ARTIFICIAL INTELLIGENCE
OPPORTUNITY AND CHALLENGES

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ARTIFICIAL INTELLIGENCE….HMM

MY HOME

MY MUSIC

MY MOVIES

MY FRIENDS   **MY LOVE**

MY INVESTMENTS   wealthfront

MY CAREER

MY HEALTH   Hamilton Health Sciences Foundation

MY TRAVEL   UBER

ARTIFICIAL INTELLIGENCE OPPORTUNITY AND CHALLENGE

AI IS

GOING TO IMPACT YOUR BUSINESS. YOU NEED TO DECIDE HOW YOU WILL ADAPT.

DO DIFFERENT THINGS

AND

REDEFINE BEST IN CLASS IN THE MARKET

DO THINGS DIFFERENTLY

REDEFINE YOUR BUSINESS

NEW BUSINESS MODELS
LIFE SCIENCES

80%

GREATER ACCURACY IN GENOME SEQUENCING USING DEEP LEARNING

RETHINKING CORE OPERATIONS
PAPER AND PULP MANUFACTURING

10%
INCREASED YIELD (SAME LAND)

OPTIMIZING BACK OFFICE:
OIL AND GAS

VIRTUAL AGENT TO HANDLE INVOICE INQUIRIES FOR FINANCE & ACCOUNTING PROCURE-TO-PAY PROCESSING.

AI IN INSURANCE….

Allstate
You're in good hands.

ABIe – THE INTELLIGENT ASSISTANT

ZURICH

AI-BASED CLAIMS HANDLING

AIG

WEARABLES WITH AI FOR HUMAN SAFETY

Swiss Re

AI-BASED UNDERWRITING

MEIJI YASUDA

ROBOTS SELLING LIFE INSURANCE

metromile

Lemonade

Hippo

swyfft

QUICK POLL

Q.1 How comfortable would you be in taking Insurance-related advise from an AI-based Robot instead of a Human Agent?
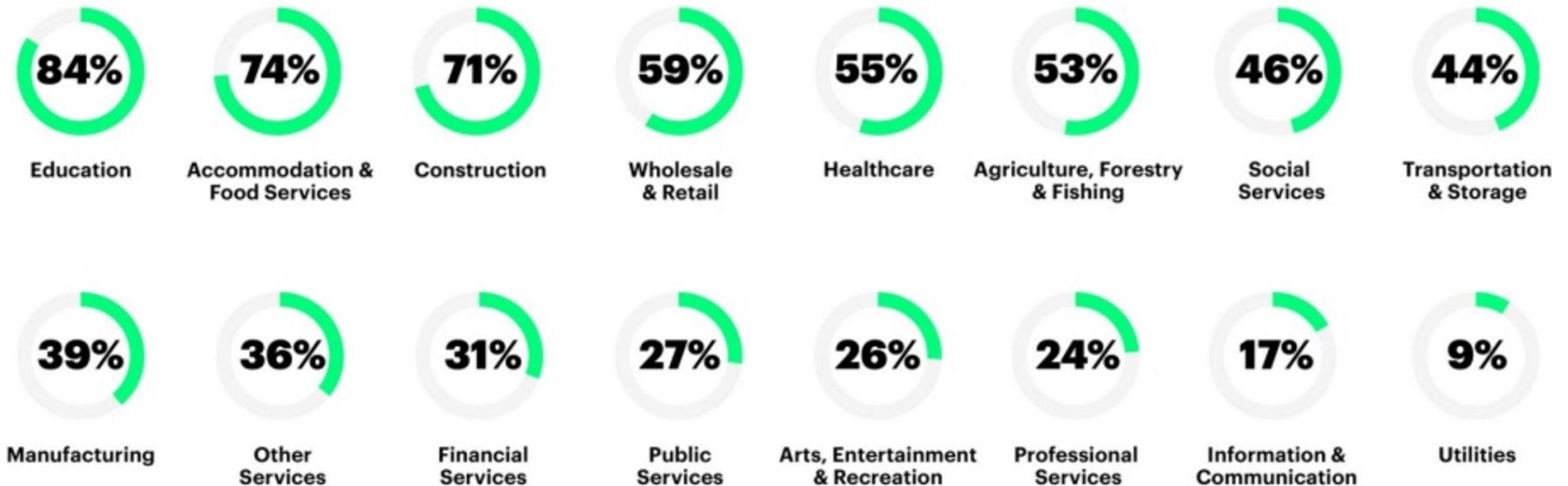
A. **Prefer AI-based Robot**

