

Mastering Digital Transformation

Carroll University – Analytics and Business Intelligence Consortium

August 16th, 2019

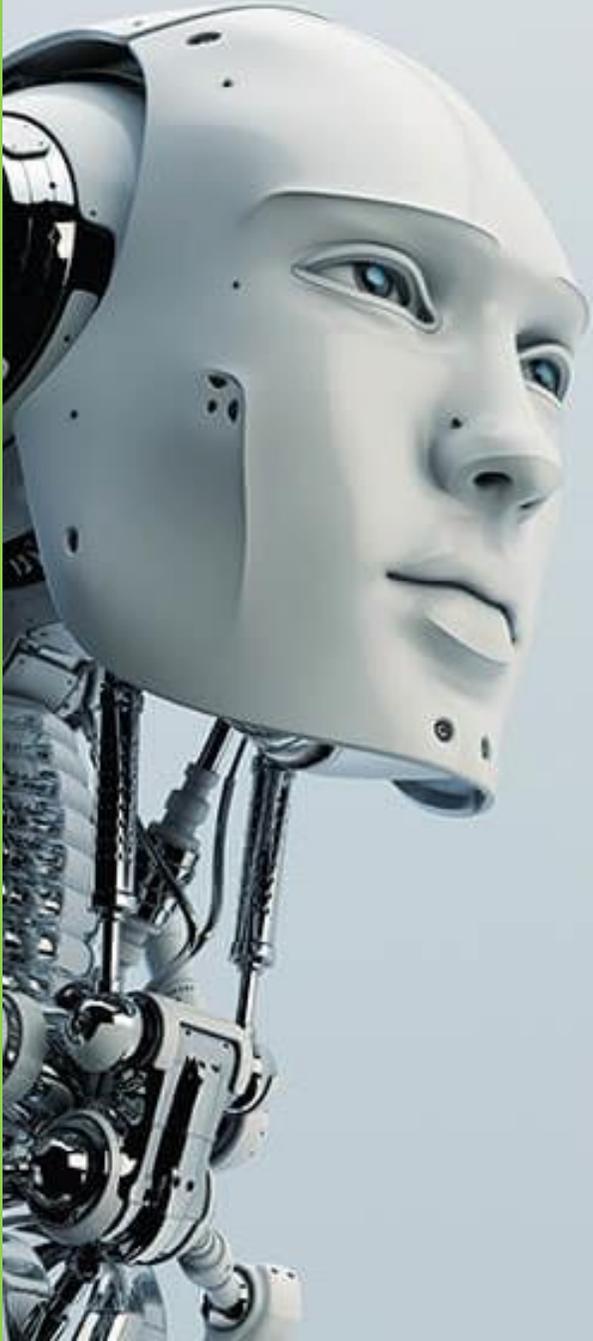
Brent Leland

Board Chair – AAIW

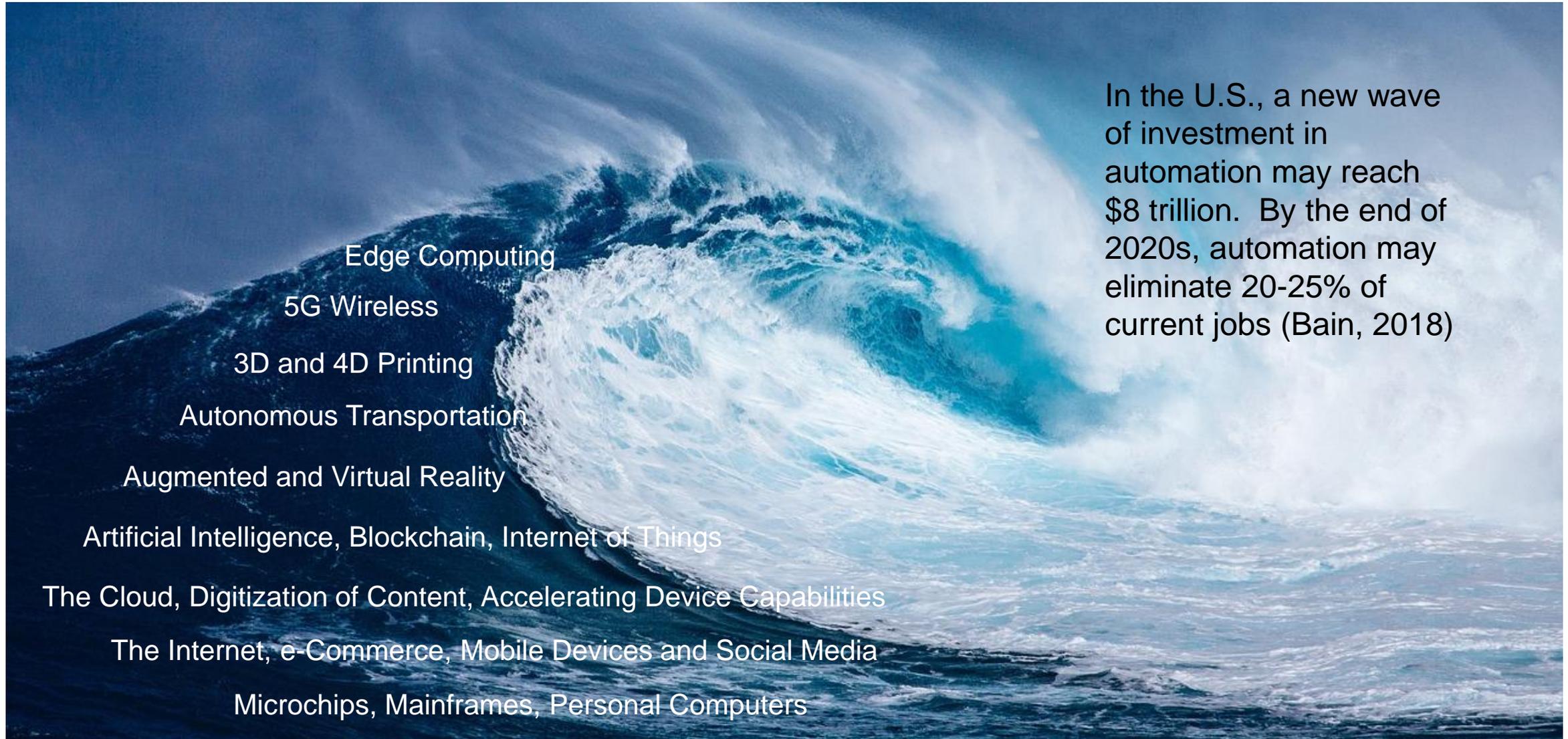
Founder & President – High G



What is the Great Transformation and Why Should you Care?



