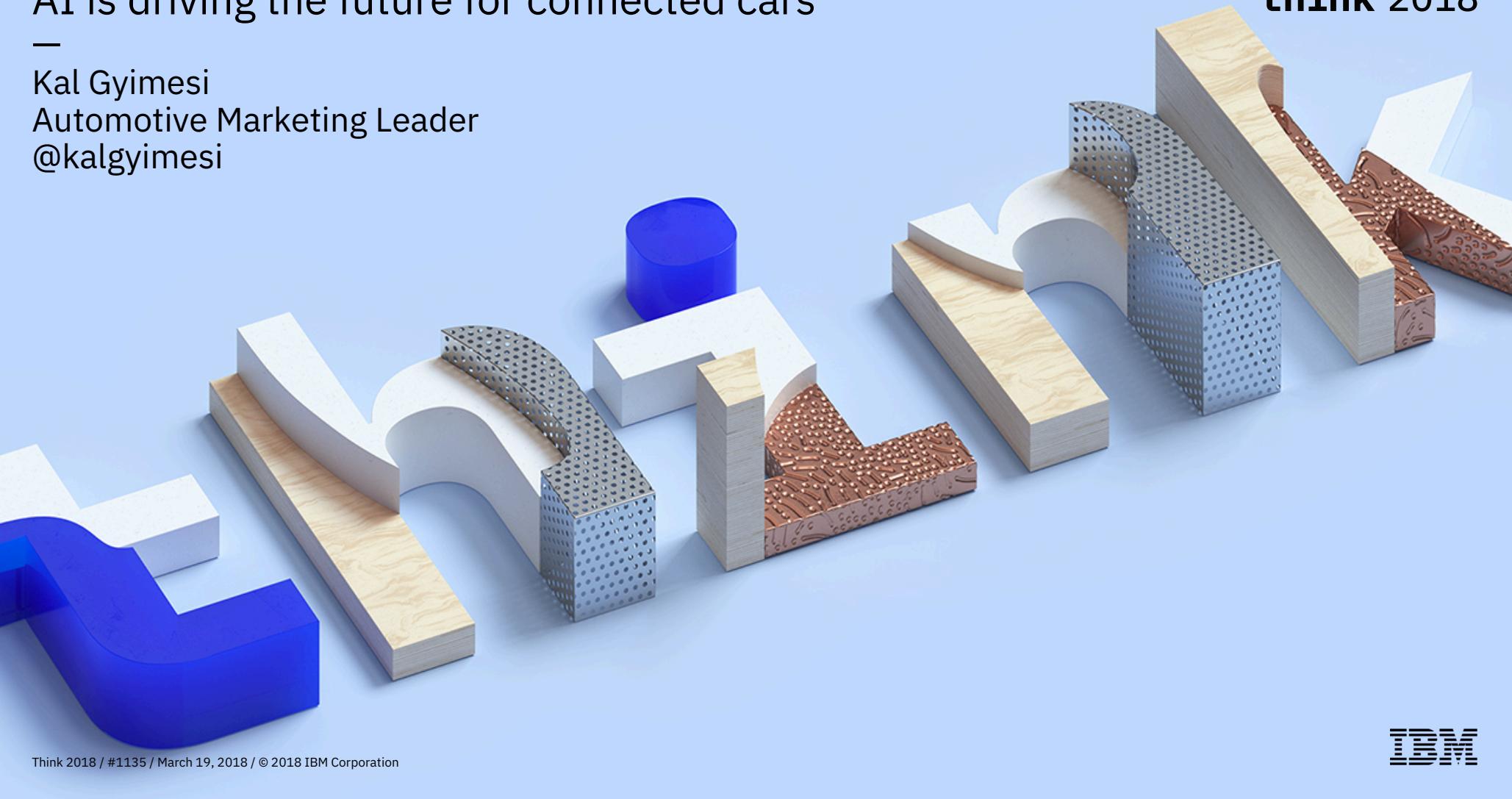


AI is driving the future for connected cars

—
Kal Gyimesi
Automotive Marketing Leader
@kalgyimesi

think 2018



Please note

IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal without notice and at IBM's sole discretion.

Information regarding potential future products is intended to outline our general product direction and it should not be relied on in making a purchasing decision.

The information mentioned regarding potential future products is not a commitment, promise, or legal obligation to deliver any material, code or functionality. Information about potential future products may not be incorporated into any contract.

The development, release, and timing of any future features or functionality described for our products remains at our sole discretion.