B. **Prefer Human Agent**

C. **Indifferent**

PROJECTED IMPACT OF AI

AI HELPS UNLOCK TRAPPED VALUE
AND WILL MARKEDLY INCREASE INDUSTRY SHARE OF PROFIT

84%	74%	71%	59%	55%	53%	46%	44%
Education	Accommodation & Food Services	Construction	Wholesale & Retail	Healthcare	Agriculture, Forestry & Fishing	Social Services	Transportation & Storage

39%	36%	31%	27%	26%	24%	17%	9%
Manufacturing	Other Services	Financial Services	Public Services	Arts, Entertainment & Recreation	Professional Services	Information & Communication	Utilities

Share-of-profit increase per industry between baseline in 2035 and AI steady state in 2035 in %, **Source:** Accenture and Frontier Economics.

ACCENTURE RESEARCH
ARTIFICIAL INTELLIGENCE: THE FUTURE OF GROWTH

3 GROWTH ACCELERATORS:

Intelligent Automation

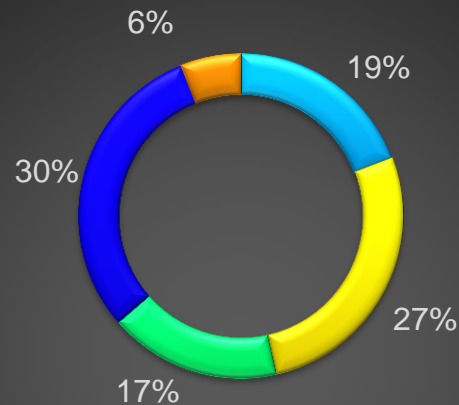**Labor and Capital Augmentation**

Innovation Diffusion

QUICK POLL

Q.2 How much incremental growth impact do you believe Artificial Intelligence (AI) will have on Insurance industry in North America in the next 5 years