A Wave of Technological Change is Under Way



Edge Computing

5G Wireless

3D and 4D Printing

Autonomous Transportation

Augmented and Virtual Reality

Artificial Intelligence, Blockchain, Internet of Things

The Cloud, Digitization of Content, Accelerating Device Capabilities

The Internet, e-Commerce, Mobile Devices and Social Media

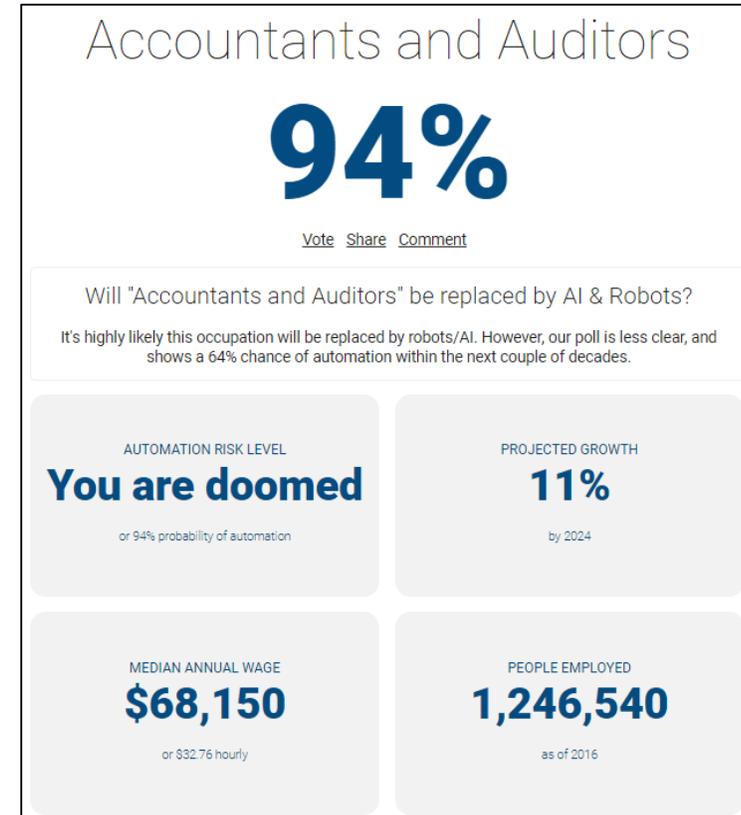
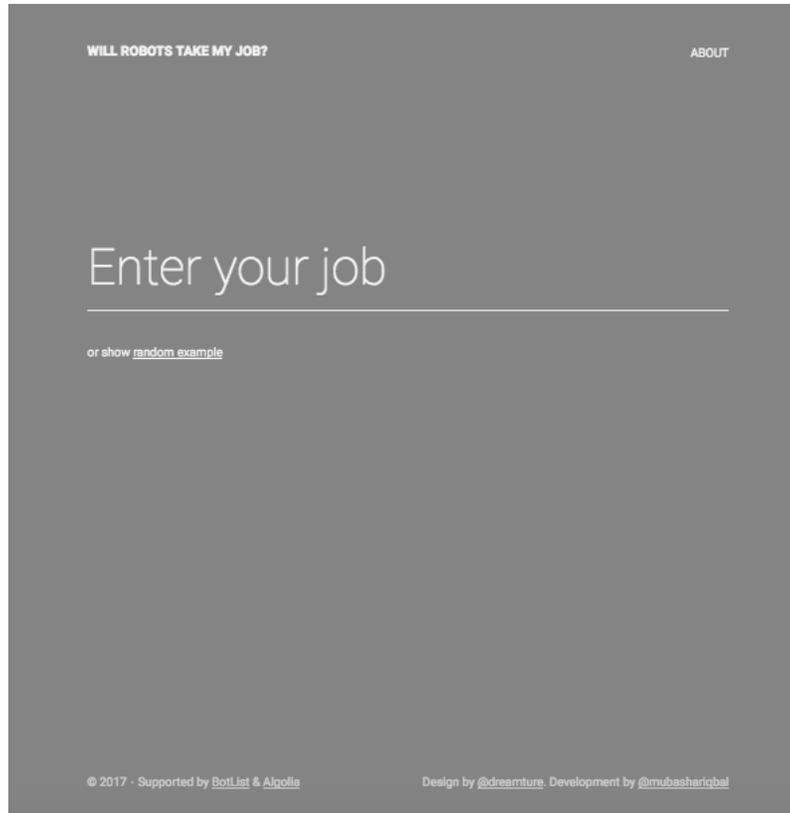
Microchips, Mainframes, Personal Computers

In the U.S., a new wave of investment in automation may reach \$8 trillion. By the end of 2020s, automation may eliminate 20-25% of current jobs (Bain, 2018)

Experts are Predicting Massive Change

“The speed of current breakthroughs has no historical precedent. When compared with previous industrial revolutions, the **Fourth is evolving at an exponential rather than a linear pace**. Moreover, it is disrupting almost every industry in every country.”
(Klaus Schwab, Founder and Executive Chairman, World Economic Forum).

Will Robots Take My Job?

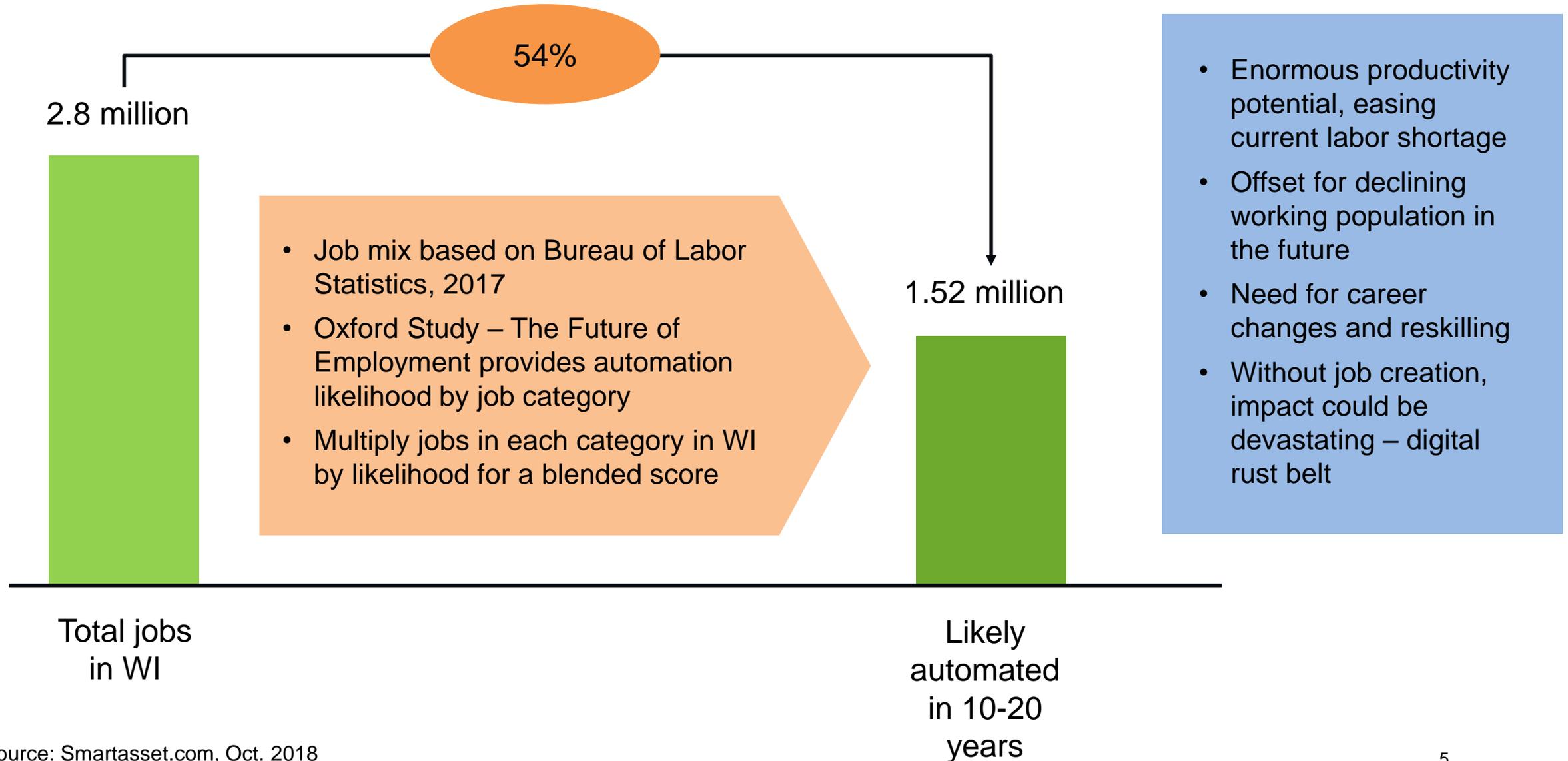


Source – <https://willrobotstakemyjob.com/>

One-third of the United States workforce could be out of a job by 2030 thanks to automation.

McKinsey Global Institute, 2018

Jobs Likely to be Automated in Wisconsin



Workforce Impacts

Jobs Most at Risk

(Routine, Repetitive, Predictable)

- Underwriters
- Paralegals
- Fast Food Cooks
- Telemarketers
- Tax Preparers
- Loan Officers
- Library Technicians
- Cashiers
- Taxi Drivers
- Computer Operators

Jobs Least at Risk

(Creative, Unpredictable, Human Interactions)

- Supervisors
- Engineers
- Social Workers
- Chefs
- Lawyers
- Photographers
- Audiologists
- Surgeons
- System Analysts
- Bot Handlers

“Career Adaptability - Practice lifelong learning, reading, listening, and experimentation. Be curious and open to new opportunities.”