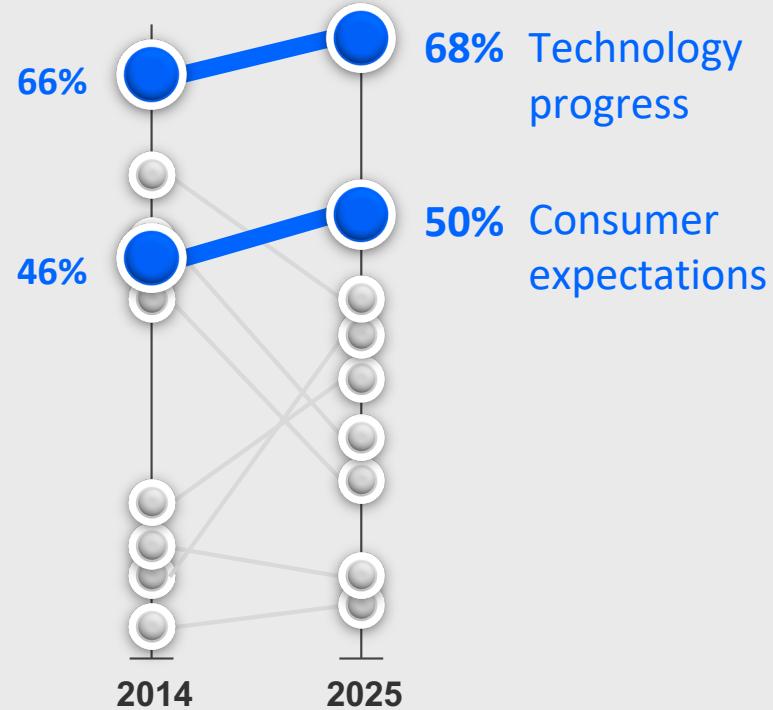
Performance is based on measurements and projections using standard IBM benchmarks in a controlled environment. The actual throughput or performance that any user will experience will vary depending upon many factors, including considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve results similar to those stated here.

Today's Discussion

- Automakers are overwhelming consumers with technology
- Data and software will transform how people will use cars
- Traditional automotive industry boundaries are rapidly disappearing

Technology and consumer expectations are driving automotive industry change

What are the most important external forces impacting the industry over the next decade?



Connected vehicles are on a steep trajectory for growth, usage and data generation

In 2015 only,
35%
of new cars were
connected to the
internet

By 2020, it will be over 90%
and internet enabled vehicles
will be the
#1 connected application

Also, connected and
autonomous vehicles
will produce
350 MB
of data per minute

Source: Statista

Unfortunately, technology in cars
is often complex and confusing...



Think 2018 / #1135 / March 19, 2018 / © 2018 IBM Corporation

Consumers are rejecting expensive technology that provides limited value



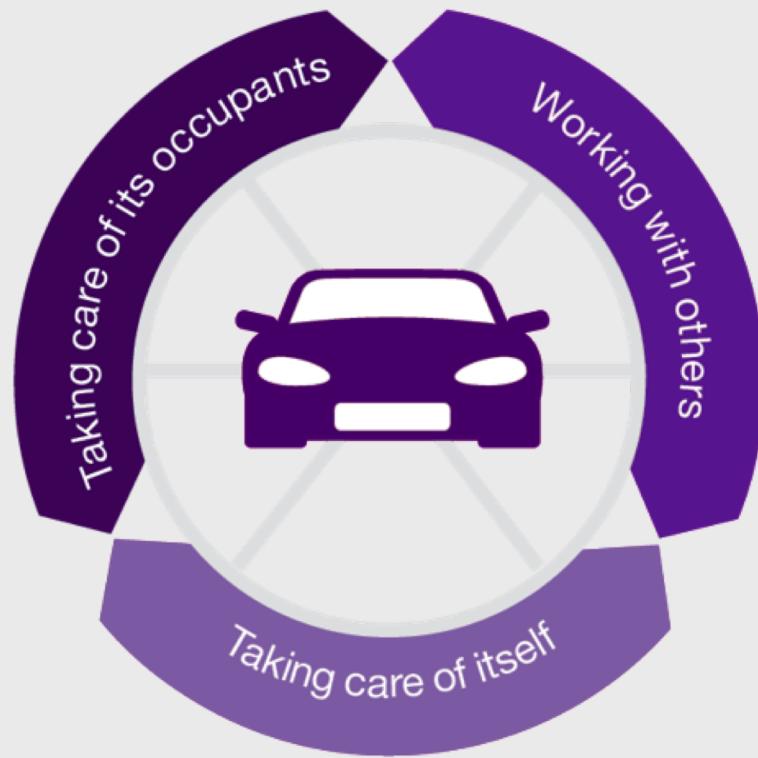
But,...
is this the answer?

