RSAConference2020
Asia Pacific & Japan

A Virtual Learning Experience | 15–17 July

HUMAN ELEMENT

SESSION ID: **RMG-R02V**

Does Artificial Intelligence Need a General Counsel?

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Agenda

Where Is Artificial Intelligence (AI) Used In Business?

AI's Popularity

What Could & Has Gone Wrong?

How To Course Correct

Key Takeaways

Where Is AI Used in Business?

MOBILE APPLICATIONS

CUSTOMER EXPERIENCE

SUPPLY CHAIN

HR

FRAUD DETECTION

RESEARCH & DEVELOPMENT

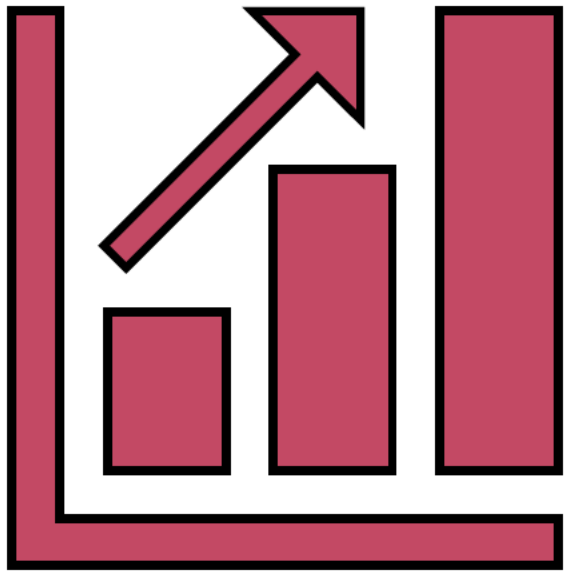
RISK MANAGEMENT & ANALYTICS

PRICING & PROMOTION

OPERATIONS MANAGEMENT

And Its Use is Only Getting Bigger…

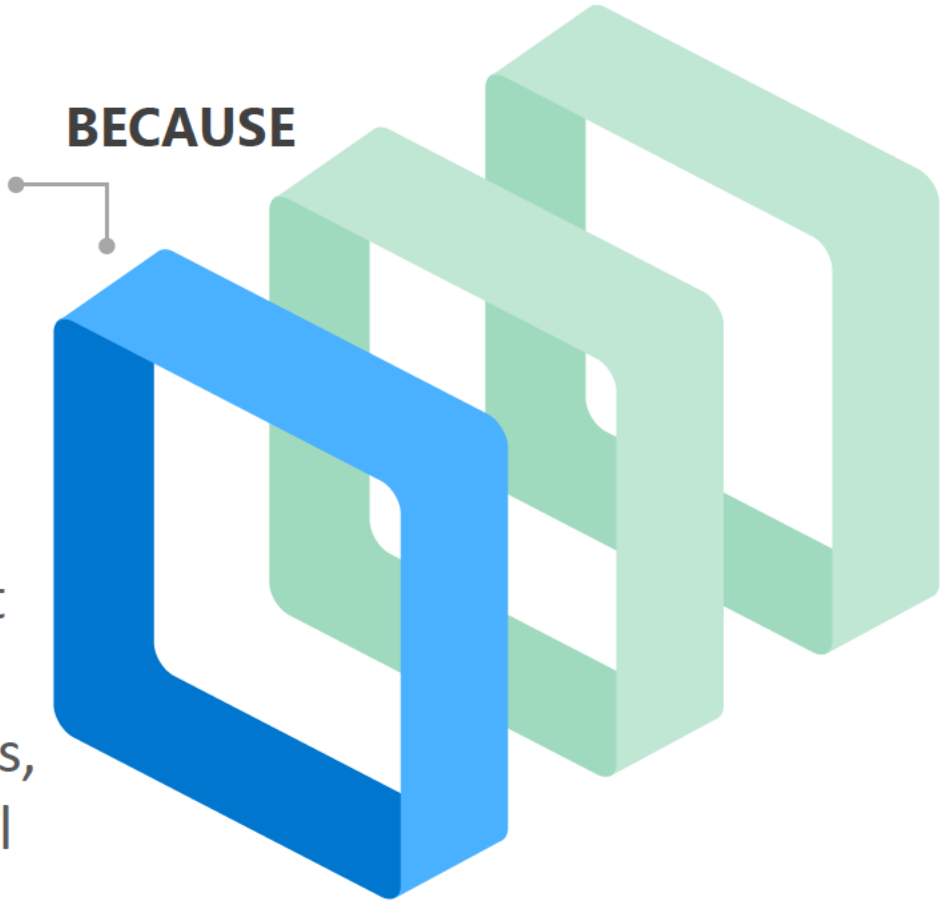
- By 2030, the average simulation shows that some **70% of companies** might have **adopted** at least one type of **AI technology**.[1]
- The **AI market** will grow to a **$190 billion** industry by 2025.[2]
- **83% of businesses** say **AI is a strategic priority** for their businesses today.[3]



