State of the Industry: CE 2017 Overview and 2018 Outlook

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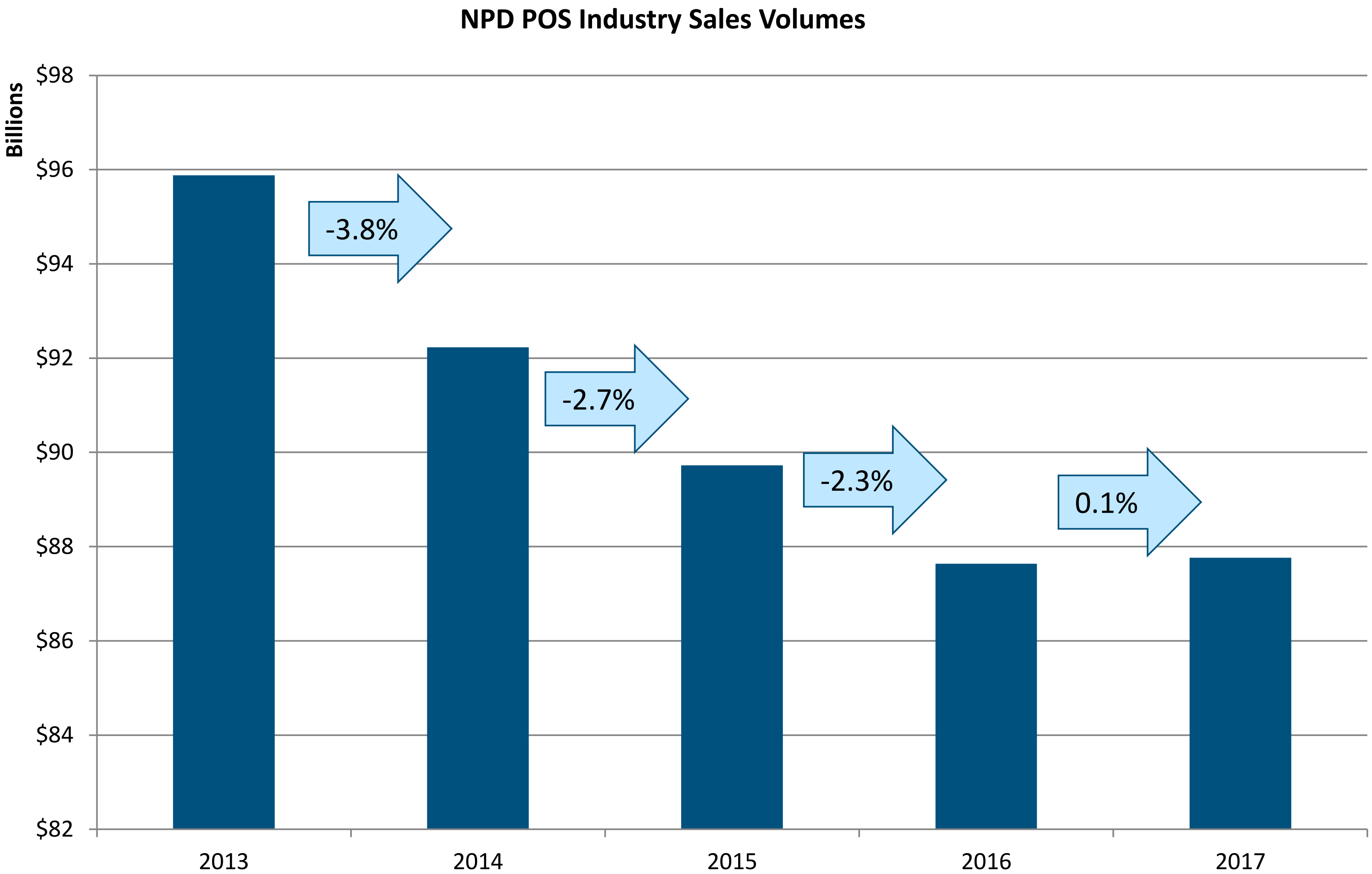
CE Industry Overview

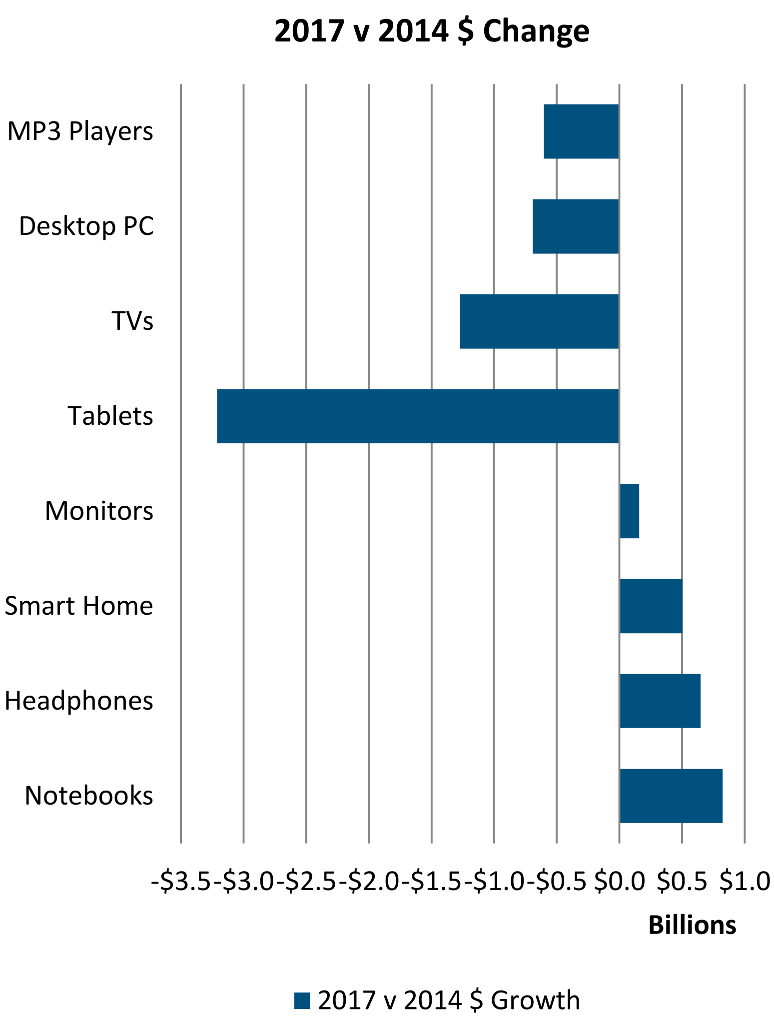
1. Breaking down Mass Market Barriers
    - Premium Economy is the new entry-level
    - Category growth drives new products into a mass market environment
2. Pace of Technology Change accelerating
    - Disruptive change begins to impact products and categories, vendors and retailers alike
    - Broadening scope and impact of tech across all consumer products landscape
3. Monetizing ownership
    - New opportunities inside rapidly transforming installed bases
    - Hardware grows as the gateway to expanded value creation
    - Installed bases are increasingly more important than upfront sales
4. Holiday/Q4 2017 success sets the stage for a positive 2018

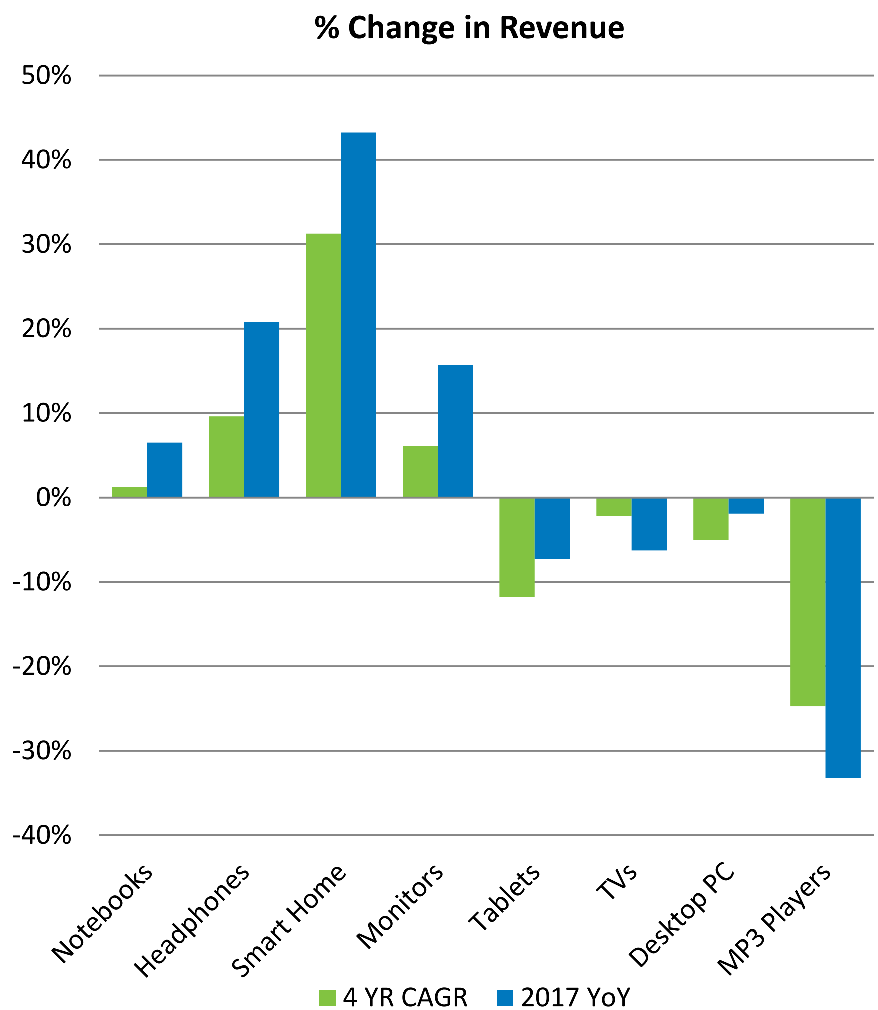
2017 turned into best year in last 5 for revenue growth



Source: The NPD Group, Inc./*Retail Tracking Service*,
Data doesn't include mobile phones, VG HW, Amazon Brand HW Devices, Surface (from MS stores), Apple Watch

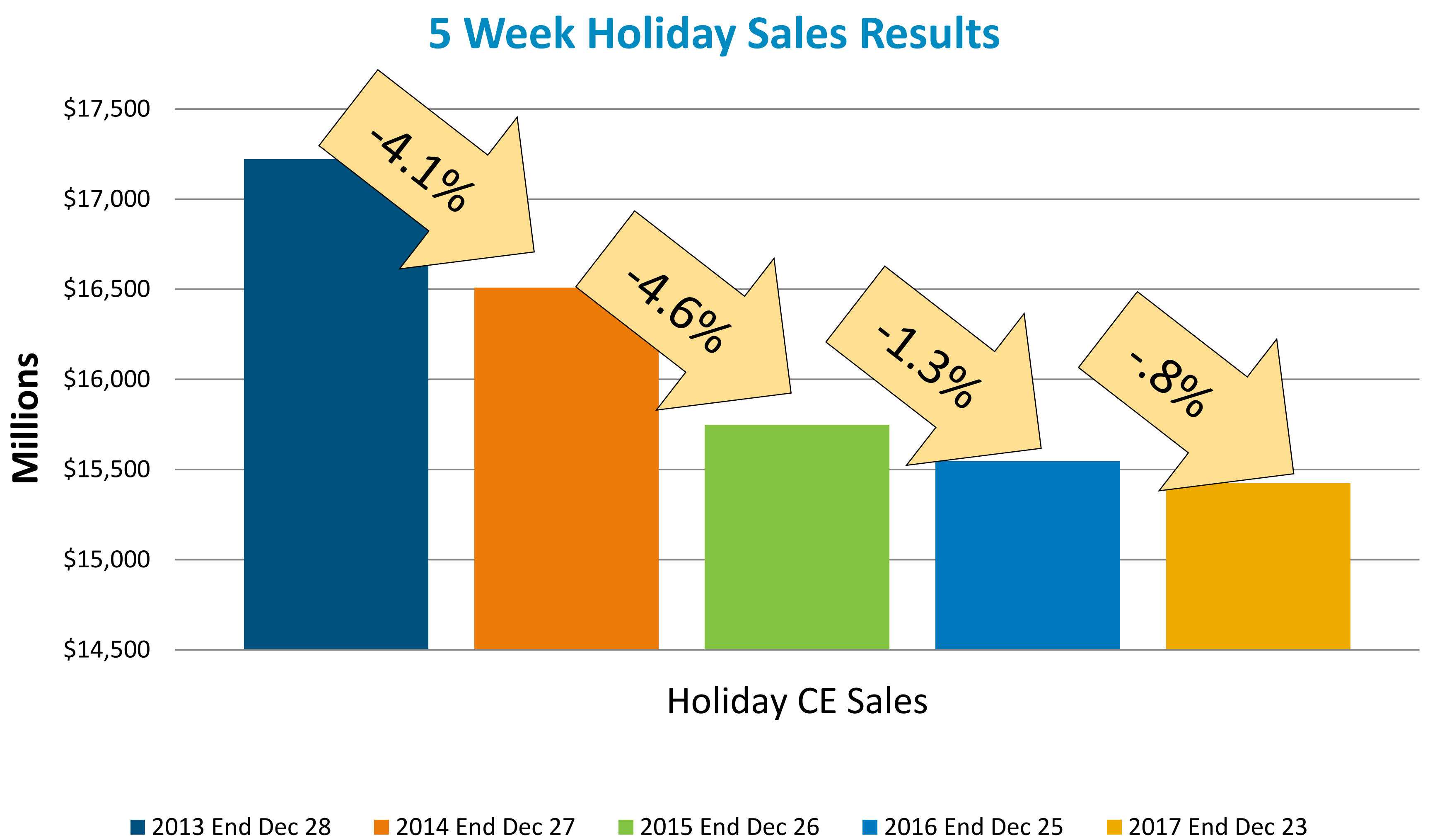
4 Top Growth Categories 2017 – 4 Top Decline Categories





Source: The NPD Group, Inc./*Retail Tracking Service*,

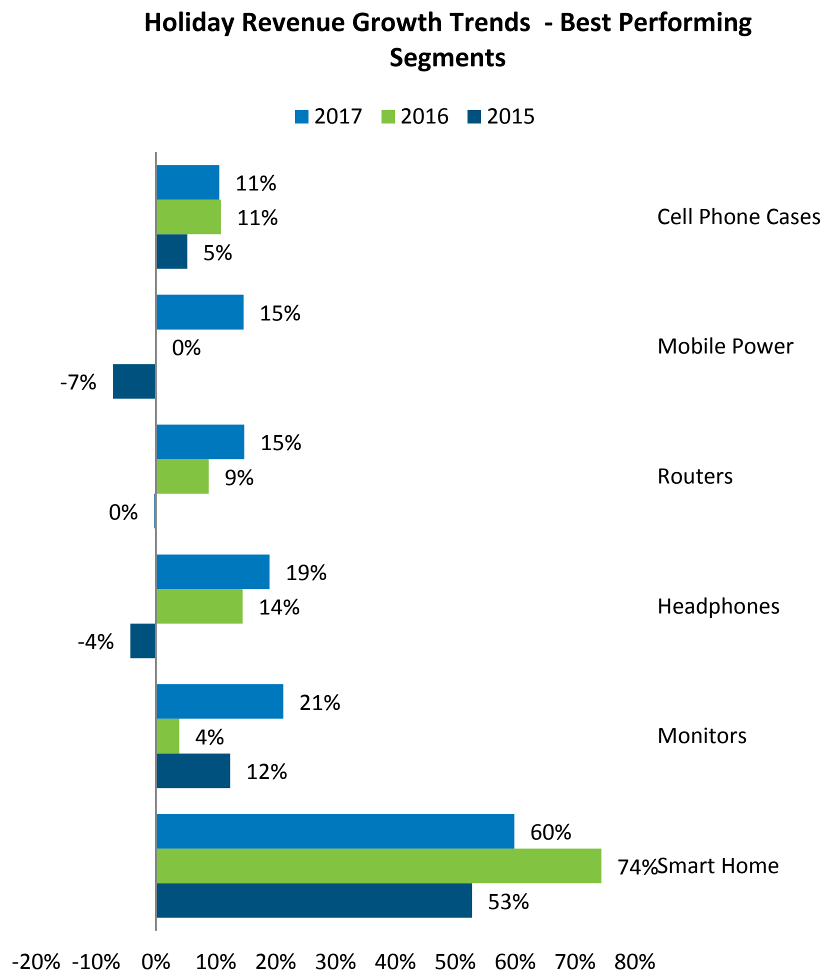
Stronger results and close to flat

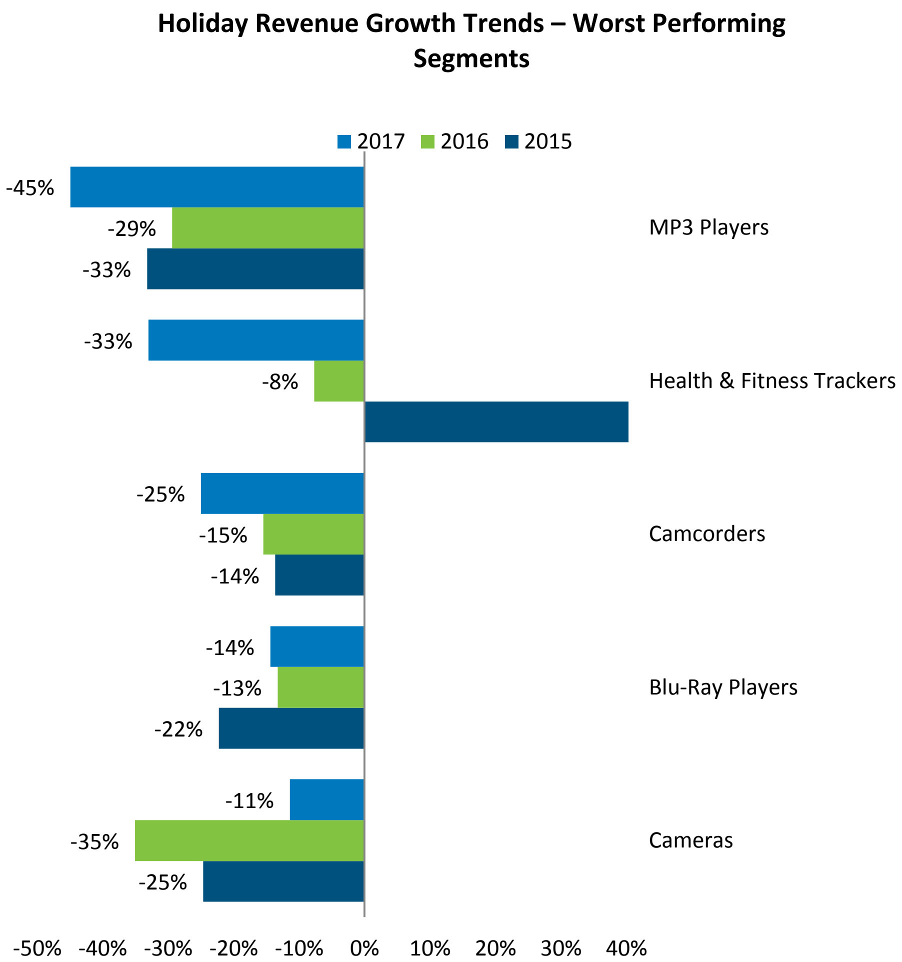


Source: The NPD Group, Inc./*Weekly Retail Tracking Service, 5 week holiday period*
Data doesn't include mobile phones, VG HW, Amazon Brand HW Devices, Surface (from MS stores), Apple Watch, Drones, VR

Winning categories have more future potential than losers do

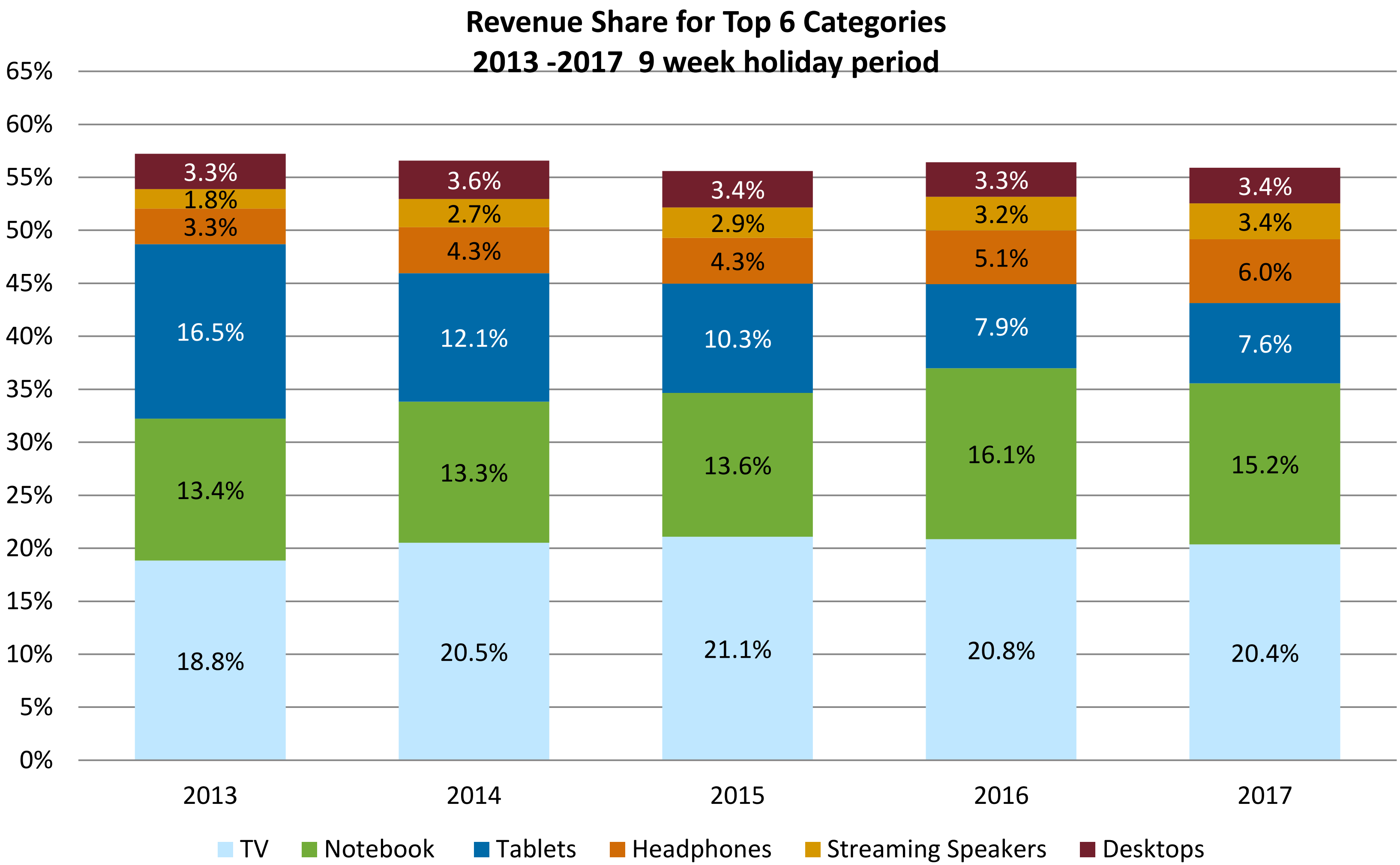
Winners grew $2.3b 2013 to 2017. Losers fell $3.2b





Source: The NPD Group, Inc./Weekly *Retail Tracking Service*, 9 week holiday period, All Categories generated $750m minimum between 2013 and 2017
Data doesn't include Amazon Brand HW Devices, Surface (from MS stores), Apple Watch, Drones, VR

