

FAA UAS SYMPOSIUM

Forecasting and Emerging Markets – Looking in the Crystal Ball



Federal Aviation
Administration



Forecasting and Emerging Markets – Looking in the Crystal Ball



Nan Shellabarger, FAA



Virginia Stouffer, LMI



Jack Cutts, CTA



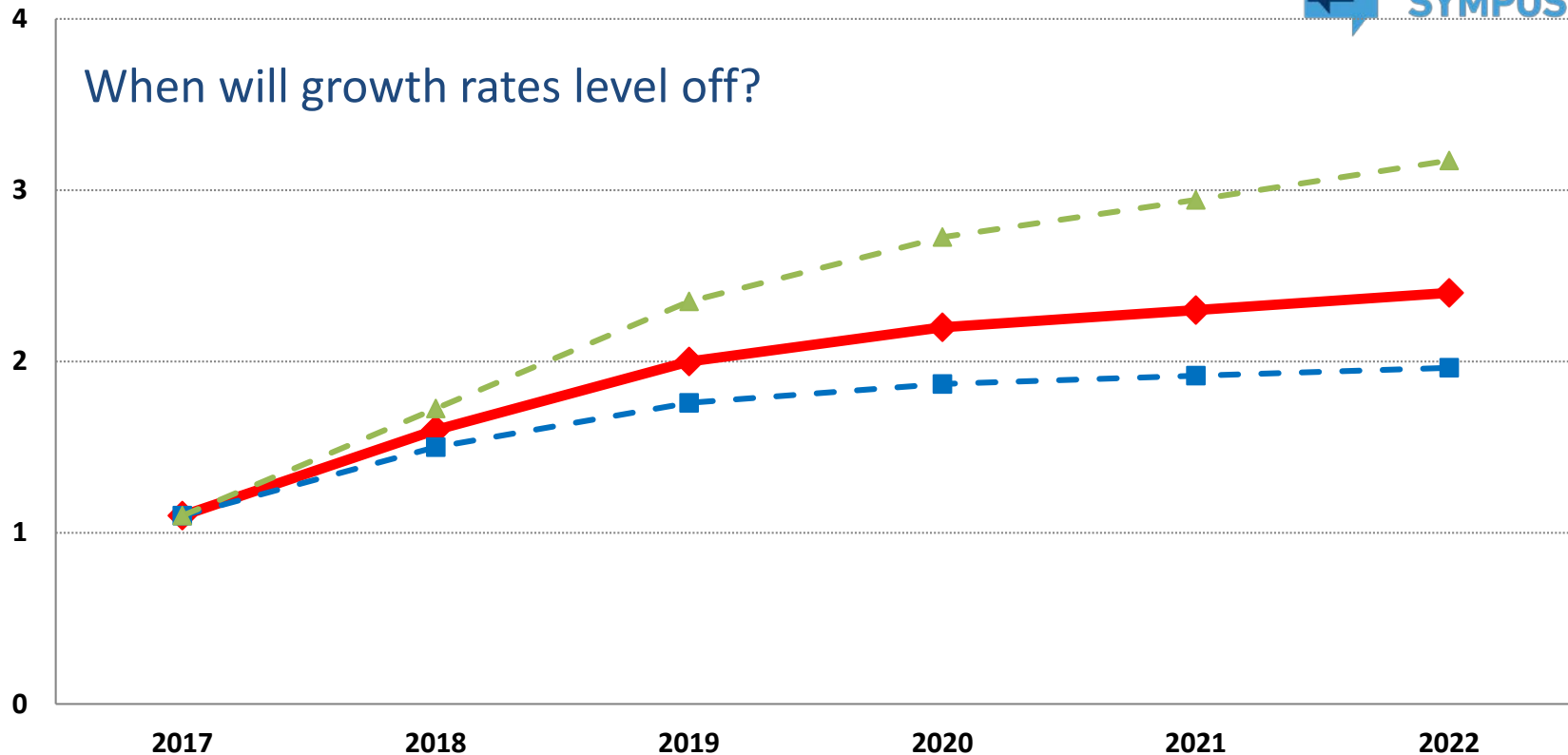
Ed Waggoner, NASA



Model UAS Fleet-Preliminary Results



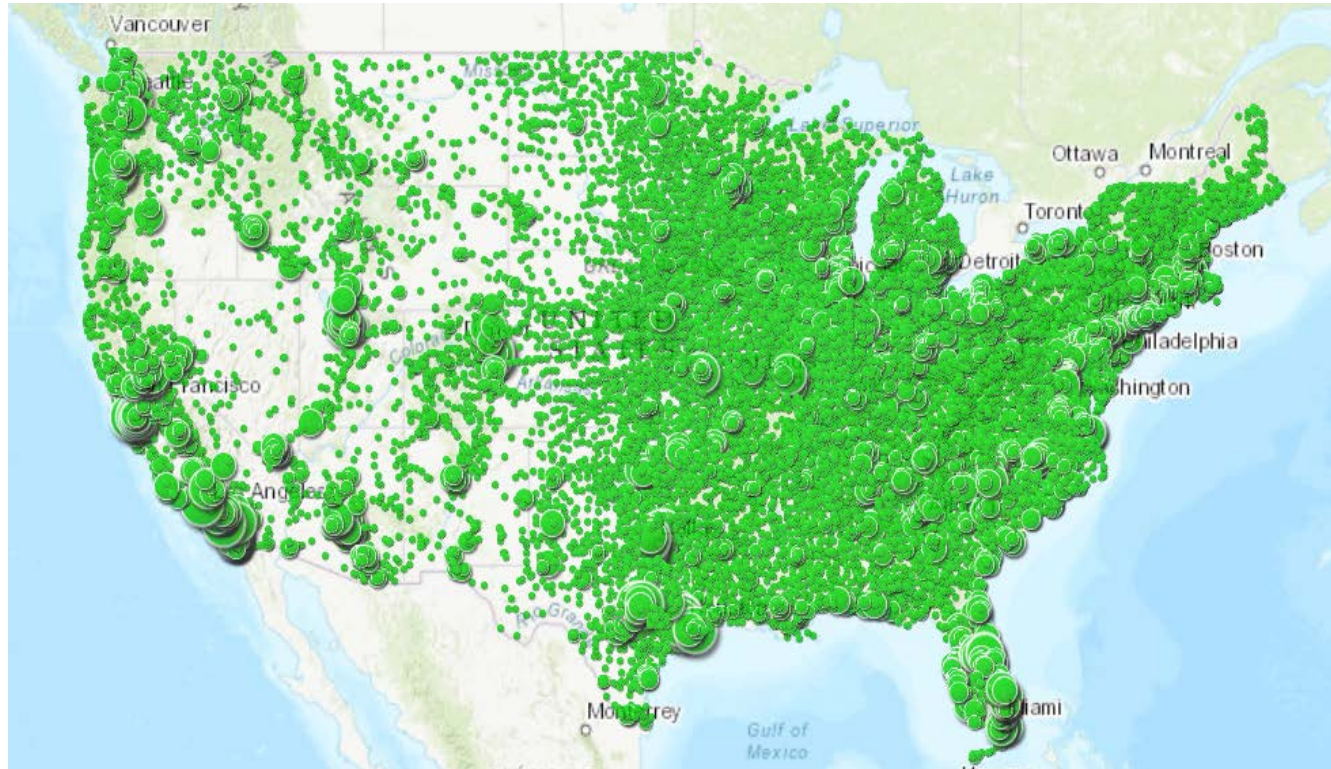
Total Fleet in Millions



#UAS2018