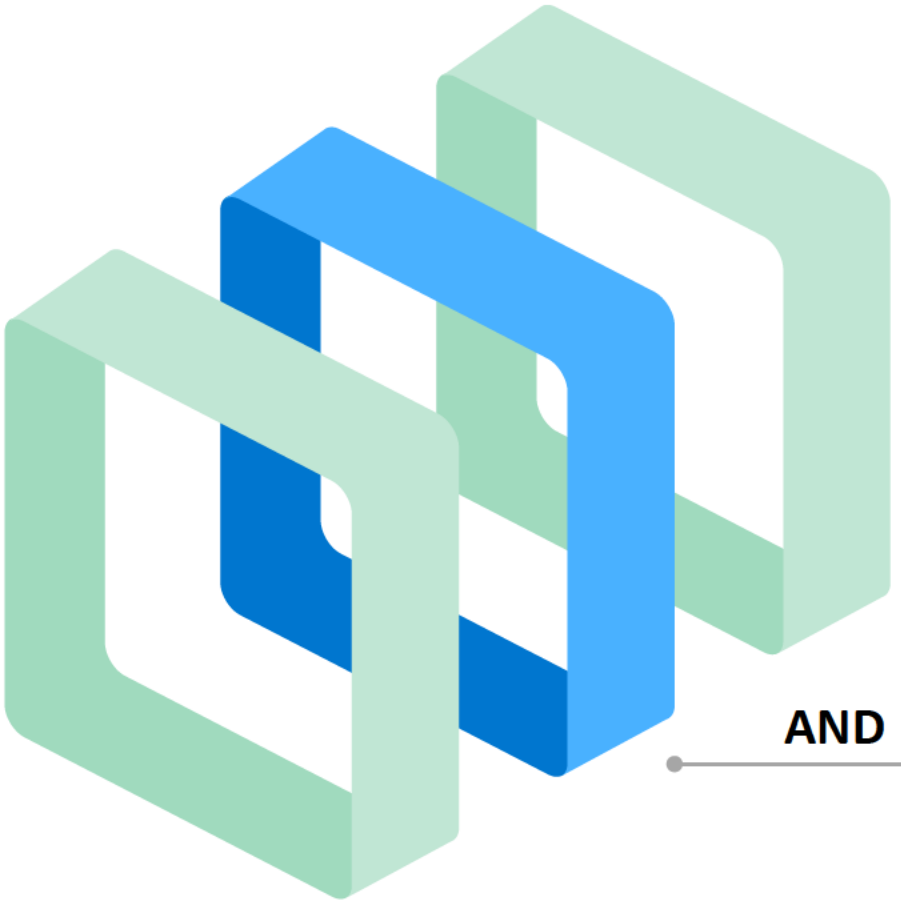
[1] mckinsey.com [2] marketsandmarkets.com [3] forbes.com

A Starting Point…Why Build AI?

- Traditional computer programming follows defined rules (i.e. it does what it does today and will do the same tomorrow)
- Basic Tenet of Compliance and testing
- Corporate counsel believe they are tech savvy but acknowledge their comfort level and confidence with technology have limitations, specifically around artificial intelligence (AI).



A Starting Point…Why Build AI?



AND

- "Everything we love about civilization is a product of intelligence, so amplifying our human intelligence with artificial intelligence has the potential of helping civilization flourish like never before – as long as we manage to keep the technology beneficial."
- Max Tegmark

A Starting Point…Why Build AI?

One of the Goals of AI & Deep Learning (DL) = Avoid Avoidable Problems

THEN

- AI rules will evolve and rules will change
- We should NOT build AI to be able to say we built it, or we have them
- The competition has one, so we need one too – and right now schedule the AI/DL timeline
- But rather, because we want to avoid avoidable problems and AI technology should be fair

What Could & Has Gone Wrong?

Autonomous weapons: AI programmed to do something dangerous

Phalanx CIWS

In one live-fire exercise, the system fired on an inbound target and hit it, but the 99% of shells that missed it flew on and shredded the bridge of another friendly warship, with loss of life.

What Could & Has Gone Wrong?

OPERATIONS MANAGEMENT

Consider a U.S. AI/Deep Learning System Used by a Financial Services Company to Make Decisions About Loans….