We All Have to Get Ready





Introduction to Advancing AI Wisconsin



AAIW Mission and Vision

Mission

We make sure that Wisconsin is not left behind in the wave of technological changes of the Great Transformation

Vision

We build a **powerful community** of the capable and willing to help educate Wisconsin audiences on the nature and impact of upcoming technological change

We create access to **relevant knowledge** in a variety of learning formats

We **engage diverse audiences** in all regions of the State to improve awareness and increase the readiness to prepare for change

AAIW Board (as of 8/2019)



Chair
Brent Leland
High G



Vice-Chair
Joe Bashta
Axicor



Treasurer
Mark Schanen
Support Strategies
Milwaukee



Secretary
Chris Carpenter
Johnson Financial



Executive Director
Oliver Buechse
My Strategy Source



Mike Semmann
Wisconsin Bankers
Association



Nicole Whitbeck
New Resources
Consulting



Troy Streckenbach
Brown County



Luis Murgas
Wipfli



Julie Rohloff
EDCI

How We Will do it

Build a community of the willing and capable, organized in action teams and ambassador circle

Develop easy to access and easy to share knowledge materials, speaking engagements, classes/training

High impact events to create connectivity around digital disruption between experts and key stakeholders

Community Pillars

AAIW Community Approach

Regional Teams

Northeast Wisconsin
Milwaukee
Madison

Others to follow

Action Teams

Healthcare
Manufacturing
Financial Services
Customer Service

Others to follow

Ambassadors

Individuals with
less time but strong
connections

Introductions
Advocacy

Newsletter and Social Media

Stay in the flow
Engage when
you can

How We Will do it

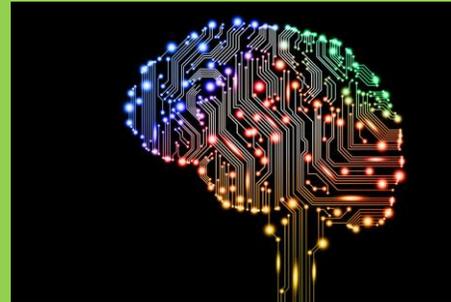
Build a community of the willing and capable, organized in action teams and ambassador circle

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High impact events to create connectivity around digital disruption between experts and key stakeholders

Our Approach to Seminars

- We are curating two hour seminars to allow audiences to achieve a deeper level of understanding
- Our goal is to develop an entire seminar series on disruptive technologies (see examples on the following pages)
- We do not claim to be the ultimate experts on these technologies, we just make it easy to understand them.





Digital Transformation Series (coming to Carroll University soon)



Digital Transformation Series with St. Norbert College



The Donald J.
Schneider
School of
Business &
Economics

Digital Transformation Series

The Schneider School, in partnership with **Advancing AI Wisconsin**, presents six seminars designed for business leaders, innovators and change agents whose industries are being challenged by the rapid pace of technological advancements. The Digital Transformation Series aims to build a solid understanding of the nature and impact of new technologies so leaders can create value and shape the future of their organizations.

About the Series

July 10-Dec. 11, 2019
3-5 p.m.

Individual seminars are \$75 per attendee; join us for all six seminars for \$300 per attendee.

<https://schneiderschool.snc.edu/digitaltransformation.html>

The Invisible War at Your Doorstep

The Invisible War at Your Doorstep - Cyberthreats and Defensive Options for Businesses

Description:

Cybersecurity is not a topic of future possibilities, it is a current reality. Companies of all sizes can find themselves the target of malicious efforts. But what exactly are these different threats and who is behind them? More importantly, what can be done to prevent, prepare, and respond. Learn what you can do to protect your business and what resources are available to you in Wisconsin.

Presenters:

Jerry Eastman (WCTRA - Wisconsin Cyber Threat Resource Alliance), Justin Valentine (Camera Corner Connecting Point), John Rousseau (Brown County Sheriff's Department) or others depending on location



Understanding AI Like Never Before

Understanding AI Like Never Before

Description:

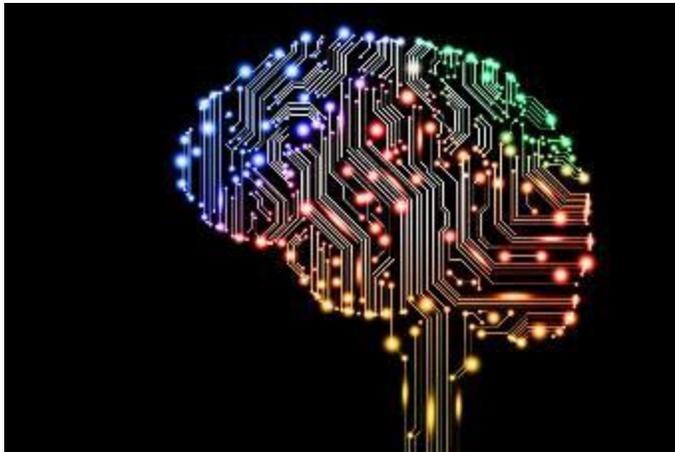
Artificial Intelligence is a term for a family of disruptive technologies which will have the greatest influence on how we will live our lives and perform our jobs in the future. In fact, it may change entirely which jobs we will perform and how business will be conducted going forward. This seminar will lift the mystery on what exactly Artificial Intelligence is and allow the participants to not only understand its nature and impact, illustrated in a wide range of use cases, but enable them to explain it to others in simple terms and with powerful examples.

Presenters:

Oliver Buechse, Executive Director of AAIW

Joe Bashta, Axicor

Sarah Alt, Founder and President of Triple Ten Consulting



Welcome to a New Reality



Welcome to a New Reality – An introduction to Augmented Reality, Virtual Reality, and more

Description:

Many of us enjoy the temporary escape from real life into a movie or video game. We are also learning to consume digital content in new ways – via computers, laptops, tablets, phones, or other devices. But for the most part, we are still clearly distinguishing between our “live reality” and that presented to us in digital formats. Going forward, these boundaries will increasingly blur. Information will be provided to us “superimposed” onto our perception of reality and we the quality of digital experiences will become so life-like that distinctions will be harder to make. In this seminar we will explore the various formats in which these new realities are being brought to us and how they can help us become more productive and enrich our lives. But we will also look at the risks that are implied especially for the young and vulnerable.

Presenters:

Oliver Buechse, Executive Director of AAIW

Eric Lien: Founder and Chief Imagineer at eXperience IT 3D

Would you Like Some AI With That?

Would You Like Some AI With That? - The Future of the Customer Experience in an Increasingly Digital World

Description:

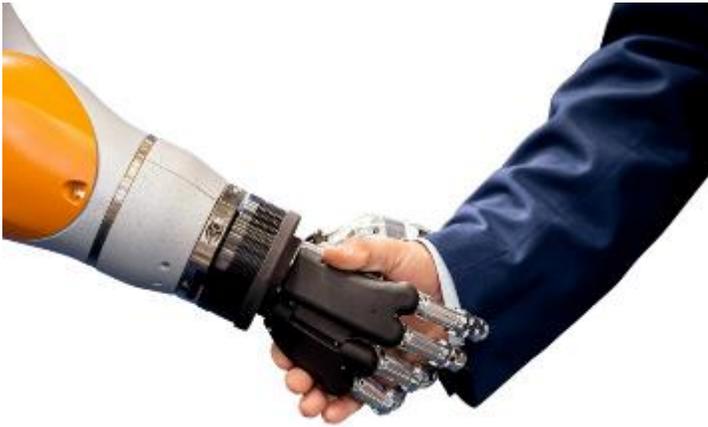
A conversation with a real person, a smile, a handshake – we can recognize the elements of true engagement and providing a great customer experience based on these real world indicators. But the future of customer engagement is much more complex and may see an accelerating shift into digital formats of interaction. From tools which empower the human interaction to digital dialogue between human and machine – the rules are changing. We may even see machines serving machines on behalf of humans. In this seminar we explore key technologies which enable the digital interaction and examine the consequences of these shifts for us as consumers and for businesses as providers of customer experiences.