Touchscreens require taking eyes off
the road – drivers can't feel the controls

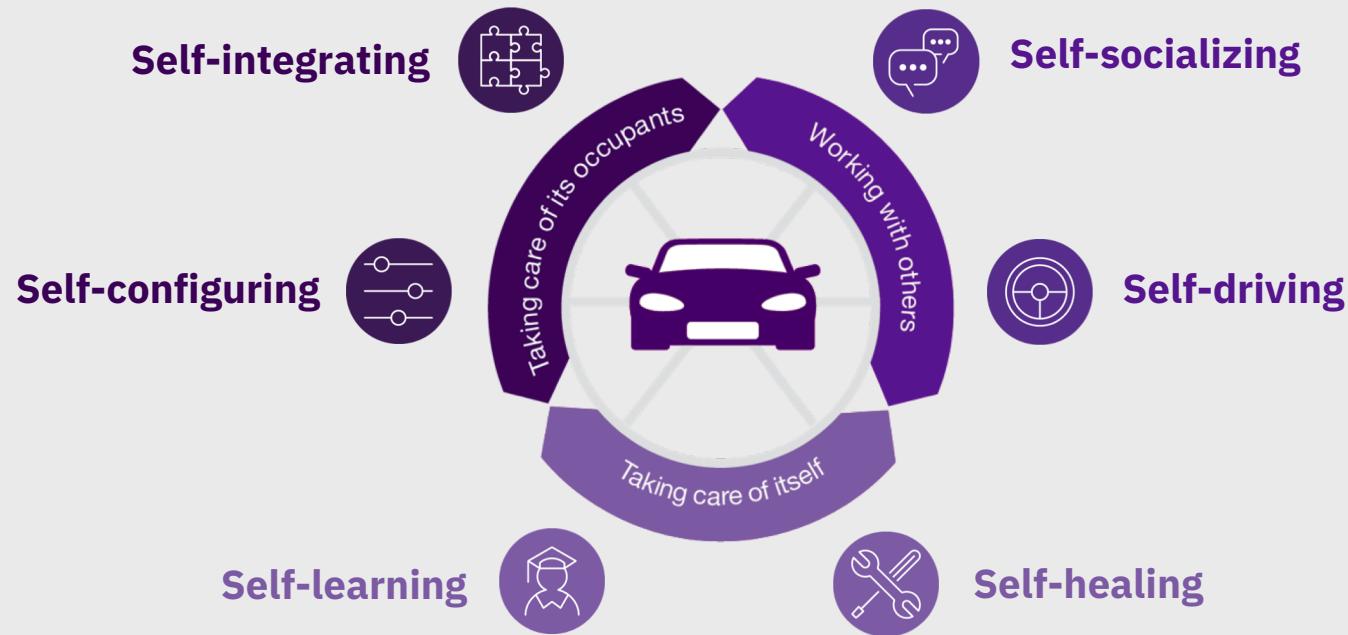


What is the right approach?

Connected vehicles ultimately provide value three ways

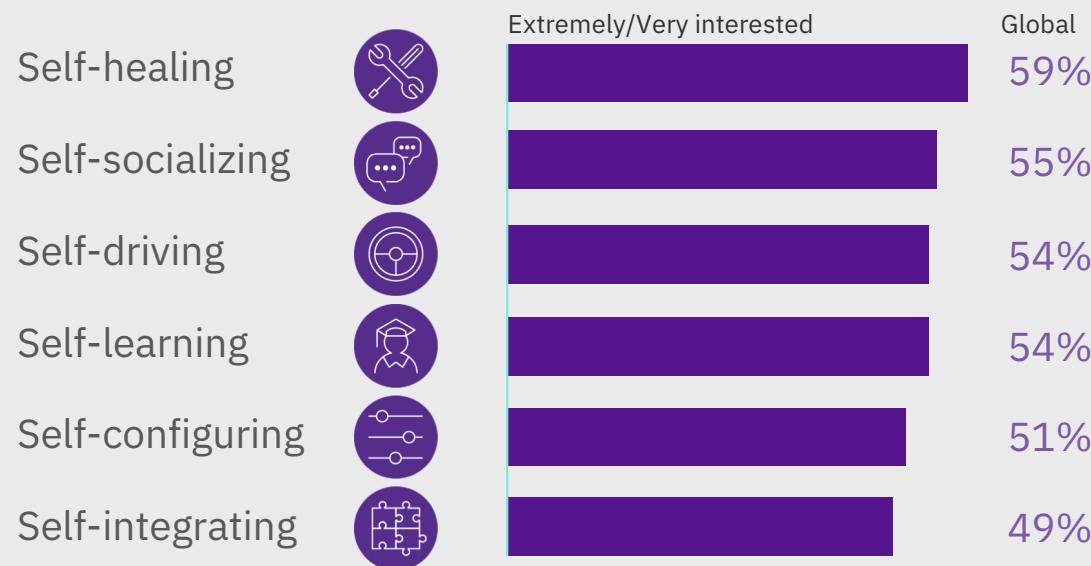


IBM sees a future where cars will enable themselves?