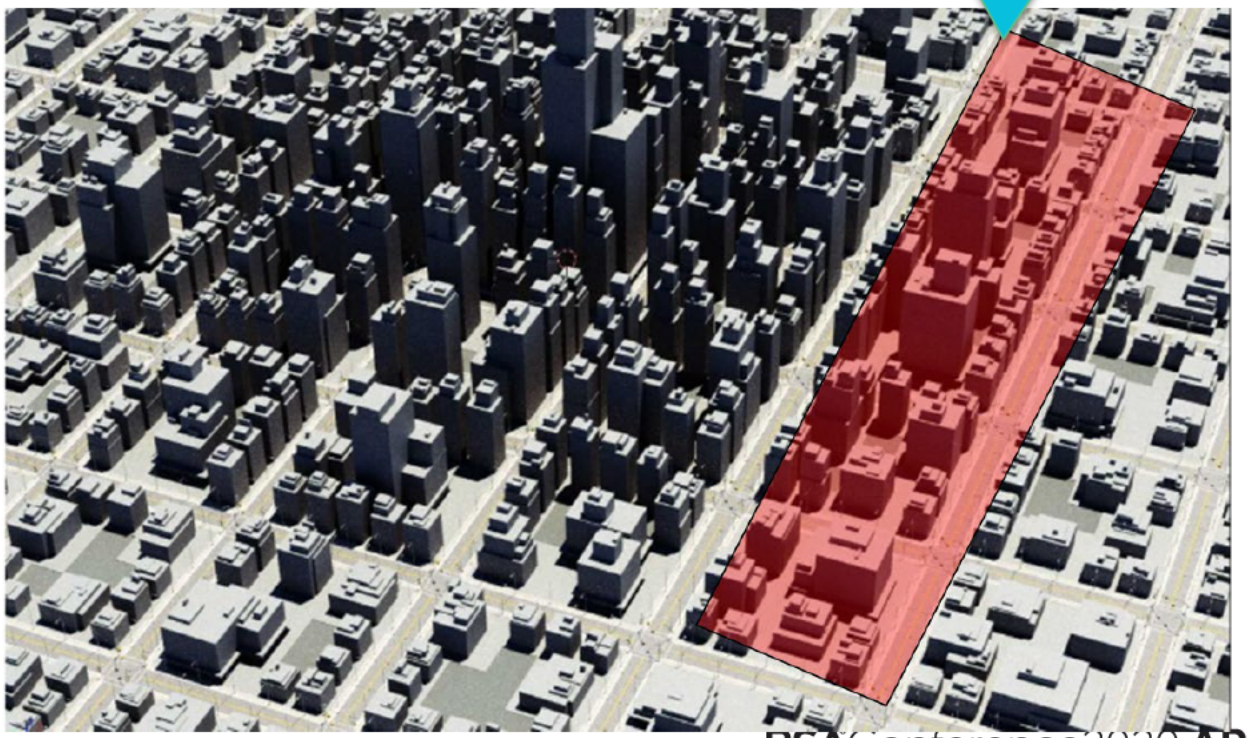
- AI System “training” provided 250,000 records of prior loans
- AI software analyzes factors related to the likelihood of successful repayment

What Could & Has Gone Wrong?

OPERATIONS MANAGEMENT

Consider a U.S. AI/Deep Learning System Used by a Financial Services Company to Make Decisions About Loans….

- One learned approval/denial factor is postal code
- AI now places greater weight in loan approval/denial based on where the borrower lives



What Could & Has Gone Wrong?

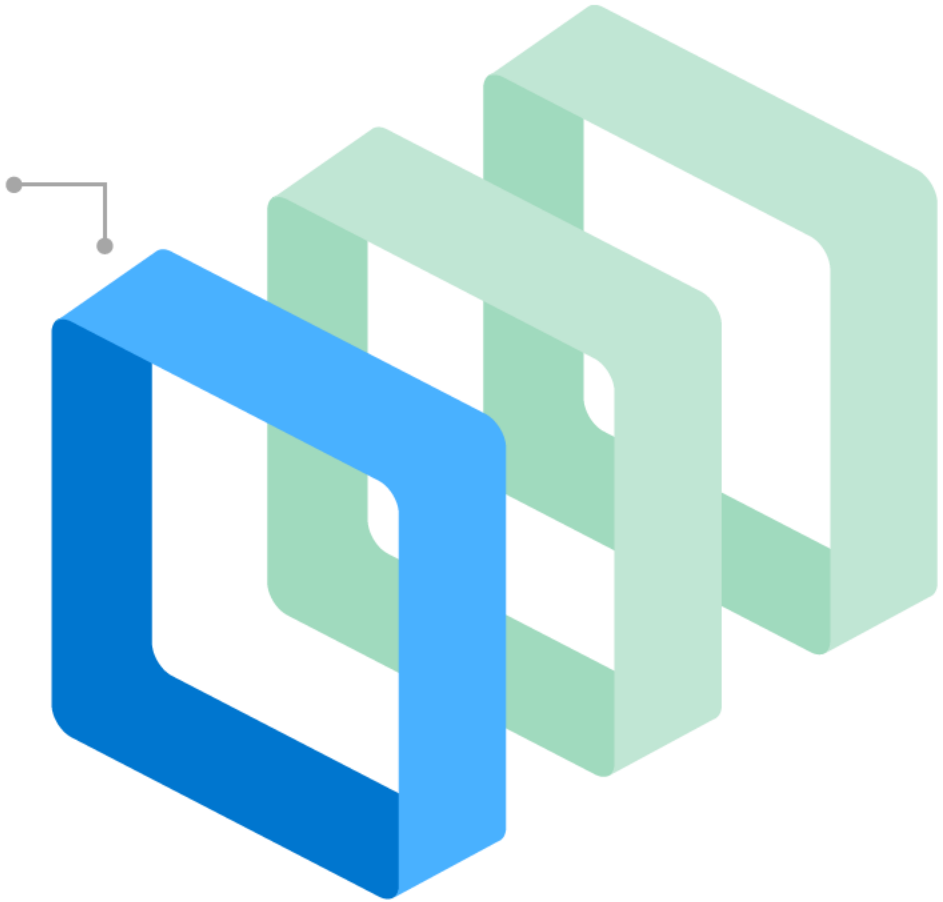
The *Community Reinvestment Act* of 1977 made it illegal to base lending decisions on the neighborhood where a person lives.

