

the Internet *f* Things

Roadmap to a Connected World



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MODULE

Introduction

The Internet of Things: Roadmap to a Connected World

What is IoT

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WHY AND WHAT

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TESLA'S OVER-THE-AIR FIX: BEST EXAMPLE YET OF THE INTERNET OF THINGS?



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What Google Really Gets Out of Buying Nest for \$3.2 Billion

DESIGN

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J.S. WOHLSEN BUSINESS 01.14.14 6:30 AM

HAT GOOGLE REALLY GETS OUT OF BUYING NEST FOR \$3.2 BILLION



THE MARKET IS EXPECTED TO BE ASTRONOMICAL

2015:

- 10 billion connected things
- \$1.9 billion from IoT services

2020:

- ABI: 250,000 connected cars
- IDC: \$7 billion from IoT services
- Gartner: \$300 billion from IoT products
- IDC: Global IoT market \$7.1 trillion
- ABI: 40 billion IoT devices

2035

- GE: \$10-15 trillion added to GDP
- Cisco: \$19 trillion
- ABI: 450 million IoTcars

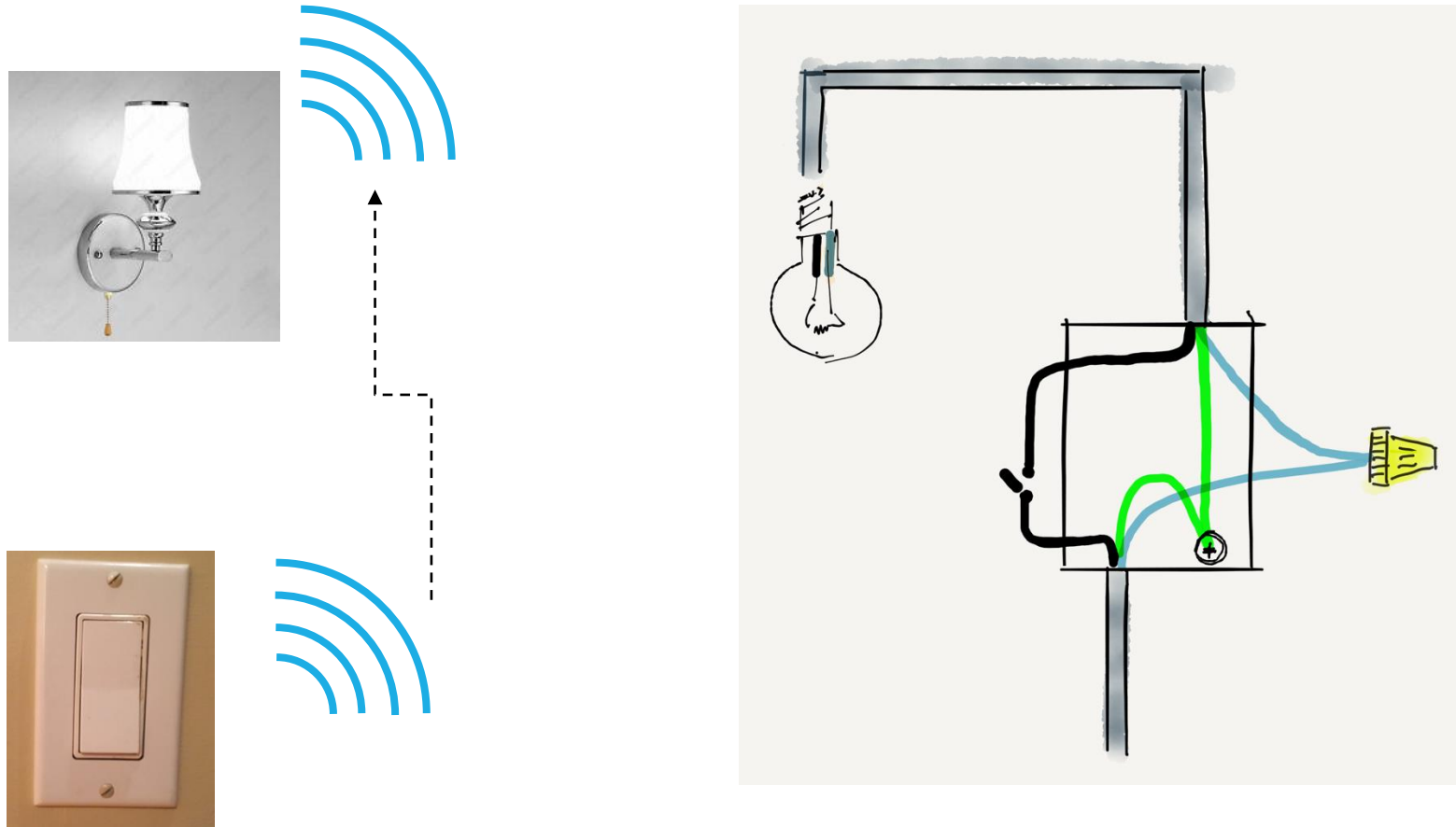


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WHAT IS IOT?