Presenters:

Jake Beyer, Director of Customer Care at EDCi
Eric Schmidt, Founder OneDayOne Marketing



How Robots Will Evolve



From Toys and Tools to the Fabric of our Lives – How Robots will Evolve and Impact our Future

Description:

Historically there has been a great divide between the use of robots in real life and the illustration of robots in Science Fiction movies where they are often indispensable companions to humans. This divide is beginning to close as robots are advancing rapidly in mobility, flexibility of movement, and the ability to communicate (powered by AI). In this seminar we will explore the inevitable evolution of the use of physical and virtual robots in arenas as diverse as manufacturing, service industries, knowledge management, elder care, education, and home security. We will also examine the implications of these trends for social structures and the concept of privacy

Presenters:

Oliver Buechse, Executive Director AAIW
Carson Diltz, Amazon

Bitcoin vs. Organic Tomato



Bitcoin vs. Organic Tomato – The promises and challenges of Blockchain

Description:

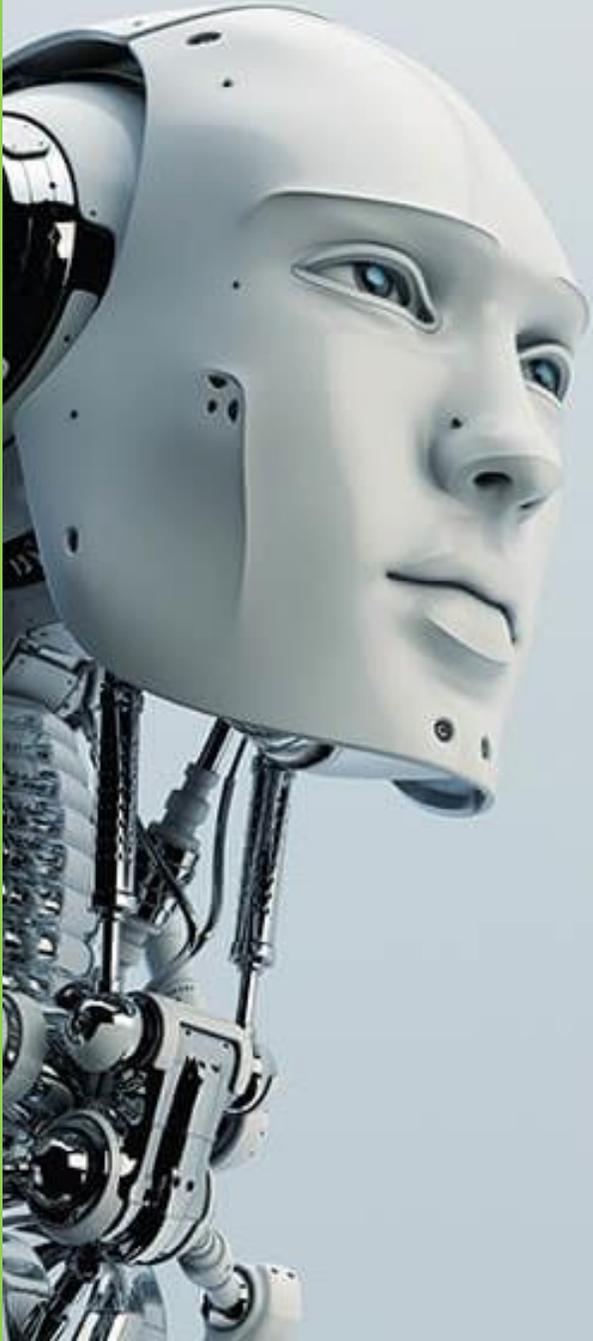
Blockchain is a frequently discussed topic, but it is not one that is easy to understand. This seminar will remove this issue by establishing a solid foundation of knowledge. We will start by looking at the original concept of blockchain in the context of facilitating cryptocurrency transactions. We will examine the four promises of Trust, Transparency, Security and Efficiency and how they were being achieved. When Blockchain is applied to other use cases, for example to Trade Finance or Supply Chain solutions, a few challenges related to the technology need to be understood. We will explore these challenges and also look at technology evolutions, both within the Blockchain family and select alternative Distributed Ledger options.

Presenters:

Oliver Buechse, Executive Director AAIW
Rhommer Varilla, SafeNet Consulting

A Sampling

Artificial Intelligence –
What Does That
Actually Mean?

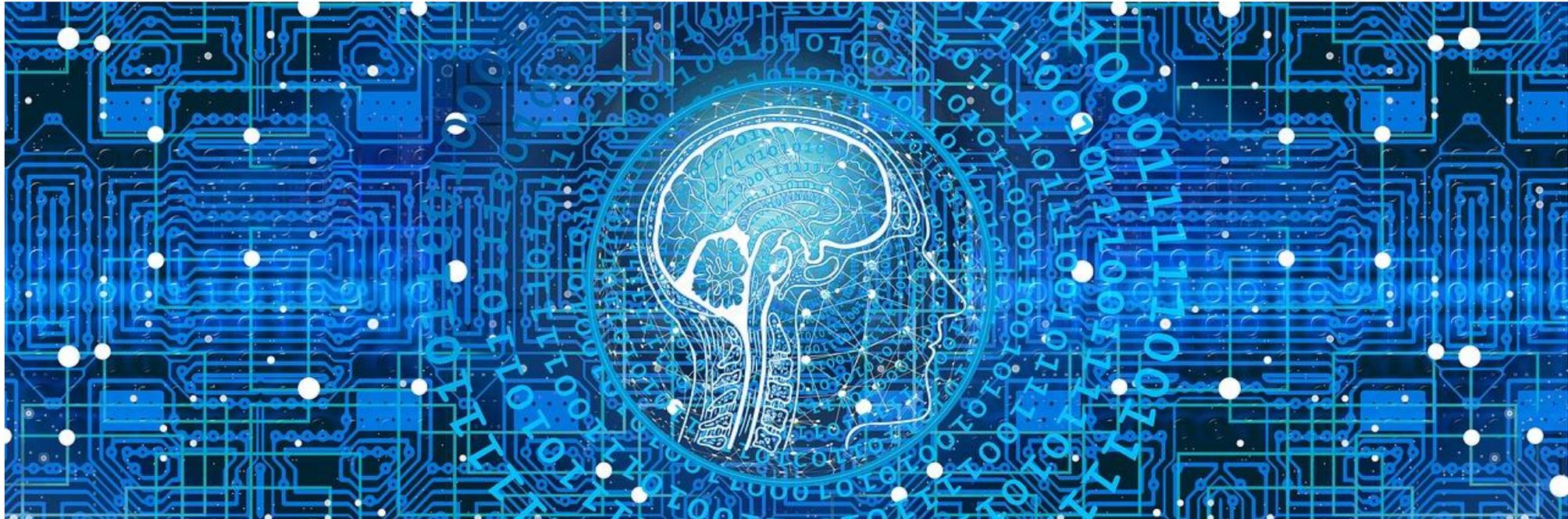


What is Artificial Intelligence?

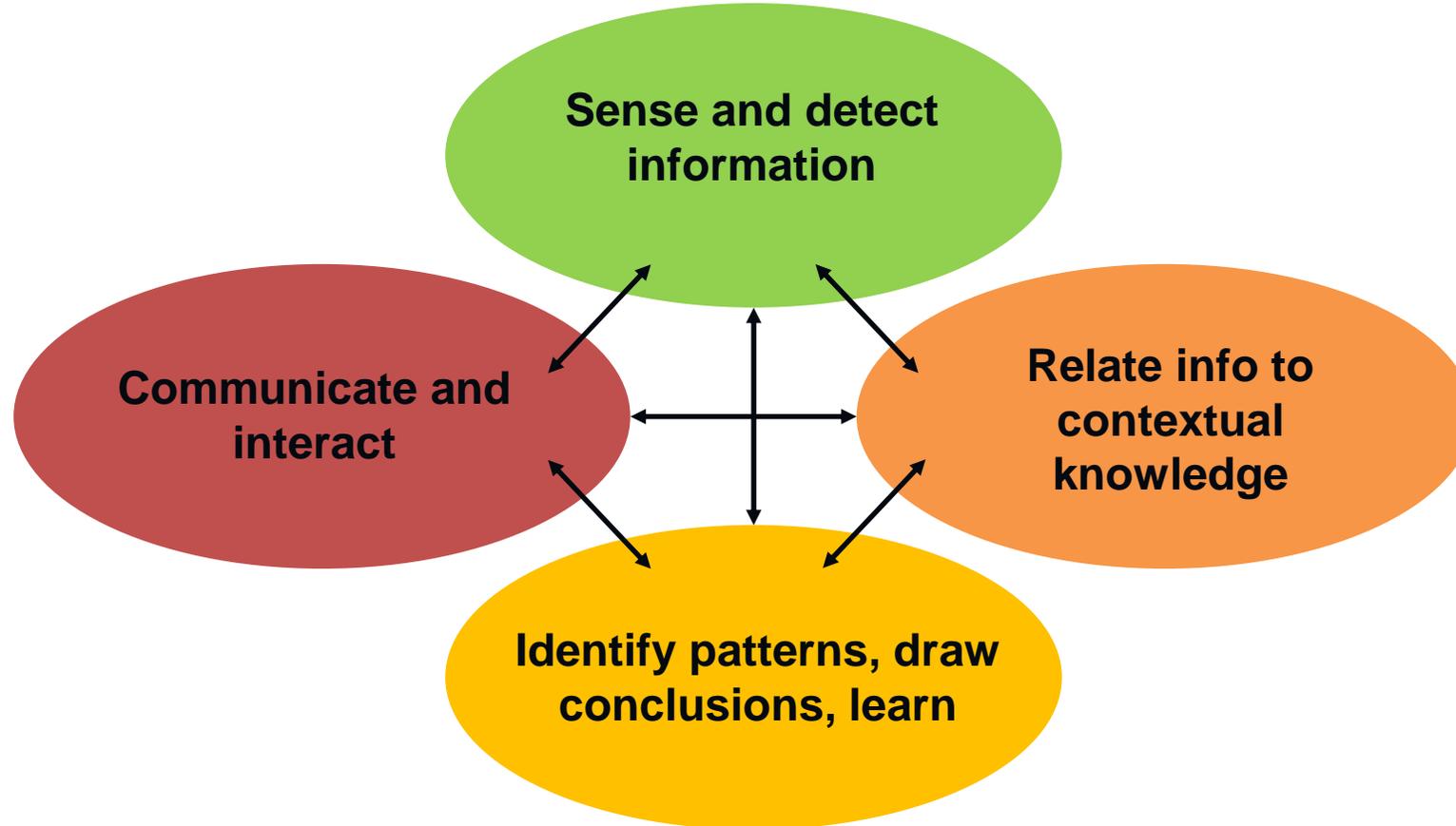
Technology that seems to emulate Human Thinking and Action