Distribution of Model Registrations

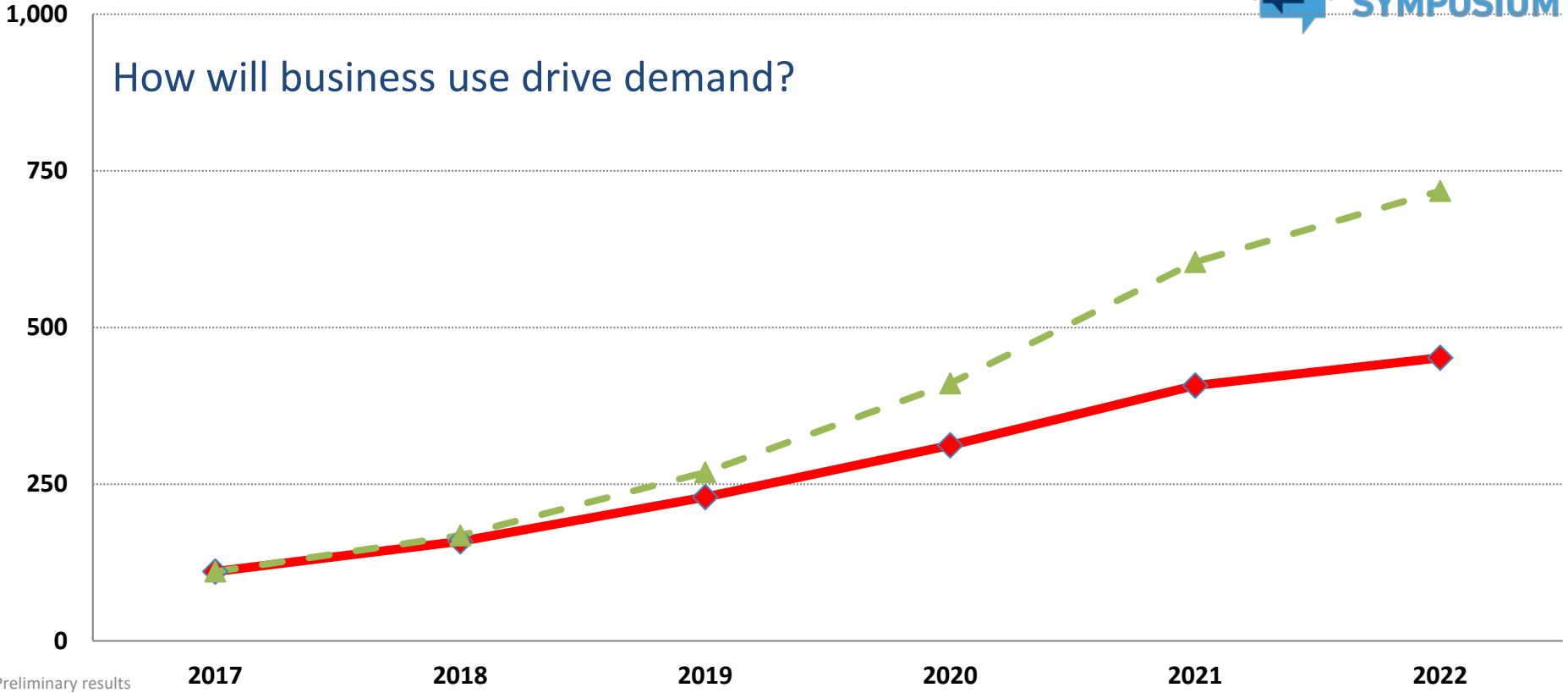


Model UAS
registrations
match
population
patterns

Non-Model UAS Fleet-Preliminary Results



How will business use drive demand?