IS THERE ANYTHING THAT WON'T CHANGE?

Cities

Buildings

Homes

Kitchens

Appliances

Security

Home Health

Factories

Machines

Robots

People

Supply
Chain

Safety

Security

Transportation

Airports, ports,
stations

Roads, tracks

Cars, trains,
planes

Traffic,
emissions

Parking

YOU CAN PLAY IT OUT IN ANY INDUSTRY



Hospitals
Equipment
Staff
Patients
Ambulances
Trauma
Centers
Medicines

Sports
Equipment
monitoring
Ball tracking
Player
tracking
Performance
telematics

Heavy
Industries
Oil and Gas
Mining
Shipping
Construction
Manufacturing
Power
Water



Ford: Self-driving cars will be aimed at u

 **Chris Woodyard, USA TODAY** 9:04 a.m. EST December 10, 2015



(Photo: USA TODAY)

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MORE

WEST HOLLYWOOD, Calif. — Instead of finding universal acceptance, self-driving cars will be better suited to cities and countries that are more urban and congested, Ford Motor predicts in a report released Thursday.

Even then, some people in those self-driving cars might not know how to fill the extra time they just acquired. Cars serve the conflicted dual role of "productivity capsule" and as "sanctuary," says Sheryl Connelly, the automaker's trends spotter who put the report together.

The report also finds that simplicity and practicality will play a bigger role in consumers' lives, including the reduction of waste and redundancy. There will be less emphasis on acquiring more stuff. People will live longer, more active lives.

Automakers spend a lot of time trying to peer into the future, such as Ford did with its 2016 Trends report. Cars take years to develop. Missing a trend can lead to expensive mistakes if society has changed by the time a new model rolls out.

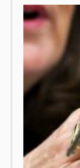
When it comes to the future, the auto industry is trying to gauge the impact of self-driving cars. While the underlying technologies that make them possible are arriving piece by piece, some automakers have pegged 2020 as the year when autonomous driving will be truly possible.

Connelly, Ford's global trend and futuring manager — yes, that's her title — says don't expect self-driving to catch on everywhere. "Autonomous driving makes sense in pockets of the world," says Connelly, who came to hotel suite near Los Angeles to preview the report with reporters.

Some 84% those living in notoriously crowded India say they can see themselves buying a self-driving car, the report says, citing global survey data from BAV Consulting. Only 40% of Americans envision it.

Part of the issue, she says, is that people have to imagine how they would occupy themselves if their cars did all the driving. About six out of 10 say they can "easily imagine" how they would use extra spare time while traveling.

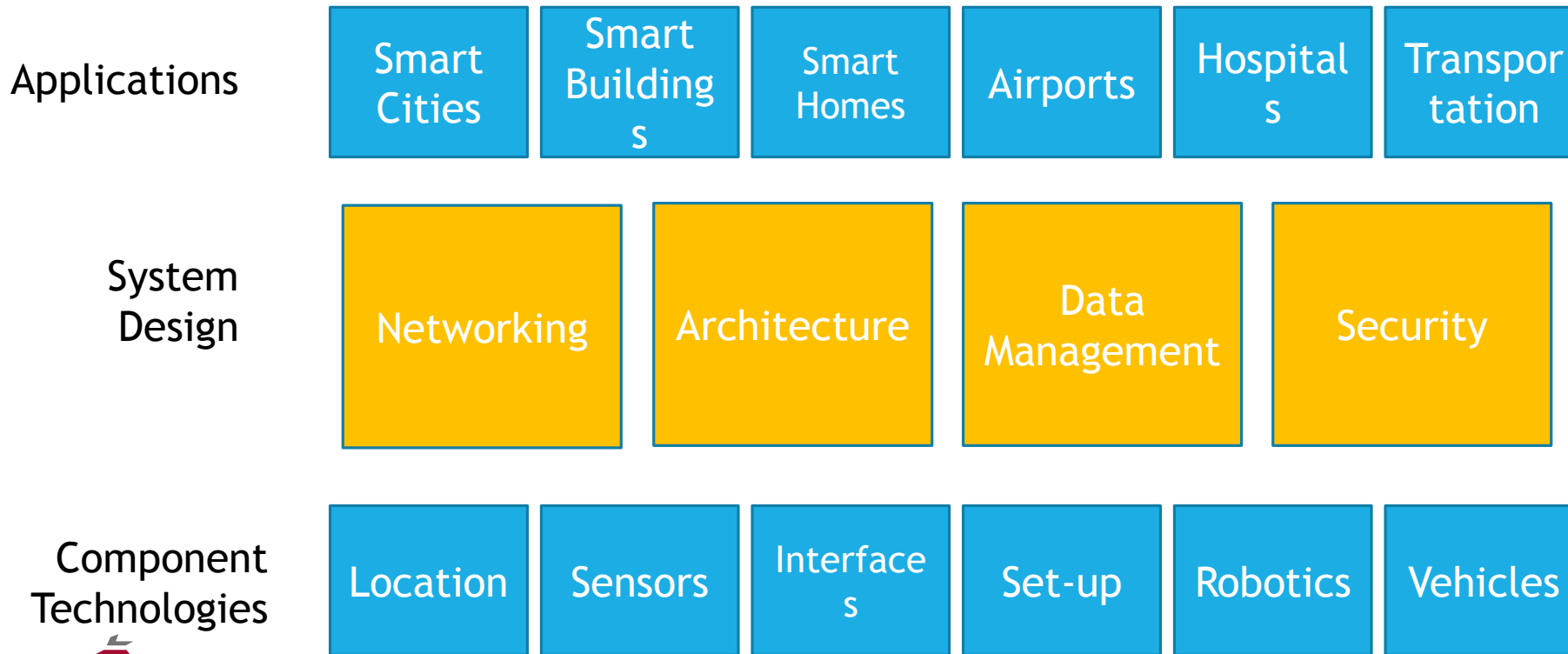
Cars are increasingly becoming pods for productivity in which people try to accomplish as much digitally as they can while traveling, but that clashes with another trend toward "mindfulness" in which a yoga-craving population