Without it, financial institutions literally drew red lines on maps around minority communities and denied them access to services.

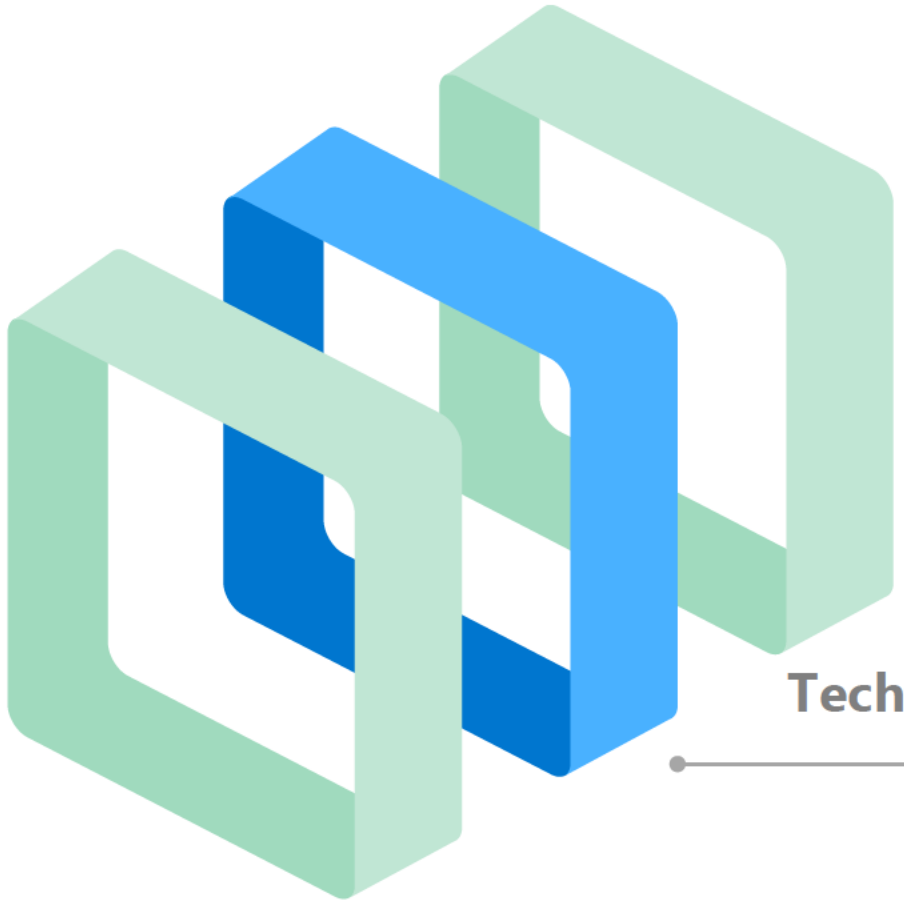
Why does this happen?

AI Experts

Organization may hire AI experts ***but not necessarily subject matter experts***.



Why does this happen?



Focused on building (e.g., make loan decisions) & **never think about legal or regulatory issues**

Why does this happen?

Who's Going To Tell Them?

- Can you **afford to hope** that **they figure this out** or research it themselves?