A. Highly Positive

B. Negligible
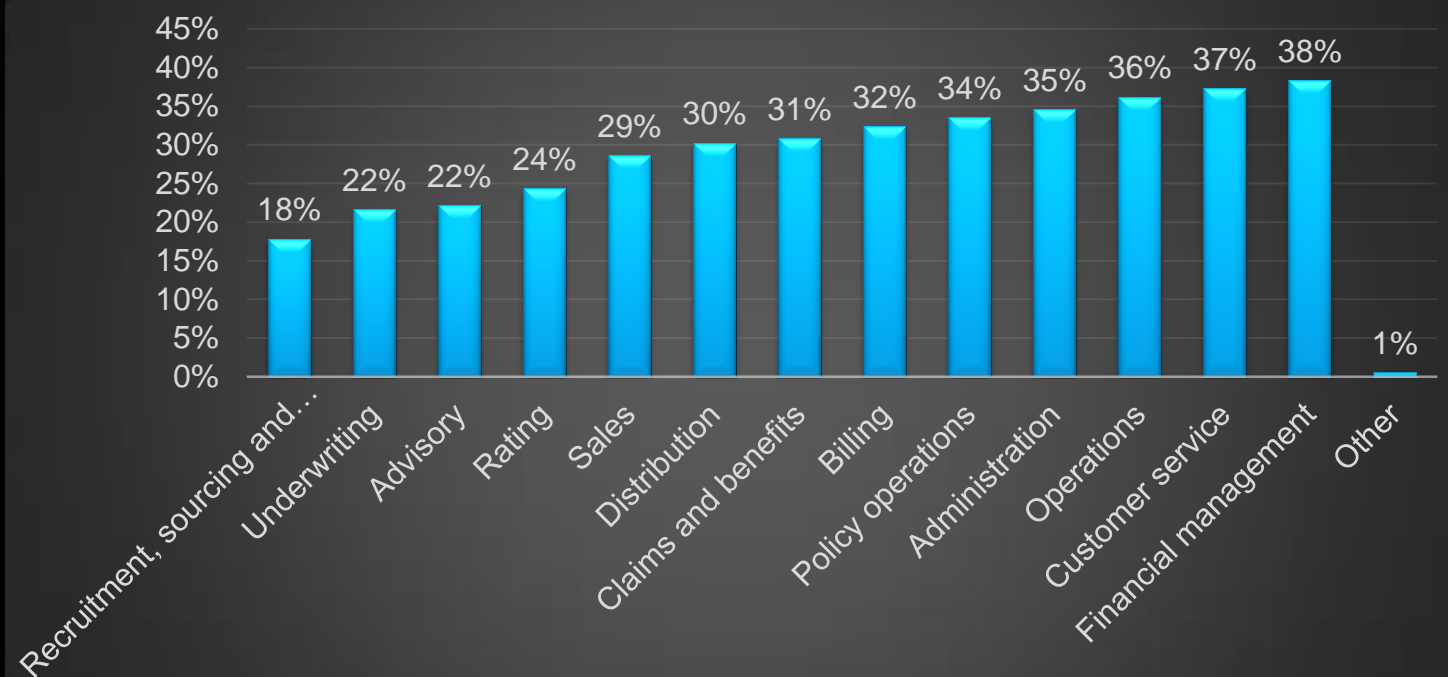
C. Highly Negative

D. Uncertain

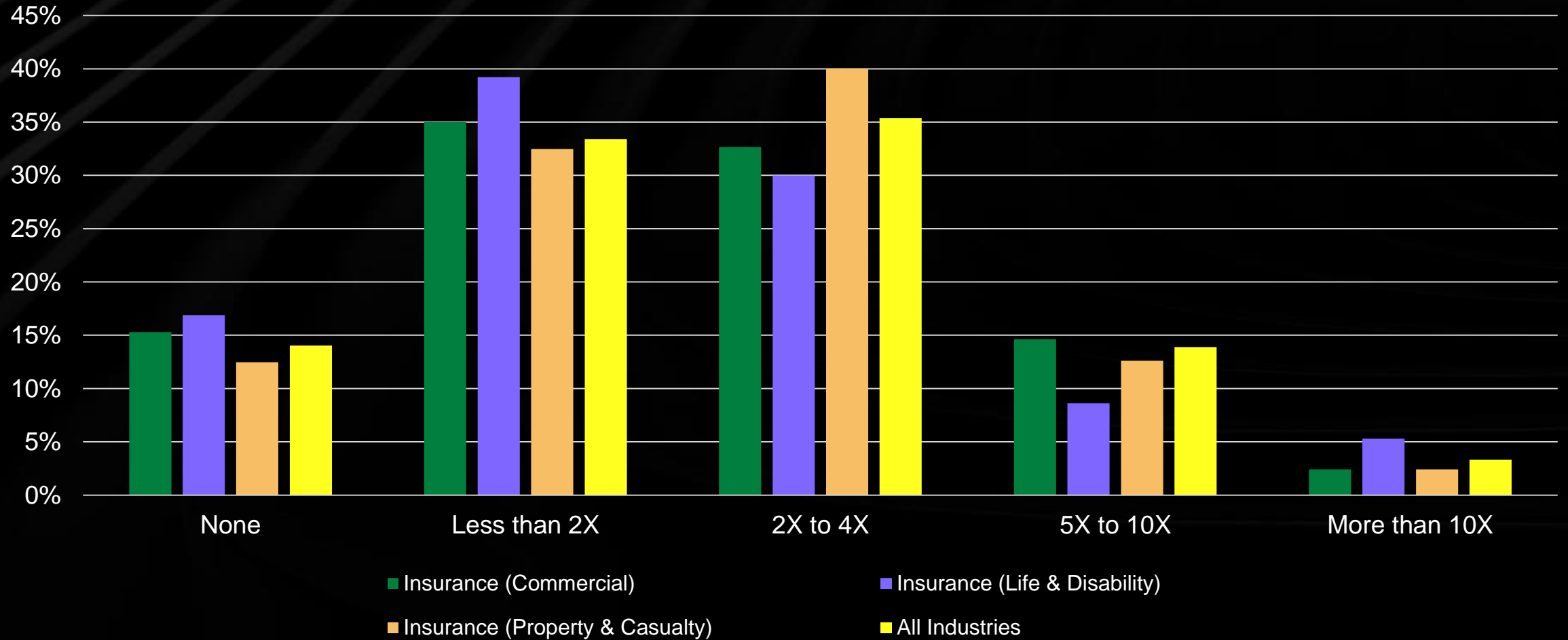# AI (MACHINE LEARNING) USAGE IN INSURANCE

INSURERS USING ML

- ■ Investigating
- ■ Piloting or experimenting
- ■ Used in one business process
- ■ Used in more than one business process
- ■ Used across the value chain