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HOW TO THINK OF IOT



PROFESSIONAL
EDUCATION



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THANK YOU!

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How to think about IoT

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SO WHAT?

OK, I CONNECTED IT UP. NOW WHAT?



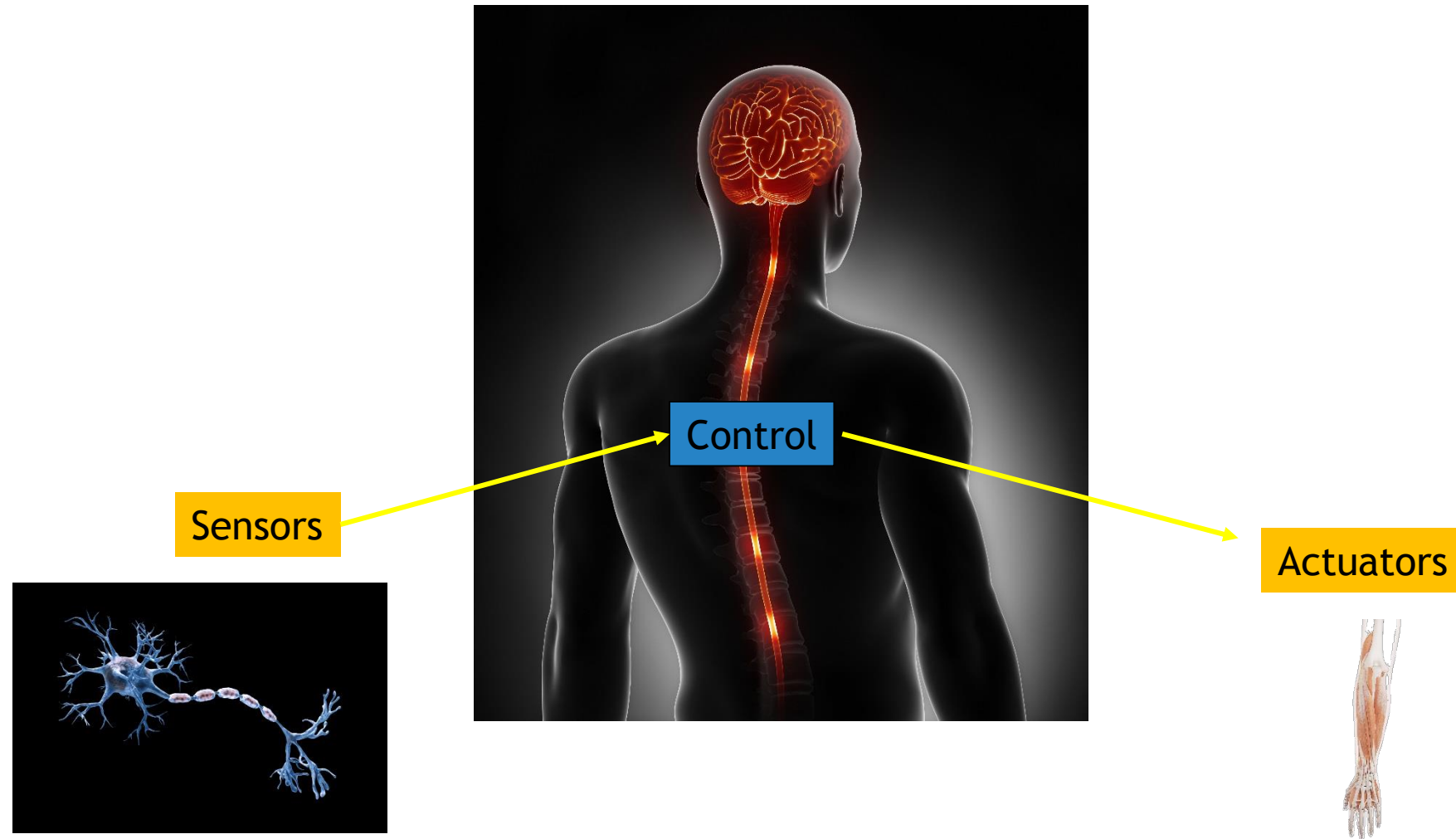
I am collecting sensor data, but what do I do with it?