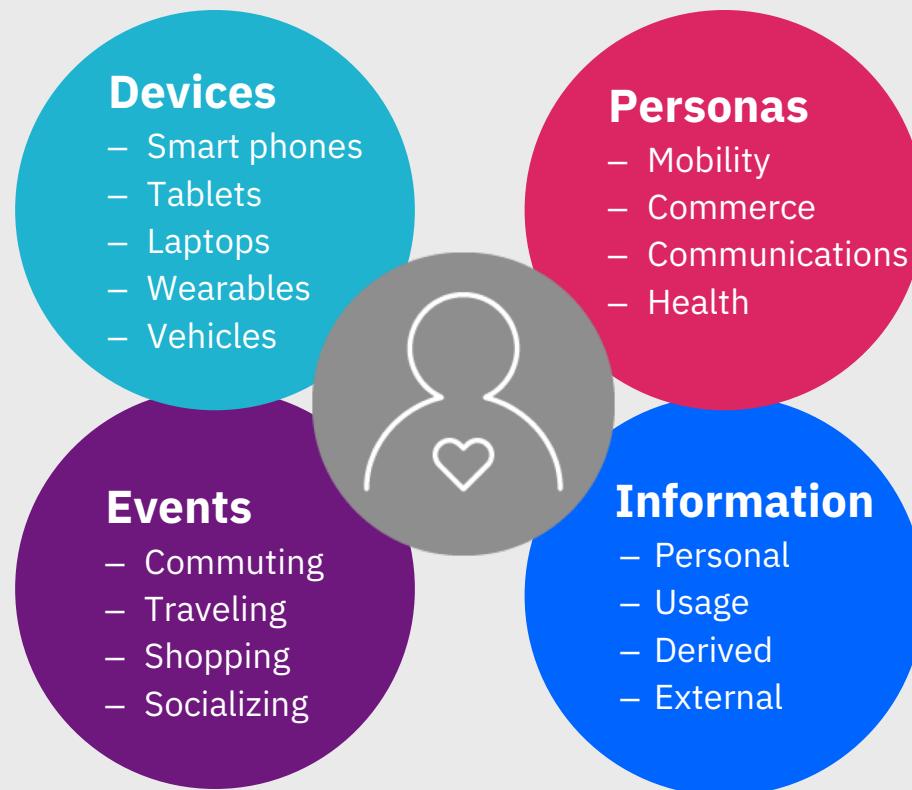


Research shows strong consumer interest in self-enabling capabilities in cars

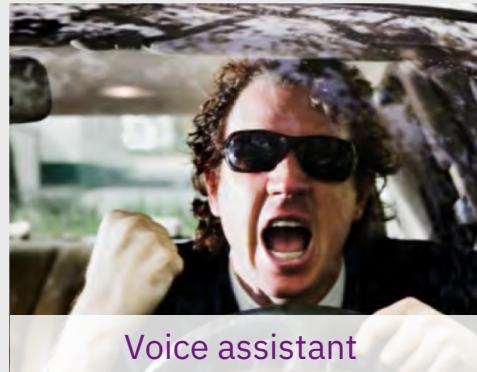
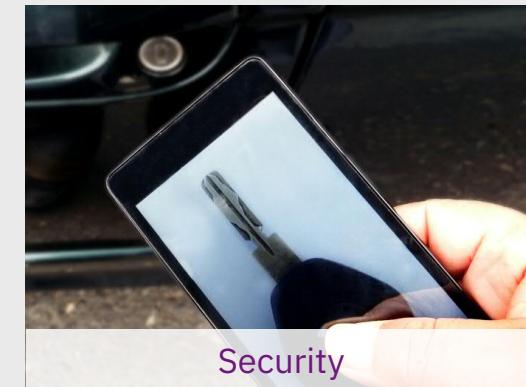
What vehicle capabilities will be most compelling to consumers?



Personalization requires applying context through data

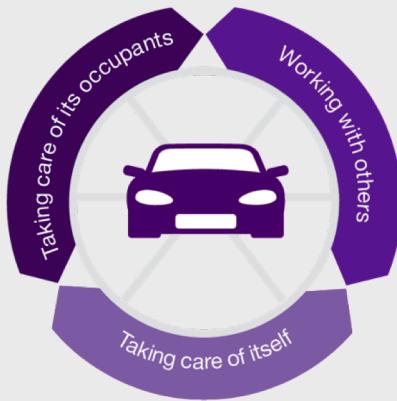


The cloud is critical to developing new capabilities and deploying new services

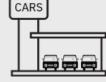


What if... vehicles recognized they've been in an accident, diagnosed the damage and even filed the claim?