(perceive sensory input, natural language, detect patterns, learn, perform non-routine tasks)

But also: Speed and data volume, accuracy, works 24/7, does not (yet) get bored

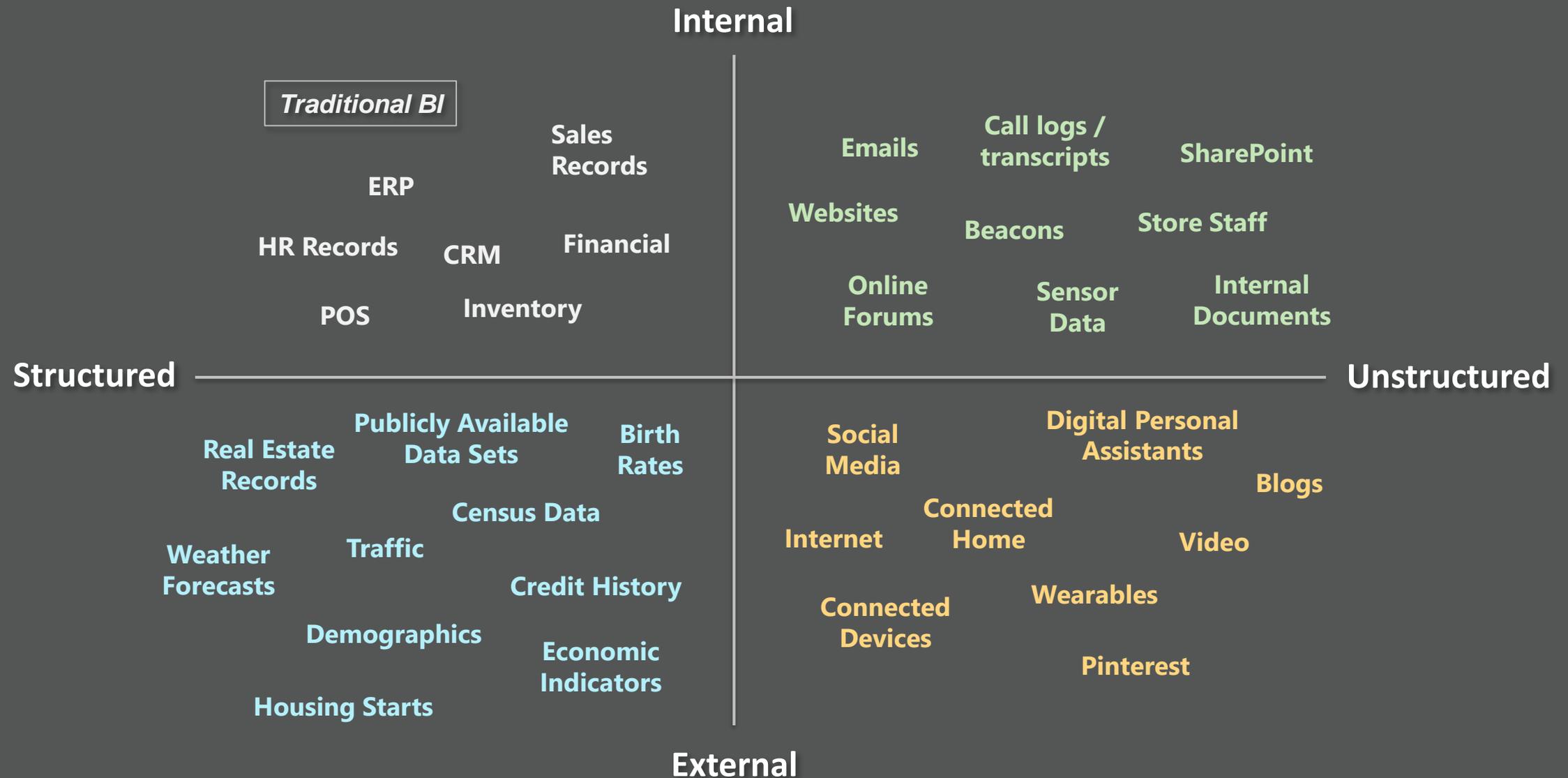


Basic Elements of Human Intelligence

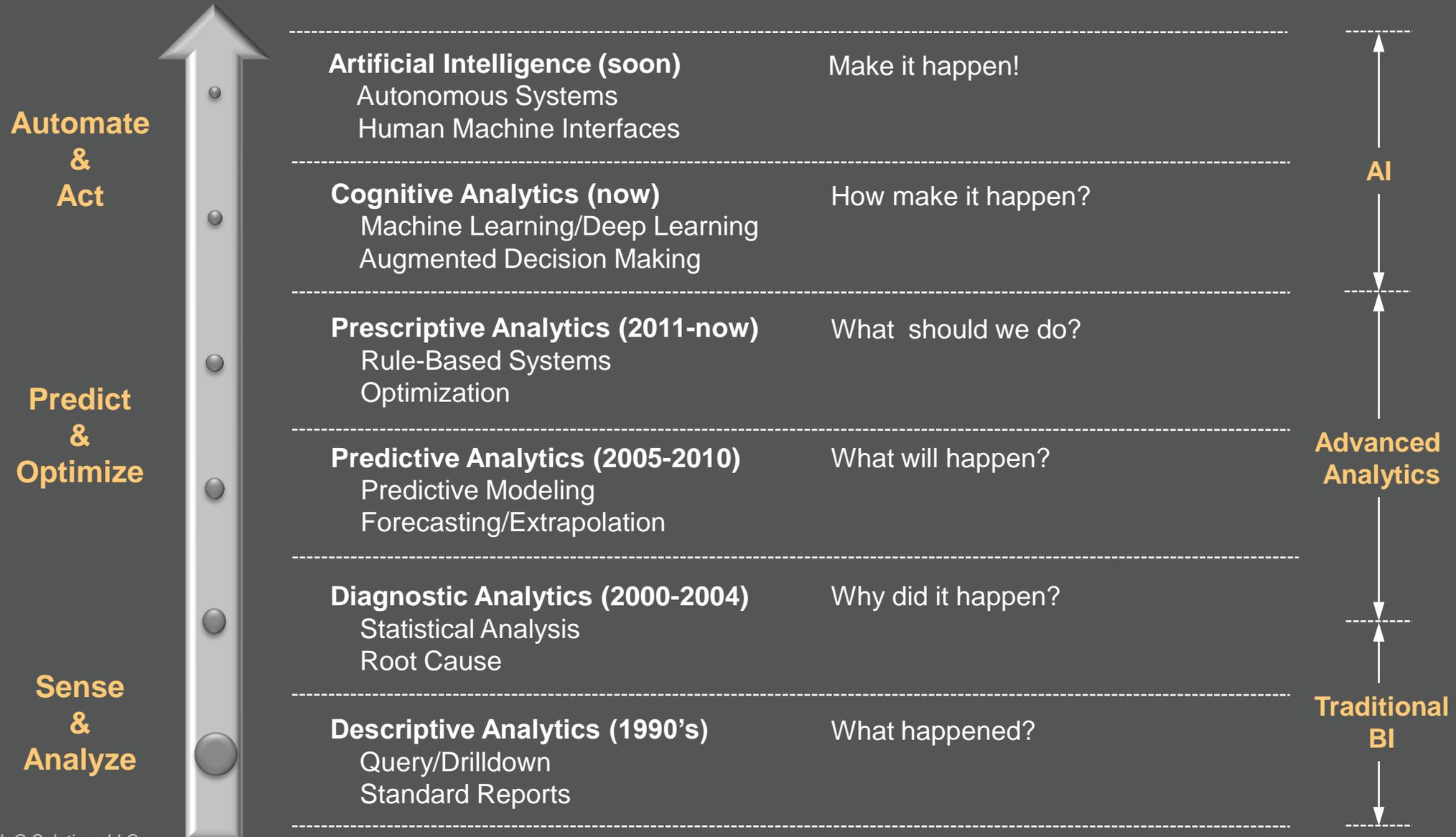


Fundamentals

Fundamental #1 Data is the New Oil

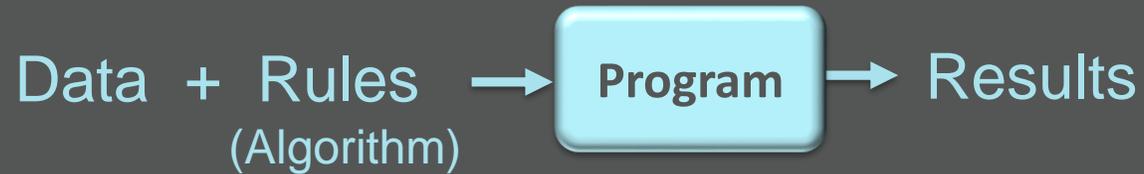


Fundamental #2 Analytics is the Foundation of AI



Fundamental #3 The Rise of the Algorithm

Traditional Programming



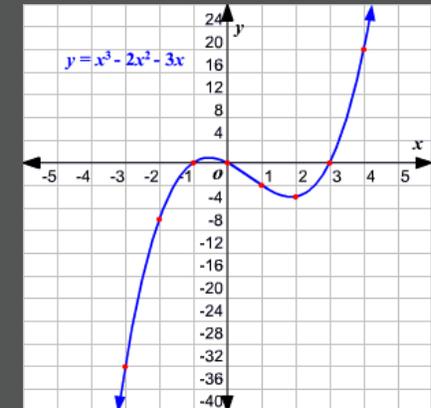
i.e. traditional virus detection (.DAT files)