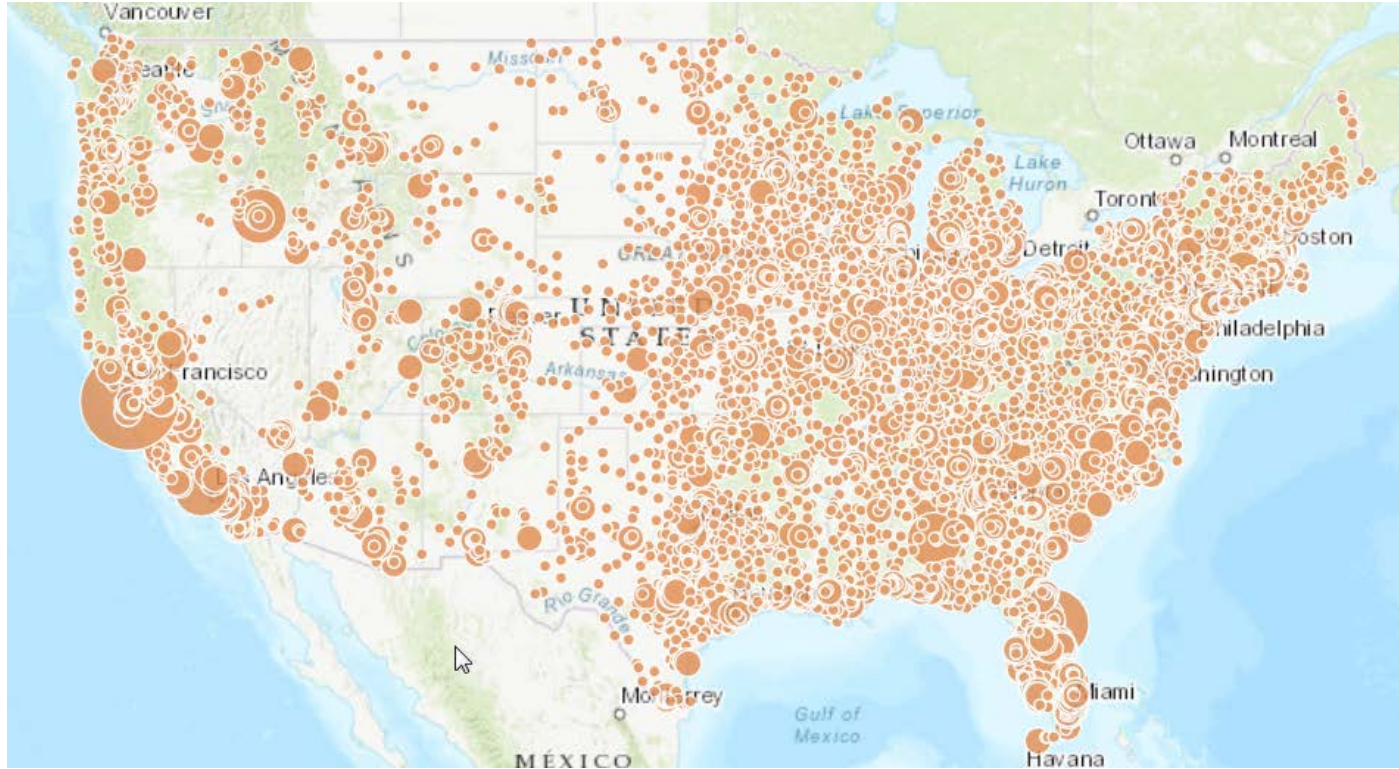


Preliminary results

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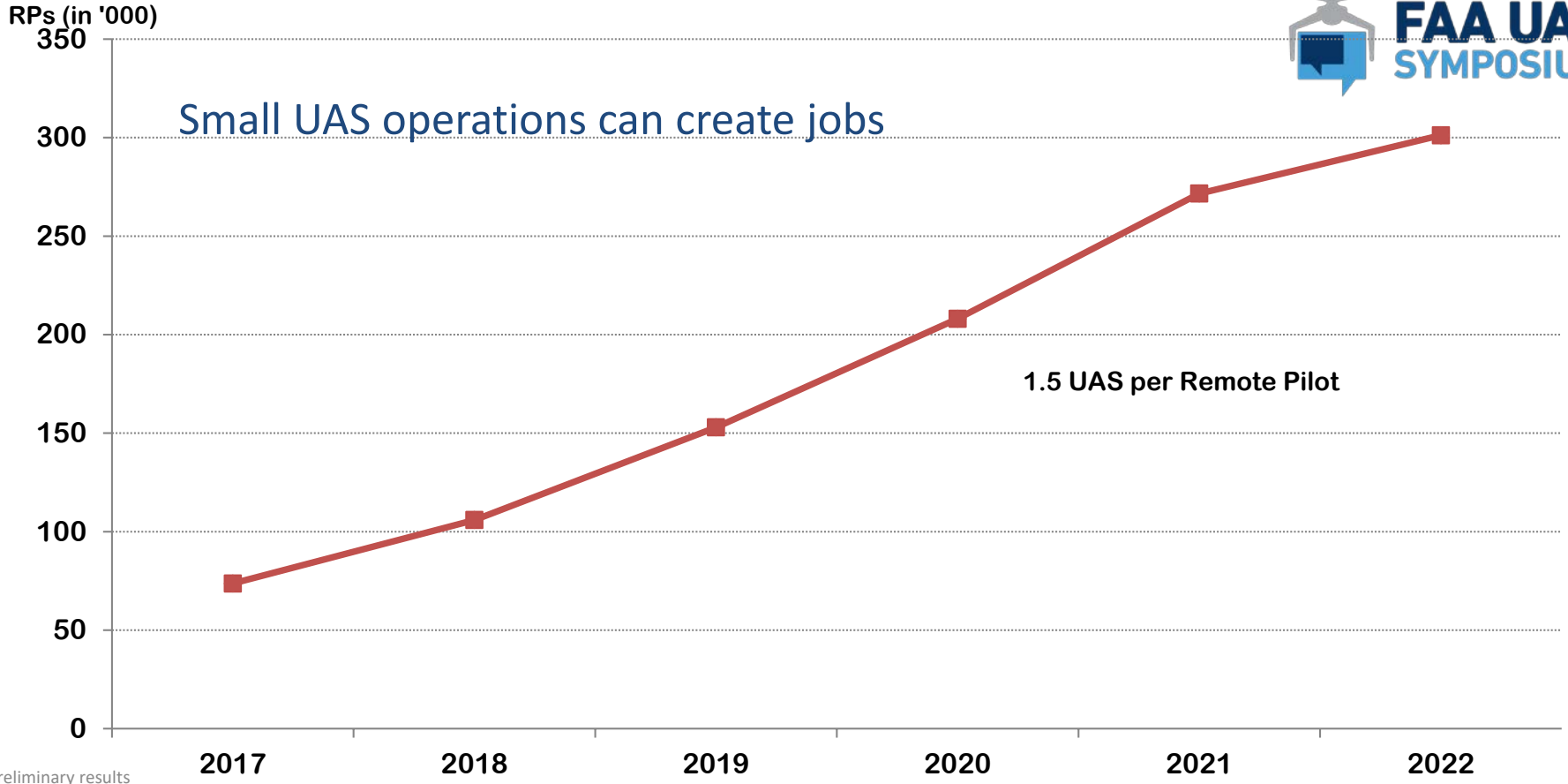


Distribution of Non-Model Registrations



Where are the areas of opportunity?

Remote Pilots Forecast-Preliminary Results