The owner opts into a service to share information



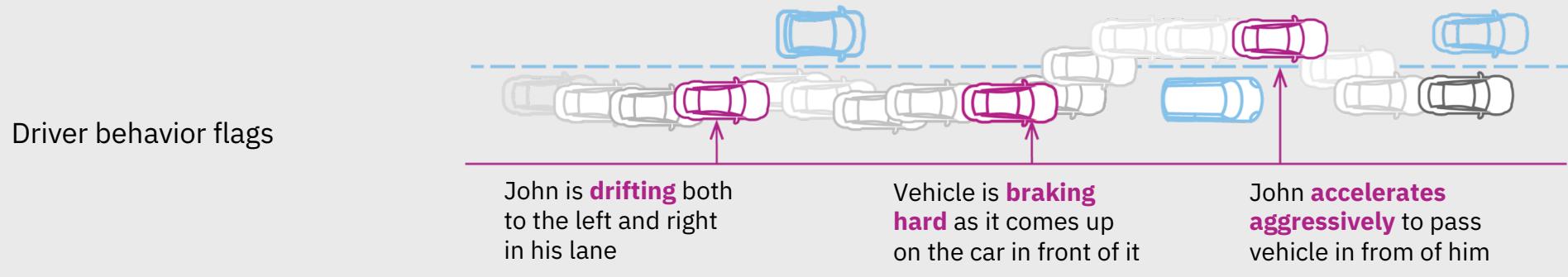
The vehicle is constantly monitoring itself and the surrounding environment

-  The owner's vehicle door is dented by another vehicle while parked at a shopping center
-  The vehicle senses it has been hit, takes pictures, gathers environmental conditions and other relevant information
-  Alerts the owner and sends pictures and other information along with its initial assessment of the damage
-  Communicates with the dealership for estimated cost of repairs, technician availability and potential appointment times
-  Files initial claim with preferred insurance company for pre-authorization to proceed
-  Confirms back to the owner for final approval to proceed
-  Finally, on the day of the appointment, the vehicle drives itself to the dealership for repairs

What if (1) - vehicles understood their users and could take steps to protect them



Vehicle detects that it is being driven erratically and putting the occupants in potential danger



What if (2) – once triggered vehicle users give off lots of data

Vehicle sensors	IoT sensors	Emotional indicators	Contextual data
 Slammed car door hard	 Increasing heart rate detected through wearable device	 Speaking in the car is louder than usual	 John tweeted that he was promoted at work in the past hour
 Music louder than usual		 Smiling captured through driver cam	 Vehicle about to enter area with higher than normal accident rates
 Driver alone in the car		 Laughter detected through audio analysis in car	 Calendar entry on phone for a party this evening
			 John has made 4 phone calls in past ten minutes to different people since he began driving

What if (3) – Your car could help you out if you let it get to know you

The owner opts into a service allowing personal data to improve safety



The vehicle monitors itself, the owner while in the car and has access to calendar and social accounts

-  Car detects that it's being driven erratically outside of its normal patterns
-  Vehicle checks driver's behavior in vehicle to determine emotional indicators and relevant context
-  Car gives verbal warning to slow down and informs John that he is driving unsafely
-  Vehicle also informs John that he is entering an area with a higher than usual accident rate
-  Both the brake and accelerator pedals vibrate when John touches either until the car is being driven safely
-  Vehicle asks John whether it can turn on adaptive cruise control and set to the speed limit
-  Vehicle congratulates John on his promotion and asks if it can reserve a ride-share vehicle to take him to his party that evening

While data is abundant, its value remains untapped as only a fraction is usable through traditional analytics