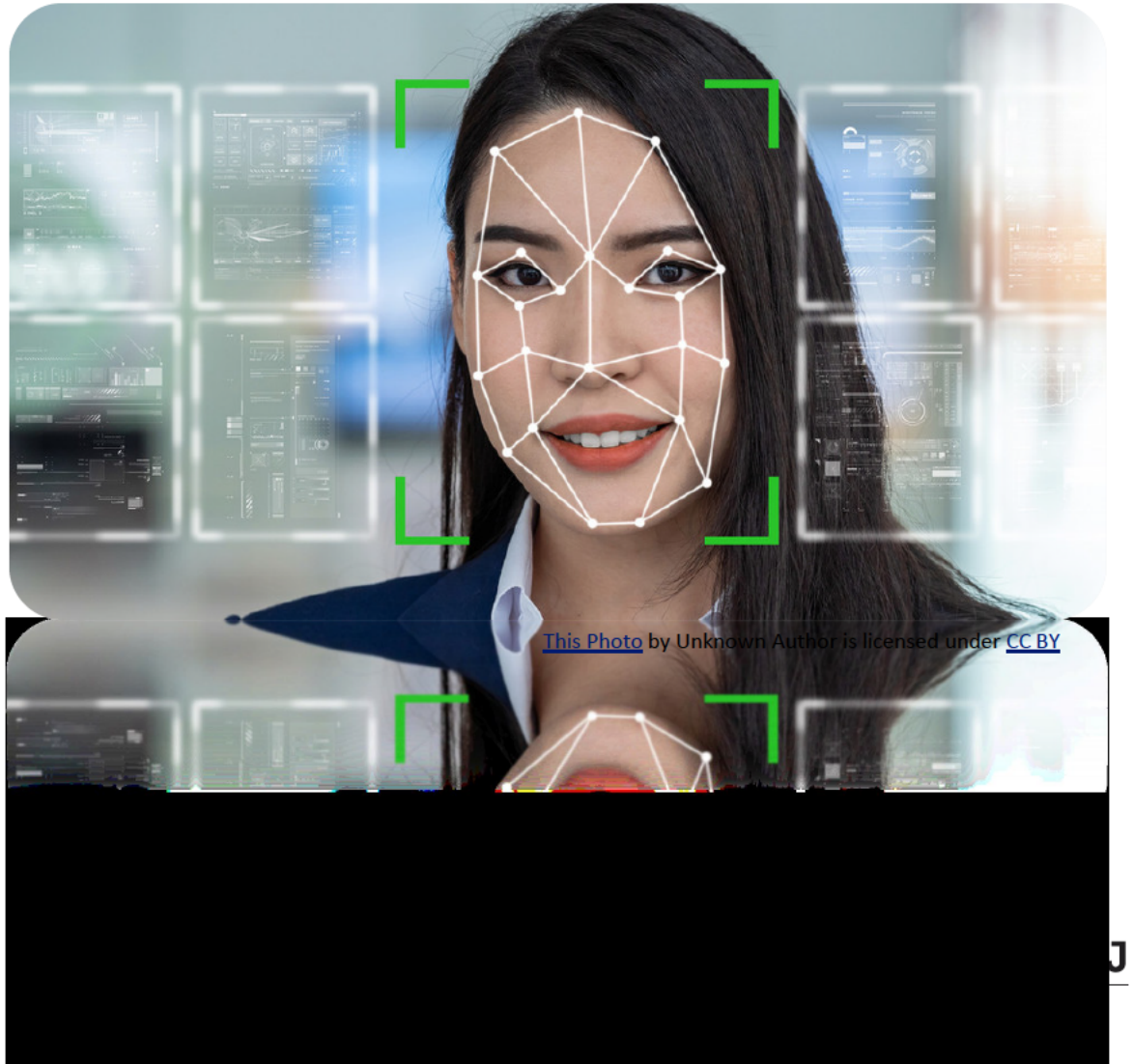
But Wait…There's Another Danger

Bias can creep in at many stages of the deep learning process, and the standard practices in computer science aren't designed to detect it.

MIT Technology Review in February 2019

An example of implicit bias…

- A **facial recognition system used by police** was **99% accurate** with **white males.** It was **substantially less accurate in** identifying **women or people of color**.
- This turned out to be because the enormous **training set used** for the system **consisted mostly of photographs of white males**.



Another example of implicit bias…

- According to Reuters, **Amazon stopped** using a new **AI** system that **reviewed applicant's resumes** looking for top-level talent. But the system was **trained on resumes submitted for 10 years**, and **most of those were from men**.
- The AI system **penalized resumes** that **included** the word **"women's"**. It also **downgraded graduates of two all-women's colleges**.

How Do We Course Correct on AI Systems?