How do I act?

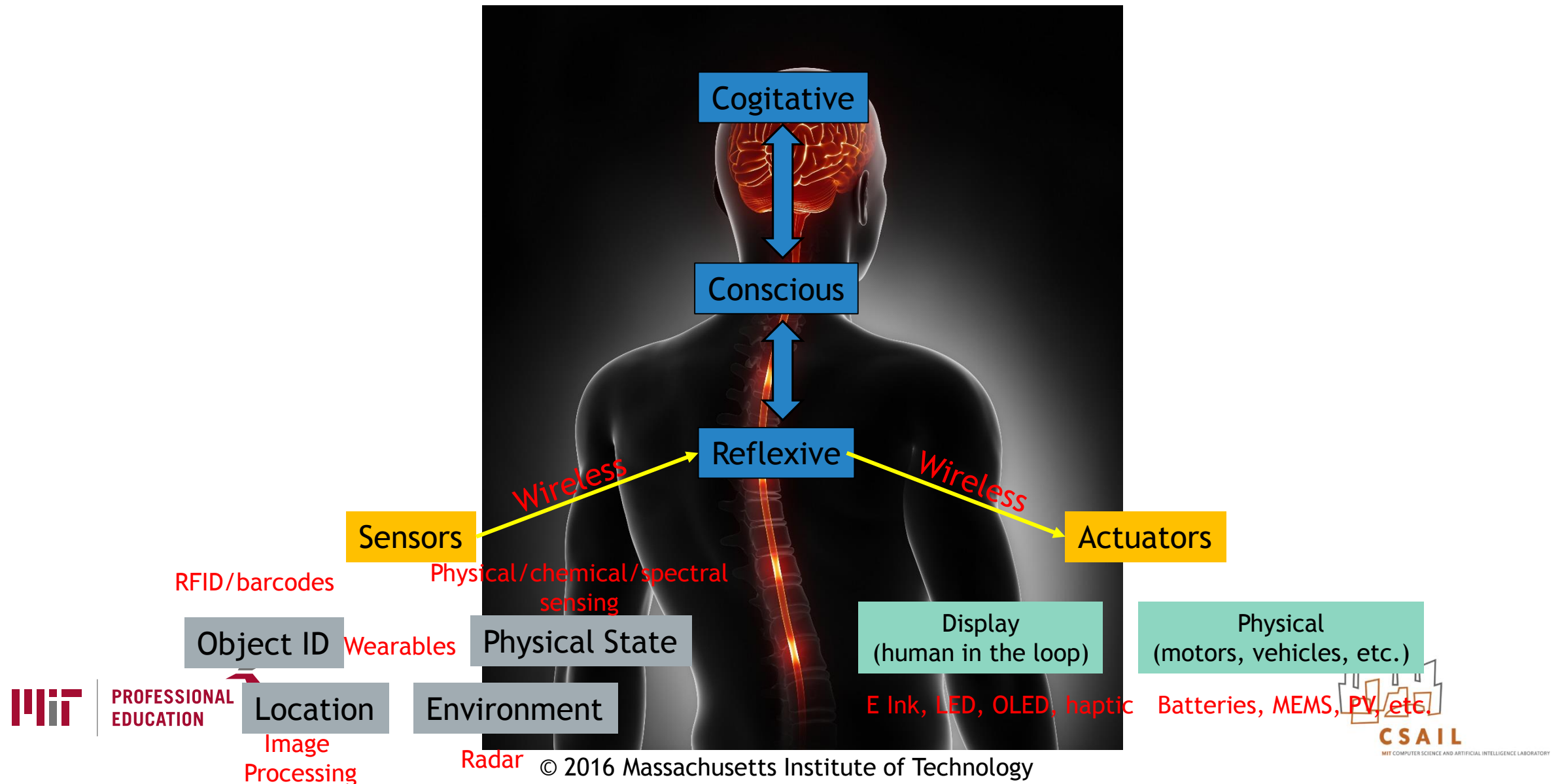
How do I build intelligence?

Do I keep the data?