65 Million
users in 185
countries allow
their location to
be tracked

3 Billion
Weather forecast
reference points

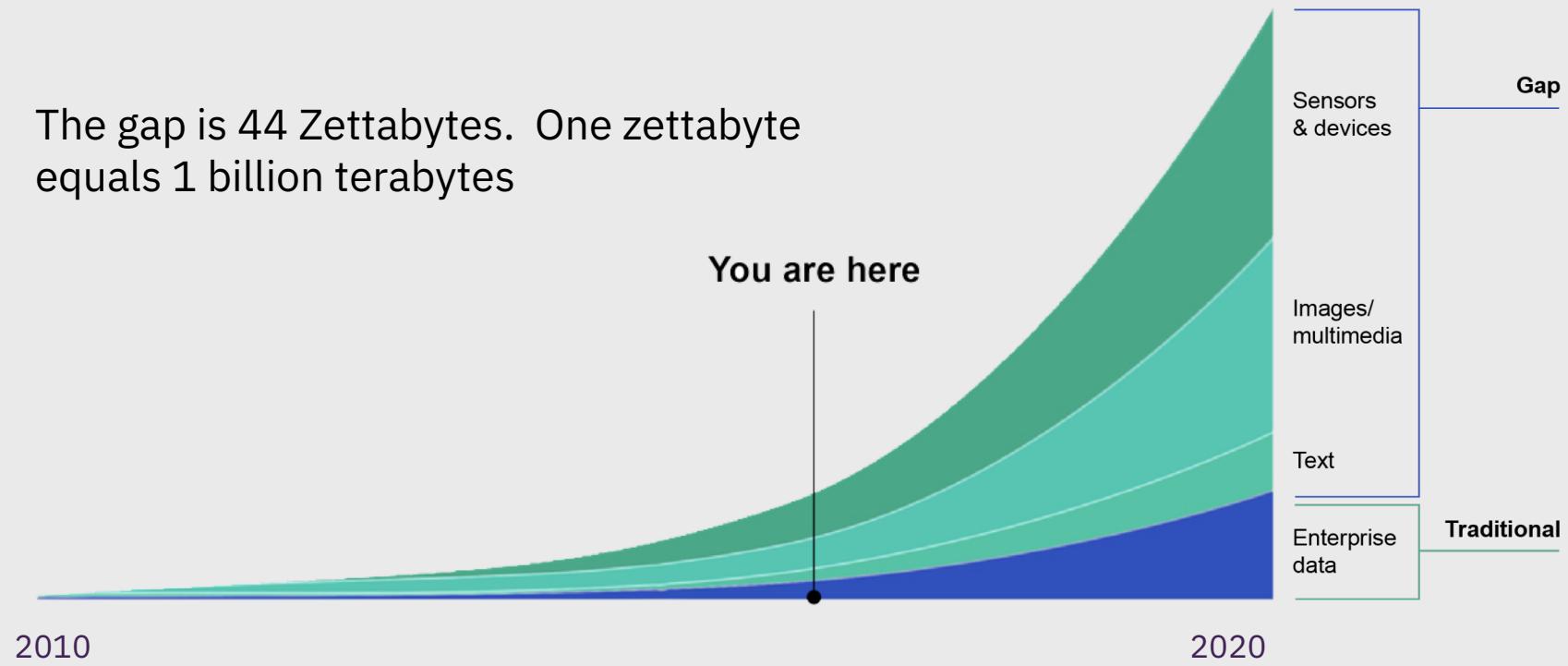
1 Million
new active
mobile social
users added
every day

9 Billion
GB of personal
data created
globally every
day

4000 GB
of data will be
generated/
consumed by 1
million autonomous
cars by 2025, daily

Much of this explosion of data is unstructured

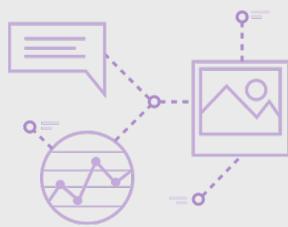
The gap is 44 Zettabytes. One zettabyte equals 1 billion terabytes



AI systems will sense, reason and learn

Adapting and developing new capabilities not previously imaginable

UNDERSTAND



Cognitive systems understand imagery, language and other unstructured data

like humans do.

REASON



They can reason, grasp underlying concepts, form hypotheses, and

infer and extract ideas.

LEARN



With each data point, interaction and outcome, they develop and sharpen expertise, so

they never stop learning.