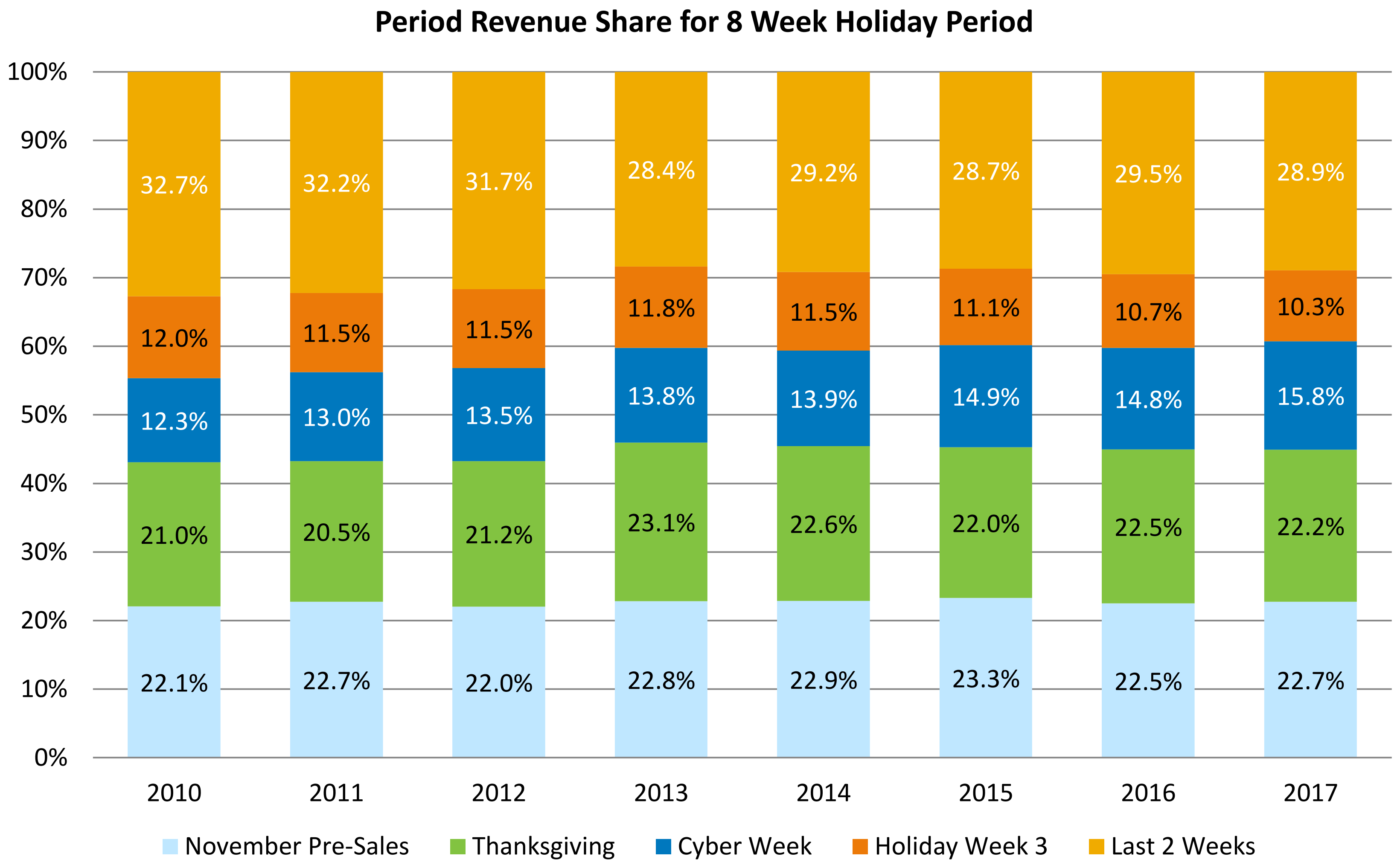
Largest 3 categories all lost revenue share in 2017 to rest of market



Source: The NPD Group, Inc./Weekly *Retail Tracking Service*, 9 week holiday period

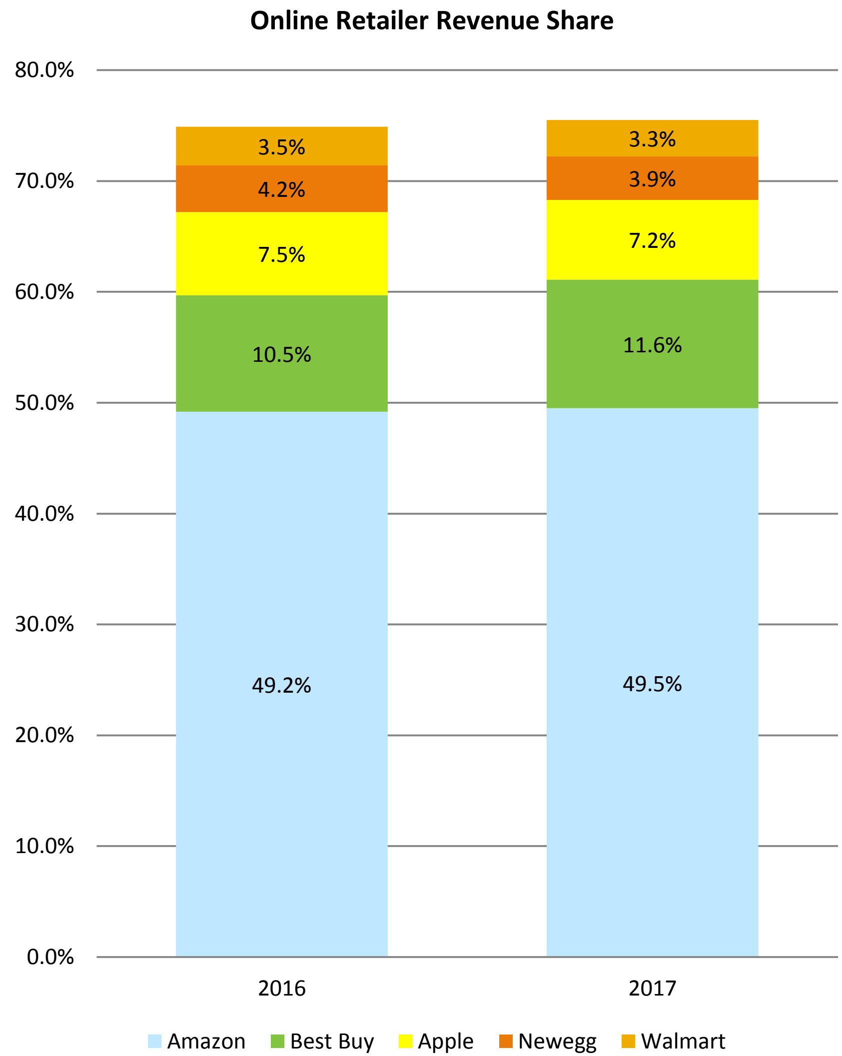
Data doesn't include mobile phones, VG HW, Amazon Brand HW Devices, Surface (from MS stores), Apple Watch, Drones, VR

2017 saw the biggest Cyber Week sales gain in three years as more retailers extended Thanksgiving weekend into online opportunities



Source: The NPD Group, Inc./Weekly *Retail Tracking Service*, 8 week holiday period
Data doesn't include mobile phones, VG HW, Amazon Brand HW Devices, Surface (from MS stores), Apple Watch, Drones, VR

Online Market growing as Amazon dominates but things are slowing changing



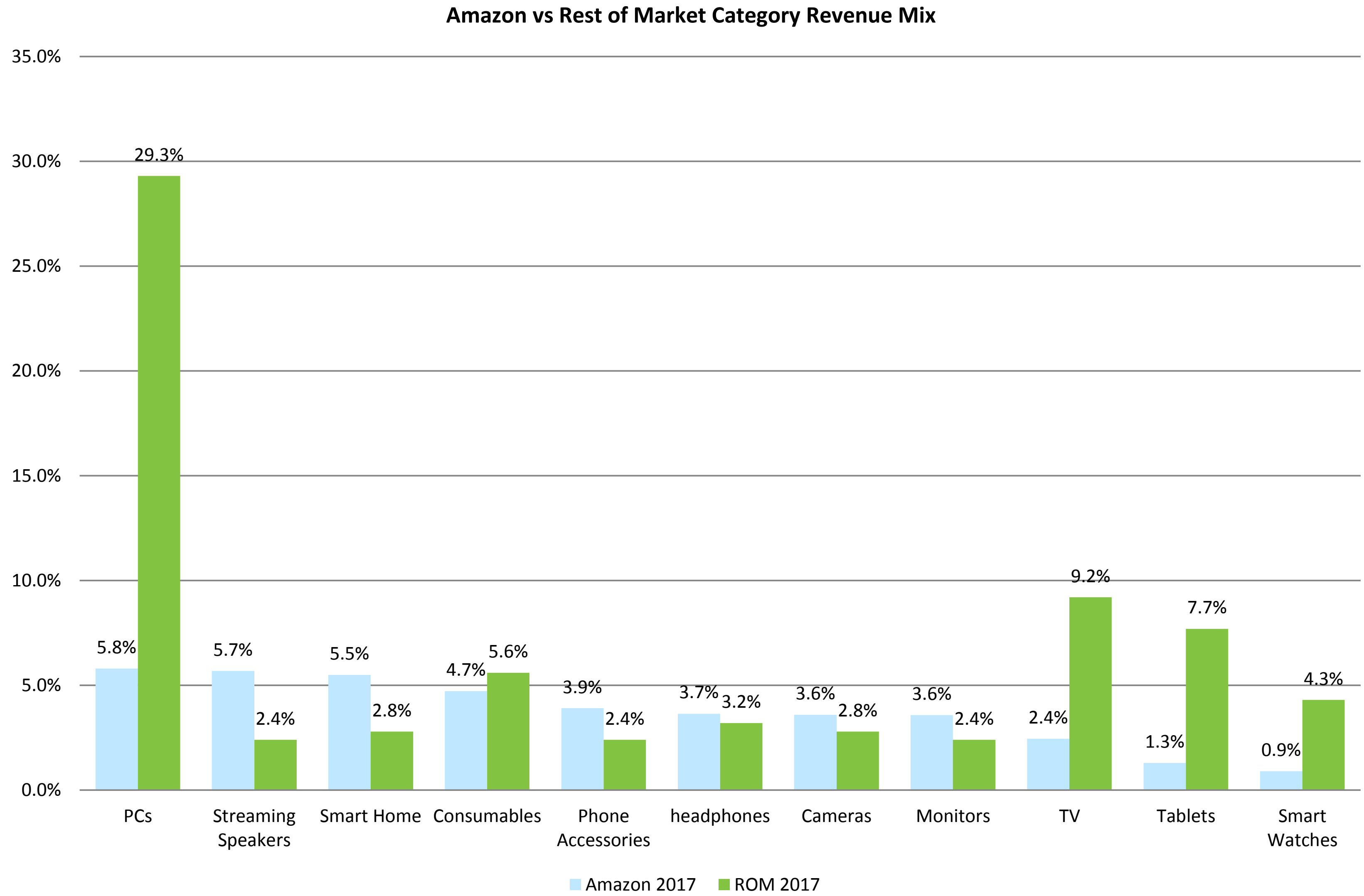
Overall Online sales grew 15% to $40.1b in 2017

Best Buy was the fastest growing retailer online in CE

Only 23% of online sales dollars come from PCs and TVs

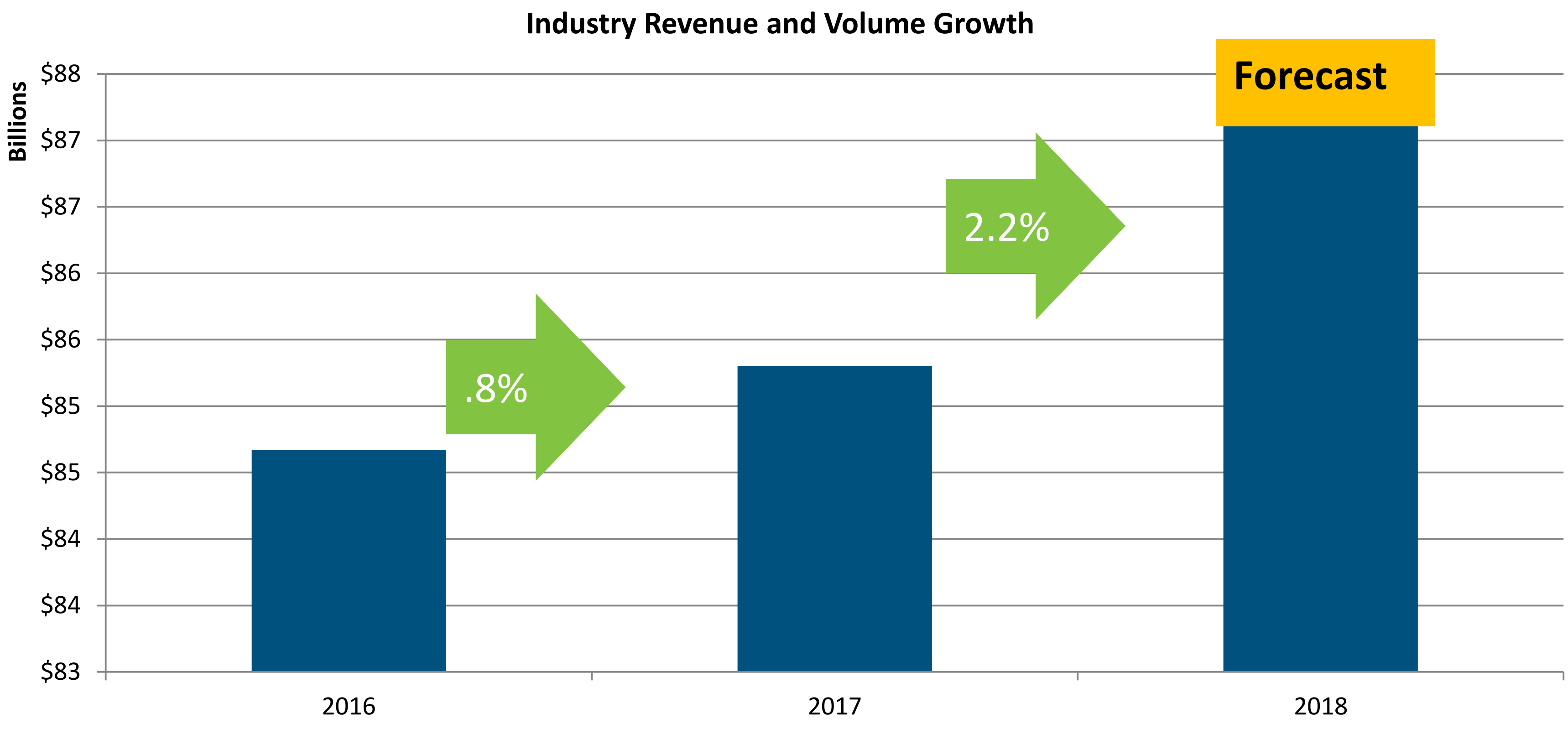
Source: The NPD Group / Checkout, Amazon includes 3rd Party Marketplace

Amazon has a business that looks very different than most CE businesses



Source: The NPD Group / Checkout, Amazon includes 3rd Party Marketplace

2018 Forecast shows calls for a second straight year of overall revenue growth



Source: The NPD Group, Inc./*Future of Tech*

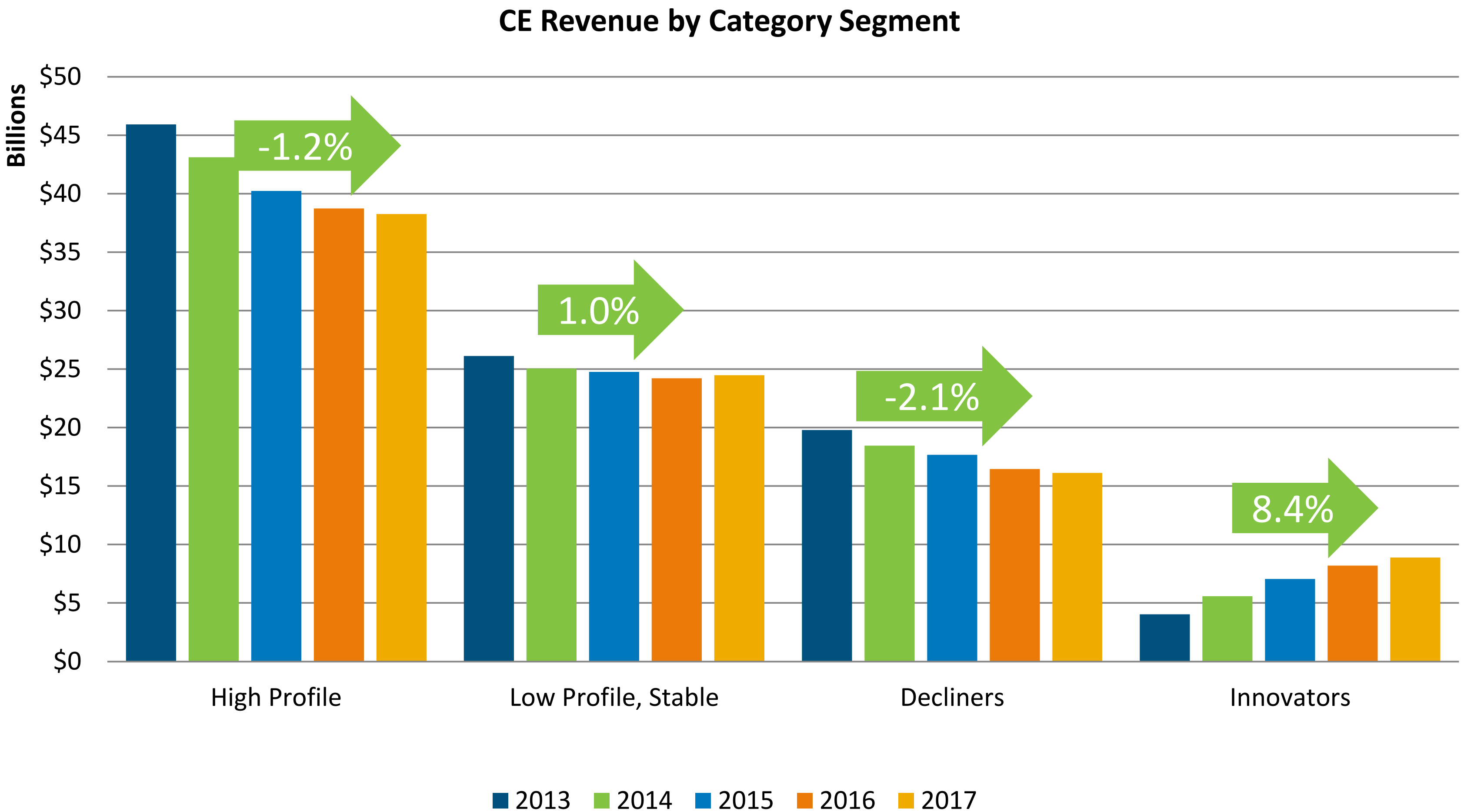
Category Industry Outlook

Overview of Category Trends

1. Industry broken into 4 segments

1. Big volume, high profile categories. PCs, TVs Tablets and Phones.
    1. While there are some segmented opportunities in general ASP increases are the only route to growth as these categories approach mass penetration
2. Stable, mostly low ASP categories, lower profile, lower customer interest level. PC Accessories, Home Theater, Mobile Accessories, Cabling.
    1. Intriguing growth opportunities available within the stagnation
    2. Low barriers to entry with innovation being done outside the curve
3. Old high profile categories in secular decline. Cameras, printers
    1. Not much value here, aging technology delivery platforms while the tech remains core
4. Innovative, interesting and high profile. Drones, Smart Home, VR/AR, Headphones, Voice, Smartwatch
    1. Future of tech. Personal and compelling. Changes consumer interaction with tech. Harder to sell but likely higher long term rewards

The smoothing impacts of mass markets, and improving pricing and technology begin to blur the lines between businesses



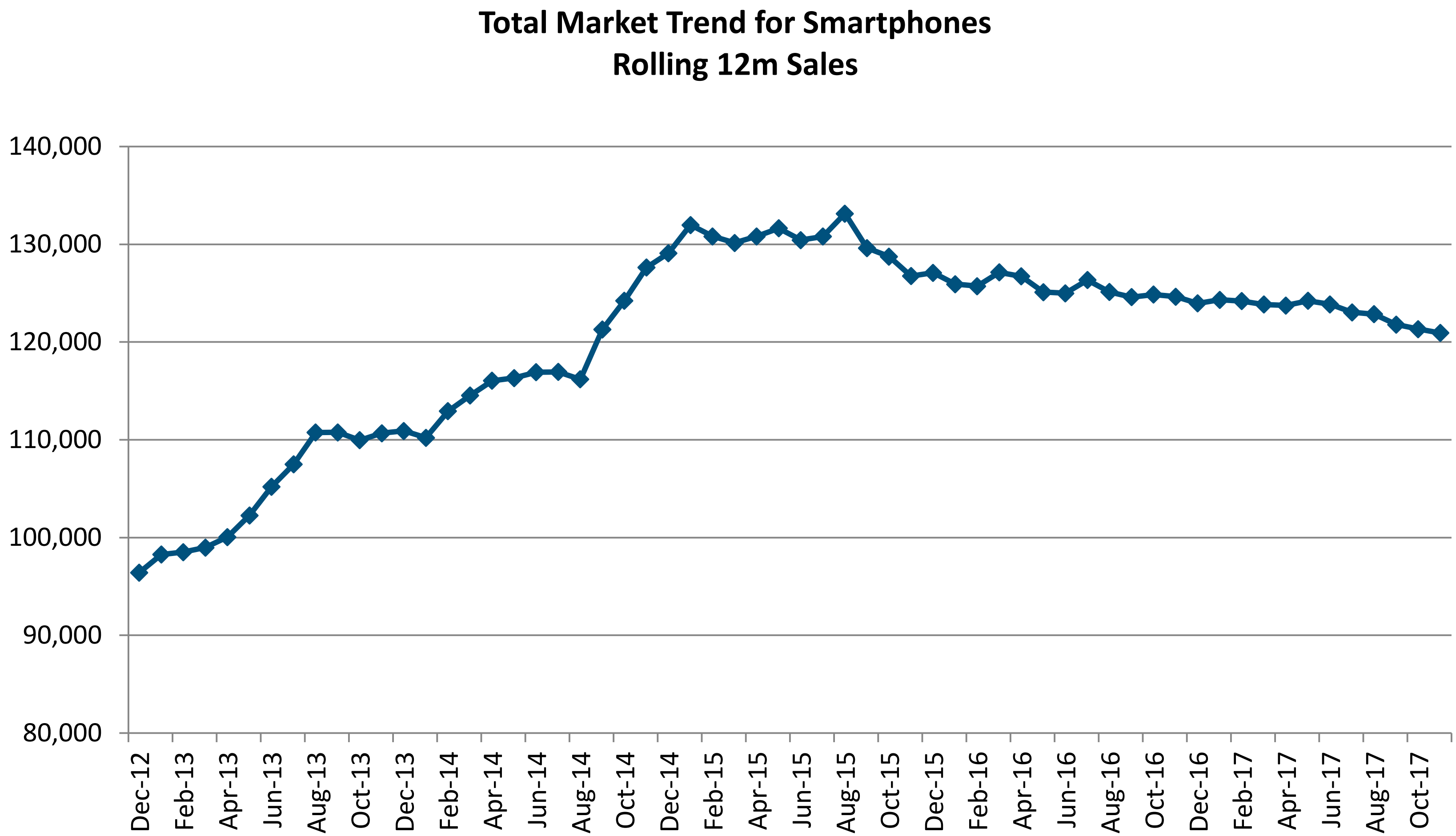
Source: The NPD Group, Inc./*Retail Tracking Service*,
Data doesn’t include mobile phones, VG HW, Amazon Brand HW Devices, Surface (from MS stores), Apple Watch,