1. Get These Experts Involved in Defining & Building AI

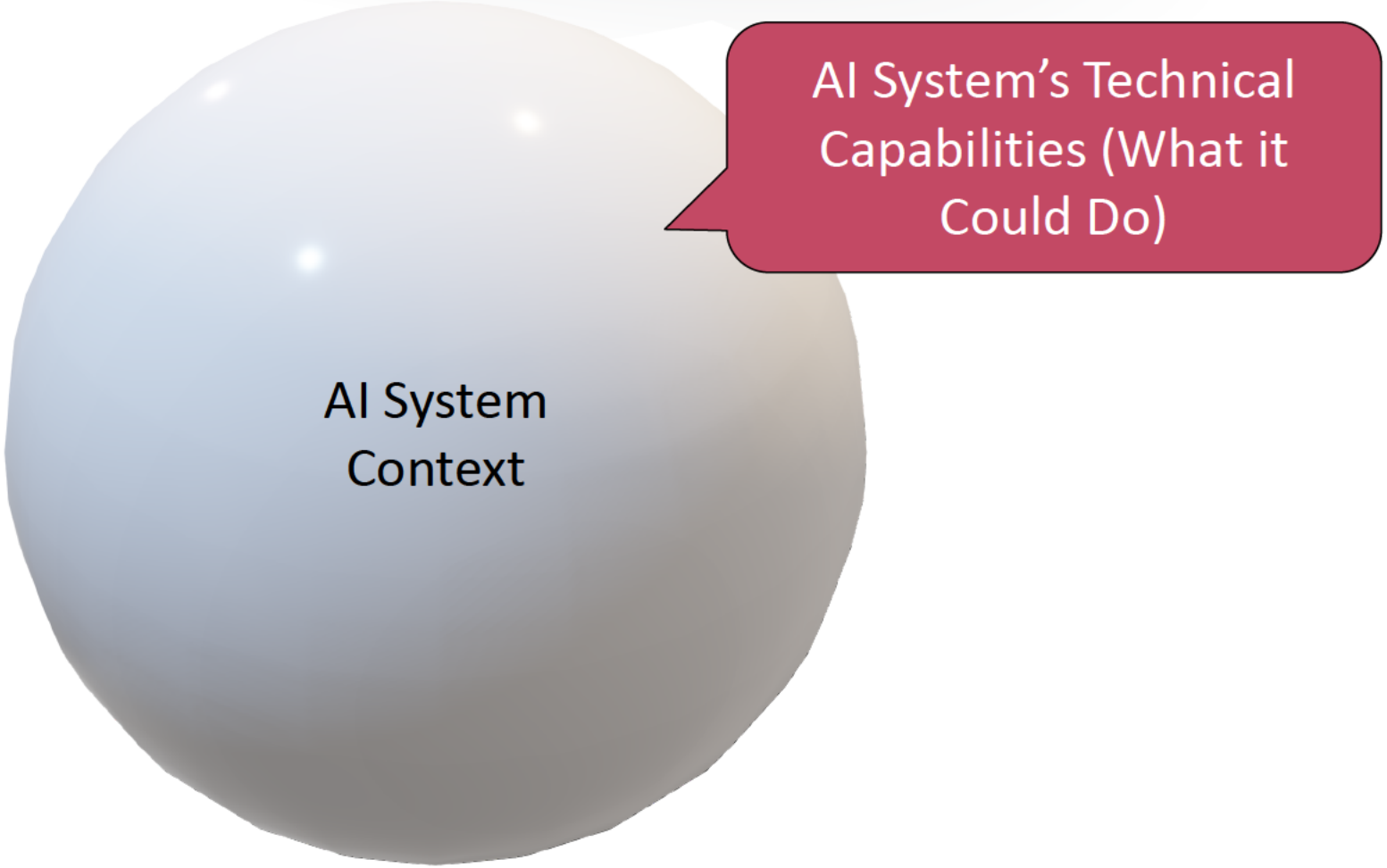
LEGAL

COMPLIANCE & REGULATORY

2. Collect larger & more diverse data sets to use for AI training

How Do We Course Correct on AI Systems?

