Connected Infotainment

Car Radio Strategies from Car Makers

Roger C. Lanctot
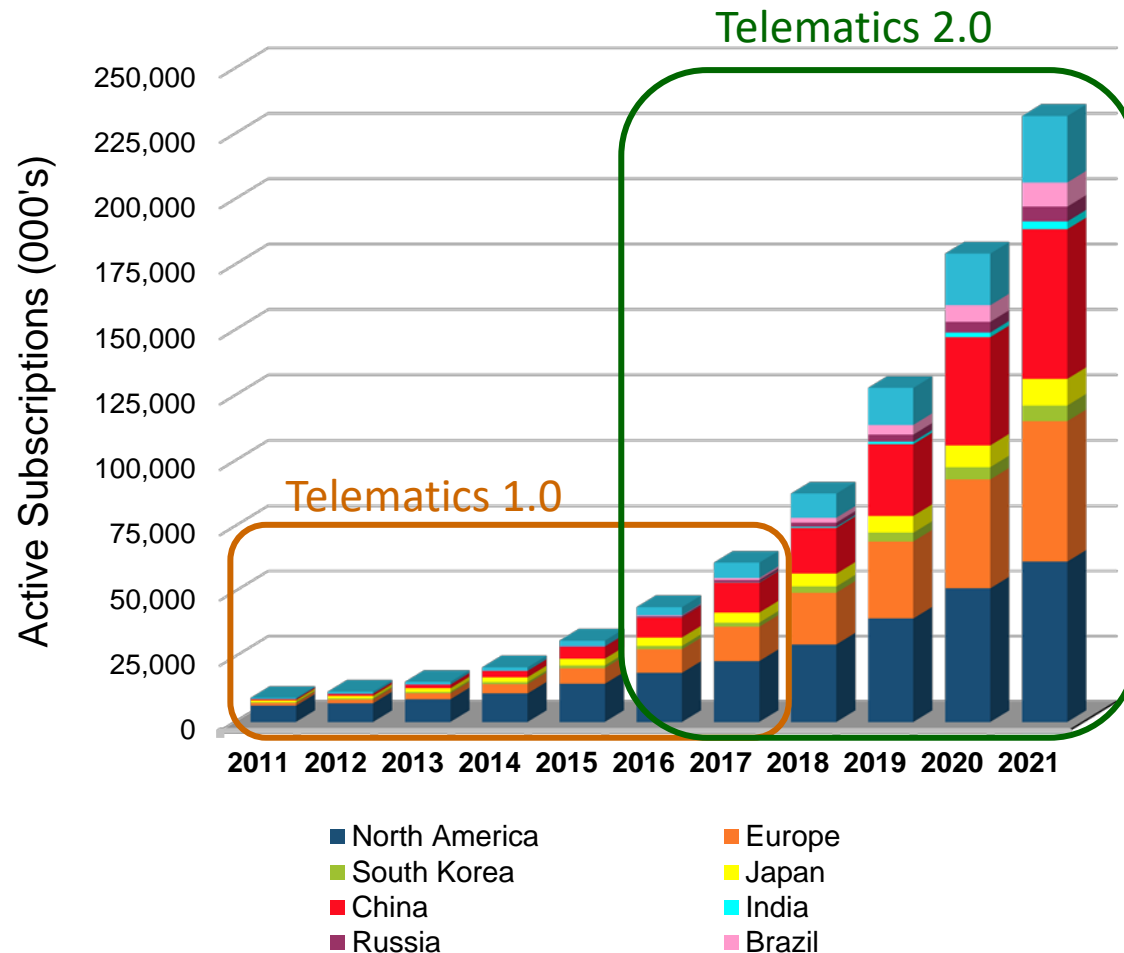Director, Automotive
Connected Mobility

STRATEGY ANALYTICS

IP CONNECTIVITY RISING FAST
ACTIVE VEHICLE SUBSCRIPTIONS BY REGION

Global Active subscriptions will exceed 250 Million by 2022

Telematics 2.0

Telematics 1.0

Legend:
- North America
- Europe
- South Korea
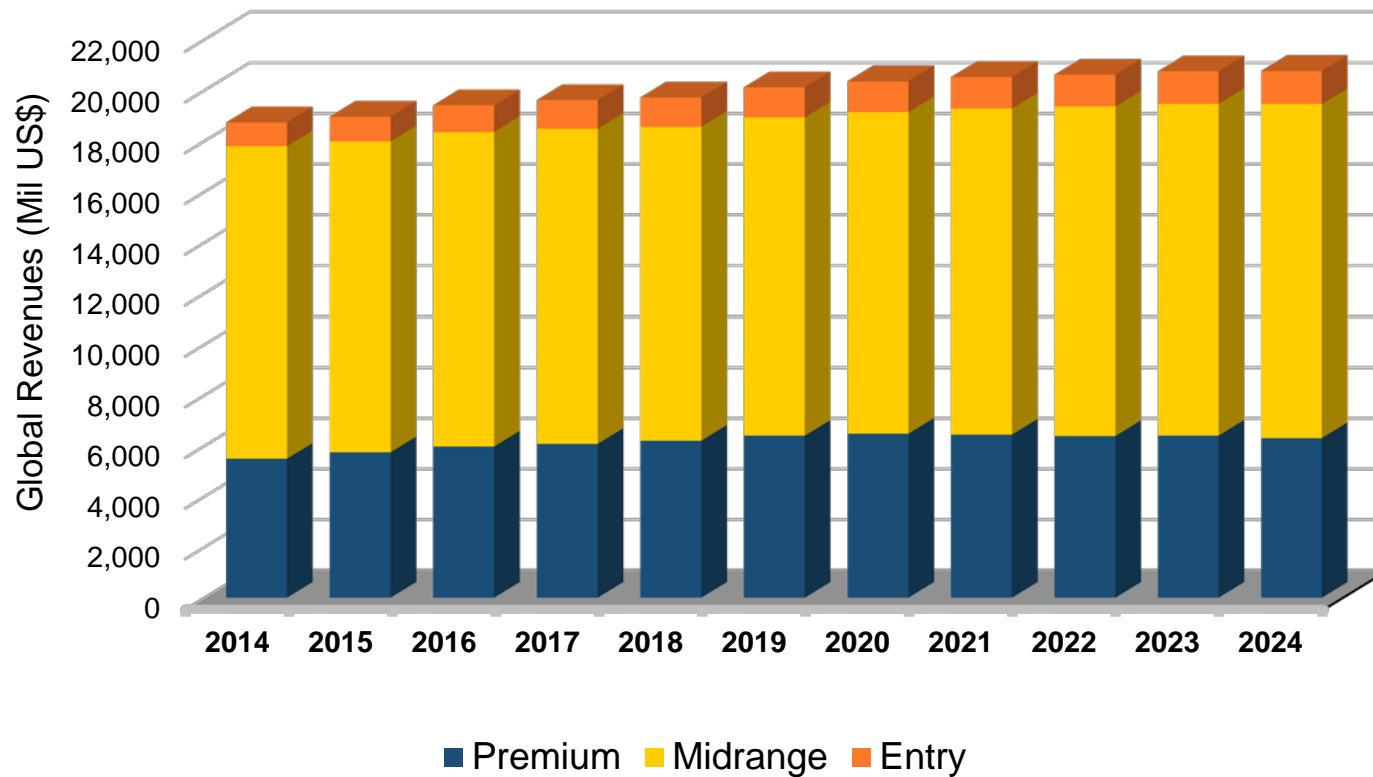- Japan
- China
- India
- Russia
- Brazil