High Profile

High Profile Category Outlook

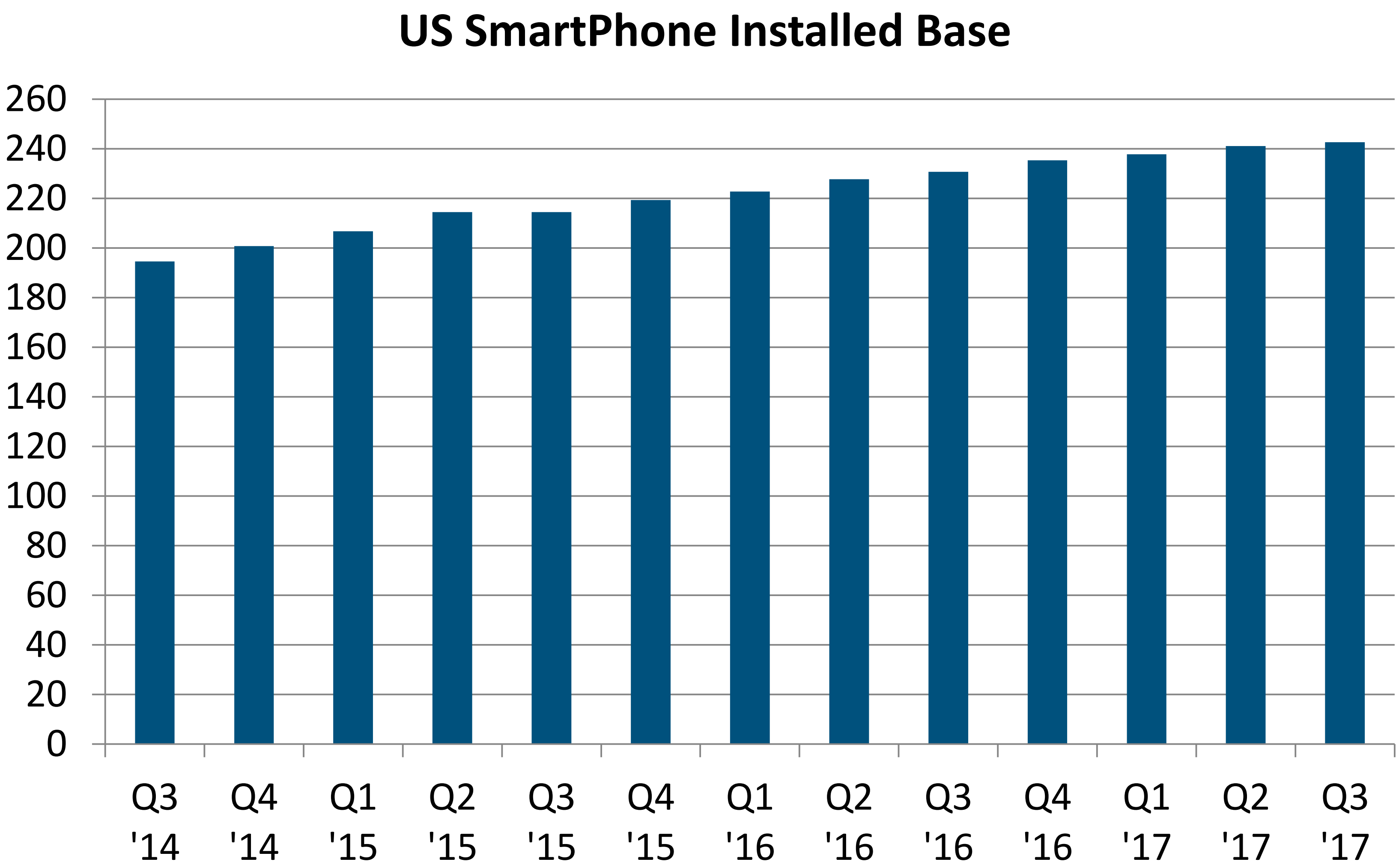
- These categories are traditionally high profile traffic drivers, generators of MDF and customers interest
- Massive installed bases, stable and deliverers of enormous attach
- These categories also tend to drive innovation through volume and R&D
- But could weaker unit volumes impact retail traffic trends?
    - PCs have become less of a high profile category, but not a dead one. There are over $200m PCs in consumer use in the US and consumers are spending more money then ever replacing them (even if they do it at a slower rate)
    - TVs installed base will shift over the next 3 years but it will remain a premier traffic product with consumers adjusting their ownership and usage. Spending is rising again and delivering connections to the device (but sometimes not thru hardware)
    - Tablets face an uncertain future outside iPads. But as a mobile consumption second screen in the home they have a strong outlook
    - Smartphone market much like PC and TVs. Enormous installed base that generates attach and accessory buys over the lifetime of the product. But rising prices and stagnant installed base could easily threaten its traffic driving capacity

Boom is over with some market slowdown over last year



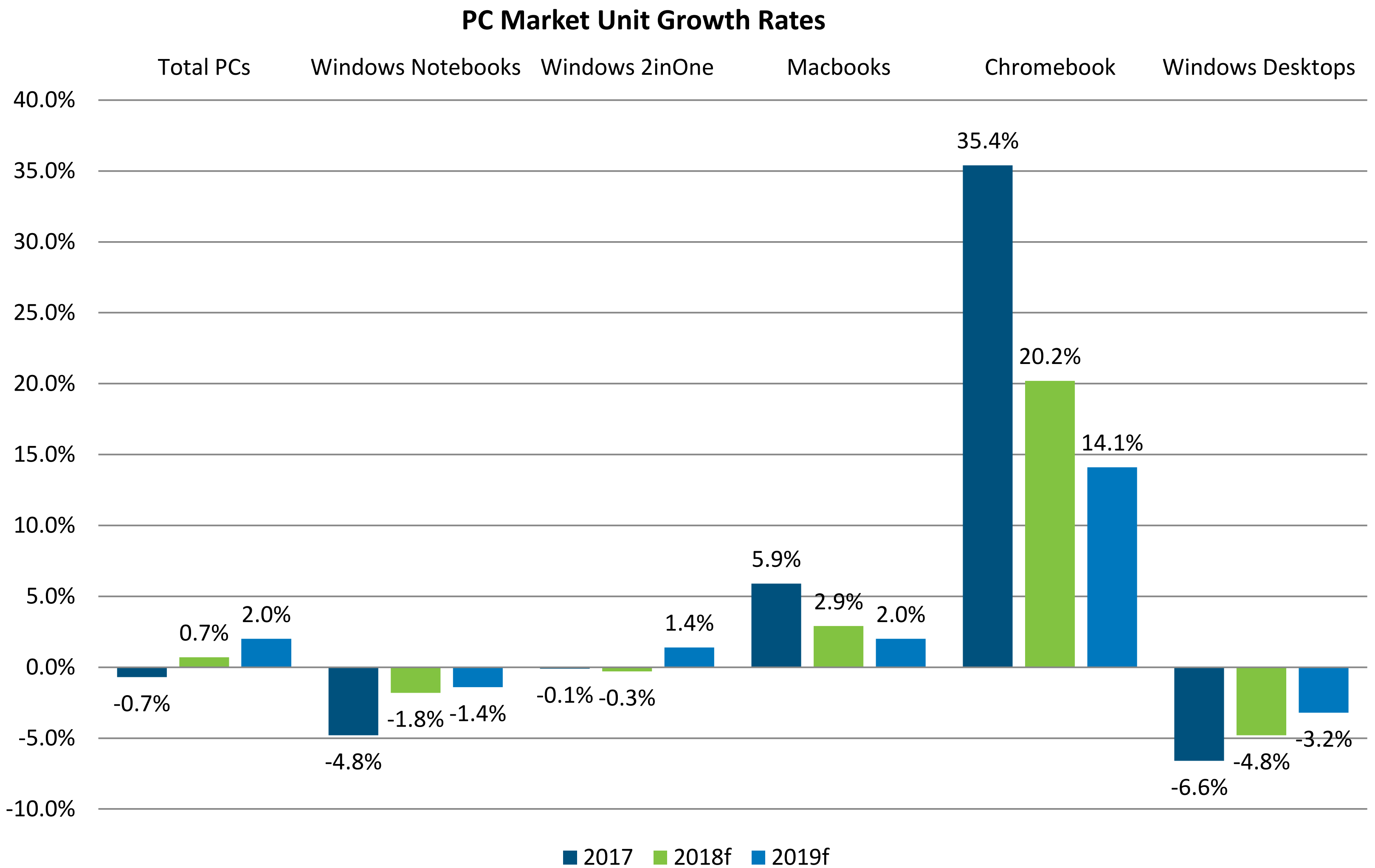
Source: The NPD Group, Inc./ Mobile Phone Track

Smartphone installed base growth, like sales volumes, continues to taper off



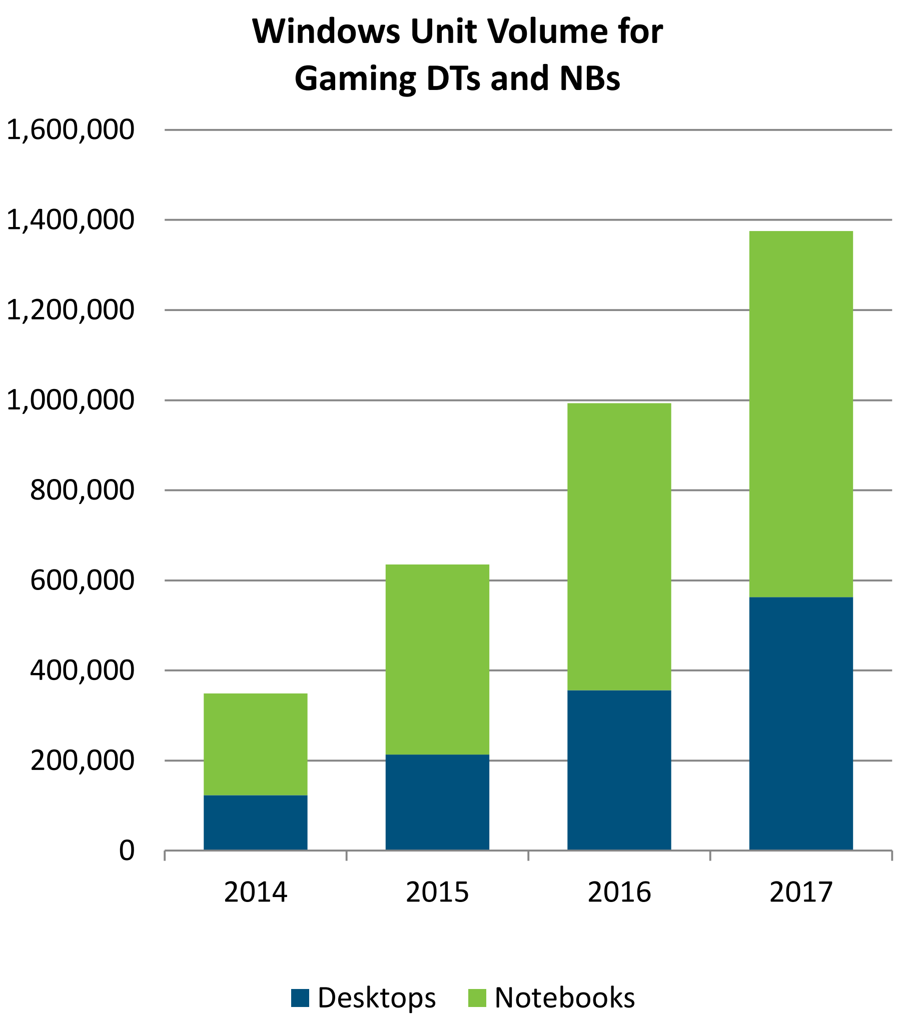
Source: The NPD Group, Inc./*Connected Intelligence Device Ownership and Trends*

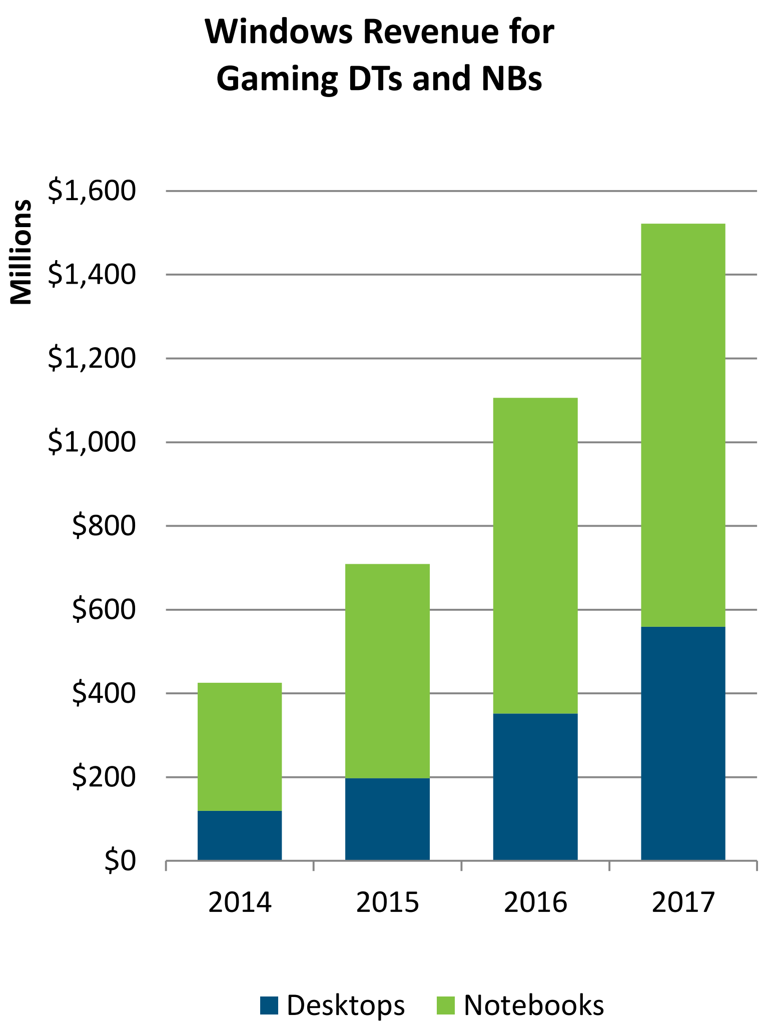
Chromebooks to dominate unit growth over next two years but overall market is stable



Source: The NPD Group, Inc./*PC Forecast Service*

Unit volume nearly 1.4m and revenue is more than $1.5b over past 12 months

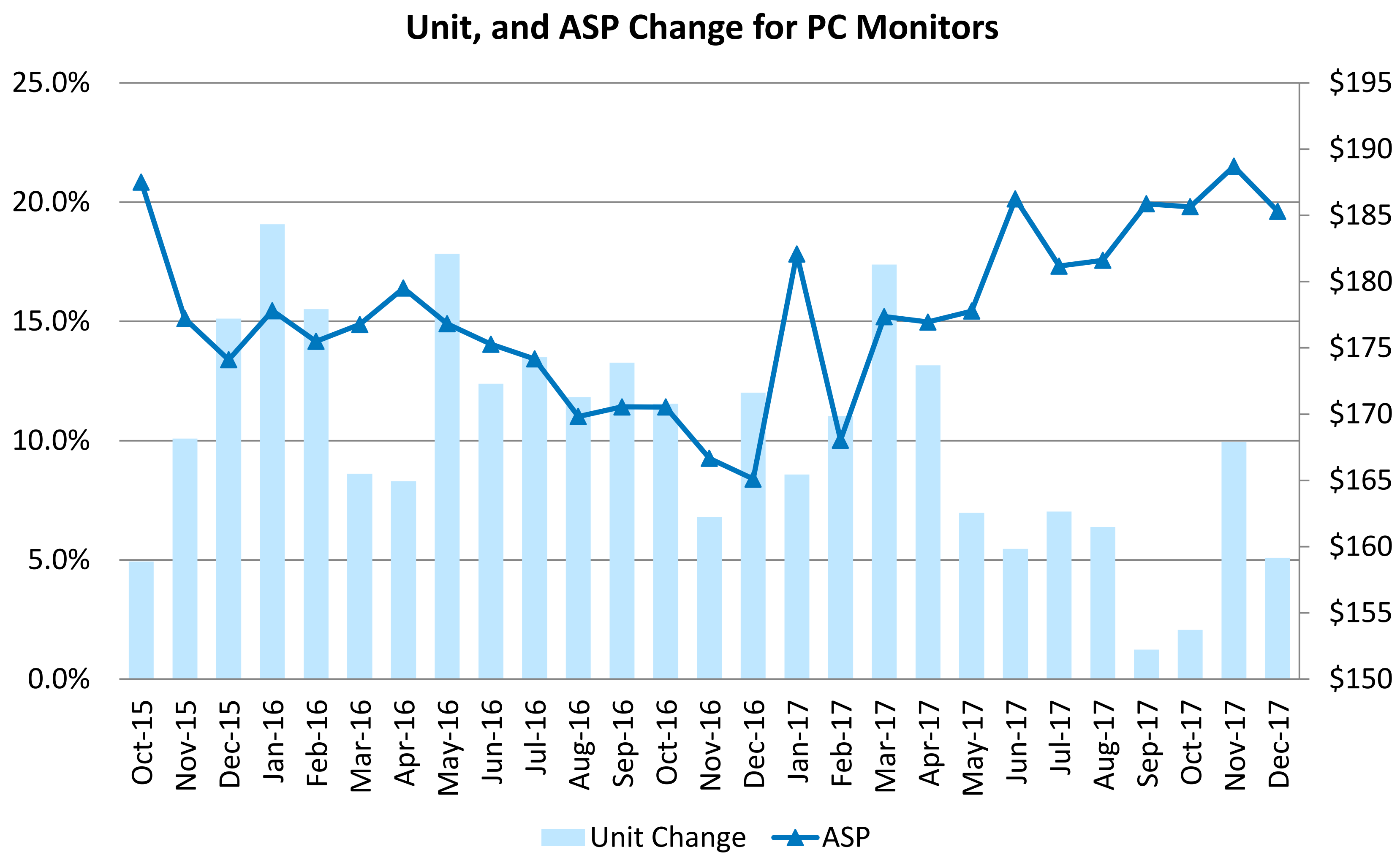




Source: The NPD Group/ Retail Tracking Service,

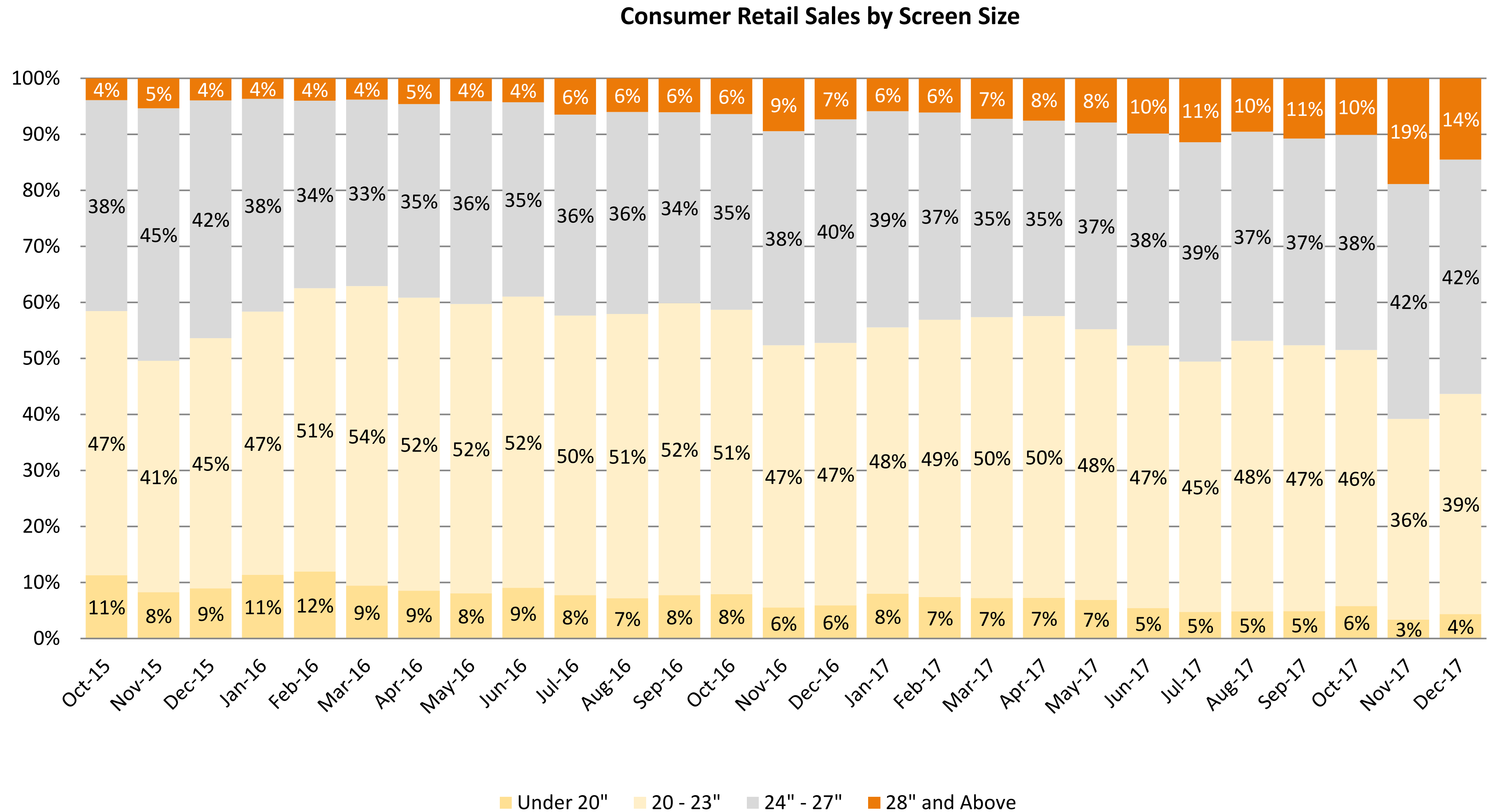
Notebook ASPs steadily marching upwards

Consumer Monitors continue to trend positive with accelerating ASPs in the back half of 2017



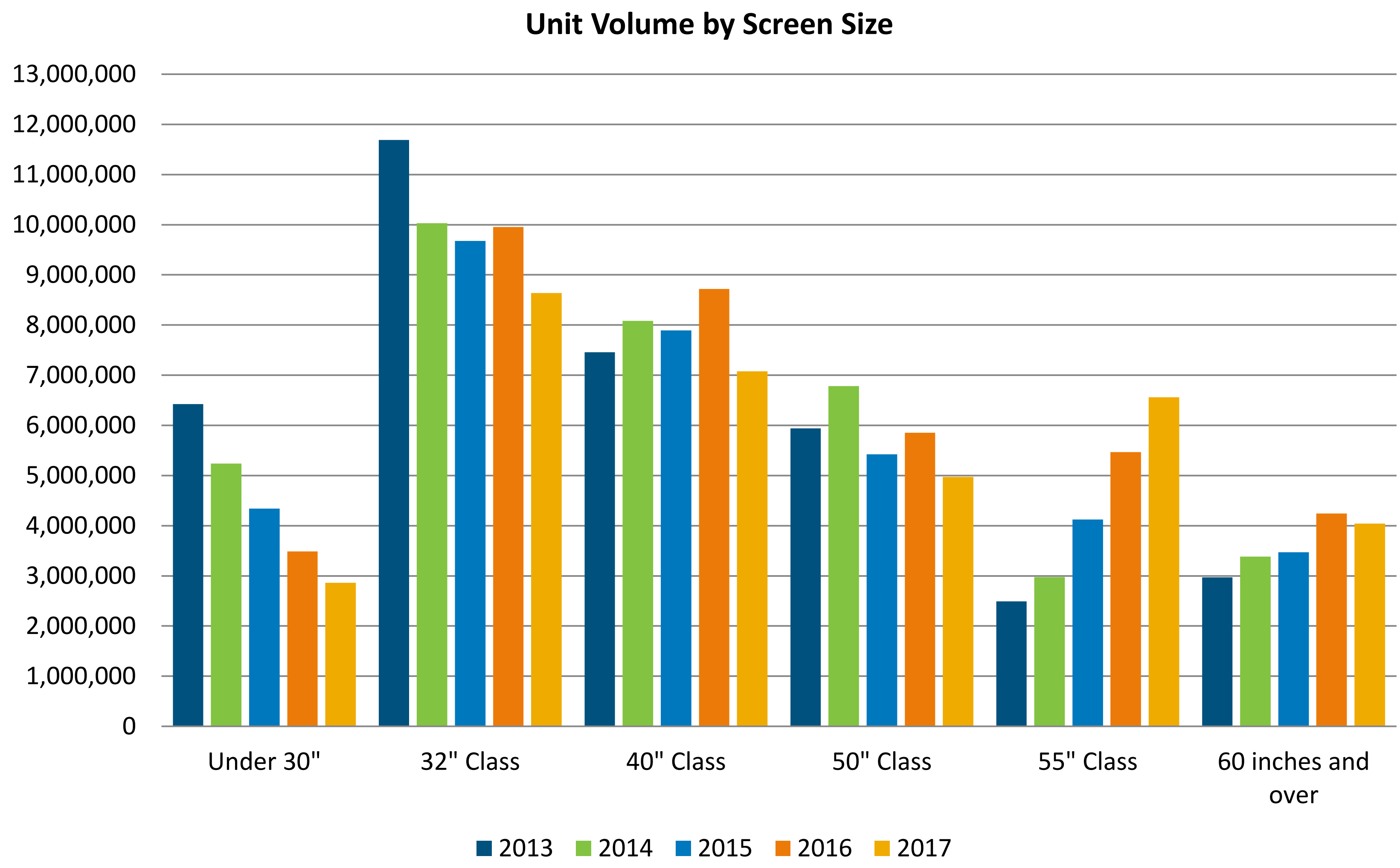
Source: The NPD Group/ Retail Tracking Service,