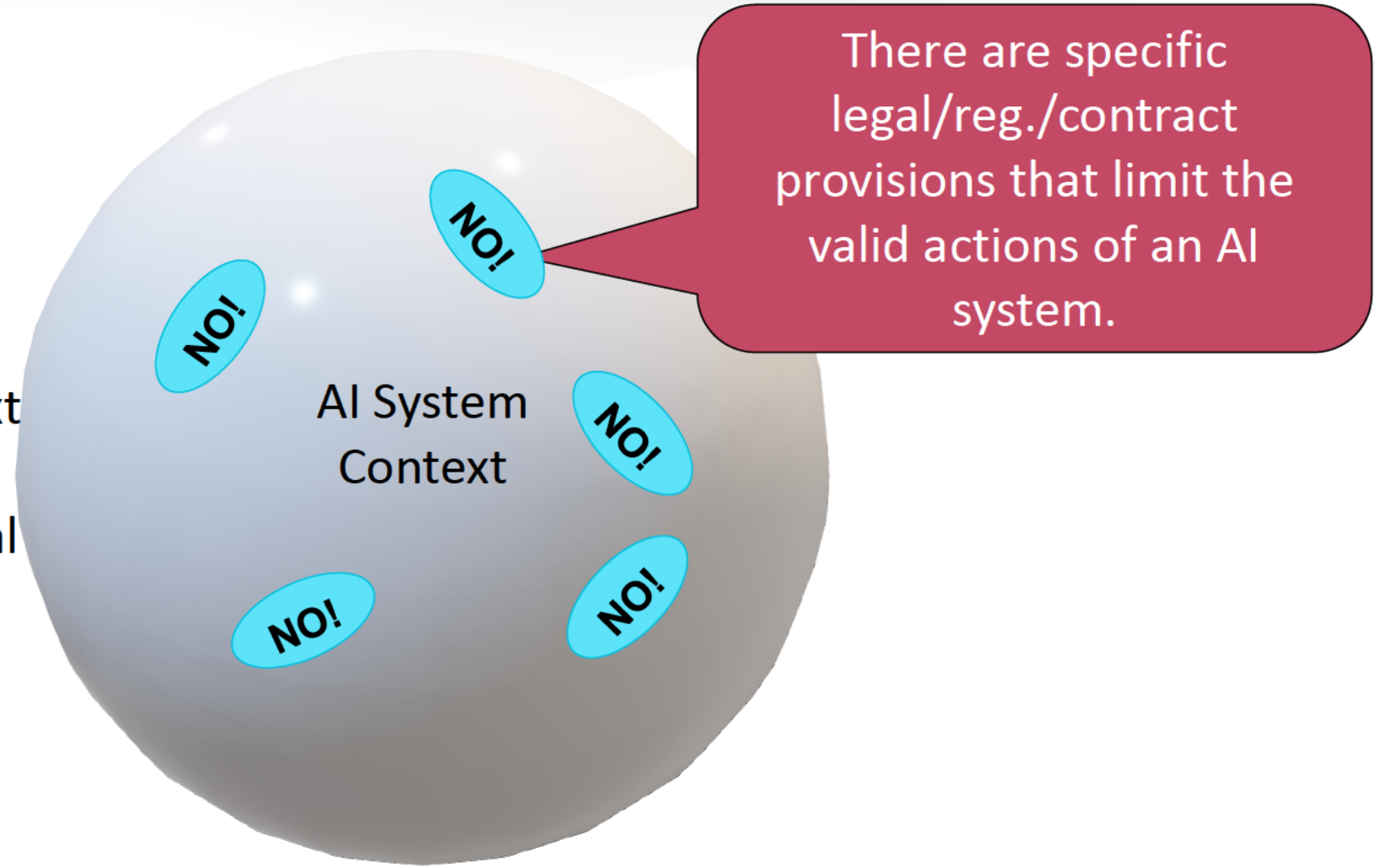
Get Legal, Compliance, & Regulatory Experts Involved in Defining & Building AI



How Do We Course Correct on AI Systems?

Get Legal, Compliance, & Regulatory Experts Involved in Defining & Building AI

Part of an AI System's Context is the Legal/Regulatory/Contractual Framework Within Which it Operates



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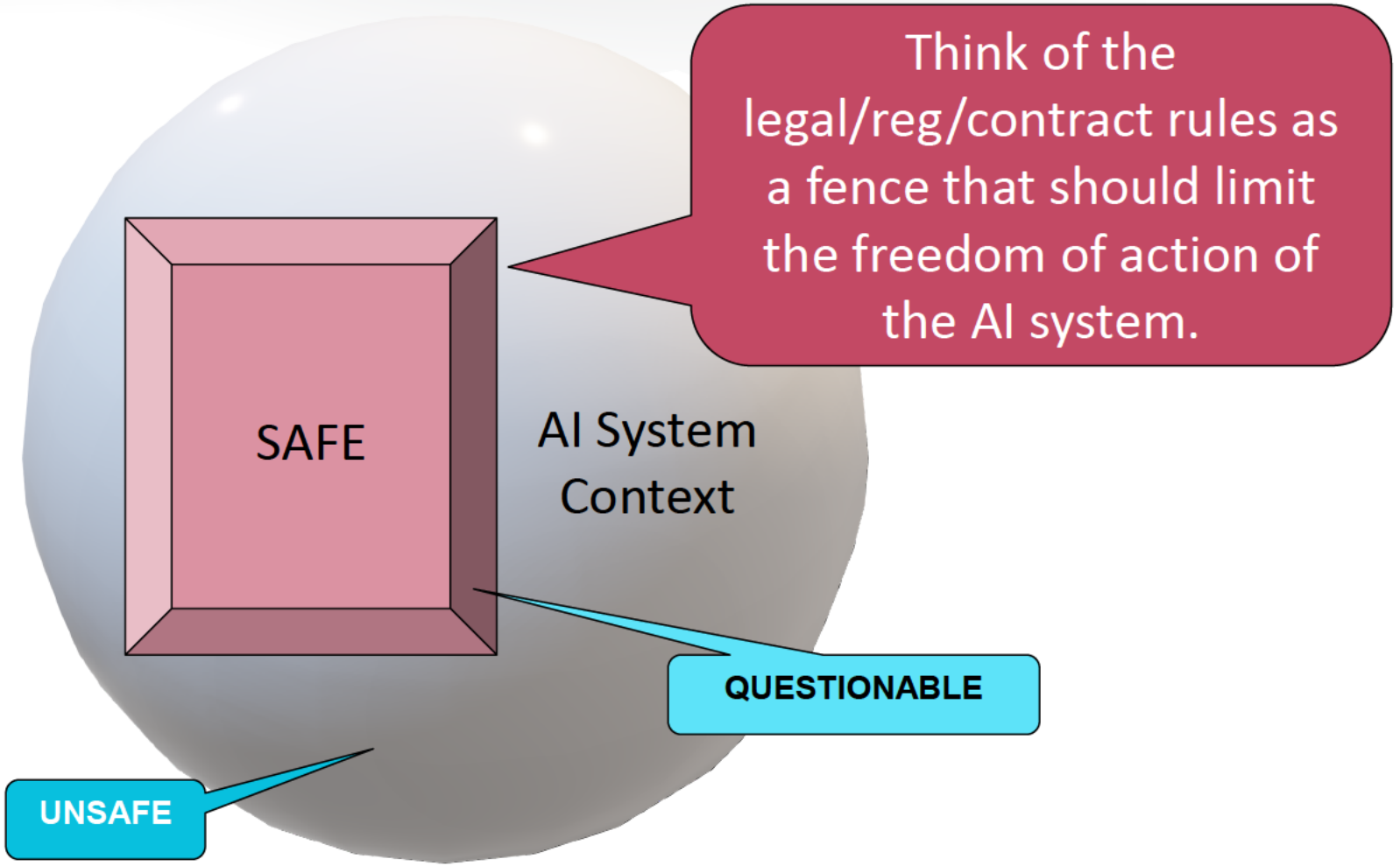