Leading Regions:

➢ North America: Market Driver - Single Market

➢ Europe: Market Driver – eCall

➢ China: Market Driver – Biggest Global Car market

INFOTAINMENT A CORE SOURCE OF CAR MAKER REVENUE
REVENUES BY VEHICLE SEGMENT

Supplier Revenue Growth 2016 vs. 2024: +7.0% (CAGR 0.8%)

- Entry level opportunity: Limited
  - $1.0 Billion in 2016 to $1.3 Billion in 2024
  - Price pressure will limit infotainment revenue opportunity

- Midrange opportunity: Stable
  - $12.4 Billion in 2016 to $13.1 Billion in 2024
  - Significant opportunity in Connectivity, Audio, Telematics, HMI/Displays, Navigation

- Premium segment opportunity: Stable
  - $5.9 Billion in 2016 to $6.3 Billion in 2024
  - Mature market and increased price pressure as features are enabled on cheaper silicon

INFOTAINMENT TAKES A BACK SEAT

Exhibit 3.1: Top Five Vehicle Purchase Priorities by Region

	US	Western Europe	China
#1	Upfront price (16.5)	Upfront price (16.8)	Ride and handling (12.3)
#2	Fuel efficiency (12.9)	Fuel efficiency (13.6)	Fuel efficiency (10.2)
#3	Ride and handling (11.2)	Ride and handling (10.3)	Workmanship and visual appeal (9.9)
#4	Workmanship and visual appeal (9.9)	Workmanship and visual appeal (8.9)	Safety features (9.0)
#5	Crash safety ratings (8.1)	Safety features (7.9)	Upfront price (8.5)

TASTES ARE EVOLVING

Exhibit 3.2: Safety, Infotainment, Automated Driving, and Advanced HMI Rankings and Average Scores

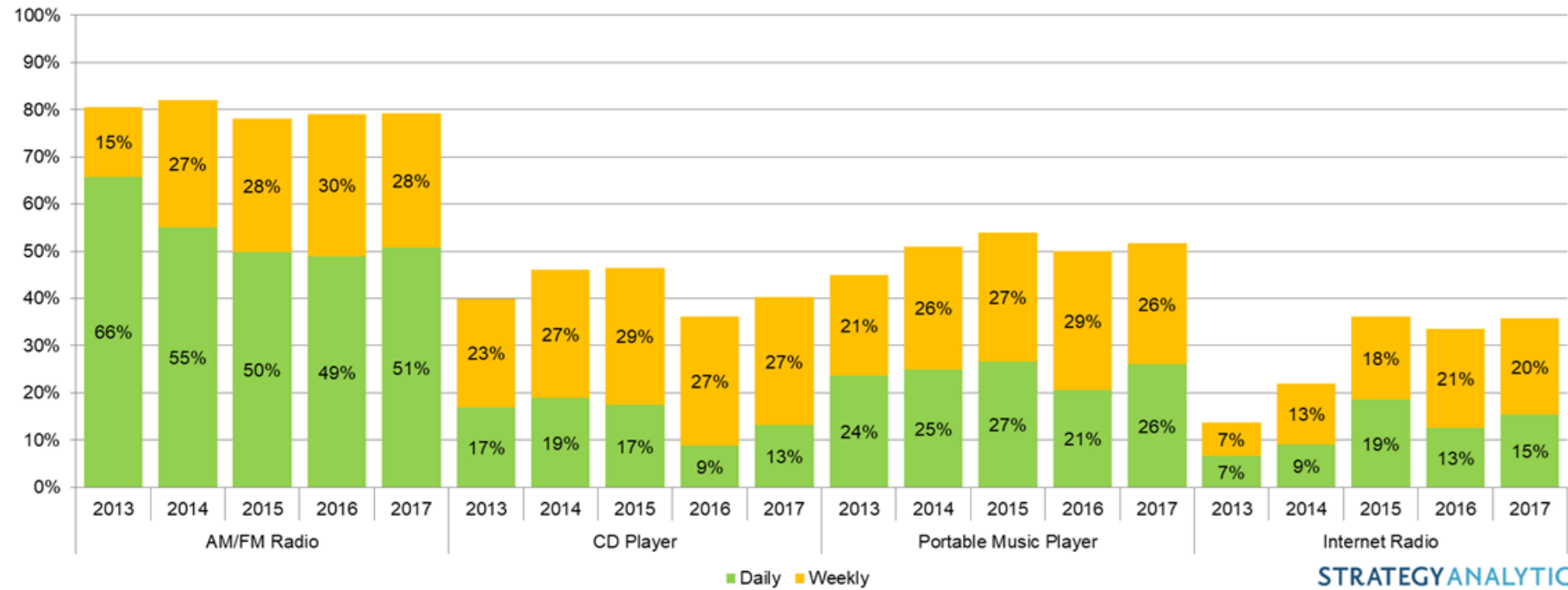|	US	Western Europe	China
Safety features	**#6 (7.3)**	**#5 (7.9)**	**#4 (9.0)**
Infotainment features	# =11 (4.7)	#11 (5.4)	#9 (7.4)
Automated driving features	# =11 (4.7)	#8 (6.4)	#8 (7.5)
Advanced HMI features	#9 (6.0)	#10 (5.8)	#10 (6.8)

