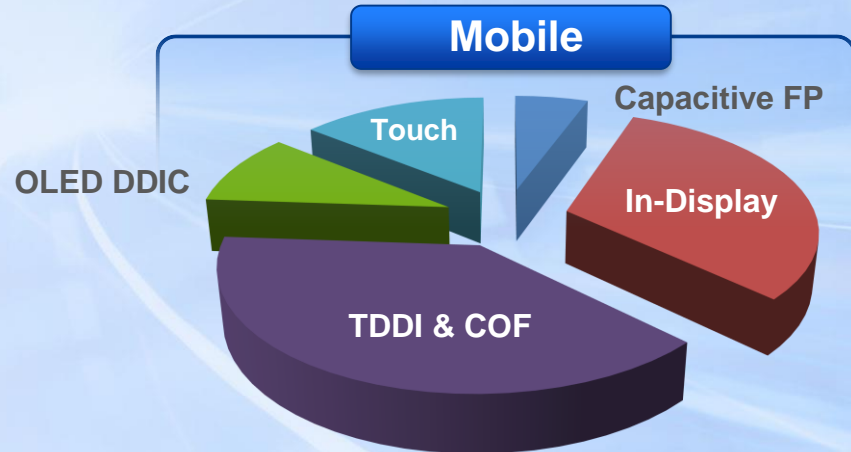
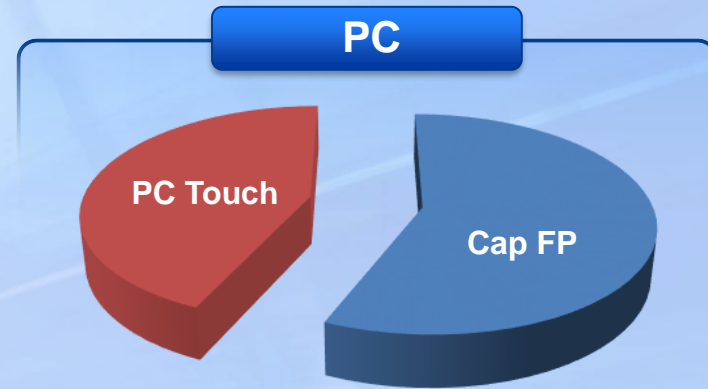
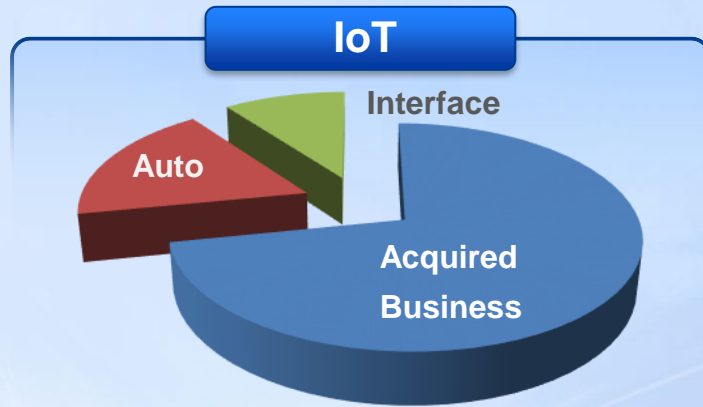
\*Consensus estimates, Nov 2017