How Do We Course Correct AI Systems?

Get Legal, Compliance, & Regulatory Experts Involved in Defining & Building AI

Collect larger & more diverse data sets to use for AI training

Implicit Bias	Preventing it requires thinking about
First, if you don't know about it, you're unlikely to prevent it.	• **How you frame the problem (what constitutes "success"?)** • **How you collect data (does the data represent reality? Does it reflect existing/past prejudices?** • **How was the data prepared? What attributes are provided to the AI system to use?**

How Do We Course Correct AI Systems?

Dealing with implicit bias can be harder than you think…

Unknown unknowns

- Amazon tried to fix its software by eliminating penalties for the word "women's".
- But there were implicitly gender-related words that appear more on male applicant's resumes than females (e.g. "executed" or "captured". **Those were still used**.

Process problems

- One standard test divides the potential training material into a group to be used to train, and one to be used to validate the training.
- If both have the same implicit bias content, **YOU'LL NEVER NOTICE IT.**

Social Context

- An algorithm designed for one purpose might be used by computer scientists in a different application.
- "Fairness" may vary depending on the subject of the system, and bias factors have to be considered in light of what the system does.

Key Takeaways

- AI/DL systems being built in private & public sector systems
  - *This is not a subject that any of us can afford to ignore now or in the future!*

AI IS GROWING

- AI built by Computer/AI/Data Science Specialist with potential for no knowledge of legal & social science areas
  - *We need to understand the legal, compliance and evidence considerations applicable to every AI system that is built.*

BRING IN LEGAL/ COMPLIANCE EXPERTS

Key Takeaways

- Identifying a problem after the system is launched may be too late to avoid consequences.
  - *System problems can result in legal action or result in severe reputational damage – best bet is to avoid predictable problems.*
- AI training data sets can include bias due to being uncomprehensive, incomplete, and too small.
  - *Give careful thought to training and testing data!*

IDENTIFY PROBLEMS DURING DESIGN & BUILD

USE LARGER, MORE DIVERSE, & MULTIPLIE TRAINING DATA SETS

Thank you for inviting us. If we can help, please contact us.

- abrill@kroll.com
- paul.Jackson@kroll.com
- If you would like to receive our cyberdefense or intel threat newsletters or our reports on fraud or other subjects, just let us know.

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Quick Look:
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What Can Go Wrong When AI Systems Are Being Developed & Tested?

Topics we will cover include.....

What Can Go Wrong in AI Systems Development?

- AI Specialists Not Supported by Sufficient Subject Matter Experts & Others like Counsel, Compliance & Risk Managers.
- Inadvertently Violating Laws, Regulations or Contractual Requirements.
- Implicit Bias.
- Test Sets Unlikely to Detect Problems.
- Failure to Understand Evidence That Will Be Needed if System Actions Result in Litigation.

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What Can You Do to Mitigate the Risk of Having These AI System Problems Affect Your Systems?

Topics We Will Discuss Include….

How Can You Protect Your AI Systems?

- Bring in specialists in areas like law, compliance, HR and litigation during development to advise the AI specialists and Subject Matter Experts.
- Be mindful when developing or adopting training and testing data sets.
- Consider the evidence that will be needed if system action leads to litigation – as well as anything that will be needed as logs to control the system and maintain basic operating records.
- And more!

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Please join us for…

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