INFOTAINMENT IS DIFFICULT

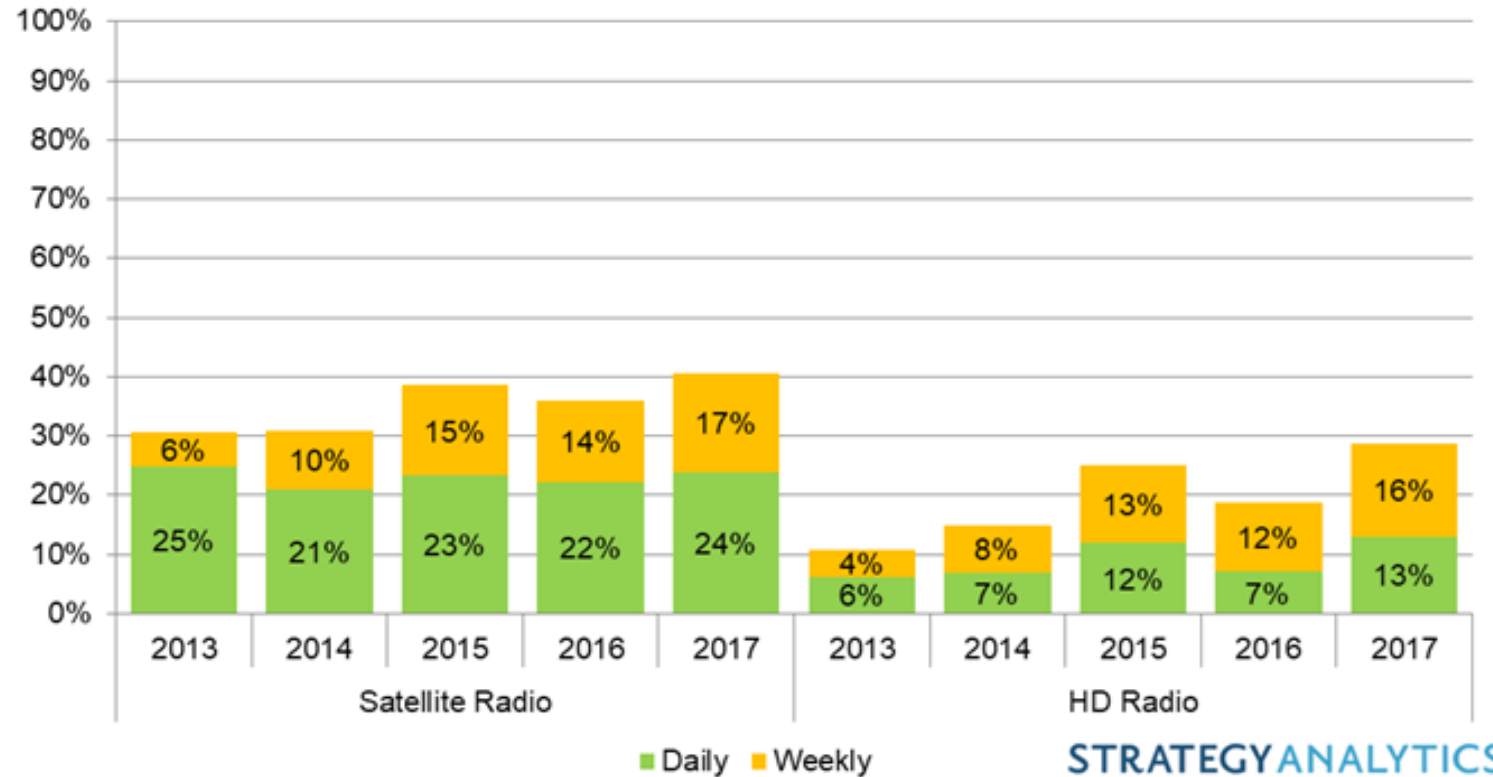J.D. Power's last Vehicle Dependability Study points to increasing issues with in-car technology

REACH: STEADY LISTENING: DOWN

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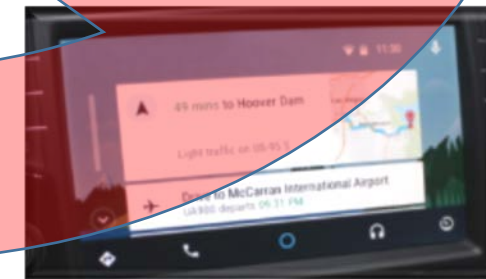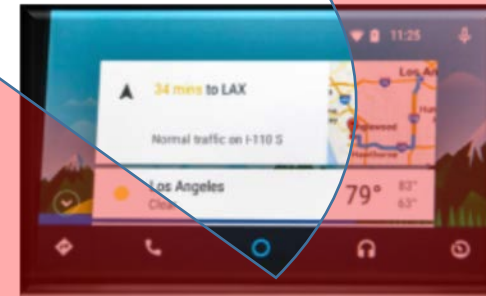
CARPLAY AND ANDROID AUTO:
THE EASY WAY OUT?