# FY18 Financial Progress

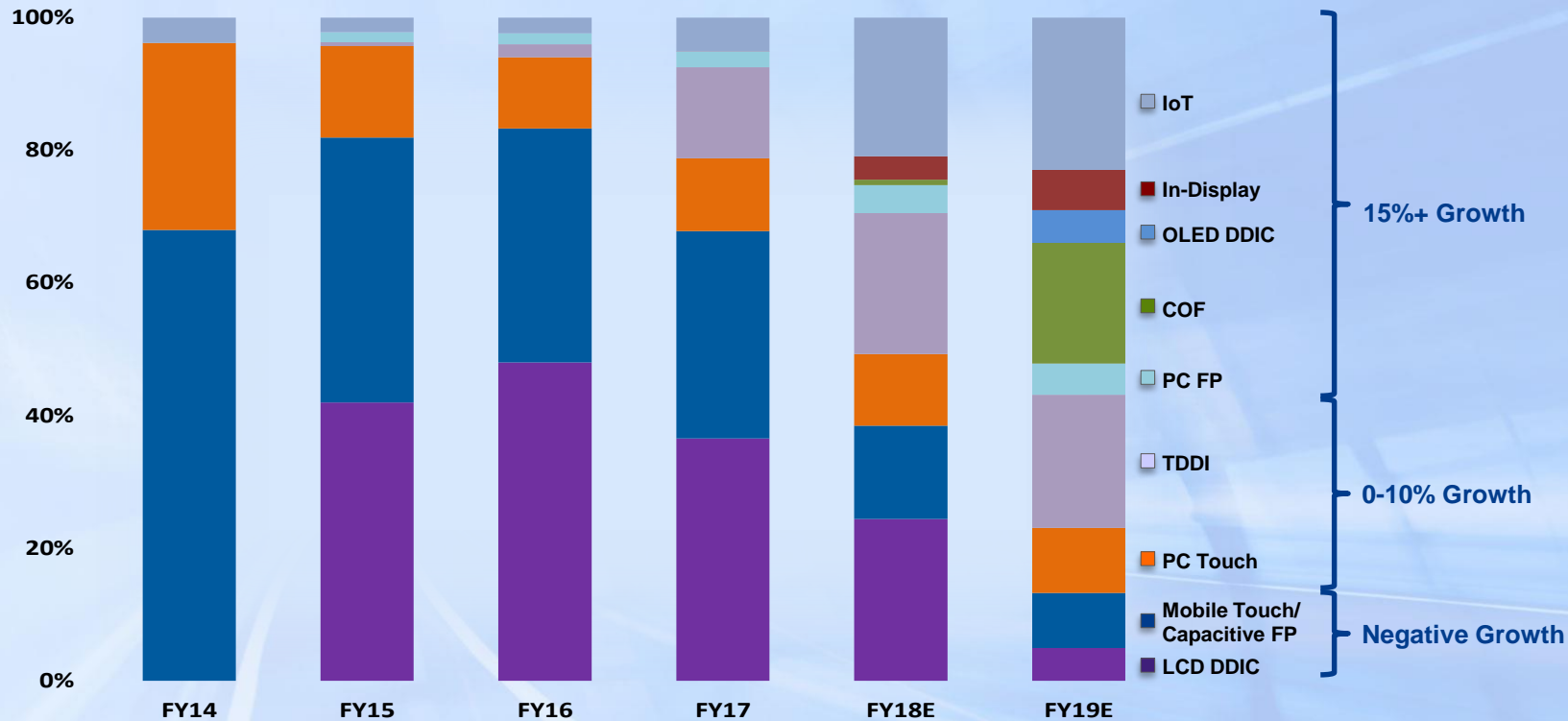
| 2018 FINANCIAL METRICS | PROGRESS                  |
|------------------------|---------------------------|
| Revenue                | On track                  |
| Gross Margin           | Improving product mix     |
| Operating Expenses     | \$40M restructuring begun |
| Operating Margin       | On track                  |
| EPS                    | On track                  |
| Cash Flow              | On track                  |