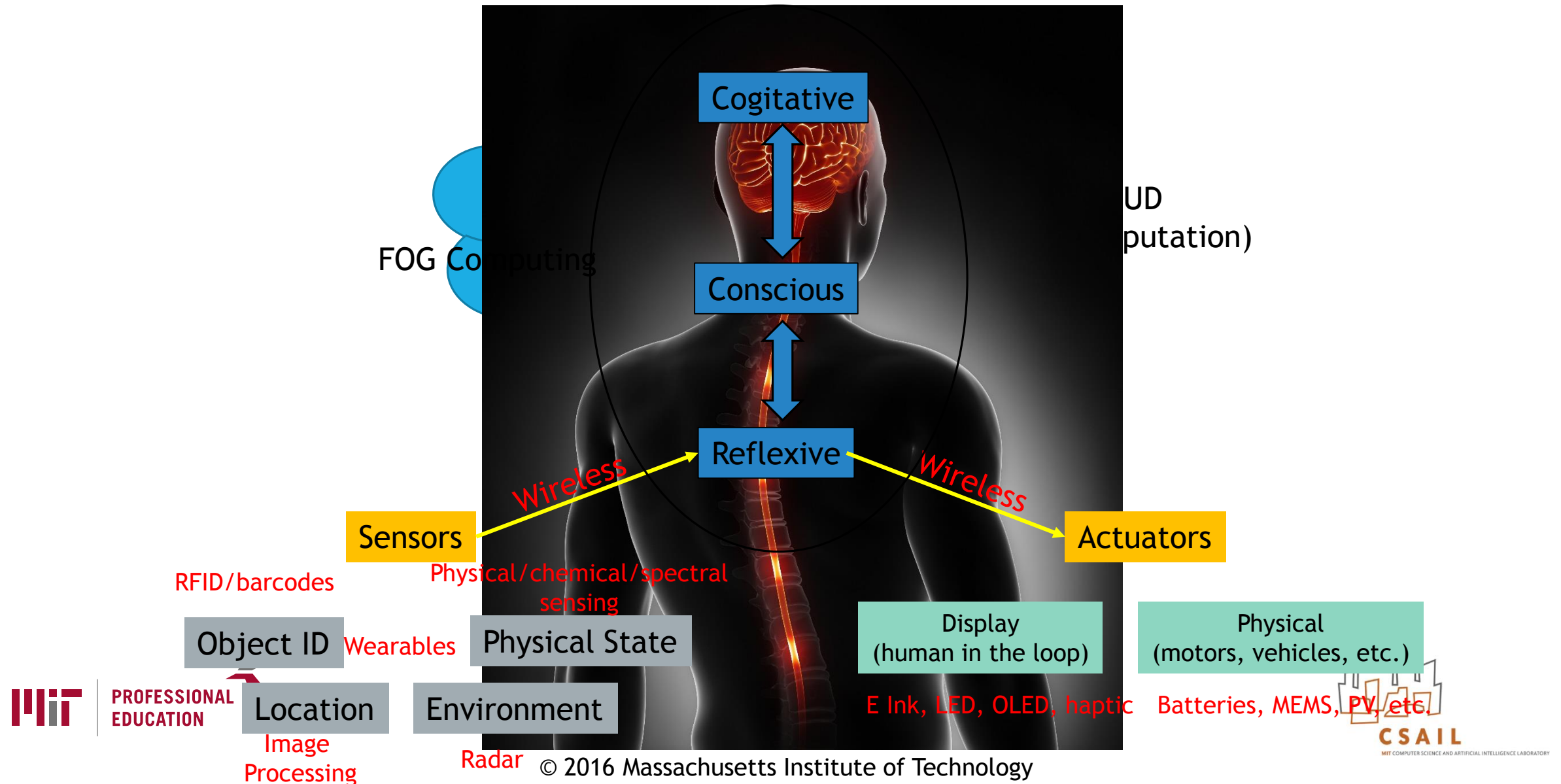
USE THE HUMAN ANALOGY



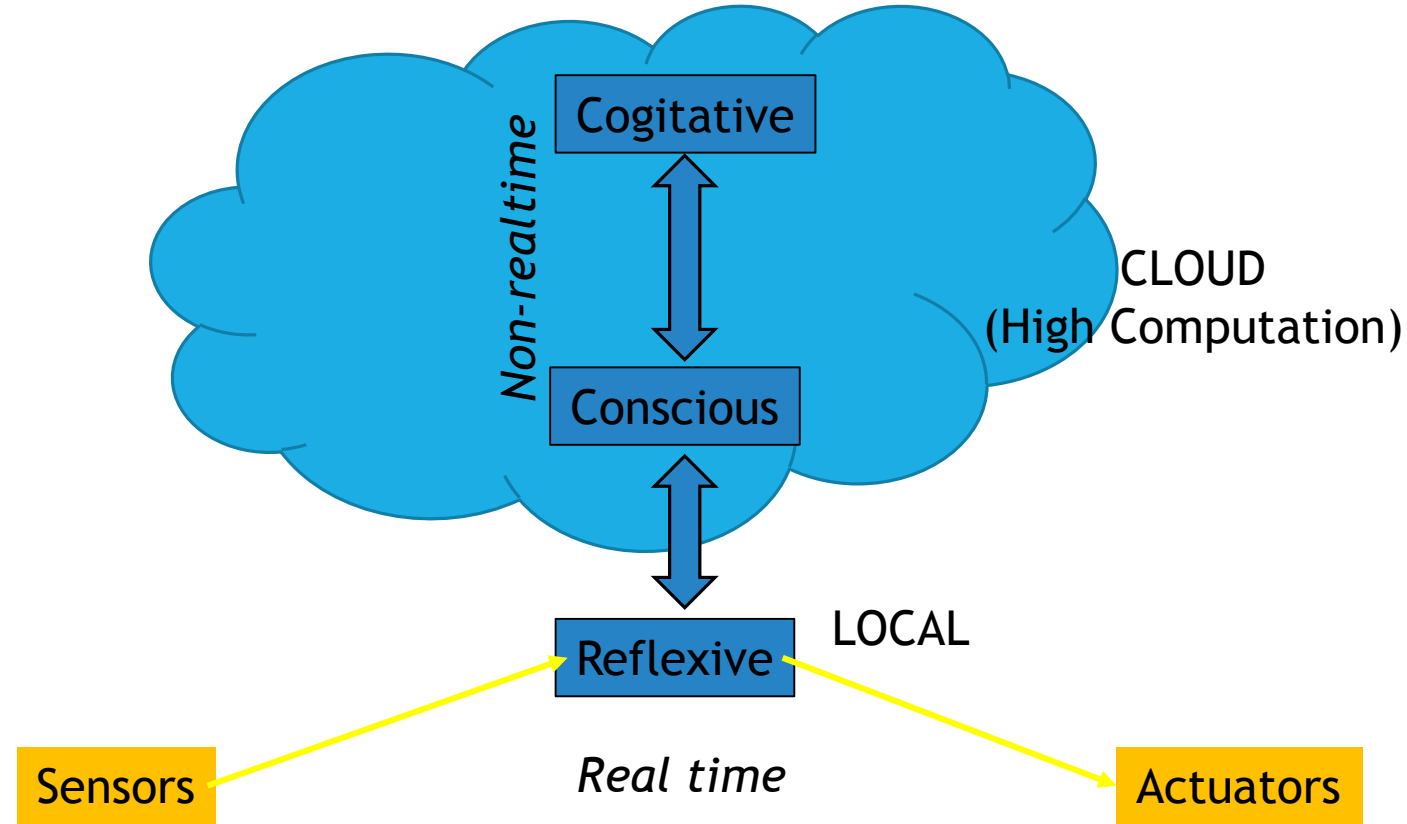
USE THE HUMAN ANALOGY



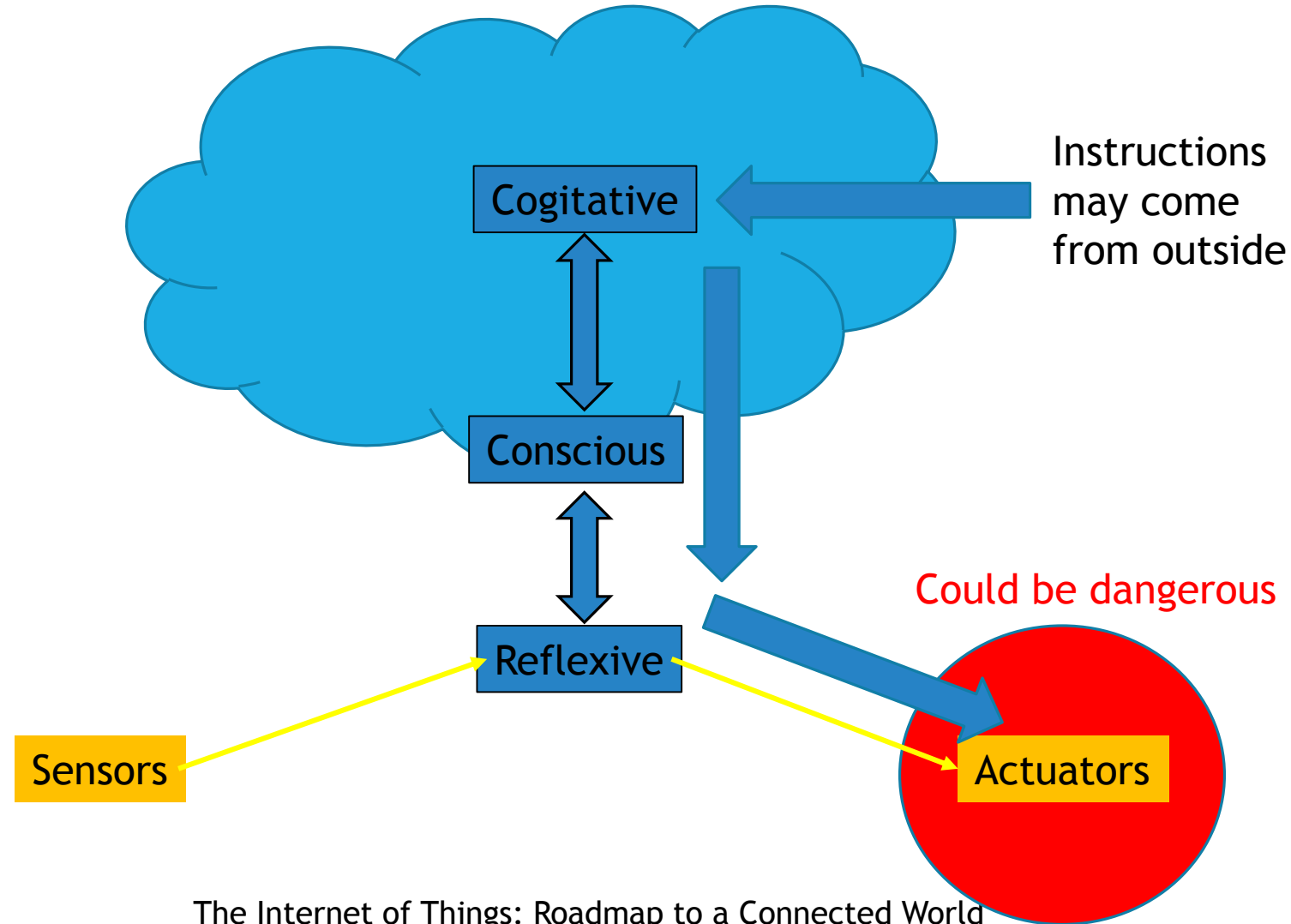