Largest screen sizes seeing rapid increase in share

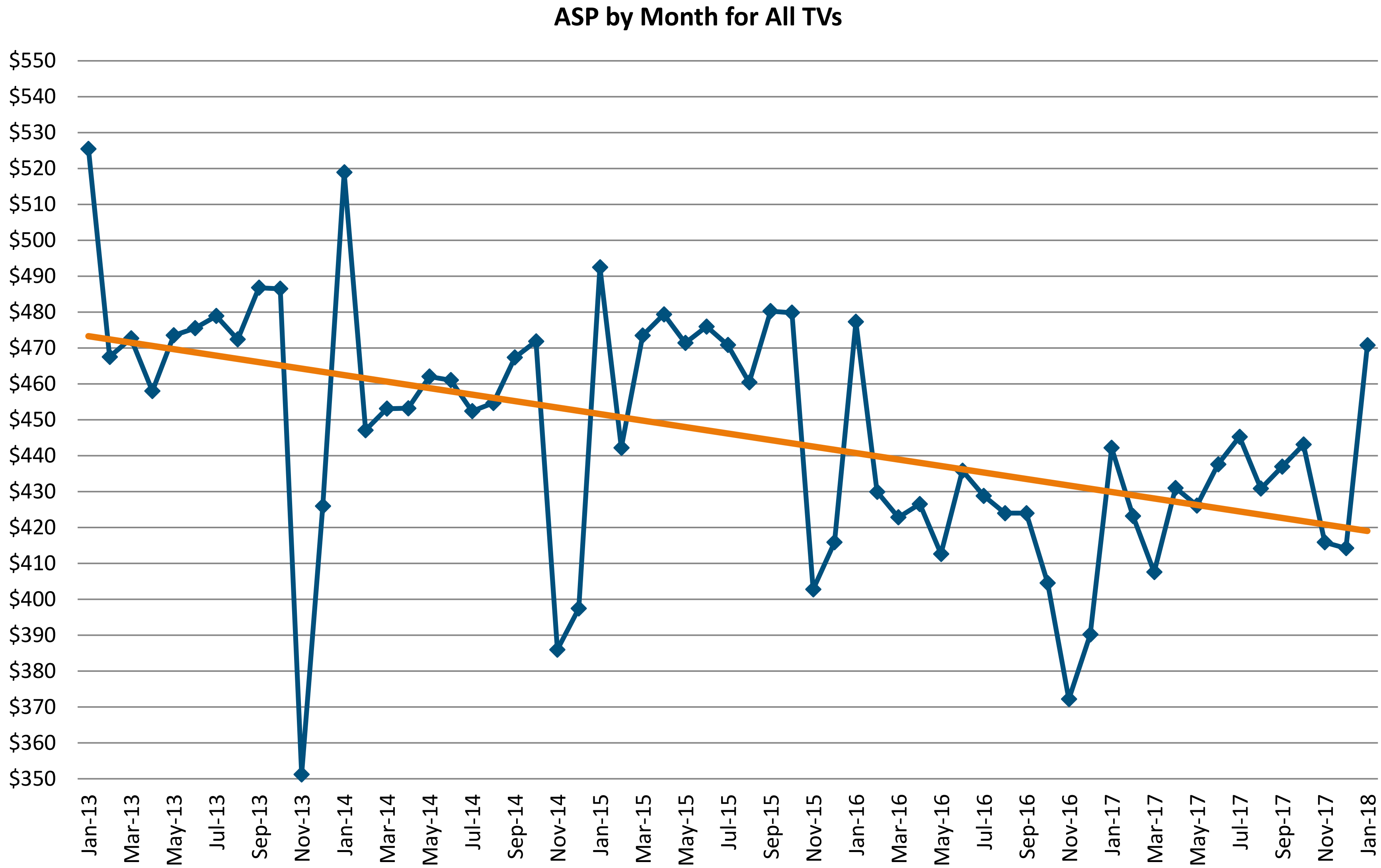


Source: The NPD Group/ Retail Tracking Service,

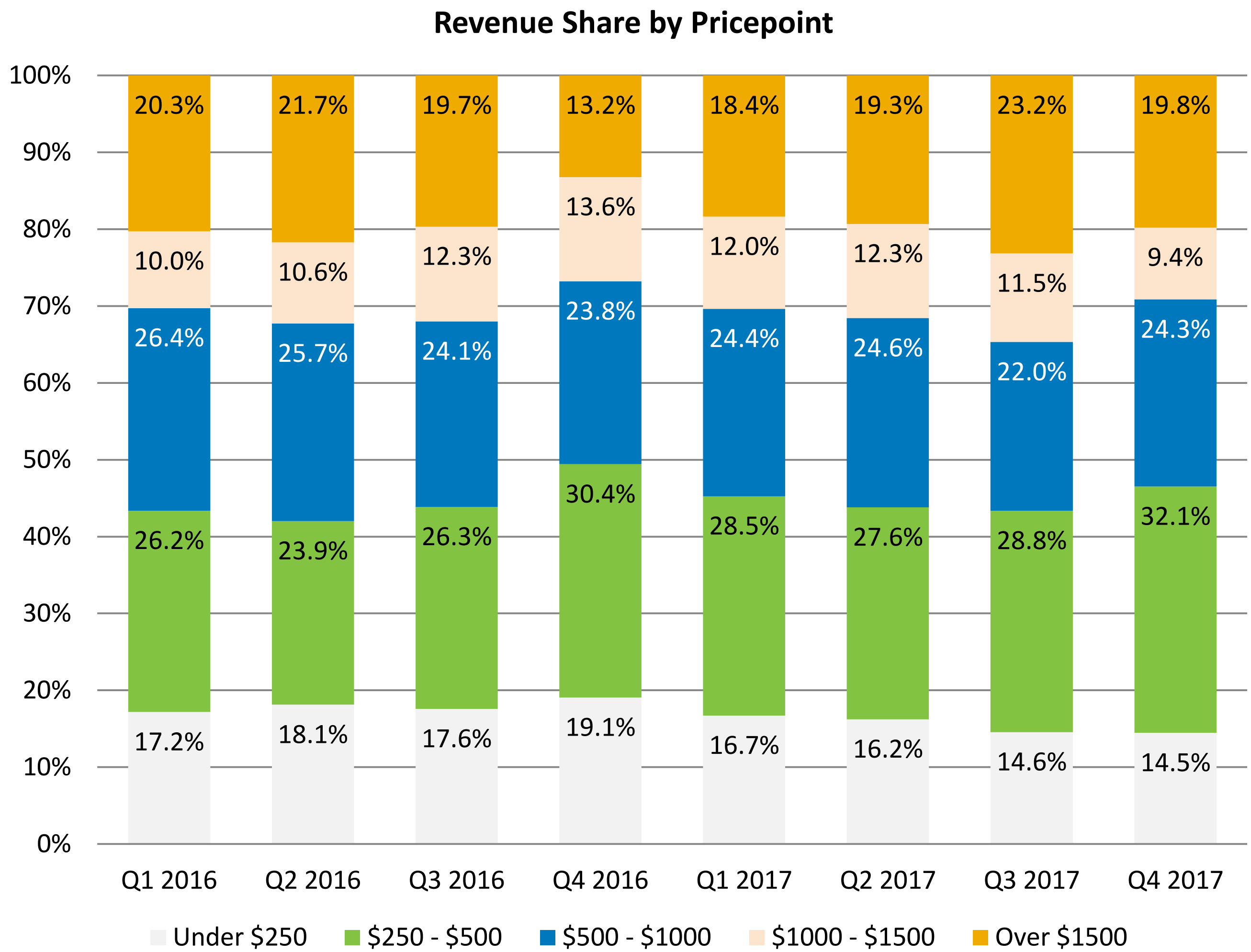
2016 sticks out as being off the longer term trends toward larger screens



2017 shows steadily improving industry ASPs



Back of 2017 showed some pick up in premium revenue growth as mainstream pricepoints continue to evolve

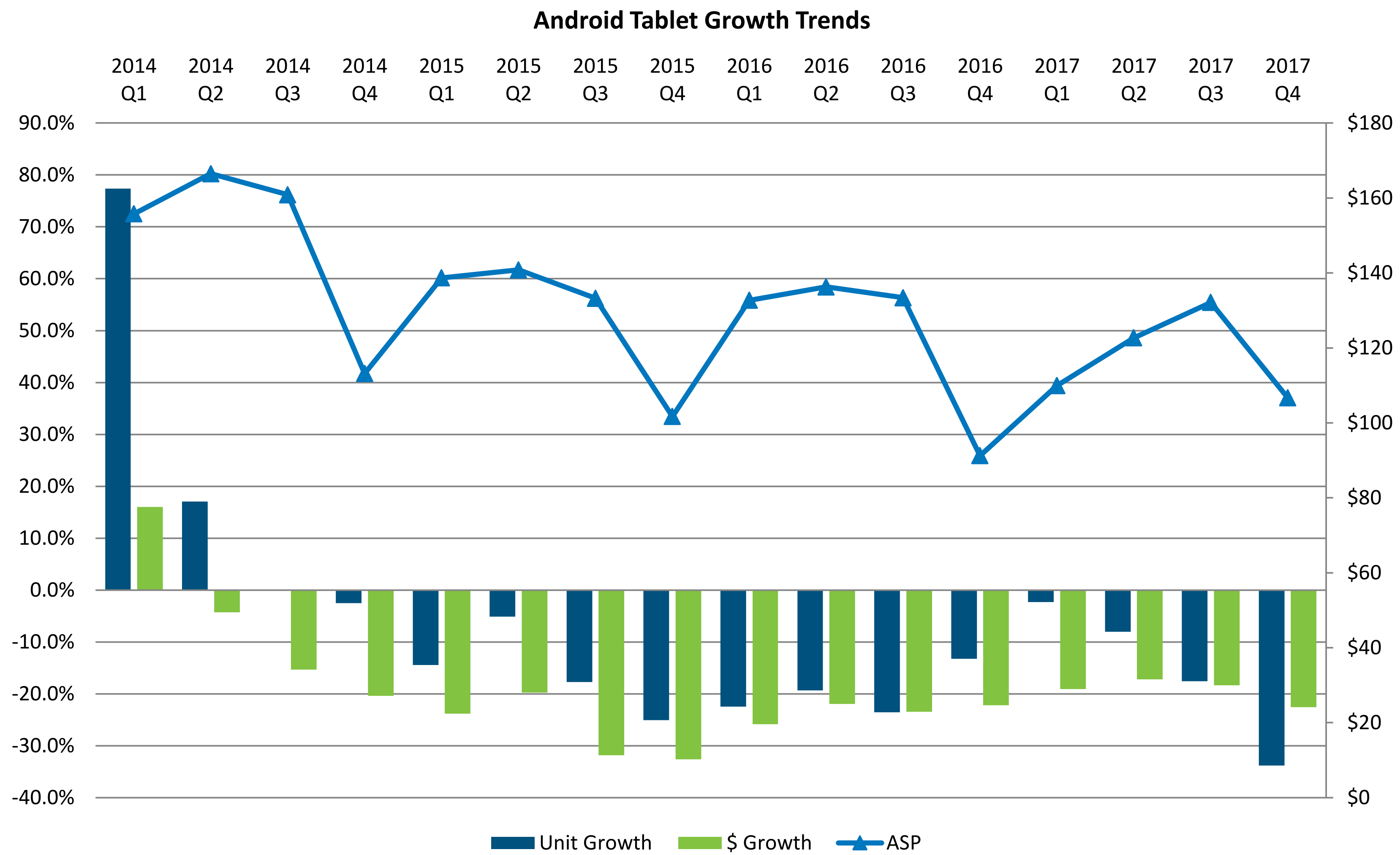


Revenue Growth by Pricepoint

	2016	2017
Under $250	12.0%	-20.9%
$250 - $500	8.6%	2.0%
$500 - $1000	-12.0%	-10.0%
$1000 - $1500	3.9%	-14.0%
Over $1500	-11.2%	5.3%
Over $2500	-7.4%	15.1%

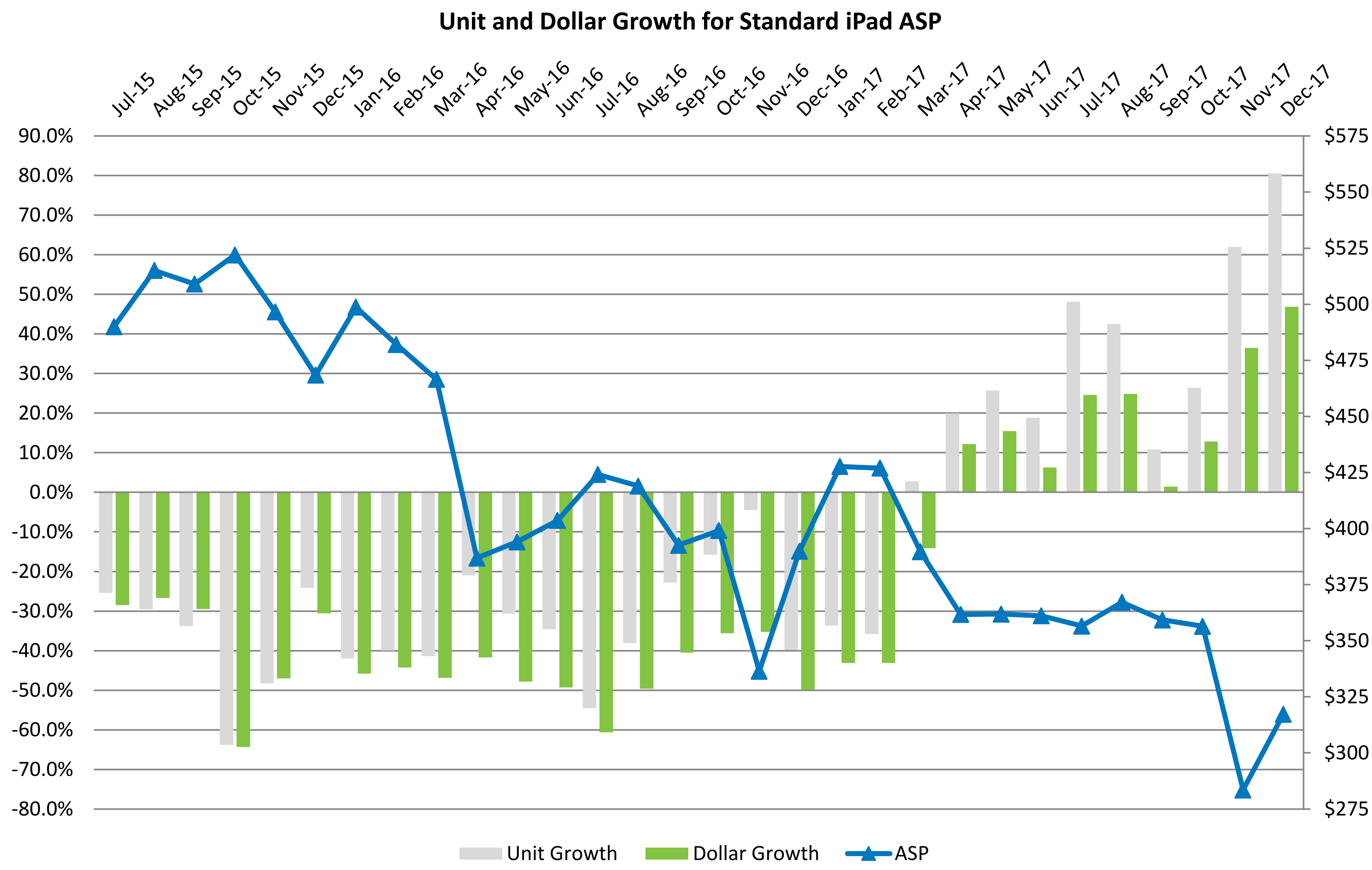
Source: The NPD Group/Retail Tracking Service

Android Tablets continue to fall as Apple becomes more competitive and Amazon takes more share



Source: The NPD Group/ Retail Tracking Service, Amazon tablets not included

The repricing and positioning of the standard iPad has changed the product dynamics



Source: The NPD Group/ Retail Tracking Service,

Stable

Stable Category Overview

1. While volume is stable it is declining. Good opportunities masked by some of the market changes in the larger segment or larger marketplace

    - This dynamic makes it difficult to recognize opportunity to drive real value and traffic in these categories

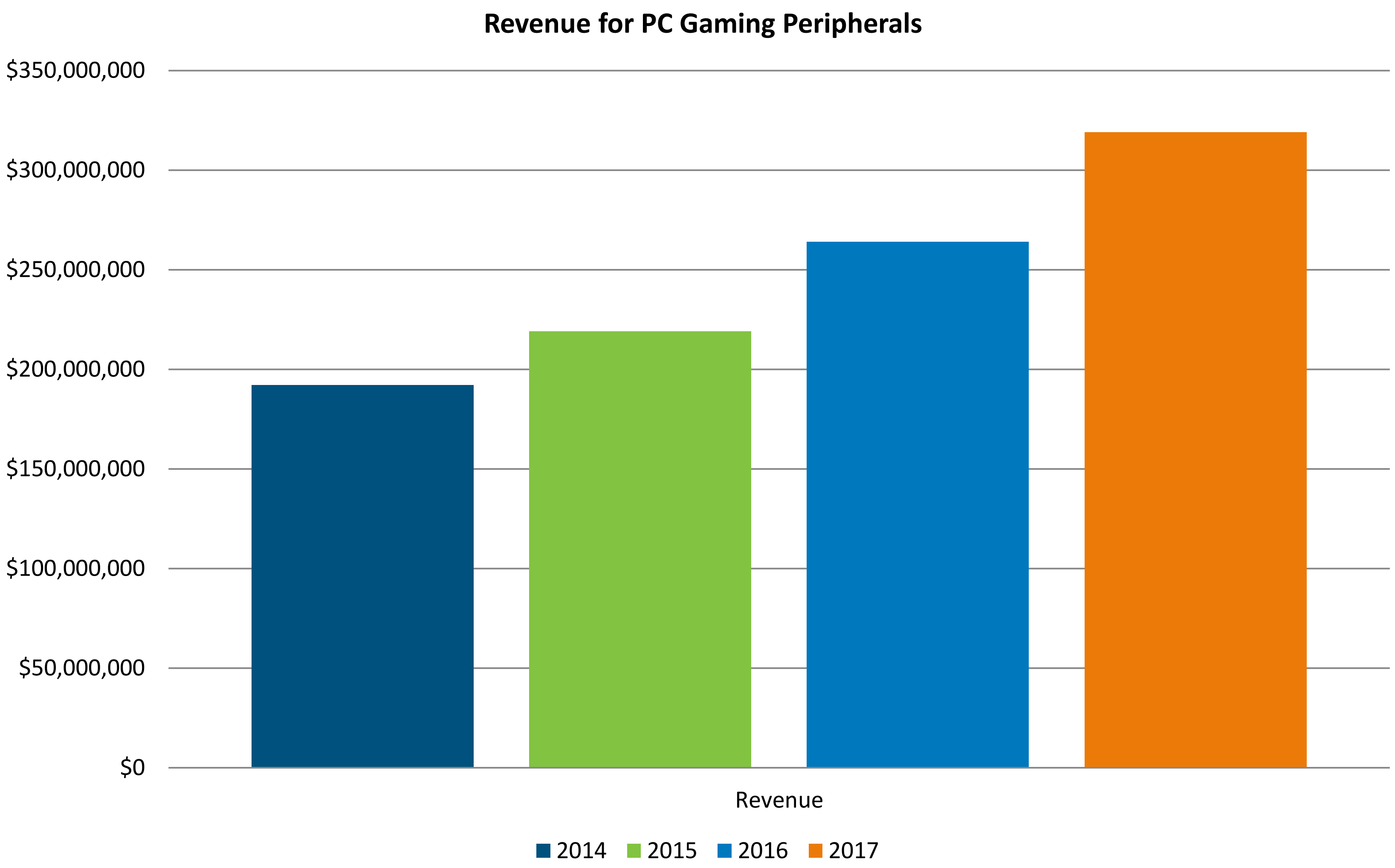
2. Innovation in subsegments, as in high profile segments, provides some offsetting revenue growth against segment declines

    - Some opportunities would be Mesh and AC networking, USB-C and Wireless Charging, Gaming Accessories