Source: Infotainment & Telematics Service
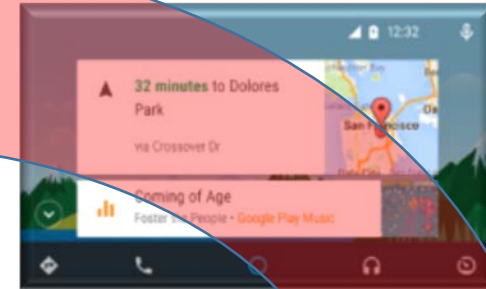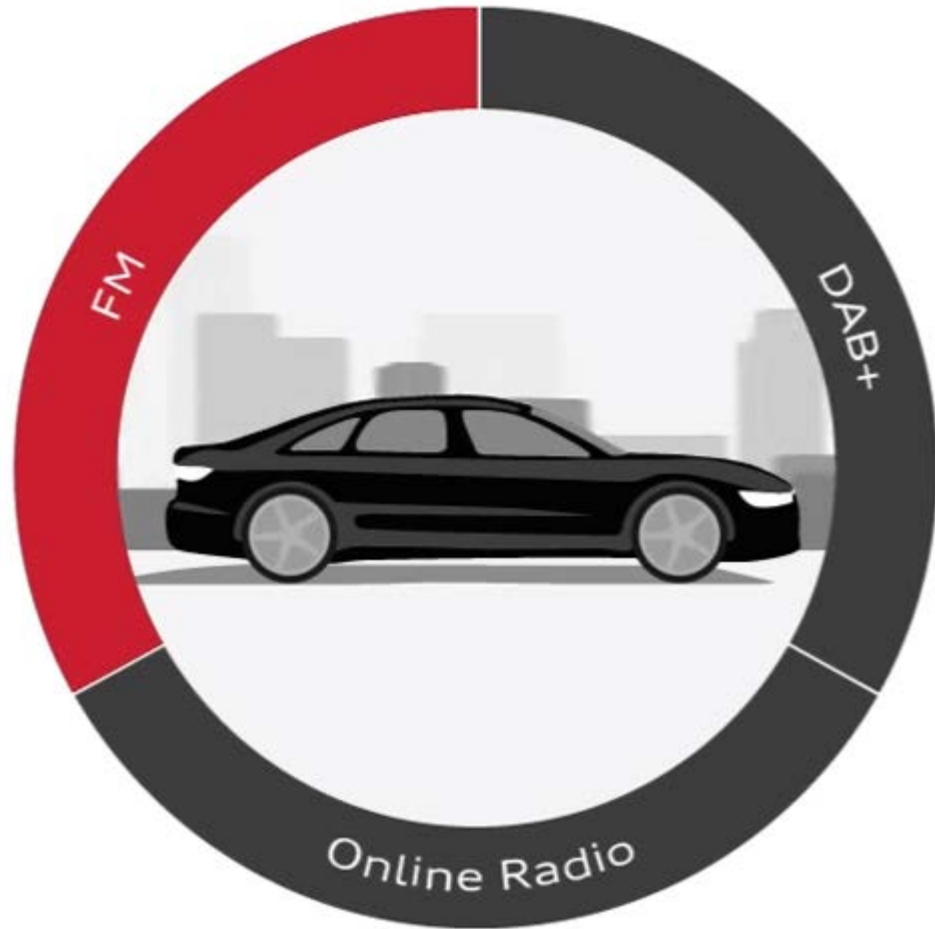
AUDI HYBRID RADIO

CADILLAC SPOTIFY

Requirements:

In all, using the native Spotify app (the one that runs directly on CUE) requires two paid plans:

A Spotify Premium plan ($9.99 per month), and an active 4G LTE data Subscription, offered as one of the following three plans:

$20 a month for the unlimited plan

$10 for 1GB

$10 a month as a device for AT&T customers

BMW PAY FOR CARPLAY

BMW added CarPlay for 2017 as a $300 option on cars equipped with built-in navigation. The new plan would be free for the first year of ownership on a new BMW. After that, owners would be asked to pay $80 per year to keep the service. Over the course of a three or four-year lease, it would still work out to less money than the option is now. Currently, BMW doesn't offer Android Auto on any of its vehicles. But Google Assistant is coming to new BMW models later in 2018. The company already announced plans to add Amazon Alexa skills.

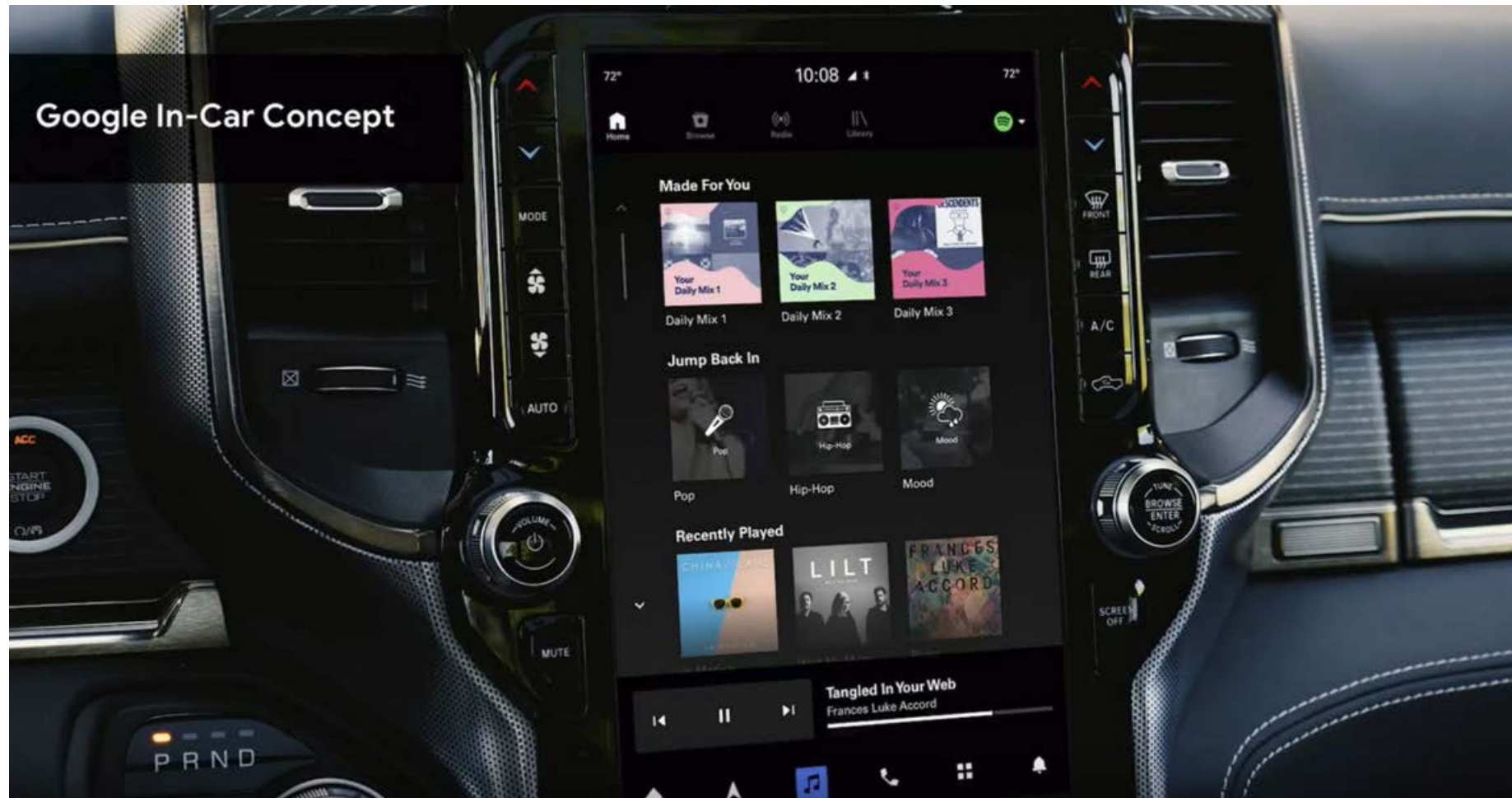## Is BMW going to make you pay for Apple CarPlay every year?