Small UAS operations can create jobs

1.5 UAS per Remote Pilot

Preliminary results

#UAS2018



Consumer
Technology
Association™



CTA.tech



CTA.tech

Consumer Demand for UAS

Jack Cutts

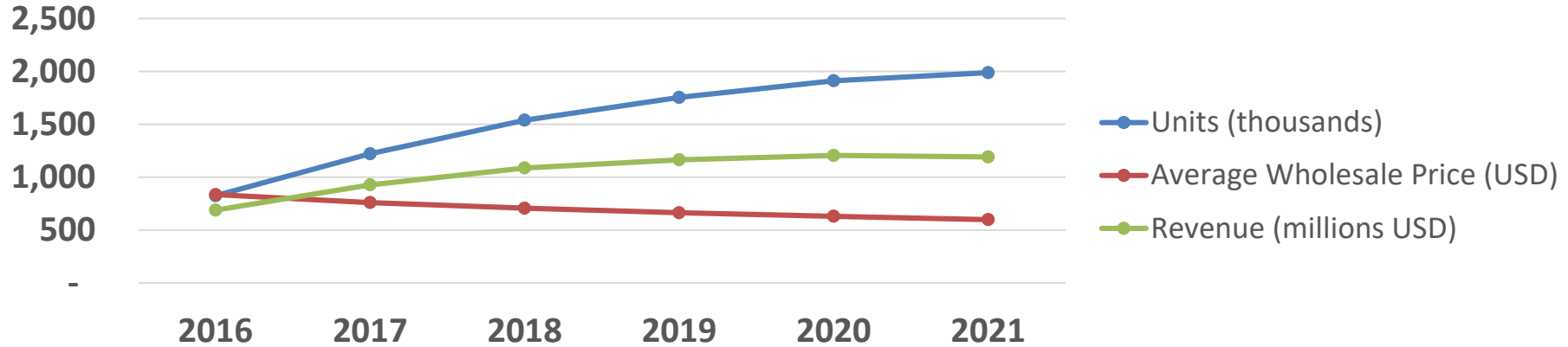
Director, Industry and Business Intelligence