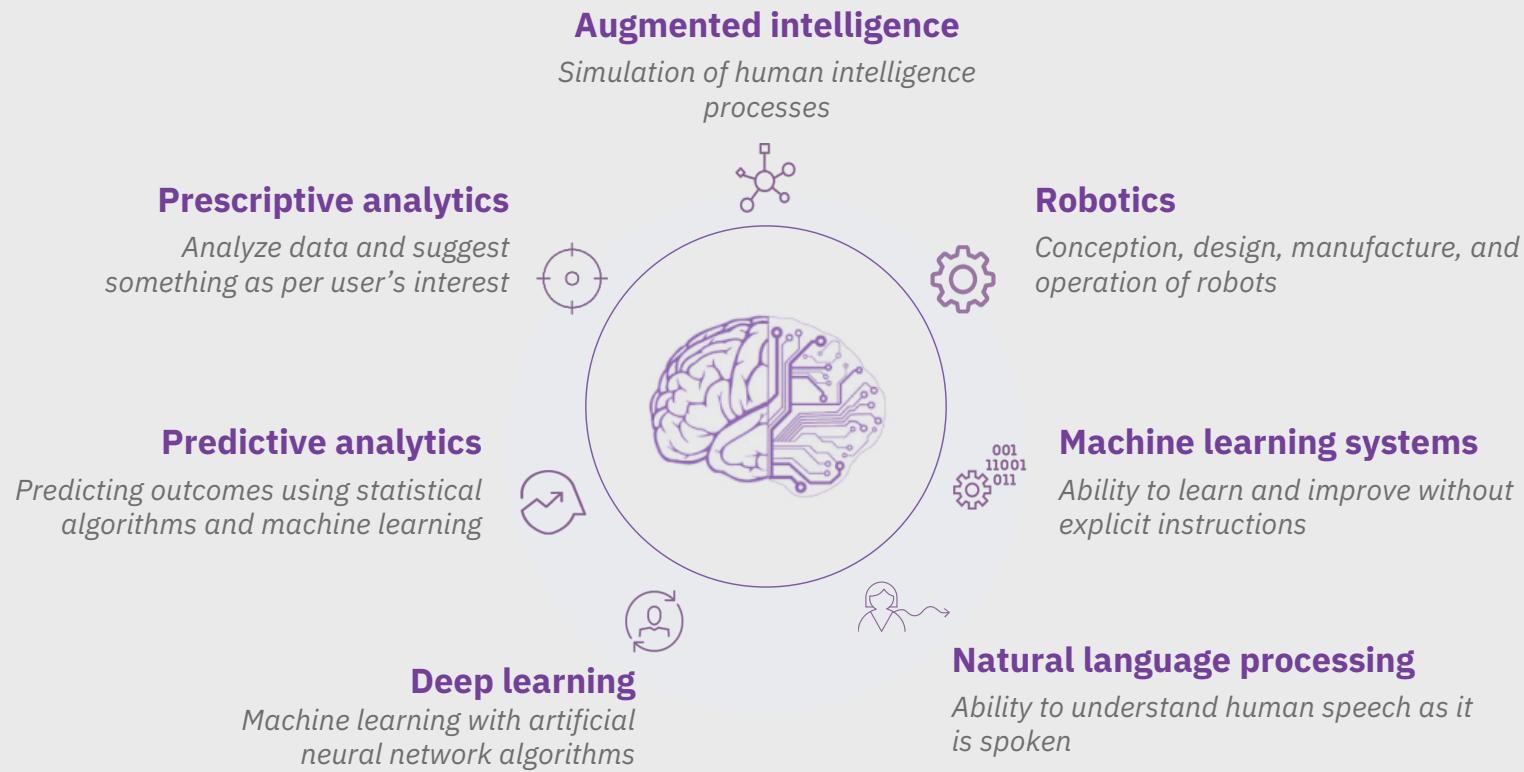
INTERACT



With abilities to see, talk and hear, cognitive systems

interact with humans in a natural way.

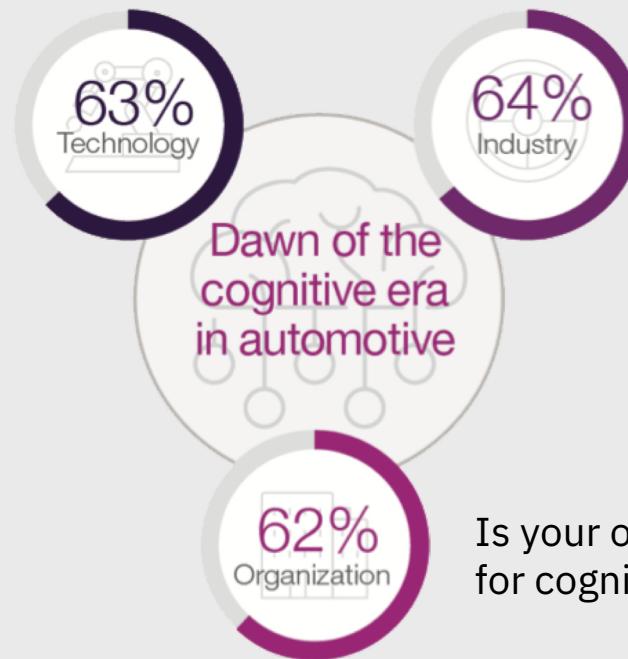
AI systems are enabled through advanced technologies



The industry sits at an inflection point where cognitive readiness is high

Spans technology, the industry at large and within organizations

Is cognitive computing mature and market ready?



Is the industry ready for cognitive computing?

Is your organization ready for cognitive computing?