3. Performing segments in stable categories fit in one of 3 segments

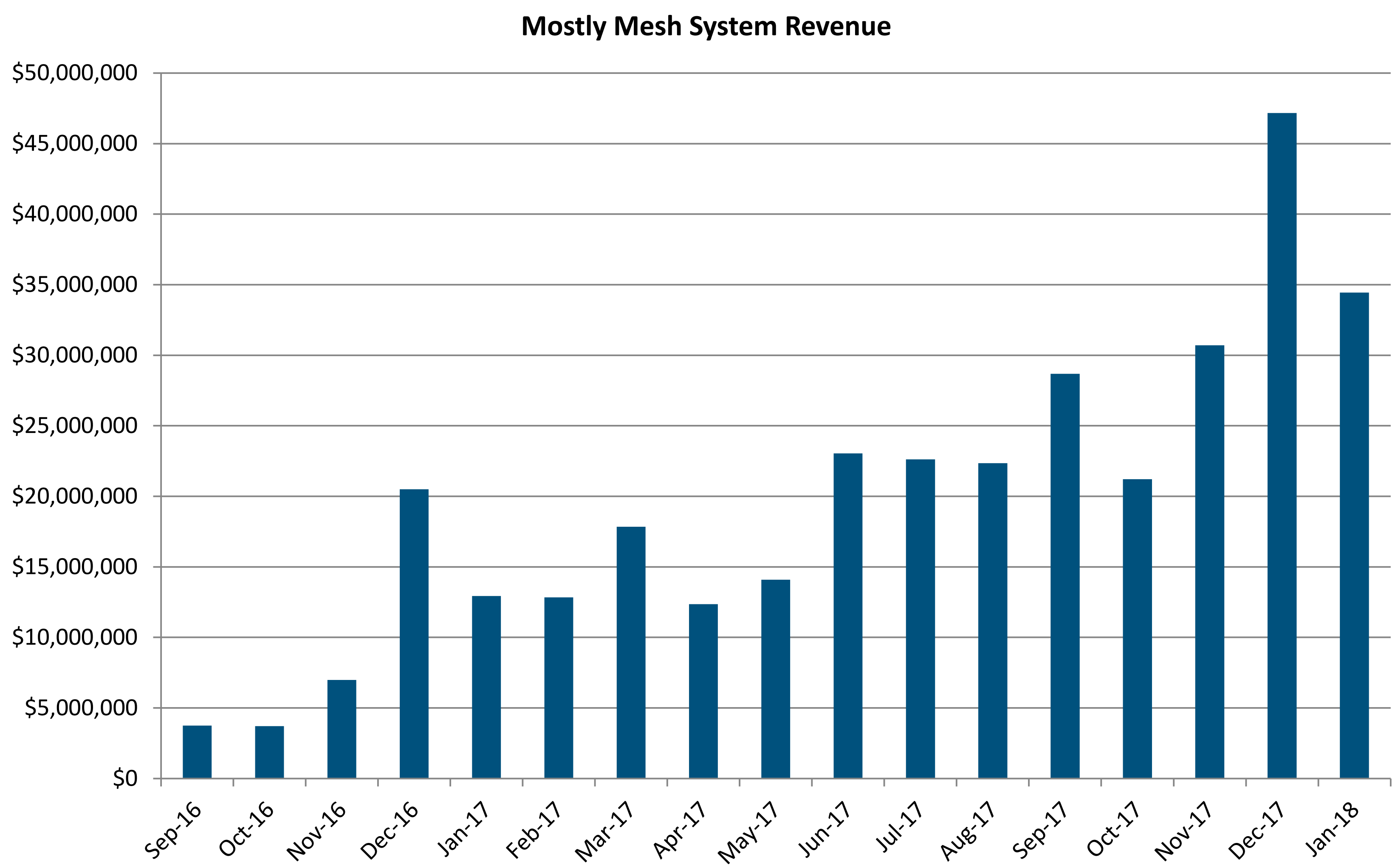
    - a strong attachment to a segment with high, consistent installed bases
    - dedicated consumers
    - Demonstrable technology advantage relating to a growing device use case
    - Supporting innovation and change while not necessarily creating it

Gaming peripherals have added $130m in revenue in 4 years



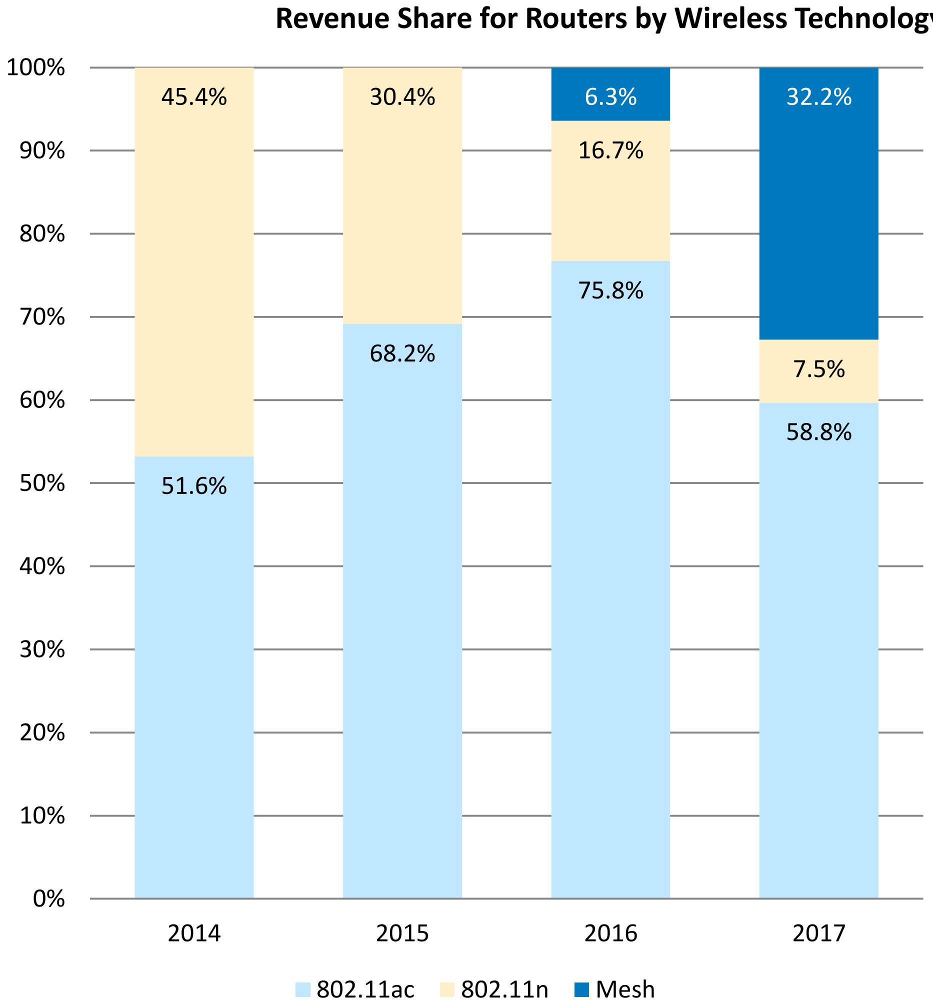
Source: The NPD Group/ Retail Tracking Service, Include Mice, Keyboards and PC Headsets coded as Gaming

Mesh Networking revenue doubling almost every month YoY and increasing month to month



Source: The NPD Group/ Retail Tracking Service

While Mesh is driving revenue overall wireless routers continue to hold their value better than ever before

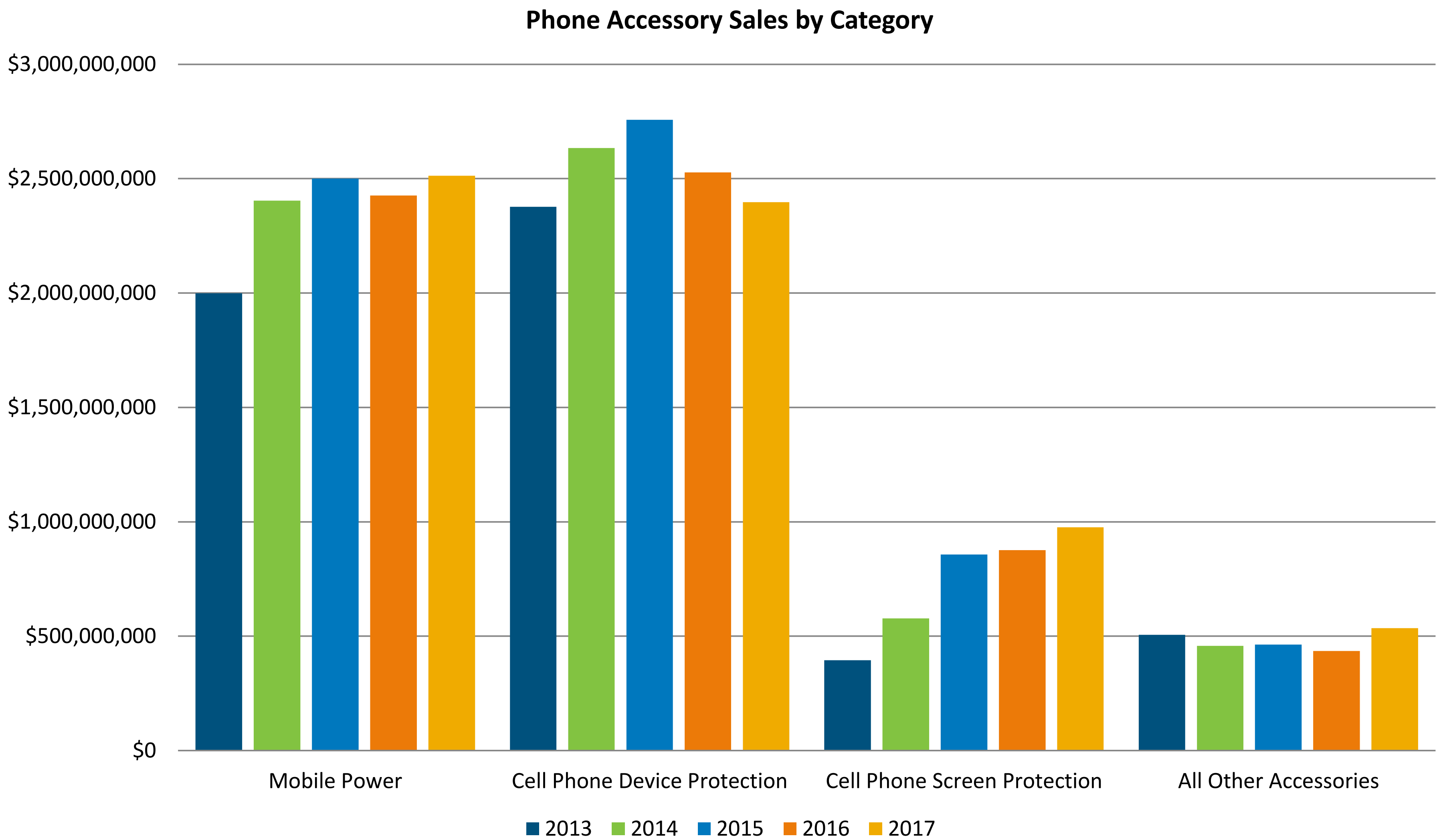


Source: The NPD Group/ Retail Tracking Service,

ASP for Wireless Systems

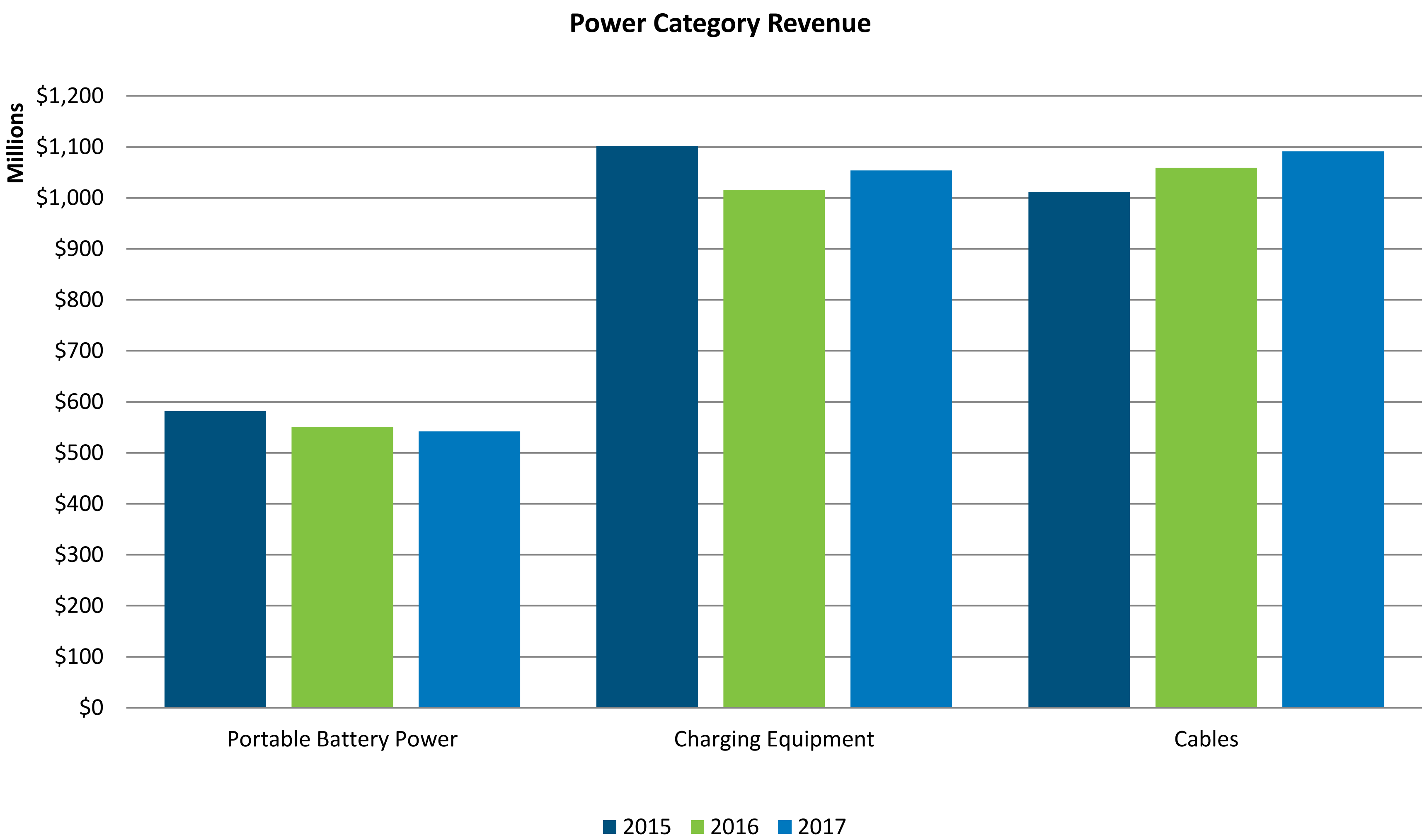
	2014	2015	2016	2017
802.11ac	$156	$152	$149	$128
802.11n	$62	$58	$53	$52
Mesh System		$358	$293	$284

Accessories are a slow and steady gainer, propelled by specific products, events and trends



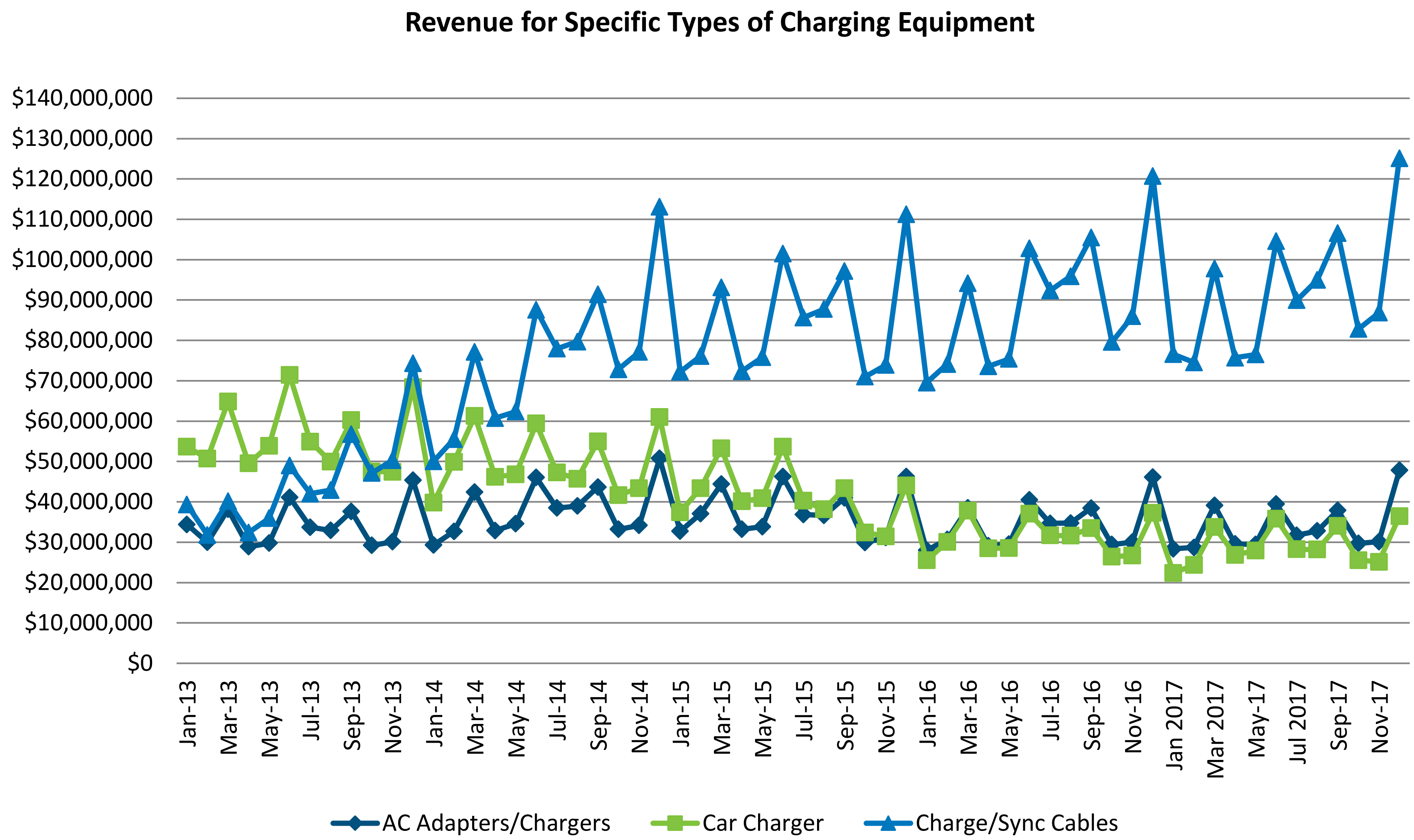
Source: The NPD Group, Inc./ Retail Tracking Service

Cables are leading revenue for power related mobile accessories



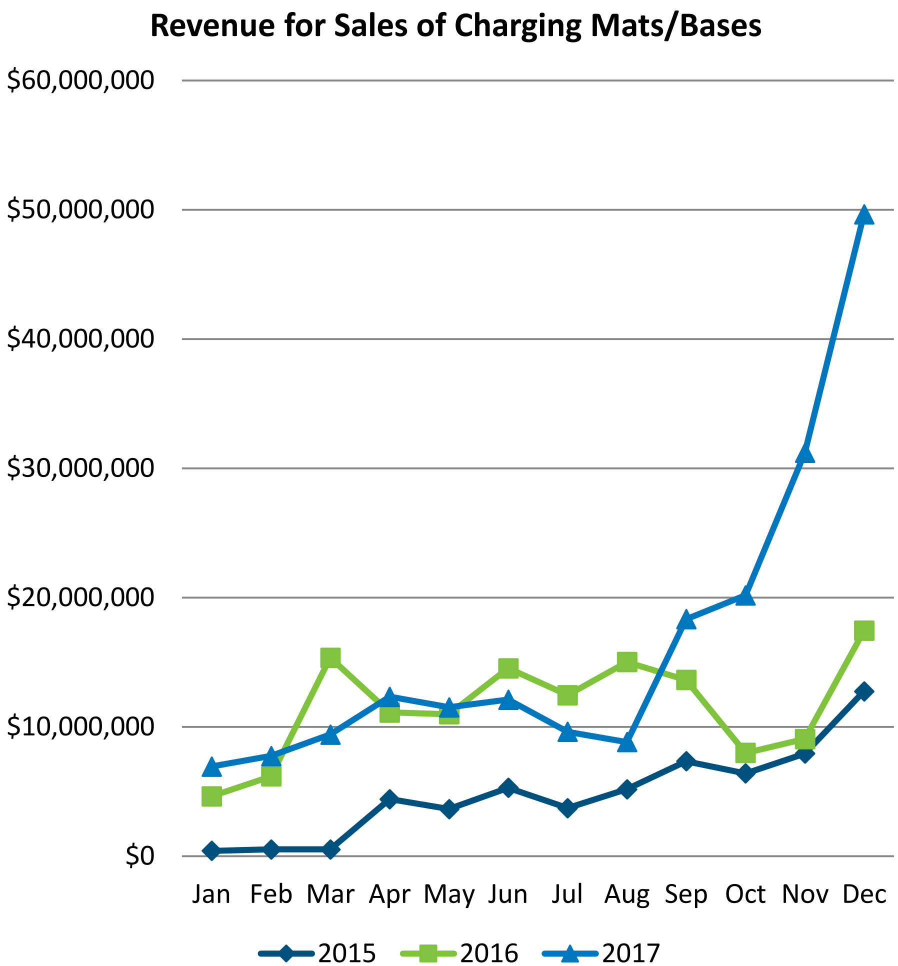
Source: The NPD Group, Inc./Retail *Tracking Service, Battery Pack Revenue includes Charging Cases*

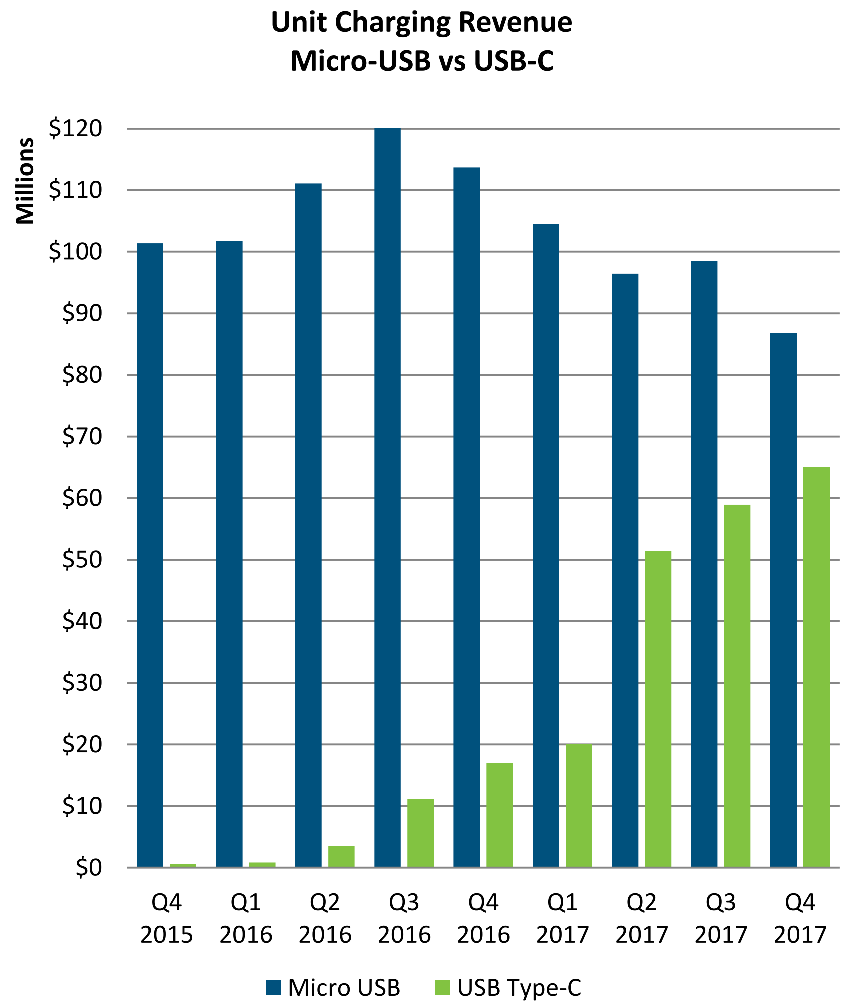
Market for charging equipment shifting towards home/stationary use models