Machine Learning

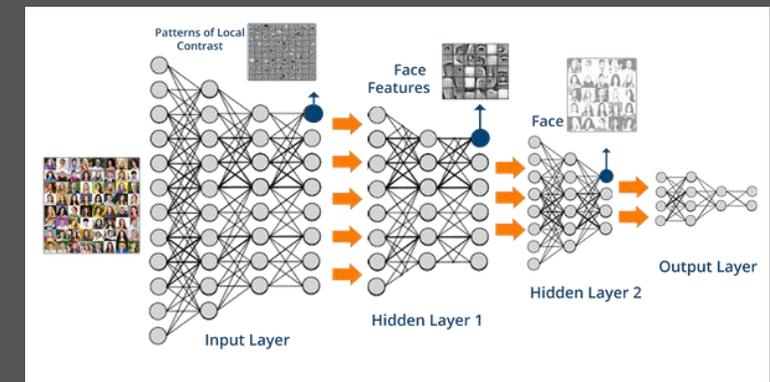


i.e. automatic spam filtering

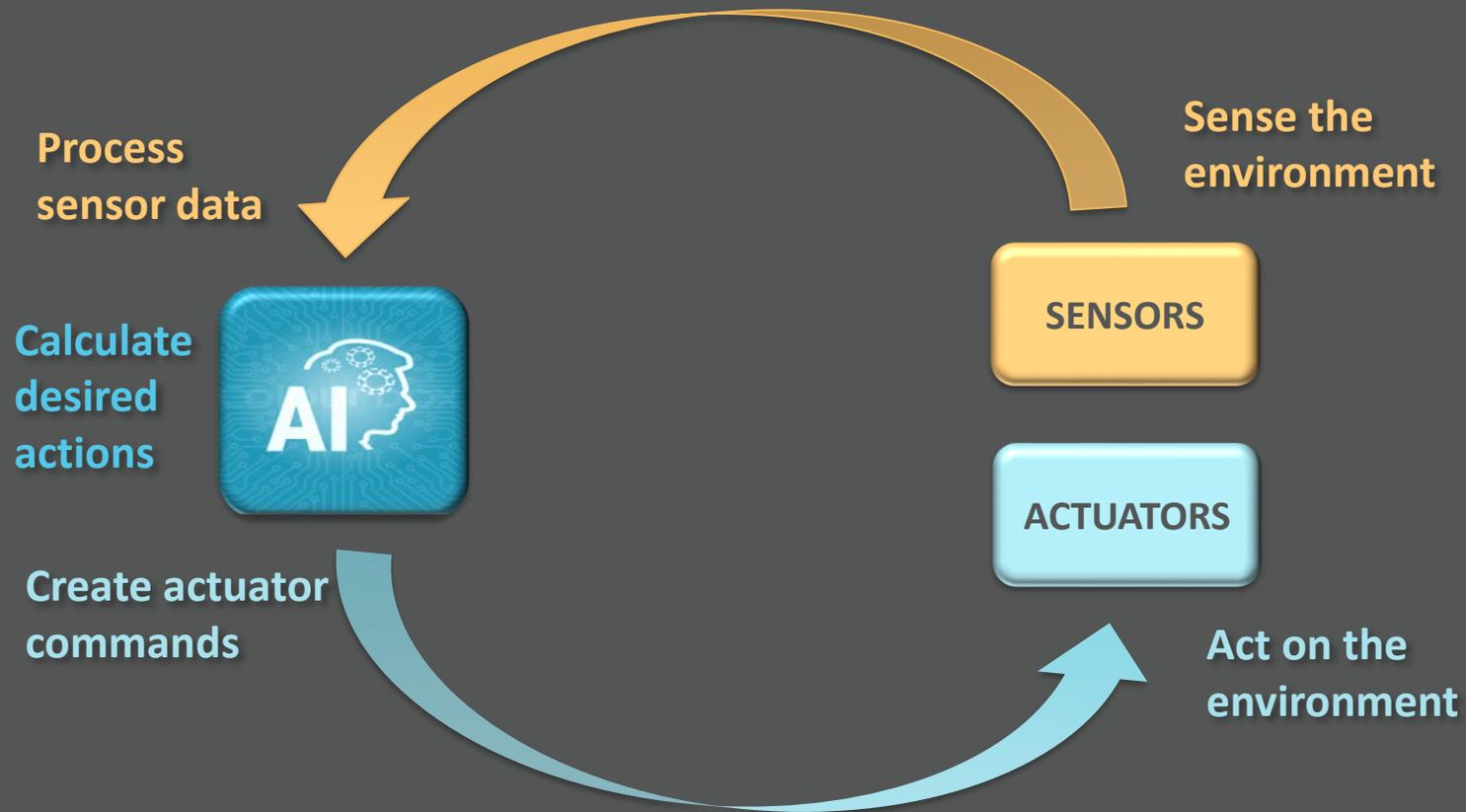
Simple
 $Y = f(x)$



Complex



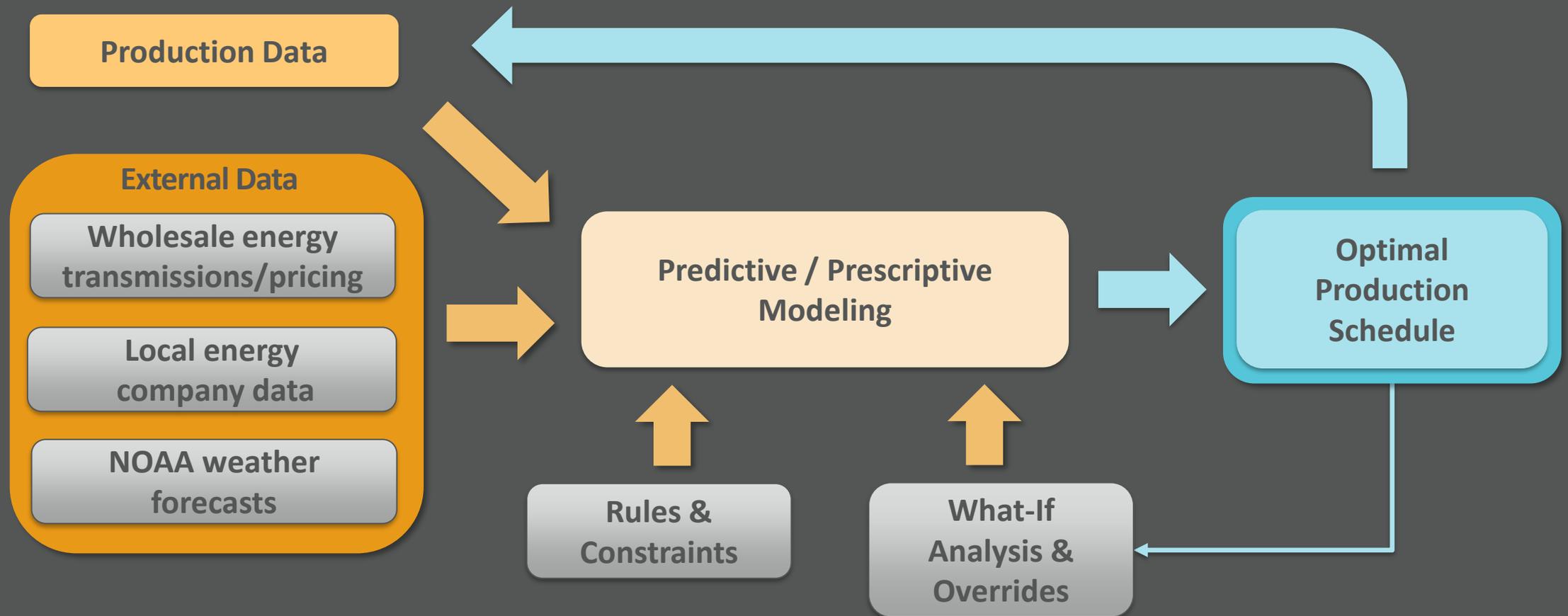
Fundamental #4 AIoT – Connecting AI to the Physical World



Measures

Machine Vision / Ambient Light
 Acceleration / Tilt
 Electric / Magnetic
 Leaks / Levels
 Force / Load / Torque / Pressure
 Position / Presence / Proximity
 Motion / Velocity / Displacement
 Temperature / Humidity / Moisture
 Acoustic / Sound / Vibration
 Radar / Lidar
 Chemical / Gas
 Flow / Volume

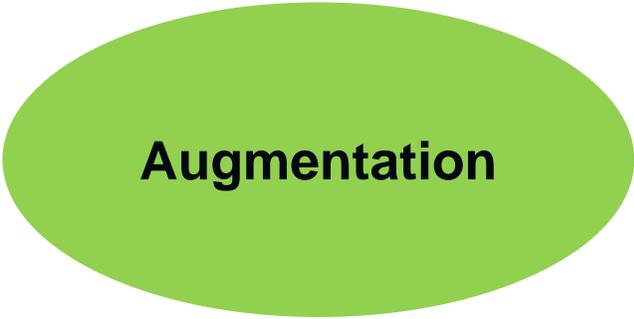
Simple Example - Energy Cost Reduction



20% Cost Reduction
400% ROI

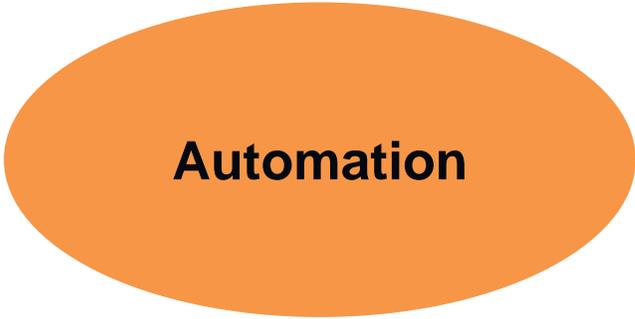
Used machine learning with historical production data and 3rd party electric and weather datasets to predict energy prices and adjust production schedules accordingly.

An Important Distinction in Use Cases



Augmentation

AI performs certain tasks which enhance the ability of a human to perform a task or job



Automation

AI, or a combination of technologies including AI, are used in a way intended to replace the human



Disruption

AI based capabilities are allowing for a complete rethinking and redesign of processes, potentially impacting entire industries

Augmentation

MACHINE + HUMAN

- **How**

- Decision making recommendations
- Initial customer interactions
- Content creation
- Augmented reality