Subscription-based CarPlay would join Alexa, Google Assistant in 2019 models
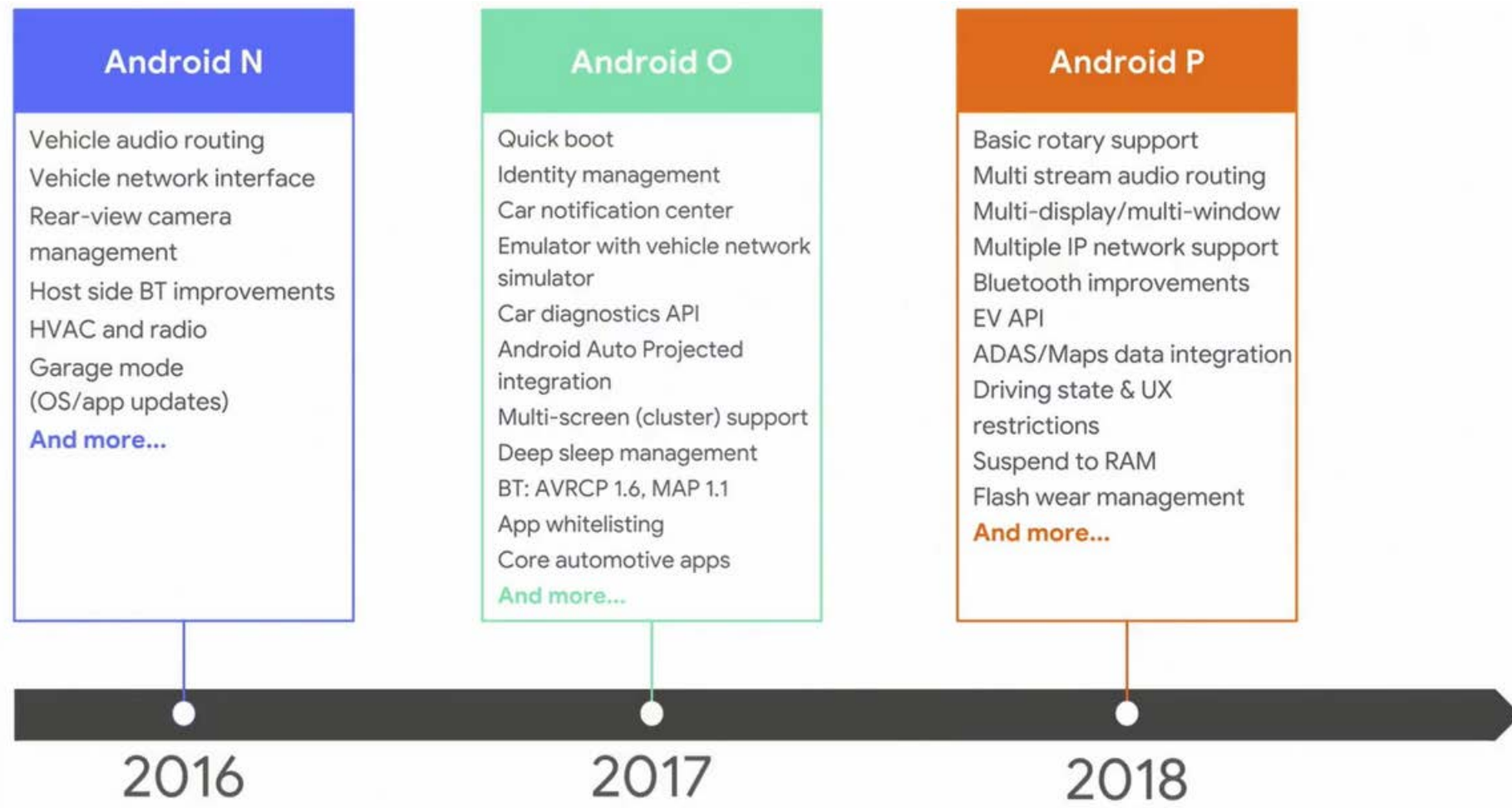
By Zac Estrada | @zacestrada | Jan 16, 2018, 5:55pm EST