Source: The NPD Group, Inc./Retail *Tracking Service*

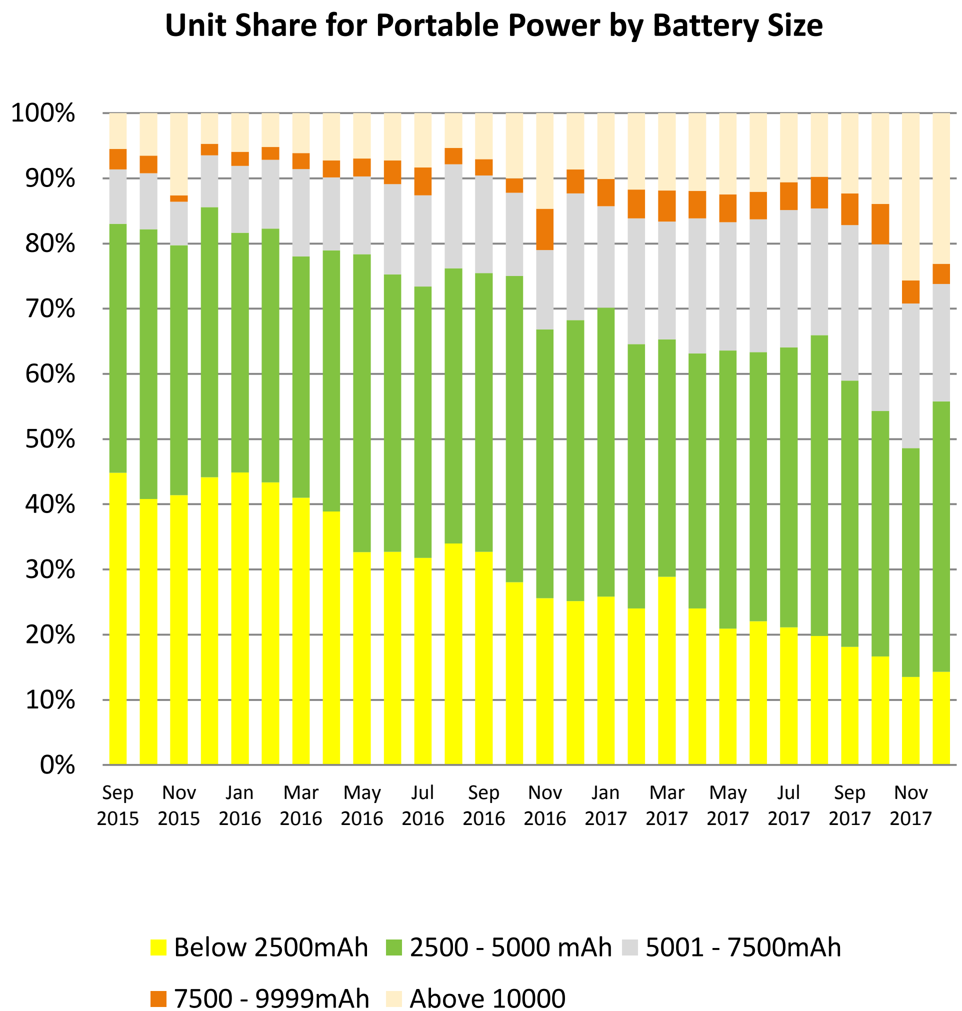
USB-C revenue moving quickly upwards
Wireless charging finally stimulated by iPhone

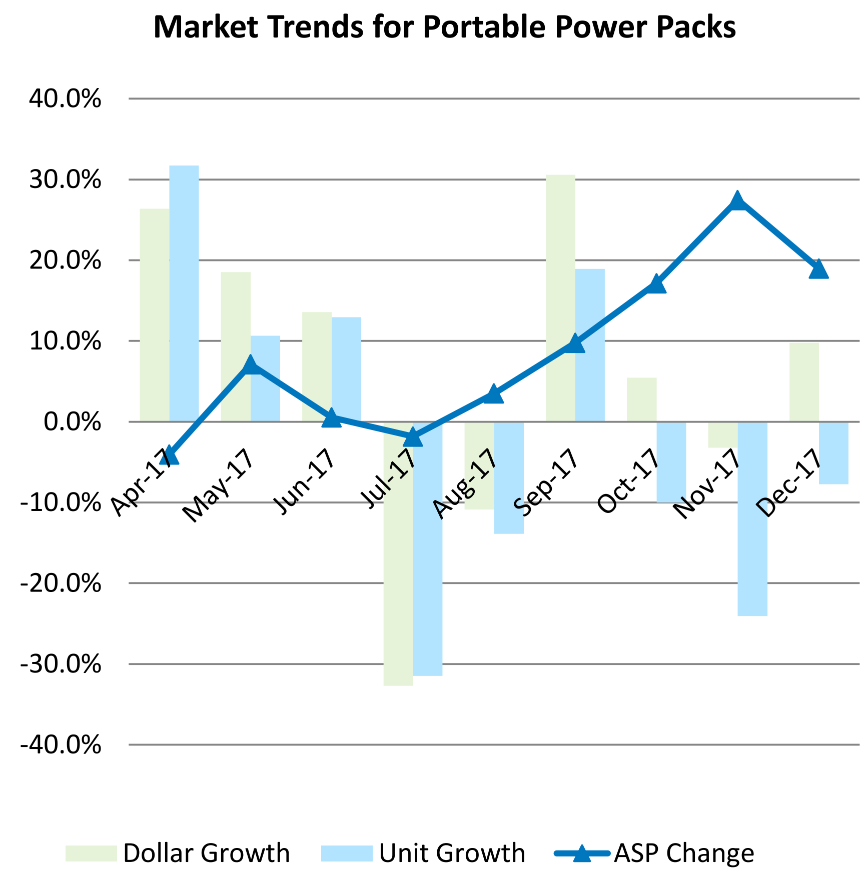




Source: The NPD Group, Inc./Retail *Tracking Service, Does not include Battery Packs, Q4 2017 is 12 of 13 weeks*

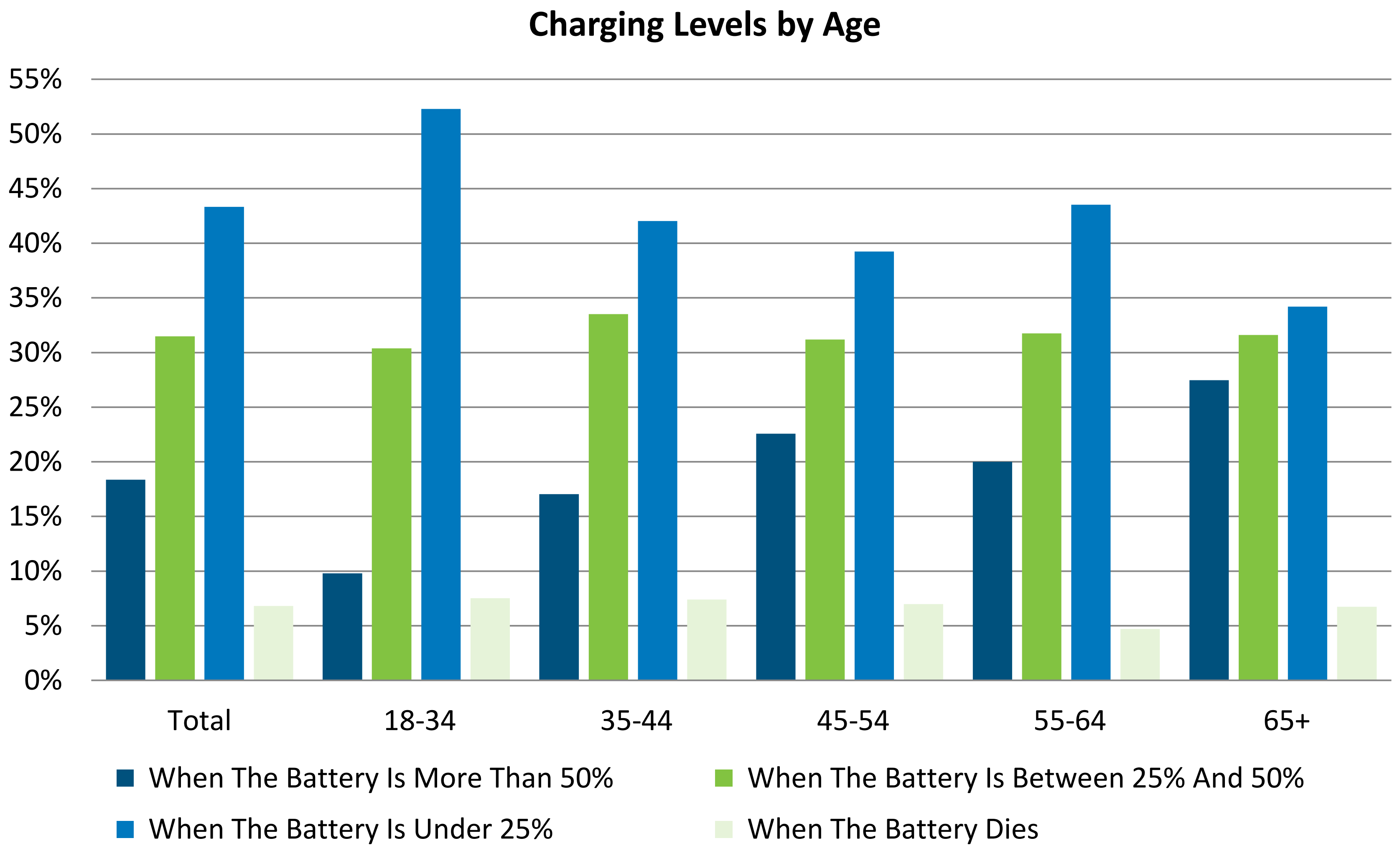
Portable power revenue grows as batteries get bigger and pricing moves higher





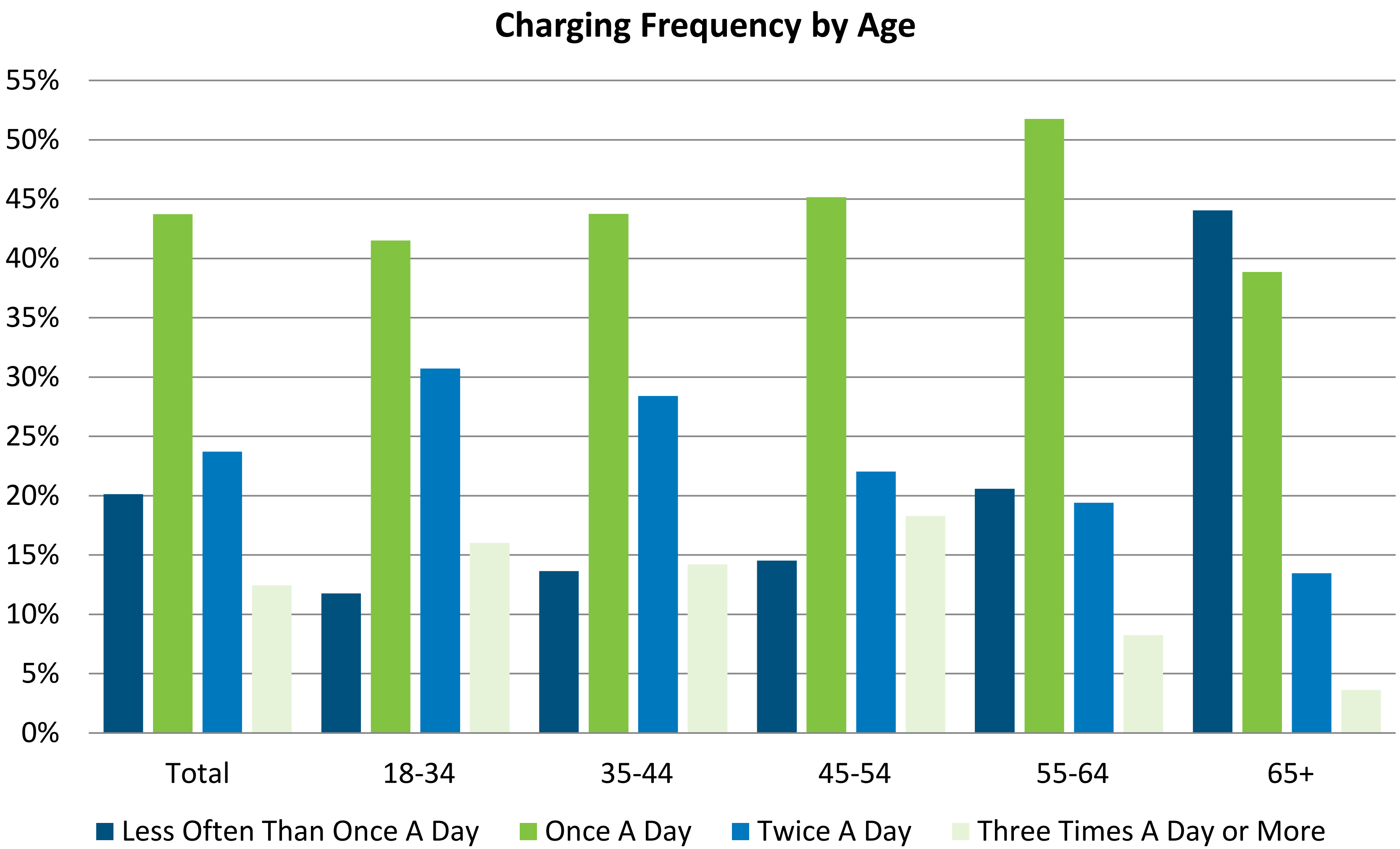
Source: The NPD Group, Inc./Retail *Tracking Service,*

Older demographics worry about their charge more than younger demographics



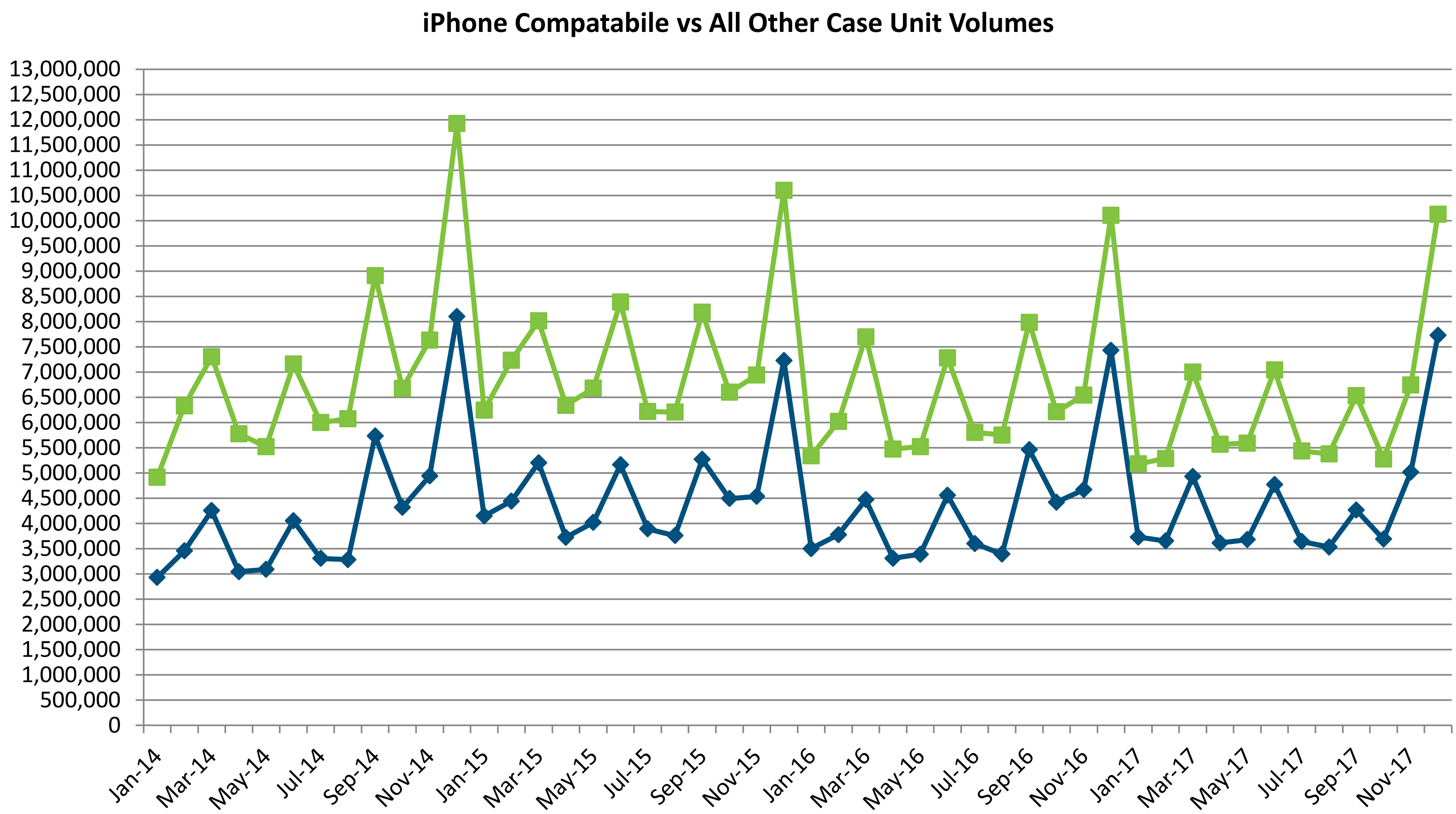
Source: The NPD Group, Inc./Omnibus Consumer Survey April 2016

Everyone charges once a day (except older people), as clearly usage likely impacts charging rates



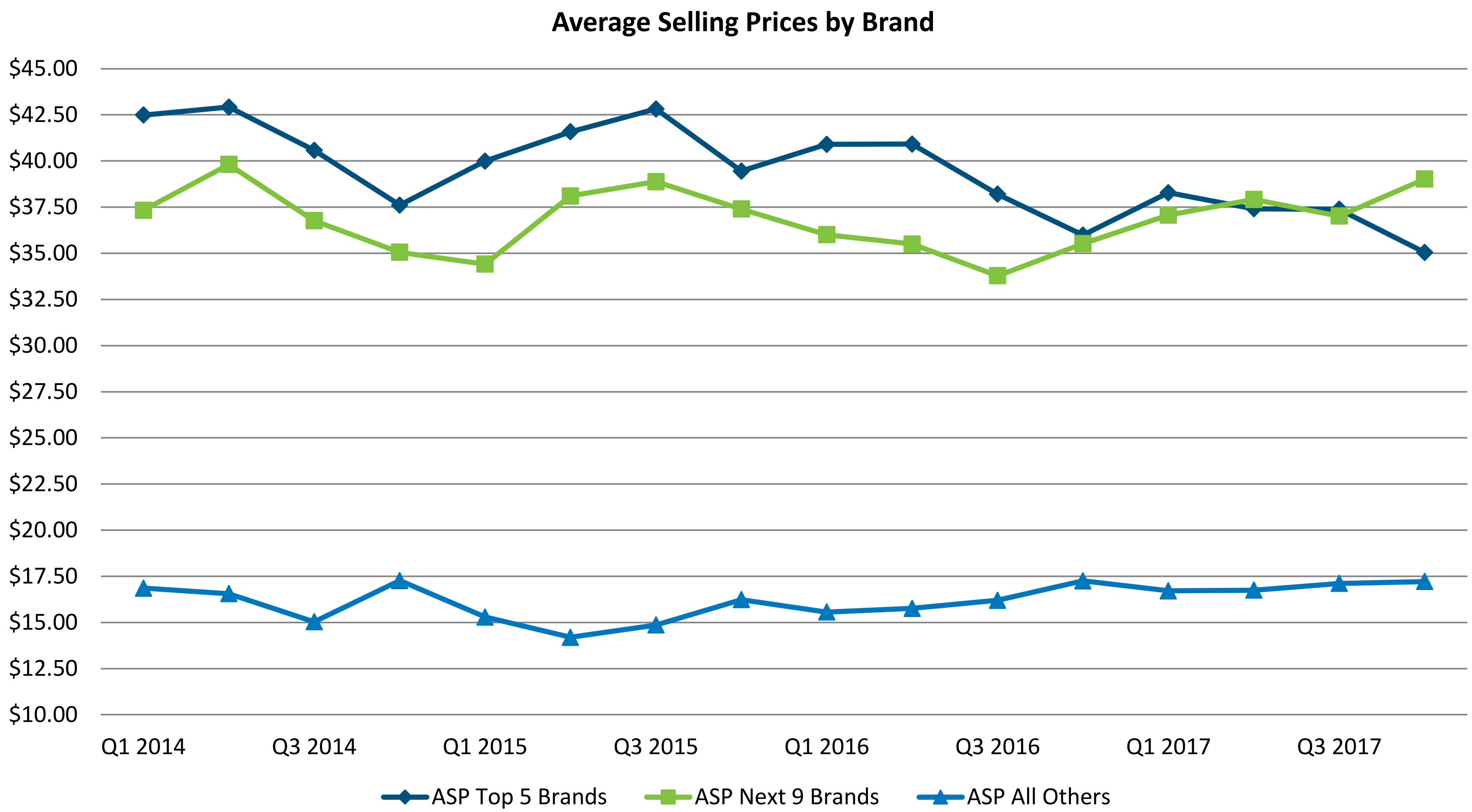
Source: The NPD Group, Inc./Omnibus Consumer Survey April 2016

As important as launches are sales still spike more significantly for holiday



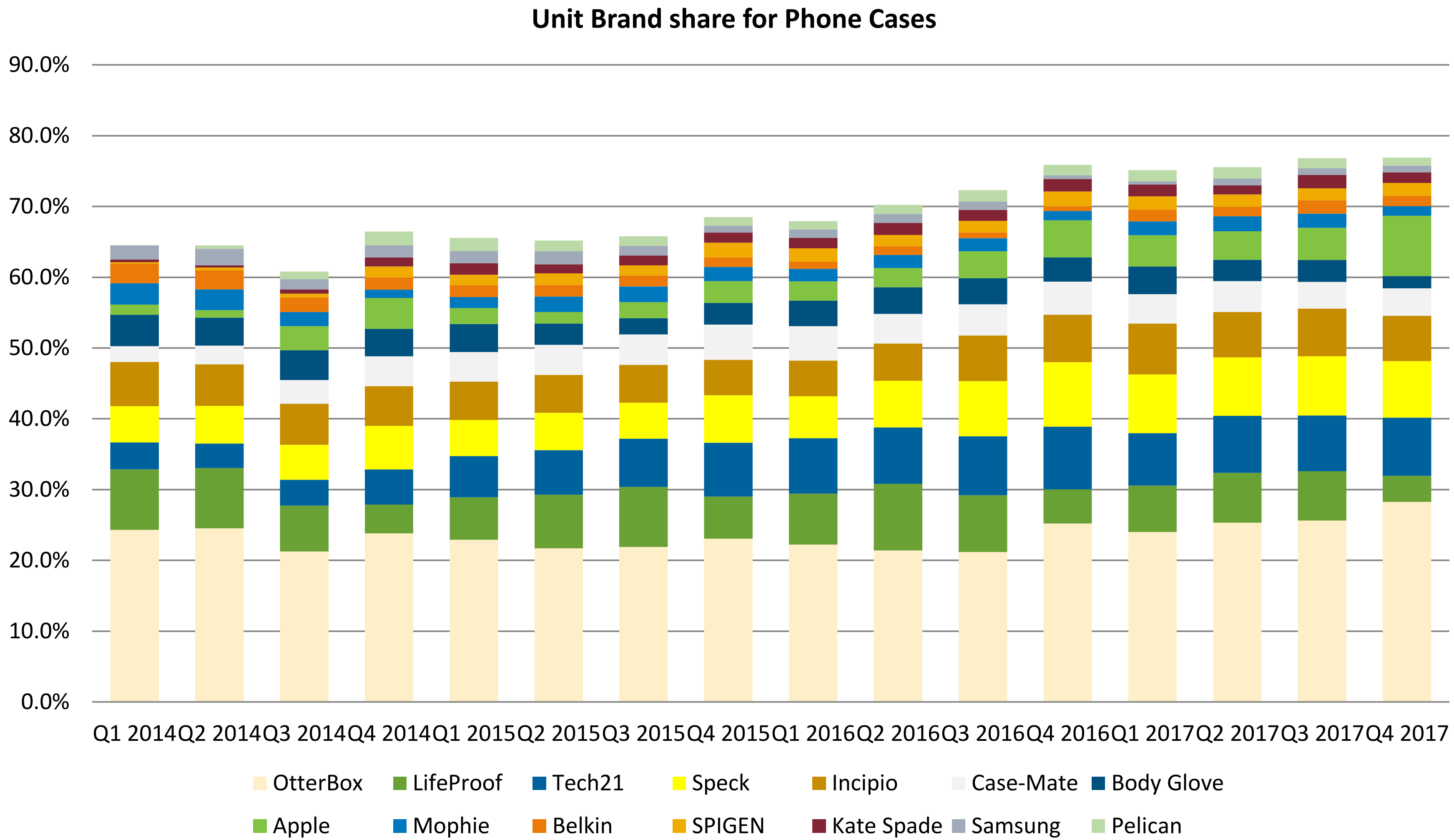
Source: The NPD Group, Inc./Retail *Tracking Service,*