- **ROI**

- Force multiplier
- Increased productivity/performance from existing resources

“AI's biggest potential is to augment human effort, not just automate human tasks, and thus help address the talent shortage.”

- Gartner

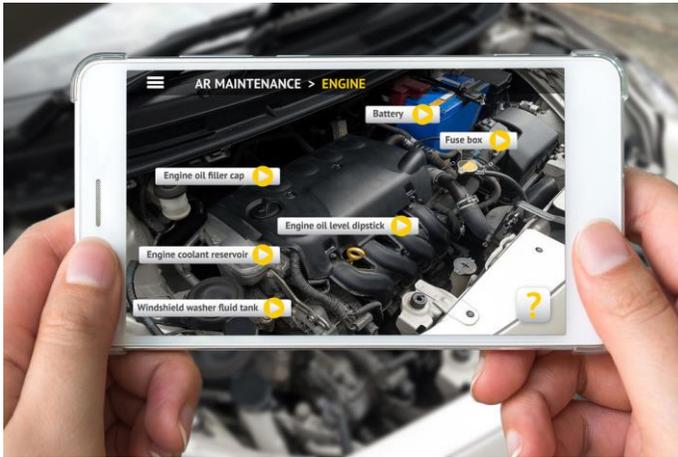
Example: Breast Cancer Detection

- Pathologists are 96% accurate
- Machines are 92% accurate
- Working together, they are almost 100% accurate

Augmentation



Augmented reality owners manual.



Helps teachers quickly grade students' work. Deciphers students' handwriting, learns how the teacher grades the first few tests, and applies the same standards to subsequent tests.

Automation

MACHINE - HUMAN

- **How**

- Smart Robots
- Robotic Process Automation (RPA)
- Mostly automation of tasks, not roles

- **ROI**

- Salary savings
- A single bot can do the work of one to five workers
- Annual cost of an RPA bot is \$1,000 to \$10,000

“Already, legal bots, AI journalists, and diagnostic ‘robot doctors’ mean that jobs lost to digital technologies will **no longer be restricted to the blue collar employment markets.**”



Automation



Amazon's KIVA robots bring the product to human pickers allowing greater warehouse density and fulfillment speed.



\$700M Automotive Manufacturer used RPA to automate a very cumbersome paper based Accounts Payable process:

- 18 AP personnel, 60,000 annual invoices
- 70% decrease in cycle time
- 43% reduction in processing labor