FAA UAS Symposium

March 6, 2018

CTA Forecast: Drones over 250g

U.S. Consumer Channels



	2016	2017	2018	2019	2020	2021
Units (thousands)	825	1,221	1,538	1,754	1,912	1,988
Average Wholesale Price (USD)	\$835	\$760	\$707	\$664	\$631	\$599
Revenue (millions USD)	\$689	\$928	\$1,087	\$1,164	\$1,206	\$1,191

Source: CTA U.S. Consumer Technology Sales & Forecasts (January 2018)

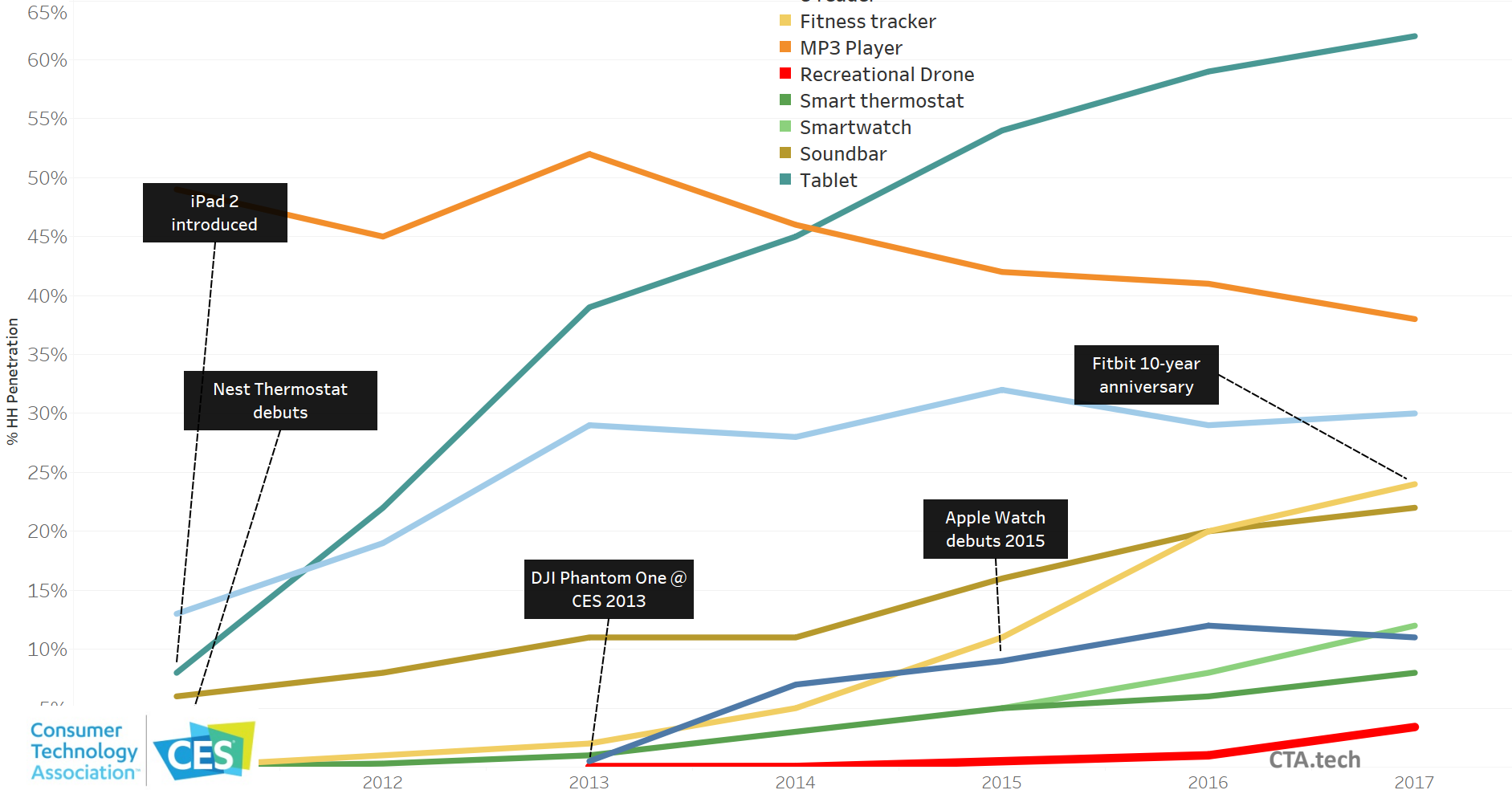
Cause for Optimism in Consumer Drone Market