f 🐦 ↗ SHARE
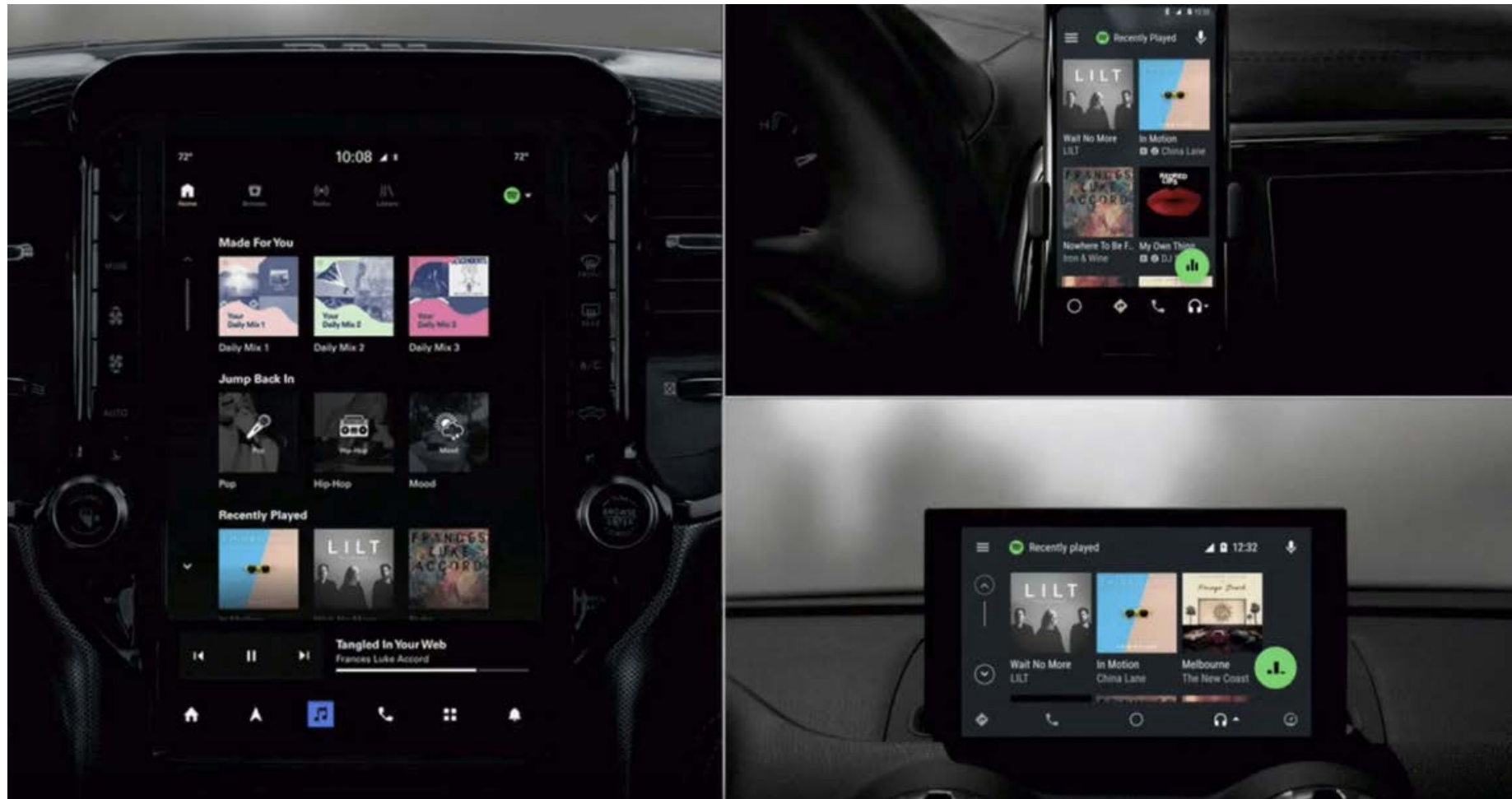
EMBEDDED ANDROID AUTO FROM VOLVO

LARGER SCREENS, NEW UI SUPPORT

Android N	Android O	Android P
Vehicle audio routing	Quick boot	Basic rotary support
Vehicle network interface	Identity management	Multi stream audio routing
Rear-view camera management	Car notification center	Multi-display/multi-window
Host side BT improvements	Emulator with vehicle network simulator	Multiple IP network support
HVAC and radio	Car diagnostics API	Bluetooth improvements
Garage mode (OS/app updates)	Android Auto Projected integration	EV API
And more...	Multi-screen (cluster) support	ADAS/Maps data integration
	Deep sleep management	Driving state & UX restrictions
	BT: AVRCP 1.6, MAP 1.1	Suspend to RAM
	App whitelisting	Flash wear management
	Core automotive apps	And more...
	And more...	

2016   2017   2018

ANDROID AUTO LOOKING MORE LIKE RADIO?

Rise of the Digital Assistants

Amazon's Alexa Voice Service	**Apple's Siri**	**Google's Google Assistant**	**IBM's Watson**	**Microsoft Cortana**	**Nuance Dragon Drive Automotive Assistant**	**Samsung Bixby**
Beginning to be used by numerous OEMs, e.g. Ford and VW	Widely deployed in cars via Siri Eyes Free and CarPlay	Precursor to Google Assistant is widely deployed in cars via Android Auto	Beginning to see use in the auto industry, e.g. via GM's OnStar Go platform	Potential deployment with Renault-Nissan vehicles in the future	Nuance offers hybrid solution rather than strictly cloud-based.	In light of Harman acquisition, unclear where Bixby will fit in Harman's strategy.

OEMS' INFOTAINMENT AI PARTNERSHIPS

OEM	Digital Assistant	Status
BMW	Amazon Alexa, Microsoft's Cortana	Alexa – Launched (BMW Connected mobile app integration), Cortana - Demonstrated
Ford	Amazon Alexa	Planned launch in Ford electrified models
GM	IBM Watson, used with OnStar Go backend	Launched
Honda	HANA, proprietary assistant developed in partnership with SoftBank	Concept demonstration
Hyundai	Google Assistant, Amazon Alexa	Google Assistant – Launched in Genesis, Alexa – Launched in 2017-MY vehicles and select 2016-MY vehicles
Mercedes	Google Assistant, Amazon Alexa	Both planned for launch sometime 2017
Nissan	Microsoft's Cortana	Planned, launch date not yet announced
Toyota	YUI, proprietary digital assistant technology	Concept demonstration
Volkswagen	Amazon Alexa	Planned, launch date not yet announced