Disruption

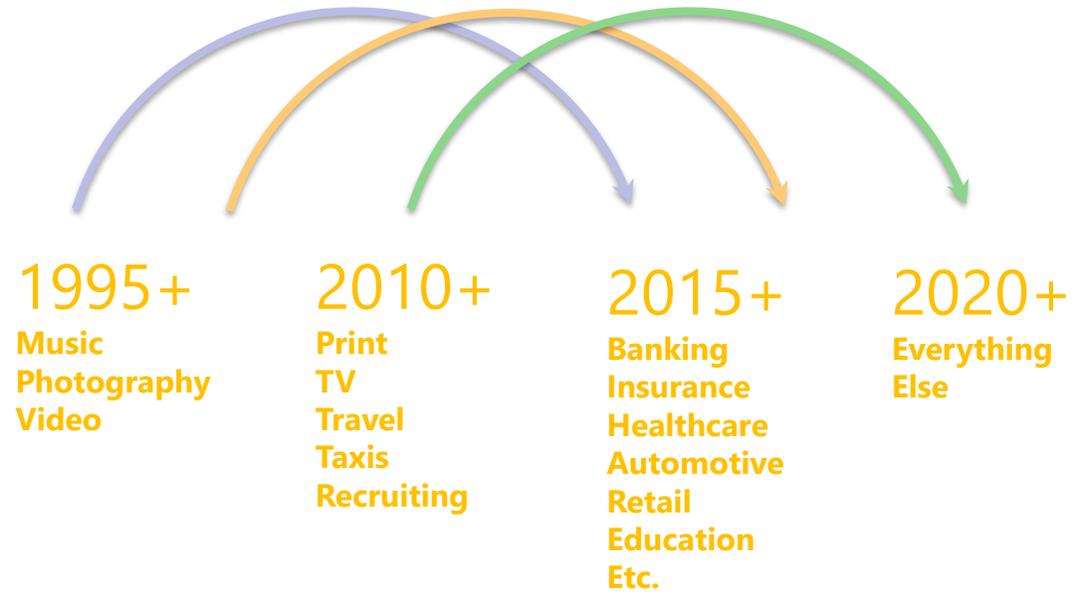
ANYTHING GOES

How

- Remake existing business models
- Create novel new opportunities

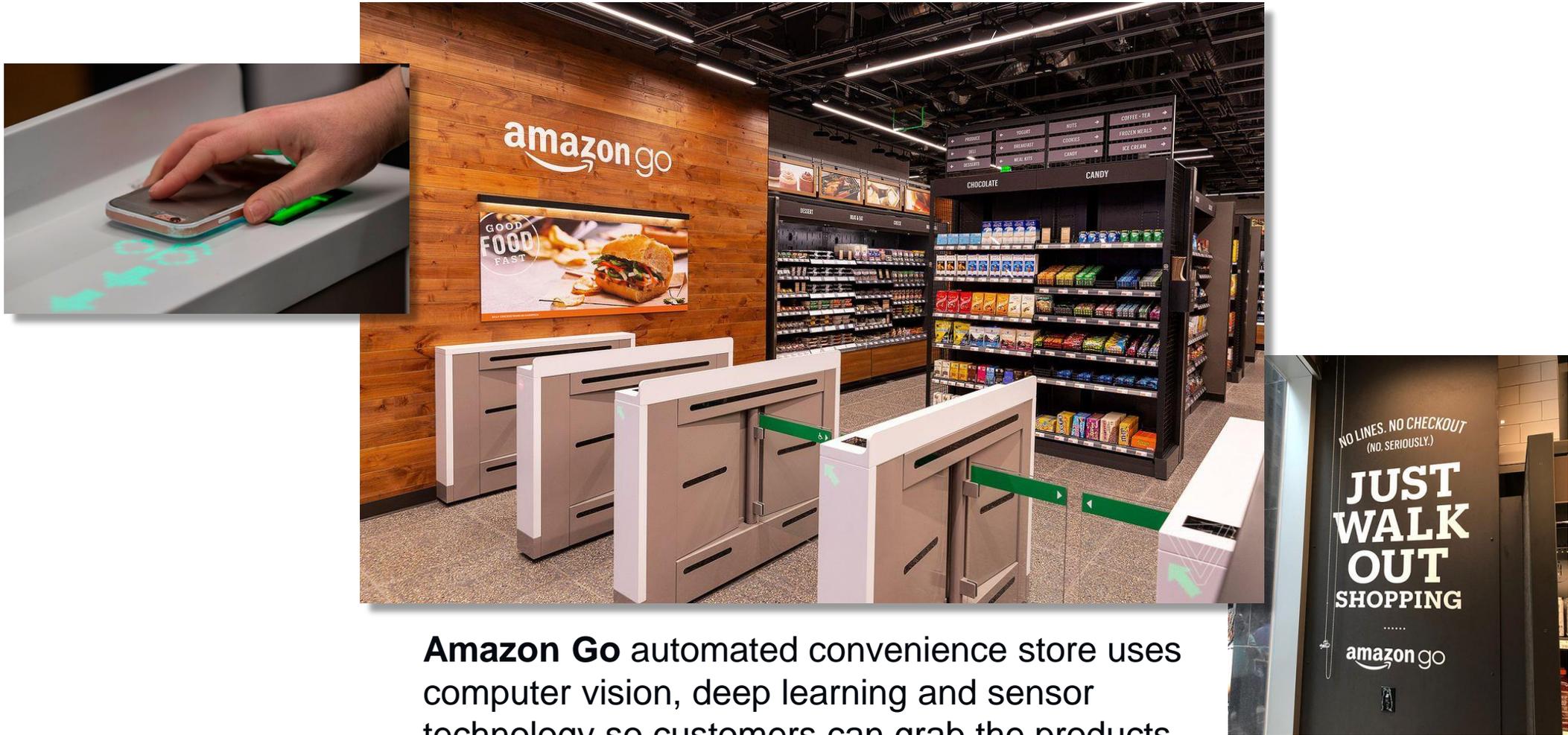
ROI

- Shifts in market share



"Disruptors look for human jobs - then remove the humans"

Disruption



Amazon Go automated convenience store uses computer vision, deep learning and sensor technology so customers can grab the products they want and just walk out the door.

Disruption

Underwriting Process



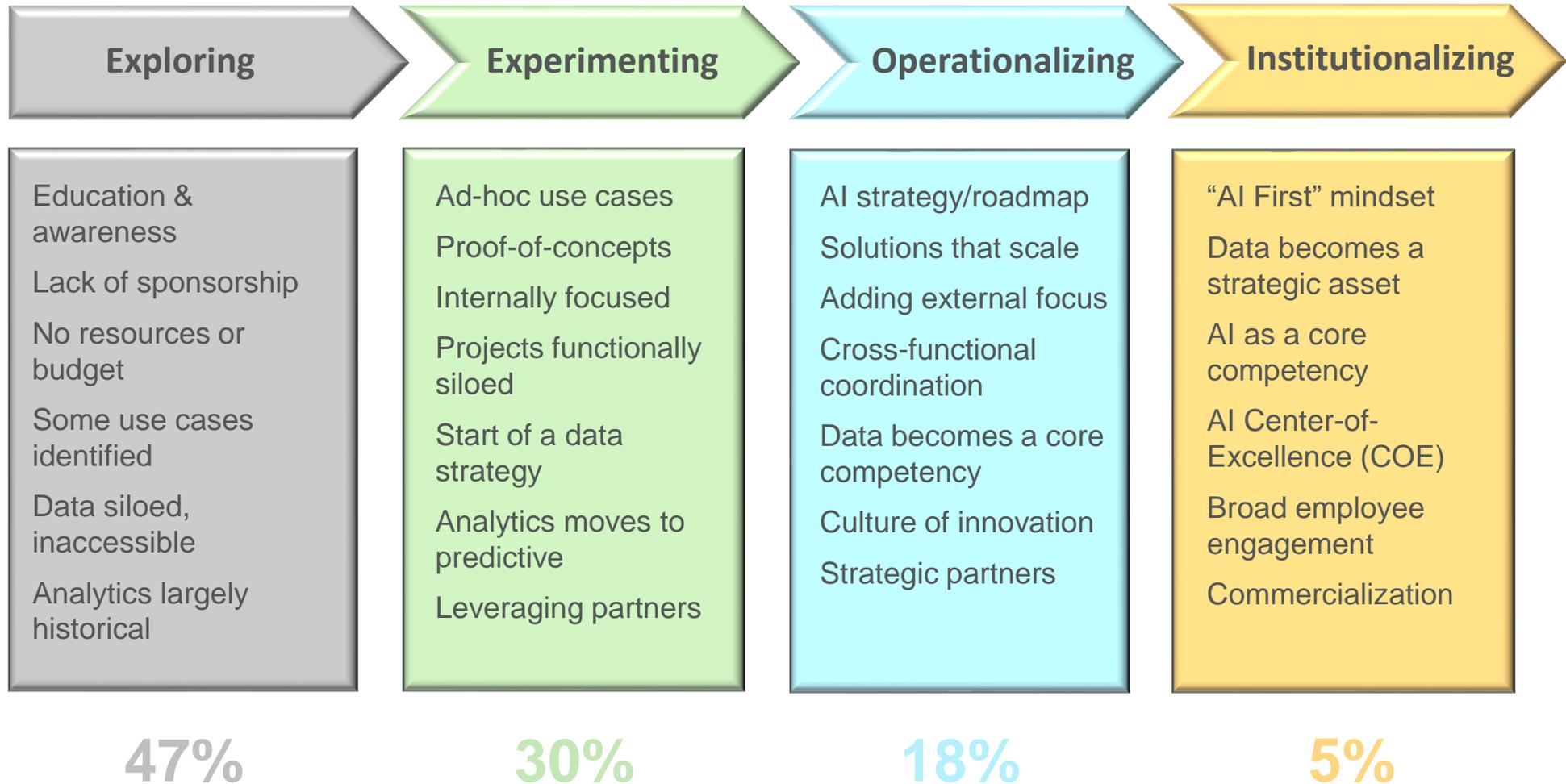
Automatically make recommendations and generate a pre-approved quote based off what is already known about the customer and property.

Claims Process



Use AI integrated drones to automatically process aerial imagery, assess hail damage, and calculate damage extent.

The AI Journey



**DO SOMETHING
DO ANYTHING**



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