- Better tech is bubbling up...
 - First-person view
 - Single-purpose drones
 - More attention to software UX
- ...and trickling down...
 - Better cameras and image stabilization
 - Better obstacle avoidance



Household Ownership Rates, 2011-2017

- Action camcorders
- e-reader
- Fitness tracker
- MP3 Player
- Recreational Drone
- Smart thermostat
- Smartwatch
- Soundbar
- Tablet





Future Purchase Intent

Purchase channels for drones are mixed between purchasing in a physical store versus online. Similar to the purchase channel profile of other consumer technology products, there is an even split between using physical store and online purchase.

Drone purchase intent

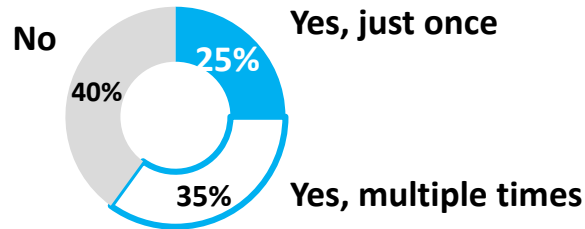


Purchase channel

Channel	Commercial Use	
		
Drone specialist	27%	32%
Manufacturing company	26%	23%
Mass merchant	18%	15%
Photo retailer	15%	15%
Electronics retailer	13%	9%
Other	1%	4%

Consumer Use

Have you ever seen a drone flying?



Have you personally flown a drone?



Purpose for flying a drone
(Among those who have flown one)



Photography and General Purpose Flying Most Desired Potential Uses for Individuals



Photography /
videography



For commercial
use*



For
racing



For general
flying

	<u>Professional</u>	<u>Amateur</u>			
Commercial	<u>46%</u>	30%	<u>41%</u>	25%	32%
Recreational	27%	<u>56%</u>	15%	17%	<u>61%</u>

Consumer Awareness

Among all consumers:



31%: Have heard of KBYF campaign



Importance of campaign guidelines



85%: On average, % of consumers who find Know Before You Fly campaign guidelines very important or important

(All were exposed to the definition of KBYF campaign)

68%
Consulted any prior to flying a drone (Net)

Resources consulted before flying a drone Among current drone owners (n=393)

State and local regulations	30%
Federal regulations	29%
Operational instructions/directions provided when purchasing/using the device	28%
KNOW BEFORE YOU FLY Campaign safety guidelines for recreational use	21%
Other	4%
I was aware of the above resources but did not read them prior to flying a drone	6%
I was not aware of any available resources, and therefore did not read them prior to flying a drone	25%

75%
Aware of any available resources

Consumer Awareness

Sources where consumers came across Know Before You Fly campaign guidelines
(*Among those who purchased a drone and are very familiar or familiar with campaign guidelines)