What's really at stake?
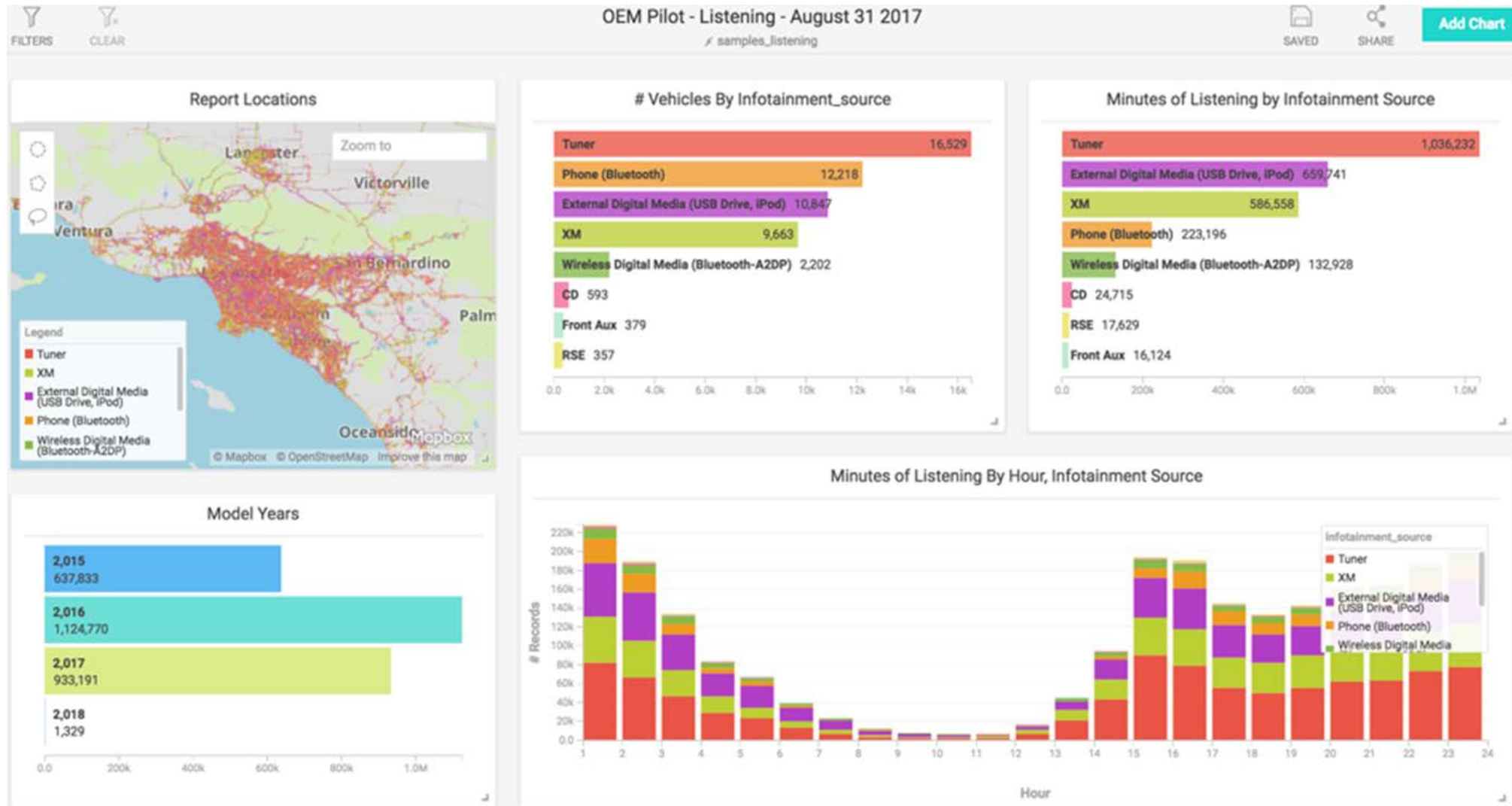
STRATEGYANALYTICS

Intent

Attribution

Audience Measurement

PEERING INTO THE BLACK HOLE OF IN–VEHICLE LISTENING

OEM Pilot - Listening - August 31 2017
samples_listening

Report Locations

 # Vehicles By Infotainment_source

Source	Value
Tuner	16,529
Phone (Bluetooth)	12,218
External Digital Media (USB Drive, iPod)	10,847
XM	9,663
Wireless Digital Media (Bluetooth-A2DP)	2,202
CD	593
Front Aux	379
RSE	357

Minutes of Listening by Infotainment Source

Source	Value
Tuner	1,036,232
External Digital Media (USB Drive, iPod)	659,741
XM	586,558
Phone (Bluetooth)	223,196
Wireless Digital Media (Bluetooth-A2DP)	132,928
CD	24,715
RSE	17,629
Front Aux	16,124

Model Years

Year	Value
2,015	637,833
2,016	1,124,770
2,017	933,191
2,018	1,329

Minutes of Listening By Hour, Infotainment Source

Los Angeles:
- USB 26%
- Satellite Radio 20%
- AM/FM Radio 41%
- BT Phone 7%
- BT Streaming 5%

Chicago:
- USB 13%
- Satellite Radio 25%
- AM/FM Radio 46%
- BT Phone 7%
- BT Streaming 6%