Branded cases generate approximately 2.5x the retail revenue as all others and generate ¾ of unit volume



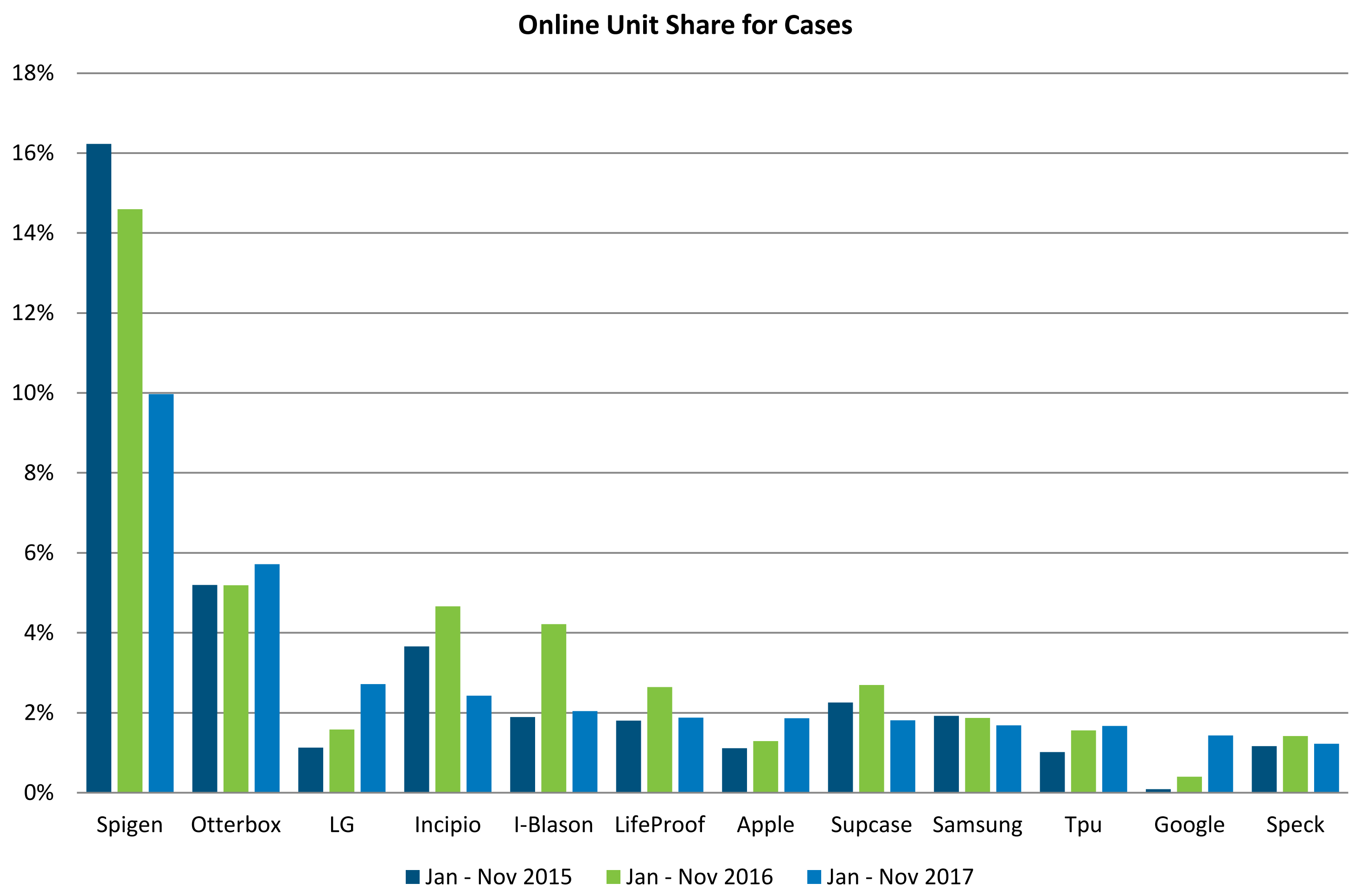
Source: The NPD Group, Inc./Retail *Tracking Service, Top 5 and Next 9 Brands derived from previous slide*

Seeing gradual growth in many of the branded cases



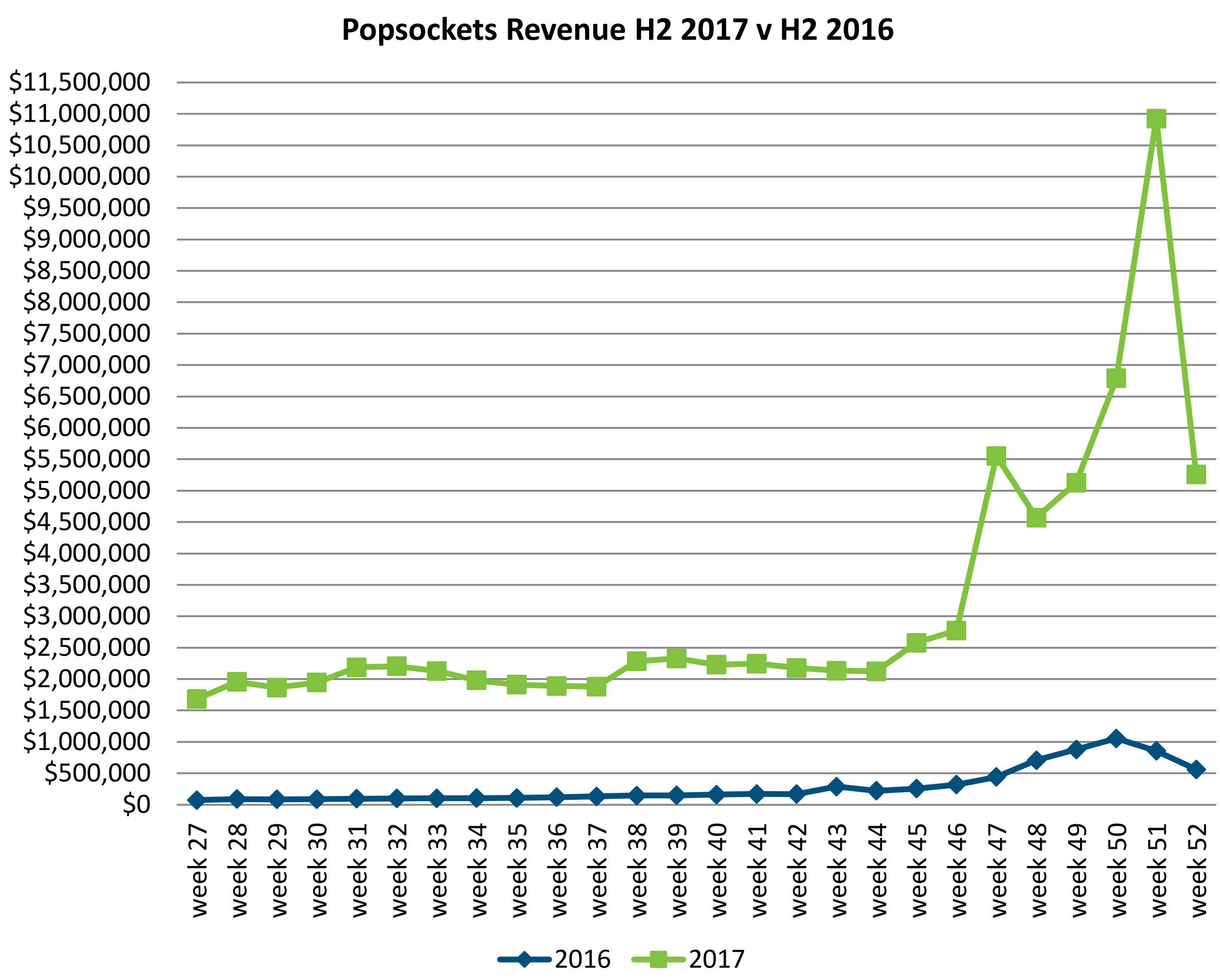
Source: The NPD Group, Inc./Retail *Tracking Service, Brands >4m units since Jan 2014*

Top brands account for less than 40% of online sales volume



Source: The NPD Group, Inc./Checkout (inc Amazon Marketplace sales)

Results of a Hit Accessory



	Units	Revenue
2016	802.8k	$8.5m
2017	10.7m	$106.7m

Source: The NPD Group, Inc./Retail *Tracking Service,*

Innovators

Innovation Segments

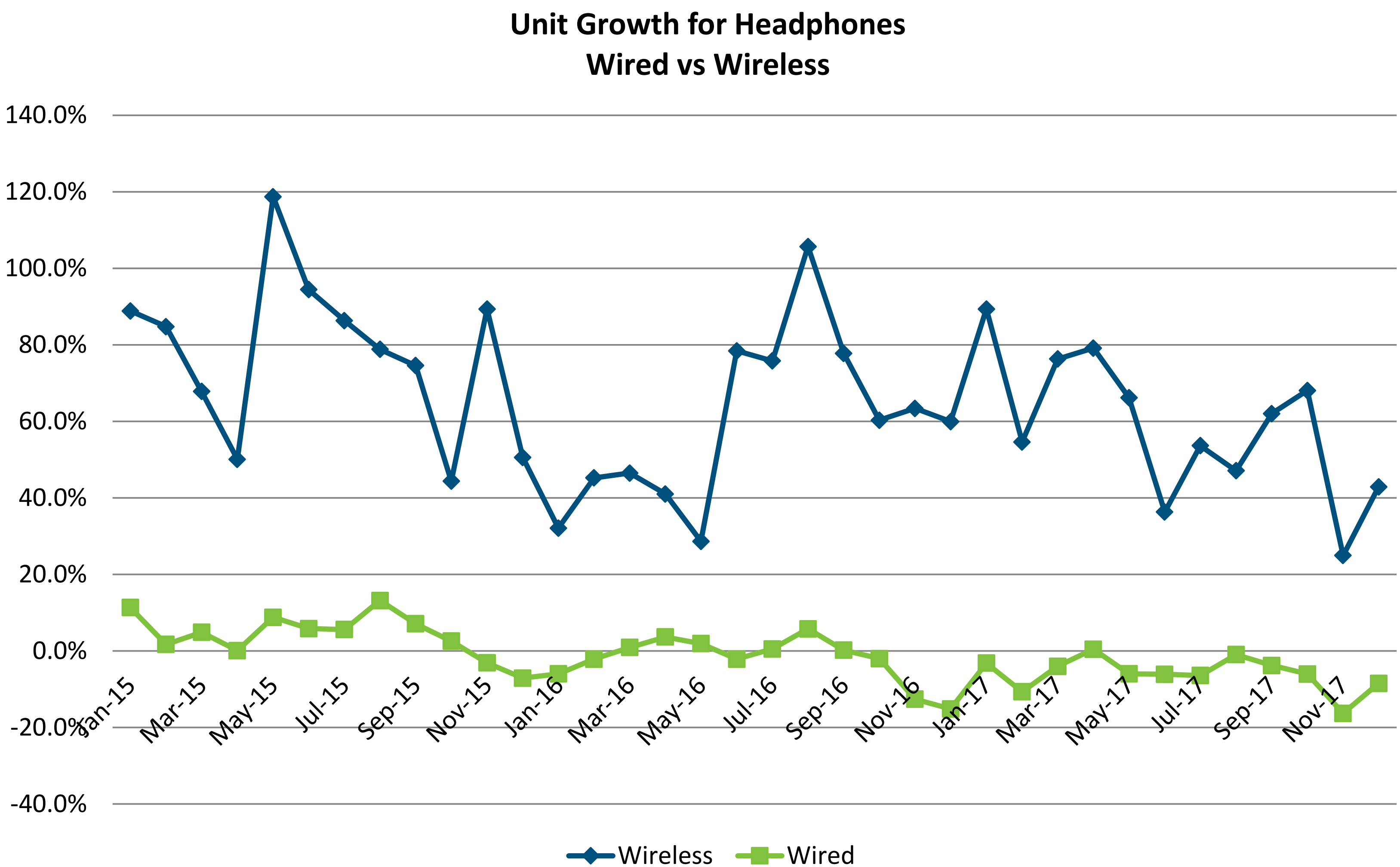
1. Most innovation is creating brand new experiences, or extending traditional CE concepts and technologies into adjacent categories

    - Wireless headphones create brand new experiences
    - Voice controlled speakers and Smart Home are extending CE concepts and products into new areas in the home
    - VR enables new experiences
    - Wearables enable new experiences and extend traditional CE concepts

2. Innovation building new segments is fundamentally different than extending opportunities (such as large screen TVs)

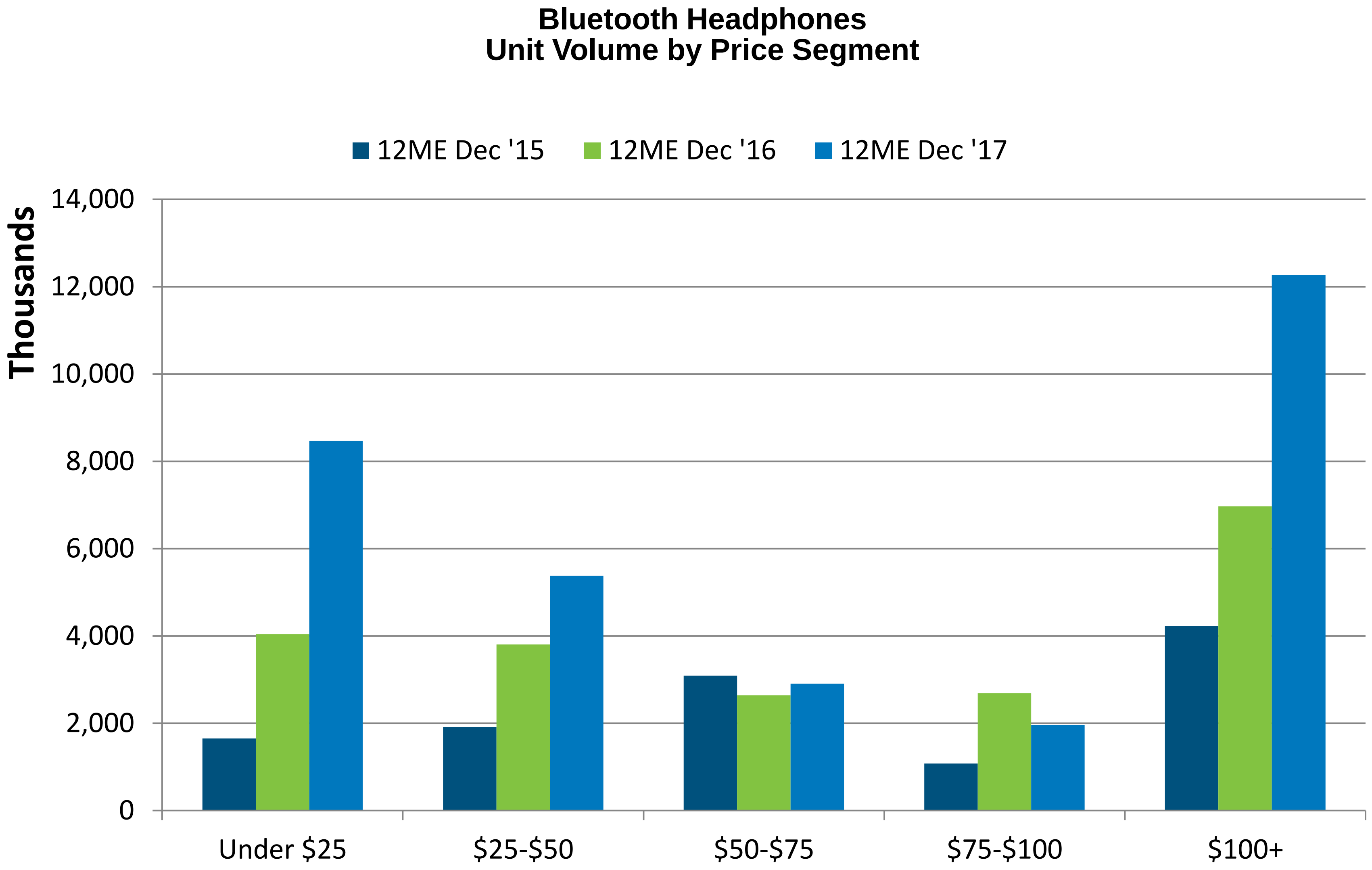
3. Innovation is making tech more personal and more one to one versus a more hybrid group interaction with technology

Wireless headphones have grown over 20% every month for 4 years straight



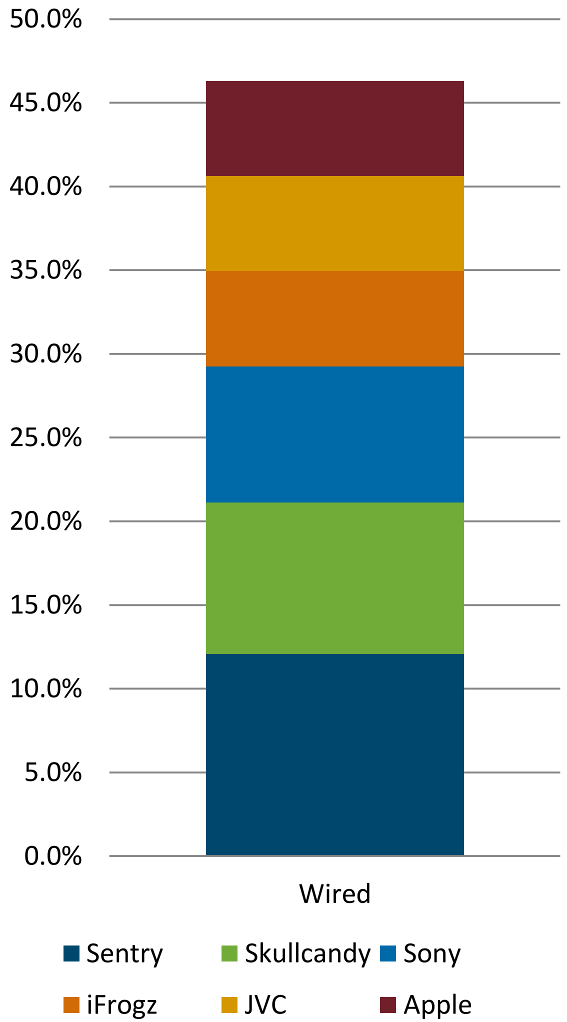
Source: The NPD Group, Inc./Retail *Tracking Service*

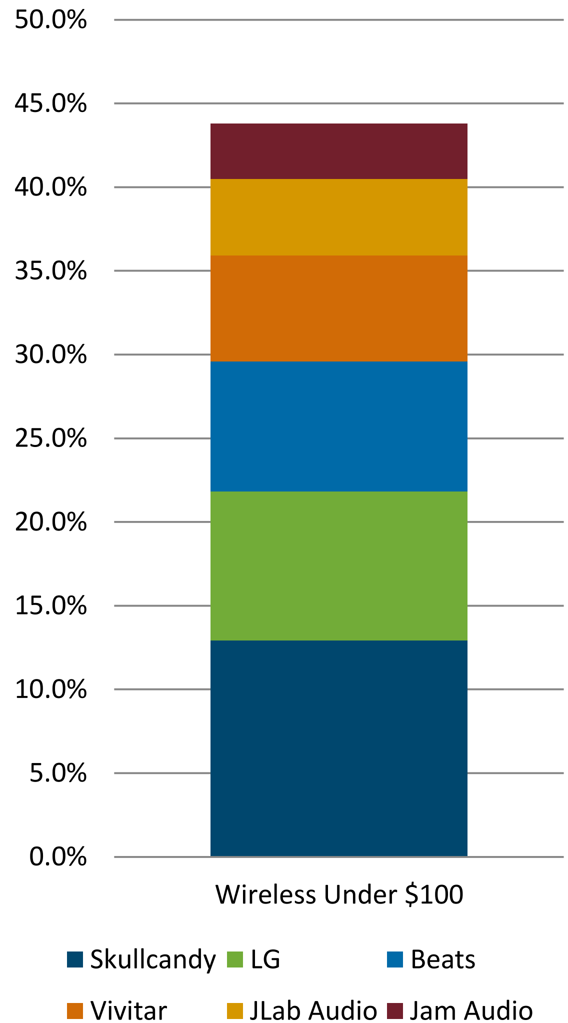
Bluetooth unit volume stagnant in $50-$75 in 2016



Source: The NPD Group, Inc./Retail *Tracking Service*

Premium heavily branded but other segments offer a broad array of brand, and retail, opportunity