% = strongly agree

A few years ago, the relevant market for these solutions would have been primarily focused on large automotive manufacturers



Source: IDC 3Q17

Think 2018 / #1135 / March 19, 2018 / © 2018 IBM Corporation

Automotive has become an industry without borders

New competitors are establishing their stake to a spectrum of opportunities

Connected Vehicle Services				
Car-Sharing and Ride-Sharing	Telematics	Fleet Management	Infotainment	Connectivity
Connected Vehicle Software and Analytics				
Cloud	Mapping and Location Services	Data Management	Security	Operating Systems
Connected Vehicle Hardware and Infrastructure				
Inputs and Sensors		Displays		
Automotive OEMS		Autonomous Platforms		
Regulatory Entities				

Source: IDC, 3Q17

For areas that IDC covers, the top 3-5 market share leaders are represented. For areas that IDC does not cover, vendor selection is up to analyst discretion.

A grayscale photograph of a person standing next to a car, with their arms raised in a celebratory or triumphant pose. The car's front end is visible on the left.

1

Simplify the complexity of technology that has become steadily more pervasive in vehicles

2

Vehicles on the internet of things, will use AI systems and the cloud to redefine the user experience

3

The traditional industry boundaries are disappearing enabling new competitors to pursue opportunities with cars

Activation

Featured Sessions

Continue the conversation here at Think...

Intelligent Connected Vehicle

Today's cars are moving data centers and entertainment systems. Learn how our vehicle-to-cloud solution is improving the in-car experience through onboard sensors and computers that capture real-time information about the vehicle.

IoT & AI: This Changes Every-thing Keynote

by Kareem Yusuf
Tue, March 20, 11:30am Mandalay Bay Ballroom



Speed your Digital Re-invention

by Bret Greenstein
Tue, March 20, 3:30pm
Business and AI Campus / Large Theater



Connected Vehicles: Spanning the digital divide

by Sachin Lulla
Thur, March 22, 8:30am
Business and AI Campus / Small Theater



Thank you

Kal Gyimesi
Automotive Marketing Lead

—
kalgyimesi@us.ibm.com
+1.804.647.0714
@kalgyimesi

Notices and disclaimers

© 2018 International Business Machines Corporation. No part of this document may be reproduced or transmitted in any form without written permission from IBM.

U.S. Government Users Restricted Rights – use, duplication or disclosure restricted by GSA ADP Schedule Contract with IBM.

Information in these presentations (including information relating to products that have not yet been announced by IBM) has been reviewed for accuracy as of the date of initial publication and could include unintentional technical or typographical errors. IBM shall have no responsibility to update this information. **This document is distributed “as is” without any warranty, either express or implied. In no event, shall IBM be liable for any damage arising from the use of this information, including but not limited to, loss of data, business interruption, loss of profit or loss of opportunity.** IBM products and services are warranted per the terms and conditions of the agreements under which they are provided.

IBM products are manufactured from new parts or new and used parts. In some cases, a product may not be new and may have been previously installed. Regardless, our warranty terms apply.”

Any statements regarding IBM's future direction, intent or product plans are subject to change or withdrawal without notice.

Performance data contained herein was generally obtained in a controlled, isolated environments. Customer examples are presented as illustrations of how those

customers have used IBM products and the results they may have achieved. Actual performance, cost, savings or other results in other operating environments may vary.

References in this document to IBM products, programs, or services does not imply that IBM intends to make such products, programs or services available in all countries in which IBM operates or does business.

Workshops, sessions and associated materials may have been prepared by independent session speakers, and do not necessarily reflect the views of IBM. All materials and discussions are provided for informational purposes only, and are neither intended to, nor shall constitute legal or other guidance or advice to any individual participant or their specific situation.

It is the customer's responsibility to insure its own compliance with legal requirements and to obtain advice of competent legal counsel as to the identification and interpretation of any relevant laws and regulatory requirements that may affect the customer's business and any actions the customer may need to take to comply with such laws. IBM does not provide legal advice or represent or warrant that its services or products will ensure that the customer follows any law.

Notices and disclaimers continued

Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products about this publication and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products. IBM does not warrant the quality of any third-party products, or the ability of any such third-party products to interoperate with IBM's products. **IBM expressly disclaims all warranties, expressed or implied, including but not limited to, the implied warranties of merchantability and fitness for a purpose.**

The provision of the information contained herein is not intended to, and does not, grant any right or license under any IBM patents, copyrights, trademarks or other intellectual property right.

IBM, the IBM logo, ibm.com and [names of other referenced IBM products and services used in the presentation] are trademarks of International Business Machines Corporation, registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the Web at "Copyright and trademark information" at: www.ibm.com/legal/copytrade.shtml.

.