USE THE HUMAN ANALOGY



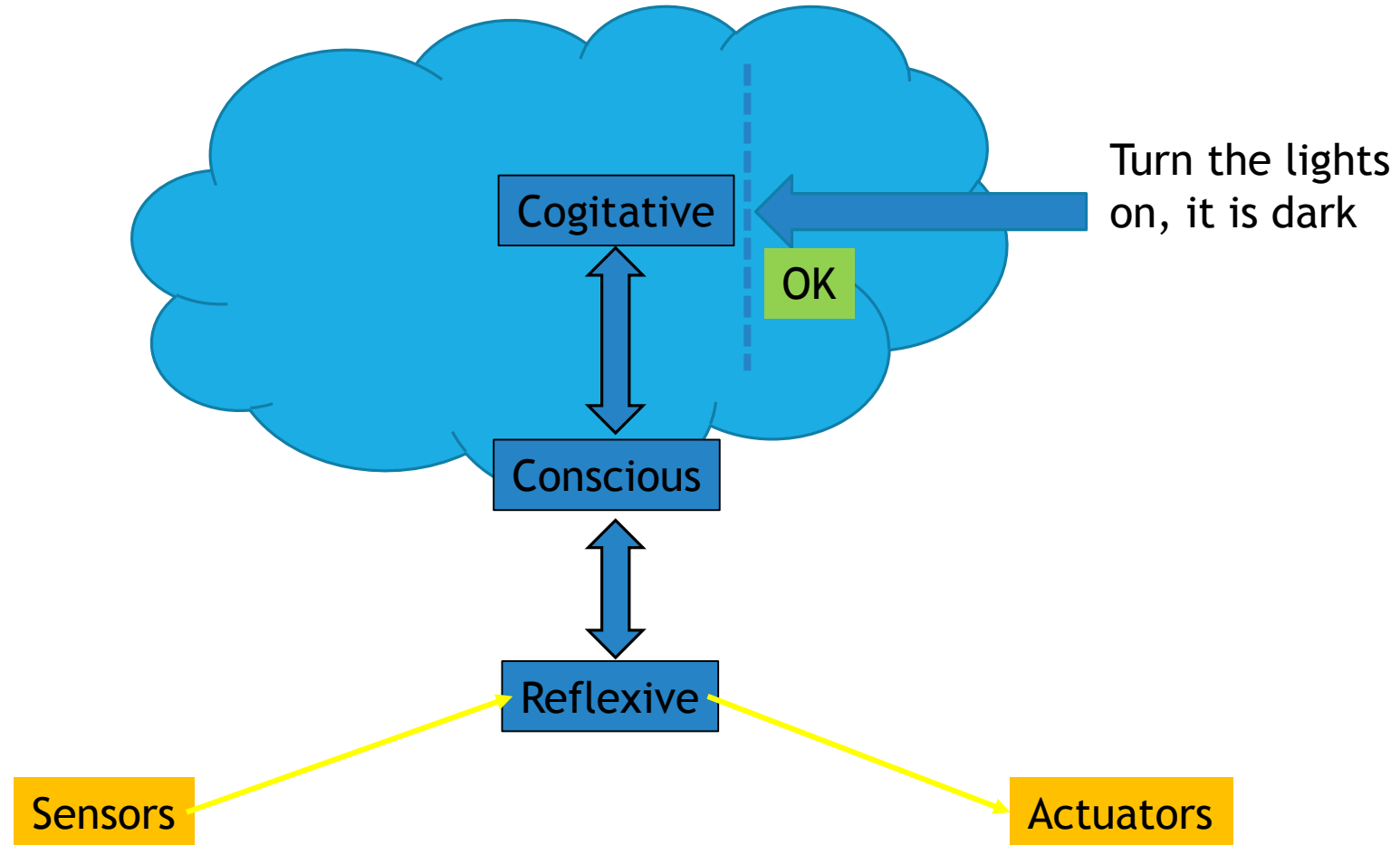
REAL TIME VERSUS NOT



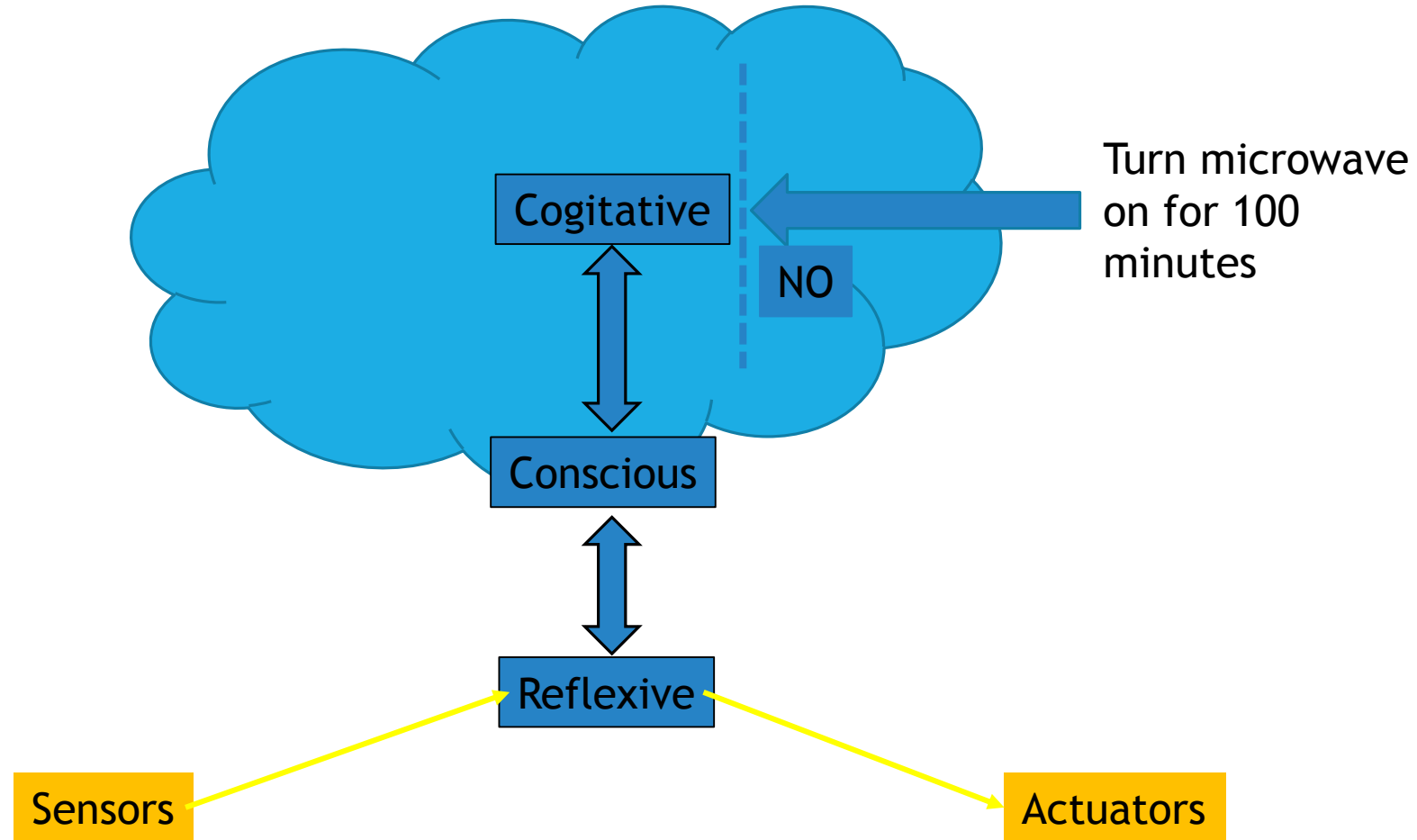
EXTERNAL CONTROL



COGNITIVE FIREWALL



COGNITIVE FIREWALL



IN SUMMARY

1. IoT is local and global
2. IoT is sensors and actuators
3. Some IoT is real-time, and some is not
4. There is a place for machine learning
5. Not all data need be stored
6. Security is important

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Thank You

END OF MODULE - Introduction