ANSWERING Q'S FOR CAR MAKERS, BROADCASTERS, ADV'RS

See listening by hour of day

Select location area for analysis
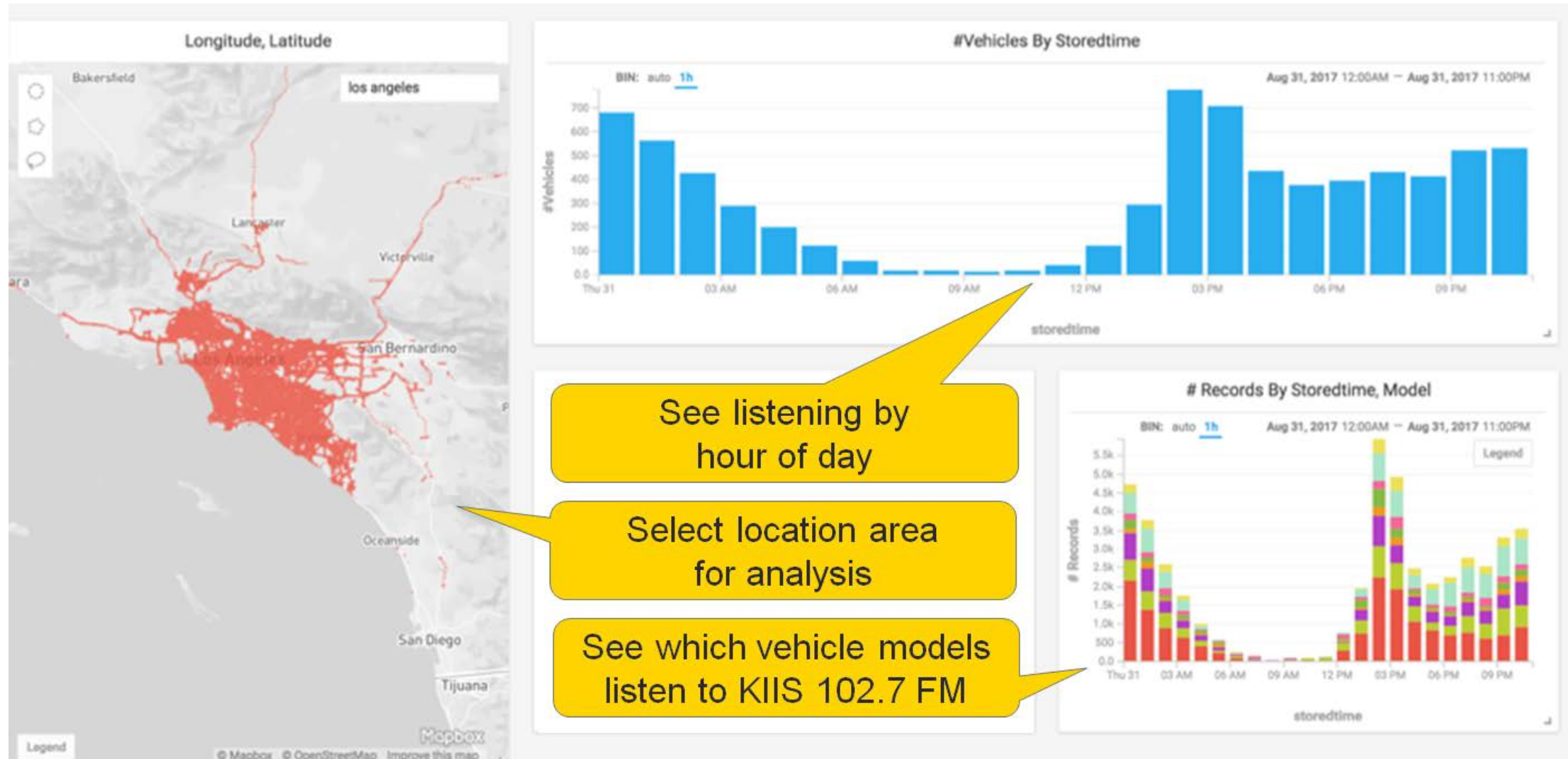
See which vehicle models listen to KIIS 102.7 FM

Digital is the solution!

FIGHT BACK! THE DIGITAL COUNTER–ATTACK
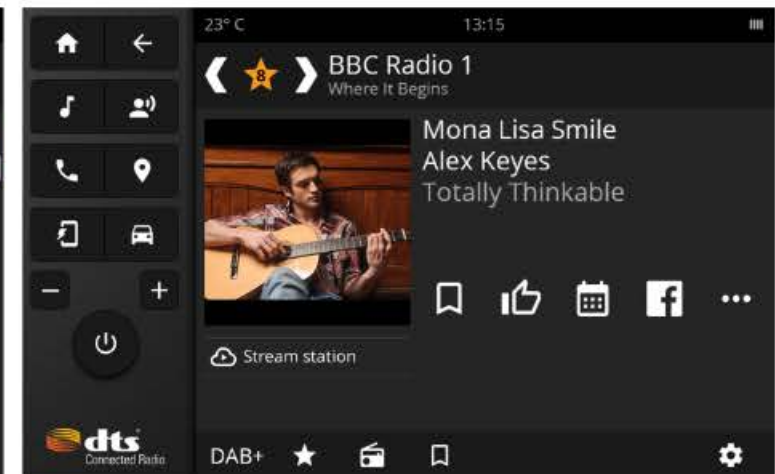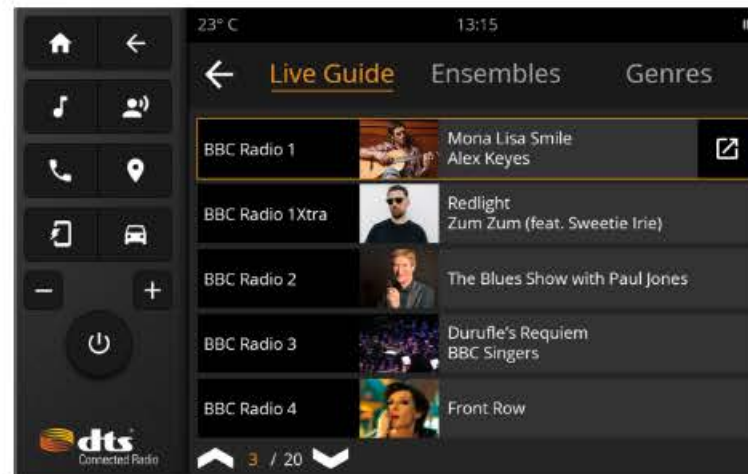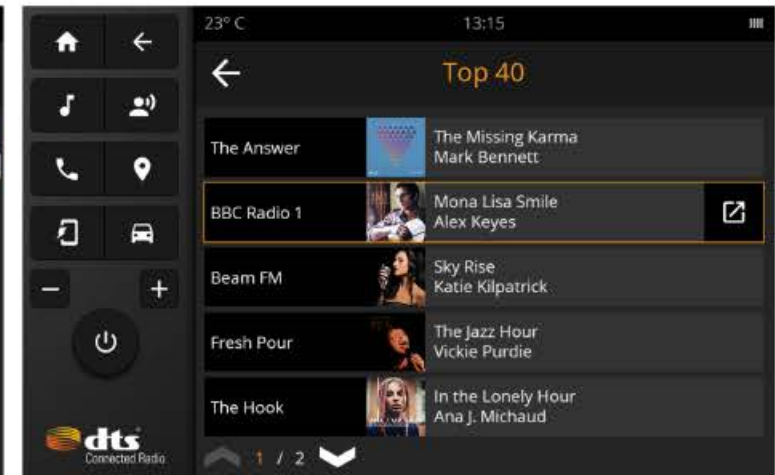
THANK YOU

- Roger C. Lanctot

rlanctot@strategyanalytics.com

@rogermud

+1 617 614 0714