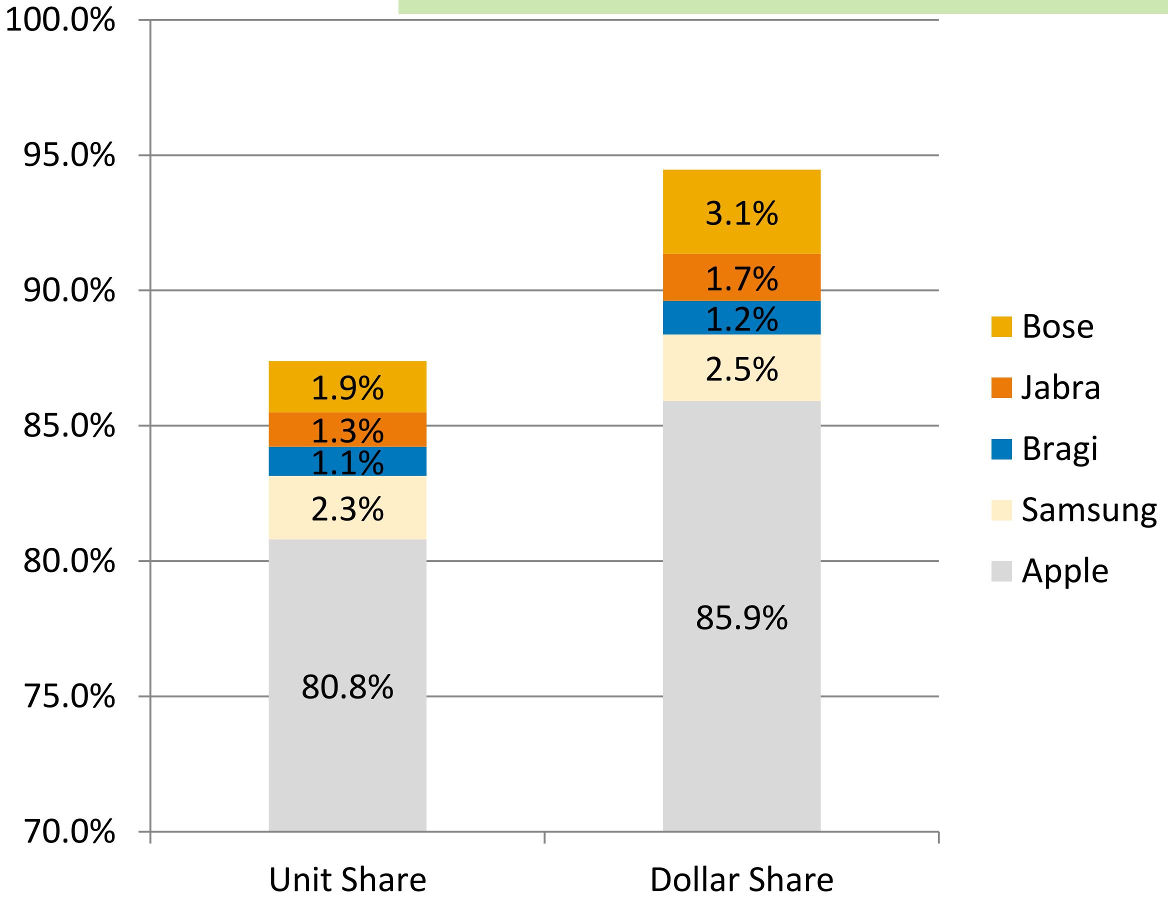




Source: The NPD Group / Retail Tracking Service, Jan-Nov 2017, Unit Share

Very little competition for AirPods yet

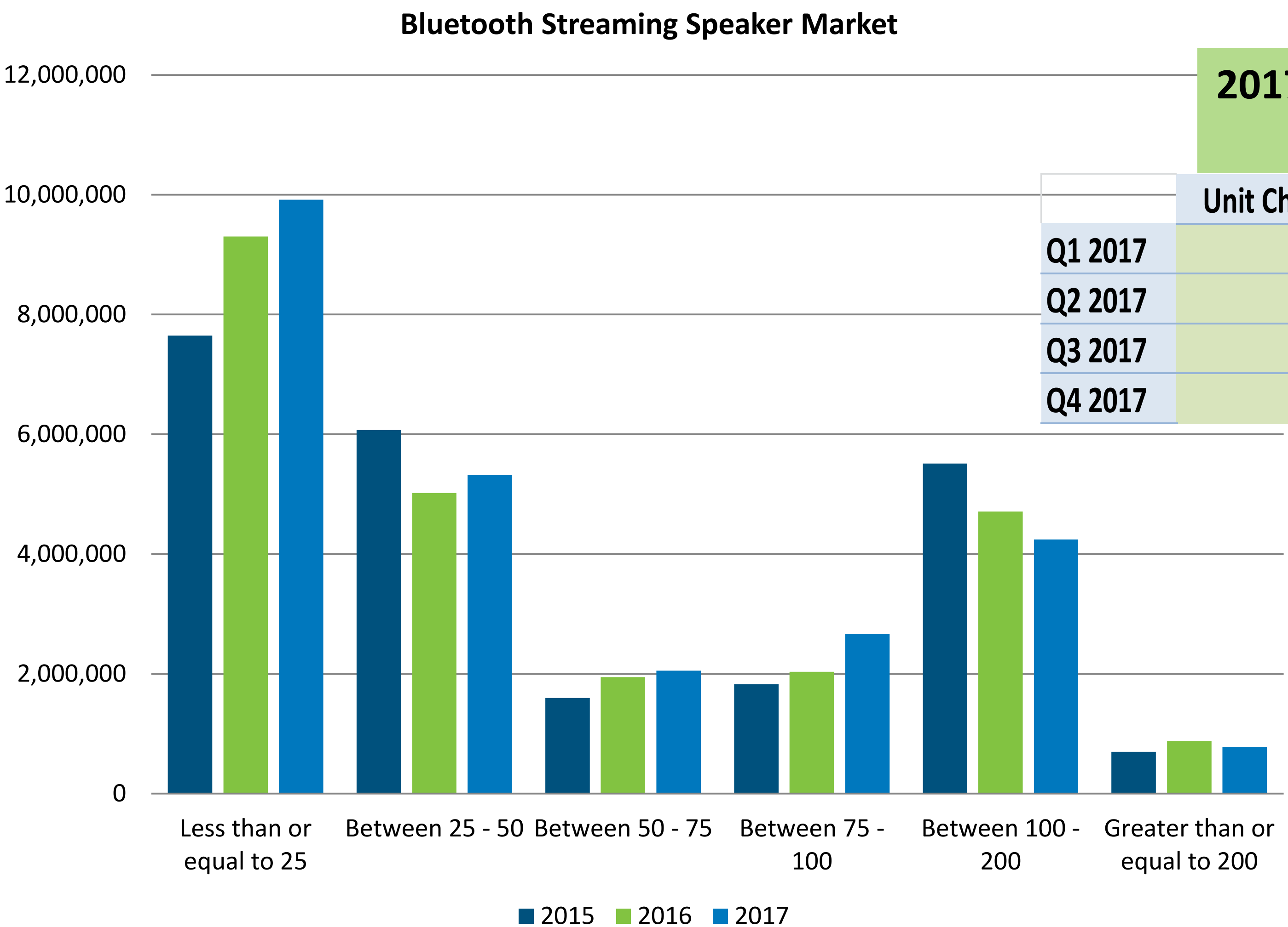
2017 Units, $ and shares



YTD Units	3.5m
YTD Revenue	$523m

Source: The NPD Group/ Retail Tracking Service

Small growth in mid price points but strongest part of business remains entry level

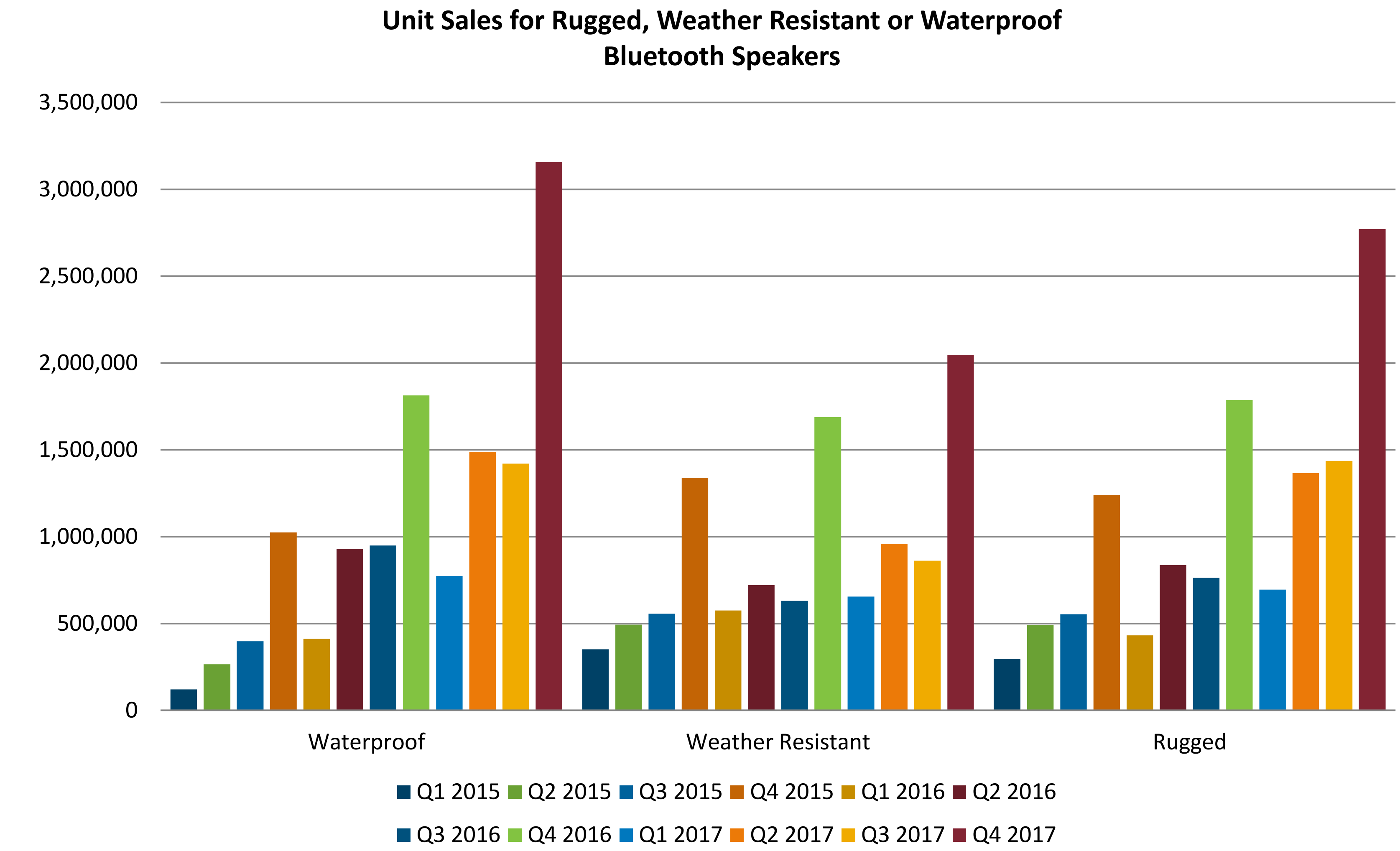


2017 Bluetooth Market Trends

	Unit Change	$ Change	ASP Change
Q1 2017	-4.1%	-4.5%	-0.3%
Q2 2017	6.9%	0.6%	-5.9%
Q3 2017	12.6%	4.5%	-7.3%
Q4 2017	2.9%	-3.9%	-6.7%

Source: The NPD Group, Inc./Retail *Tracking Service, Not Including WiFi Mesh System and not including Google (or Amazon) Voice Speakers,*

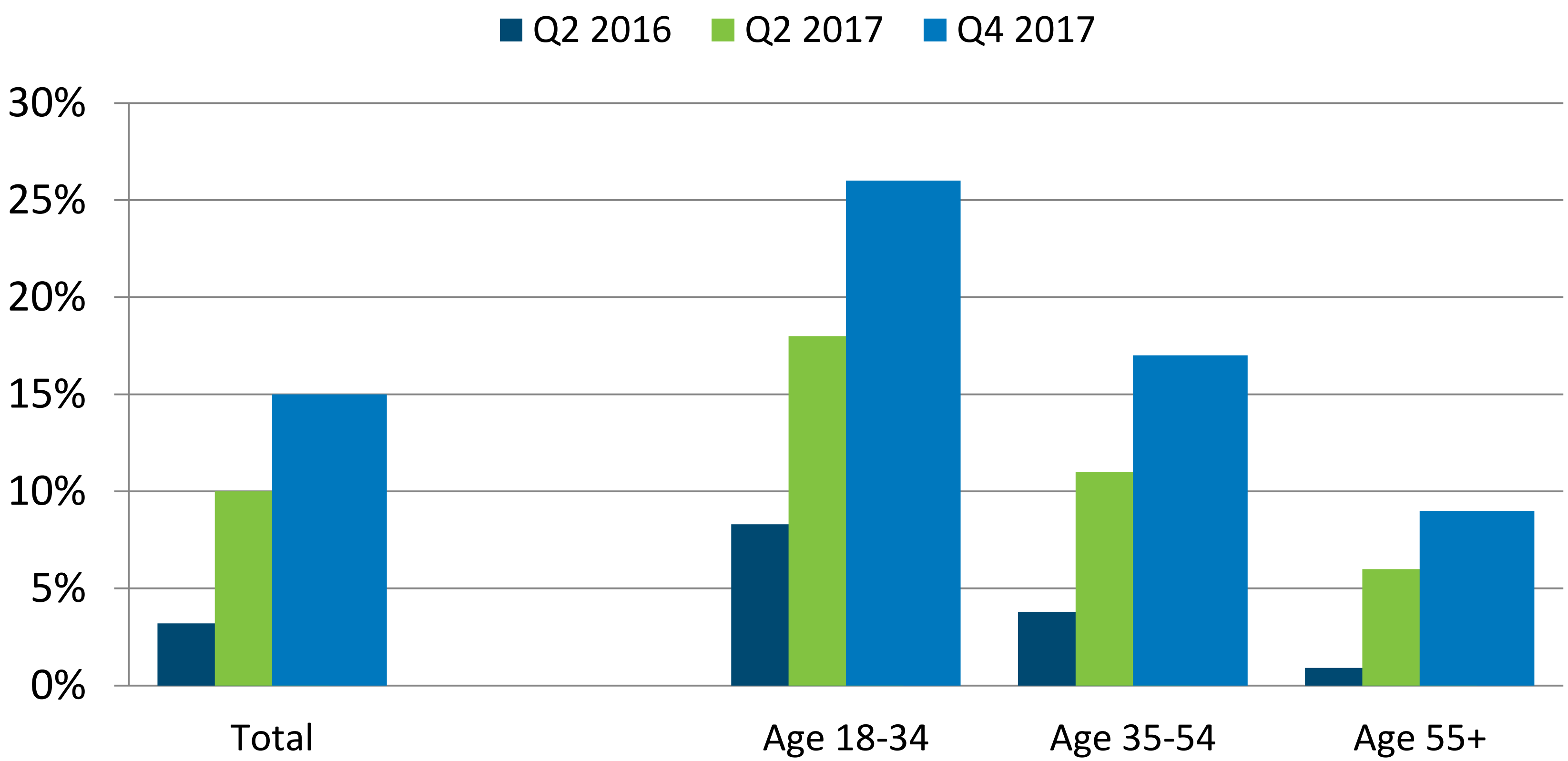
Waterproof speakers and other specialty products growing faster in a slowing market



Source: The NPD Group, Inc./Retail *Tracking Service,Rugged and Waterproof or Weather Resistant are not mutually exclusive*

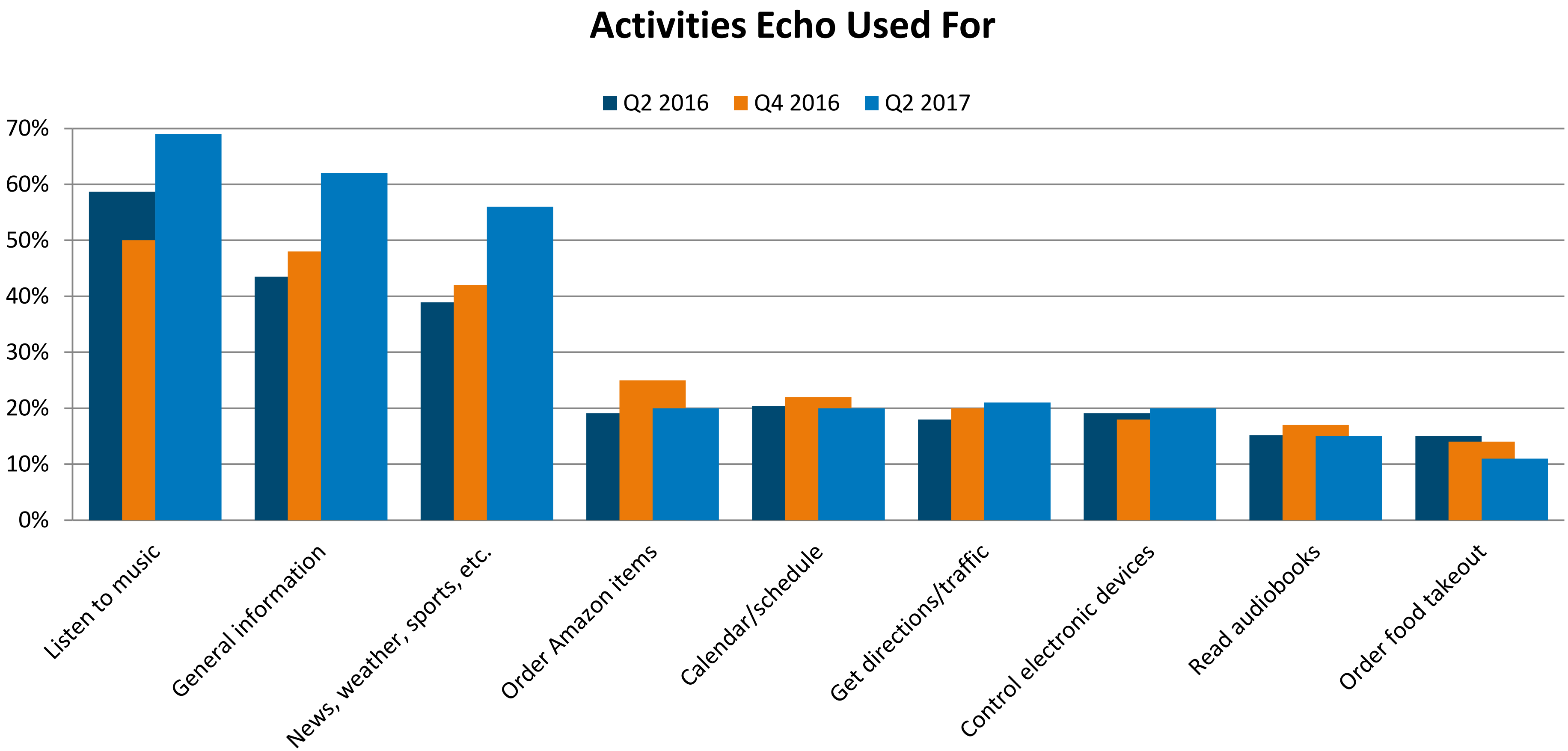
Voice activated speaker ownership

Ownership of voice activated speakers has grown to 15% of internet enabled households



Source: Connected Intelligence, Connected Home Automation Report, Q2 ’16, Q2 ’17, Q4 ’17

Music continues to be a top task for Echo users



Source: Connected Intelligence, Connected Home Automation Report, Q2 '17

Purchase Sequencing: Dot and Smart Home

Consumer Receipt Transaction Analysis

Smart Lighting: 15%

Security & Monitoring: 10%

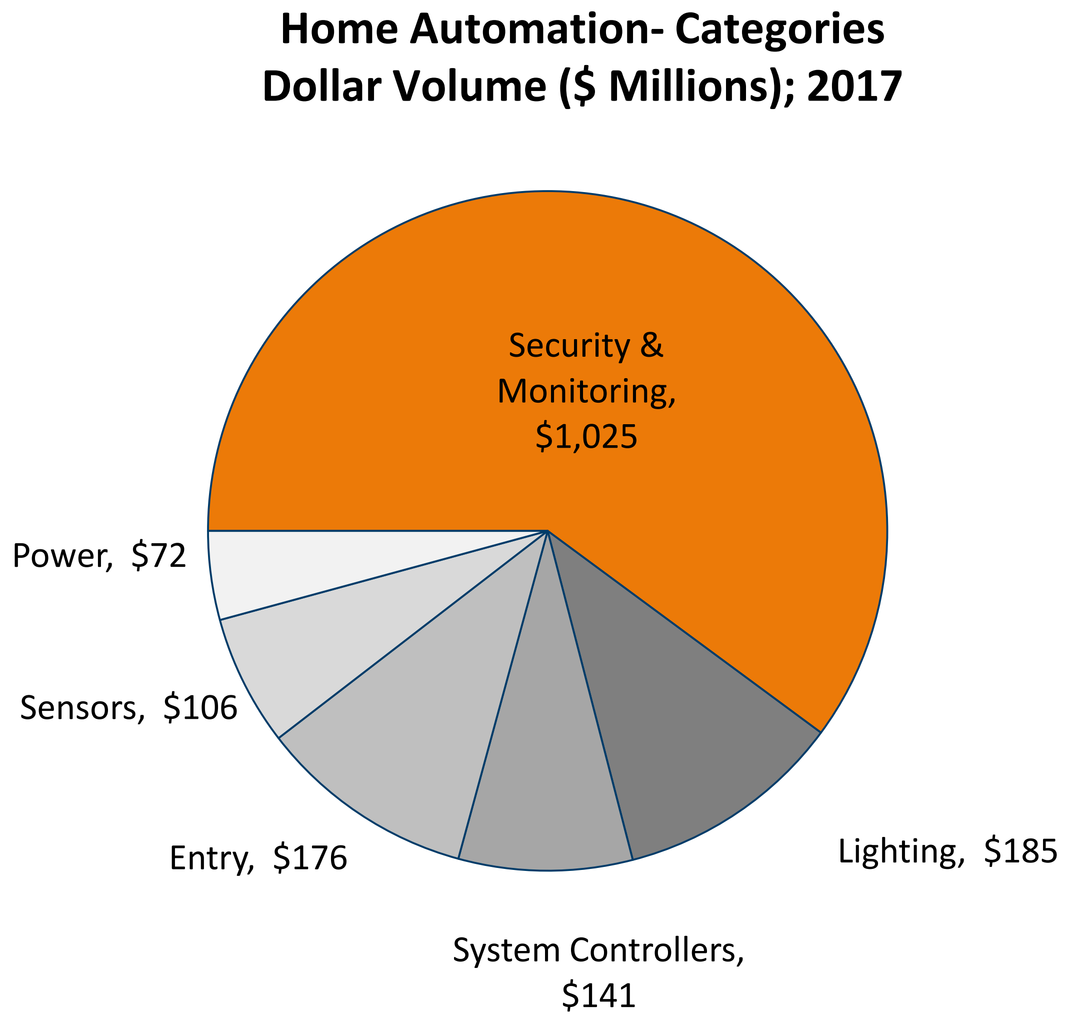
Power & Sensors: 8%

System Controllers: 7%

Smart Locks: 2%

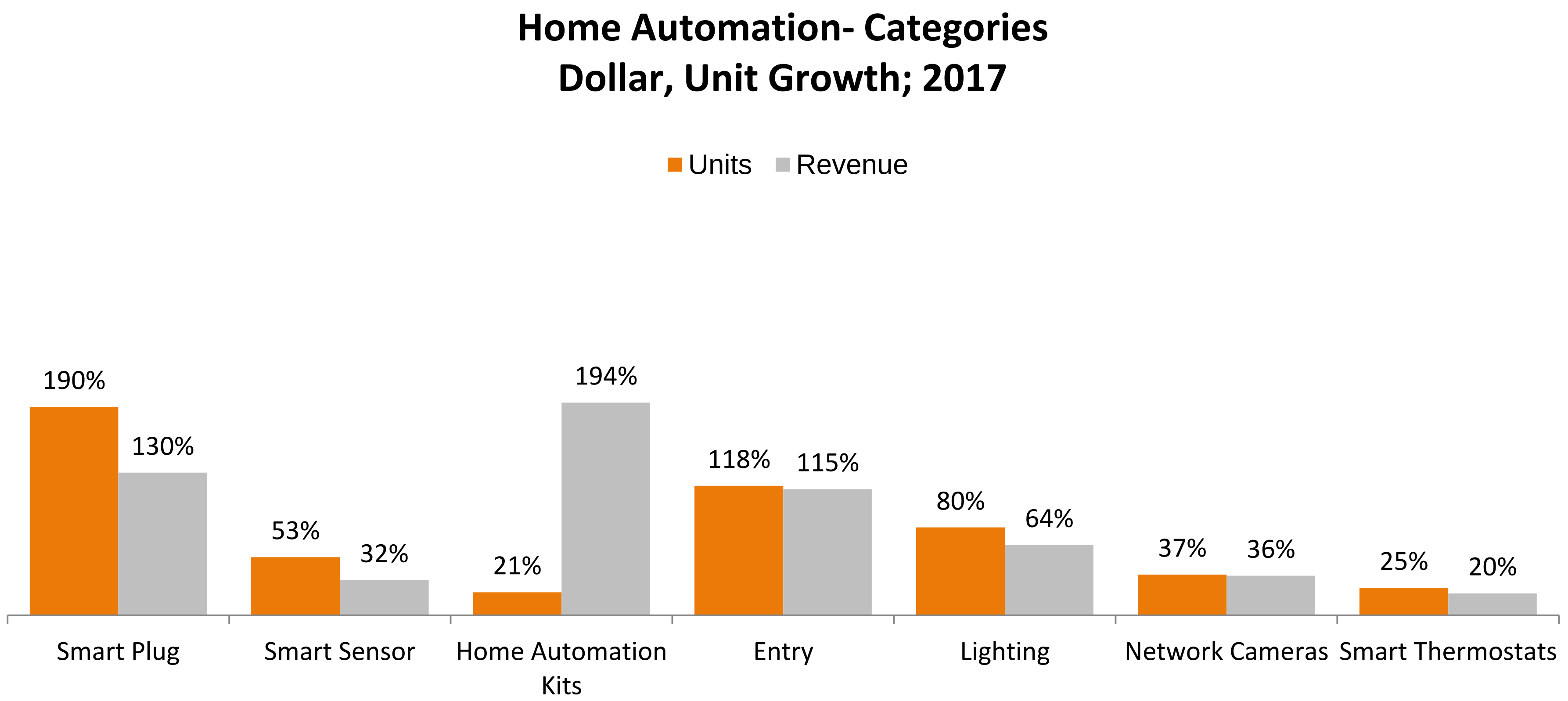
Source: The NPD Group / Checkout E-commerce
Jan 2016 – Aug 2017

Security and monitoring accounts for nearly two-thirds of category sales



Source: The NPD Group, Inc./Retail Tracking Service

Lighting and entry are large categories seeing significant unit and revenue growth



Source: The NPD Group, Inc./Retail Tracking Service