**Focus on Operating Margin and EPS Growth**

# FY18E R&D Investment

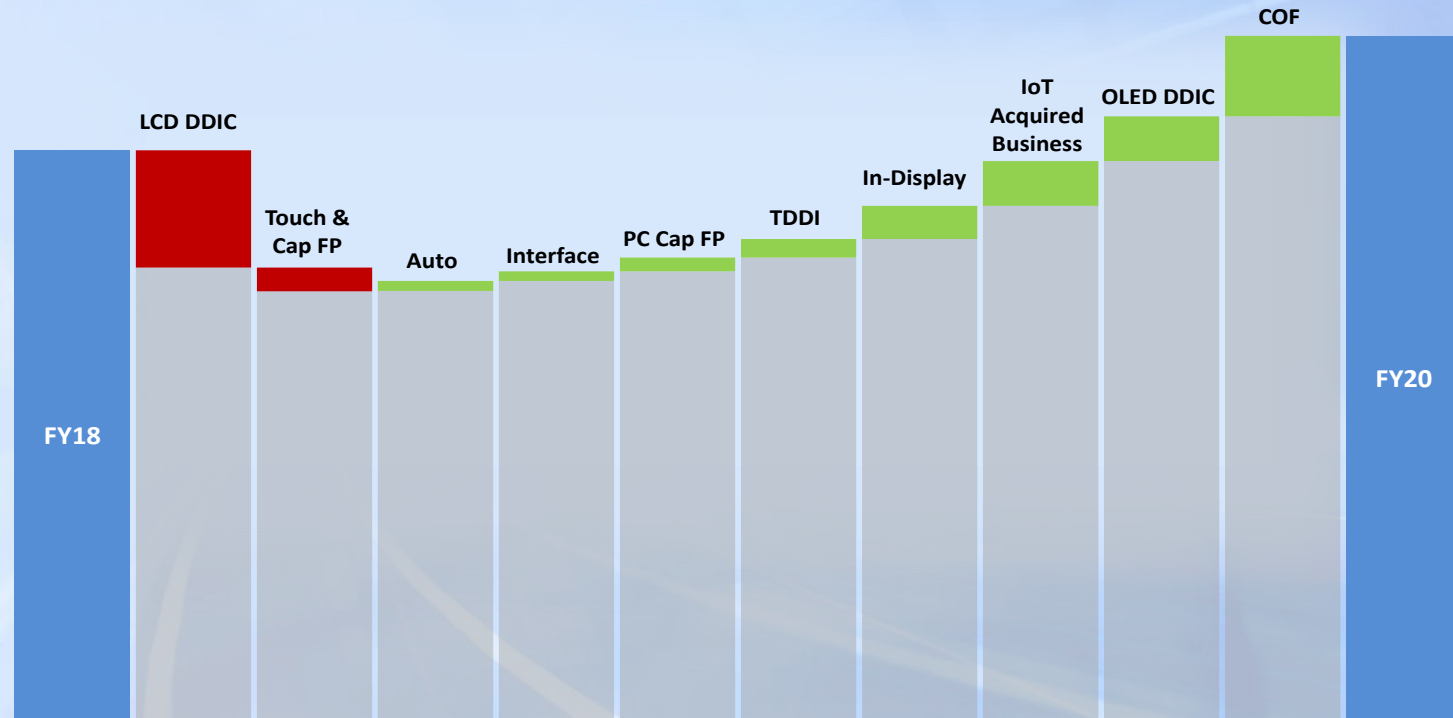


# Revenue Mix





# Multiple Vectors of Organic Growth to \$2B+ Model



# Non-GAAP Target Operating Model

|                         | NEAR-TERM                        | MID-TERM                       | PREVIOUS                       |
|-------------------------|----------------------------------|--------------------------------|--------------------------------|
| Revenue                 |                                  | 15%+                           | 15%+                           |
| Gross Margin %          | 34-37%                           | 35-39%                         | 32-36%                         |
| OPEX                    | 24-26%                           | 22-23%                         | 18-20%                         |
| <b>Operating Profit</b> | <b>10-11%</b>                    | <b>13-17%</b>                  | <b>13-17%</b>                  |
| Tax Rate                | 12-14%                           | 12-14%                         | 12-14%                         |
| <b>Net Income</b>       | <b><i>High Single Digits</i></b> | <b><i>Low to Mid Teens</i></b> | <b><i>Low to Mid Teens</i></b> |

# Key Takeaways

ADVANCING  
THE  
HUMAN  
INTERFACE

**1** **Revenue:**  
Positioning for a return to solid top-line growth

**2** **Diversification:**  
Transformation of both core and IoT product lines

**3** **Investments:**  
R&D resources aligned with high growth areas

**4** **Operating Leverage:**  
Expect to continue to generate meaningful cash

# ADVANCING THE HUMAN INTERFACE



# ADVANCING THE HUMAN INTERFACE



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