Pie chart values: 6%, 19%, 27%, 17%, 30%

WHICH PROCESSES

Process	Value
Recruitment, sourcing and…	18%
Underwriting	22%
Advisory	22%
Rating	24%
Sales	29%
Distribution	30%
Claims and benefits	31%
Billing	32%
Policy operations	34%
Administration	35%
Operations	36%
Customer service	37%
Financial management	38%
Other	1%

SOURCE: Accenture Study on Machine Learning Enabled Processes (2017)

AI-BASED PERFORMANCE IMPROVEMENT

Legend:
- Insurance (Commercial)
- Insurance (Life & Disability)
- Insurance (Property & Casualty)
- All Industries

WITH AI, GREAT OPPORTUNITY PRESENTS EVEN GREATER RESPONSIBILITY.

LEADERS WANT TO KNOW

BUSINESS
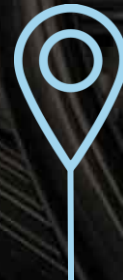
AI's possible "unintended consequences" like Brand and PR impact?

GOVERNMENT

Is AI being deployed for "Societal Good" OR "Job Loss"?

REGULATORS

Is AI compliant with regulations like GDPR?

RESPONSIBLE AI WILL ENABLE AI TO FLOURISH

RESPONSIBLE AI DRIVERS

Governance, accountability

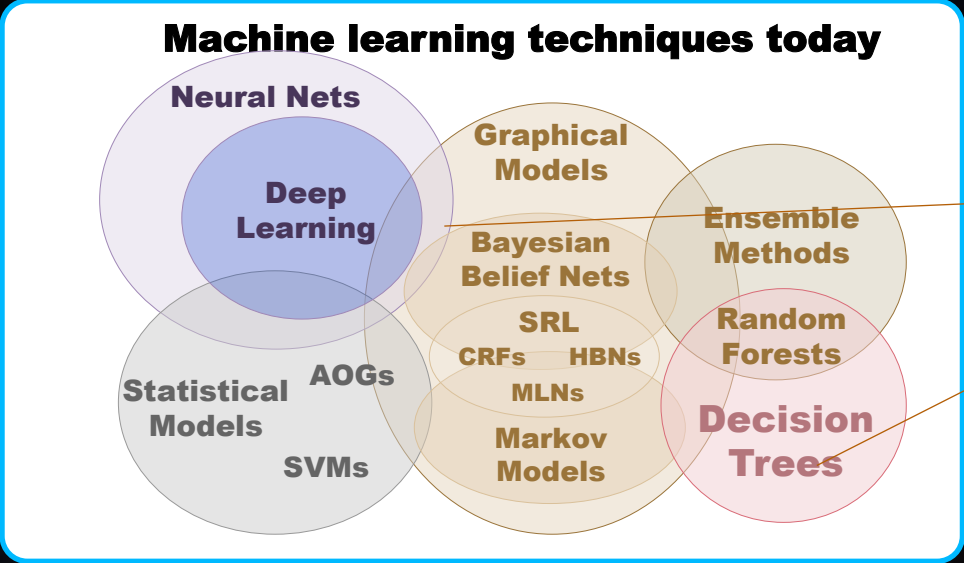Honesty, transparency, fairness

Stewardship, reskilling
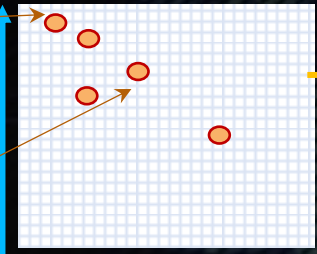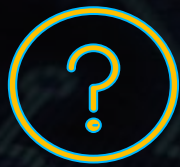
Security

ESTABLISH TRUST

CHALLENGES WITH AI

Limitations of Machine Learning – Blackbox / Opaqueness

Machine learning techniques today

- Neural Nets
- Deep Learning
- Graphical Models
- Ensemble Methods
- Bayesian Belief Nets
- SRL
- CRFs
- HBNs
- MLNs
- Random Forests
- AOGs
- Statistical Models
- SVMs
- Markov Models
- Decision Trees

Prediction Accuracy

Explainability

Today

Training Data → Learning Process → Learned Function → Output: This is a cat (p = .93) → User with a Task

- **Why did you do that?**
- **Why not something else?**
- **How do I correct an error?**
- **How do you unlearn?**
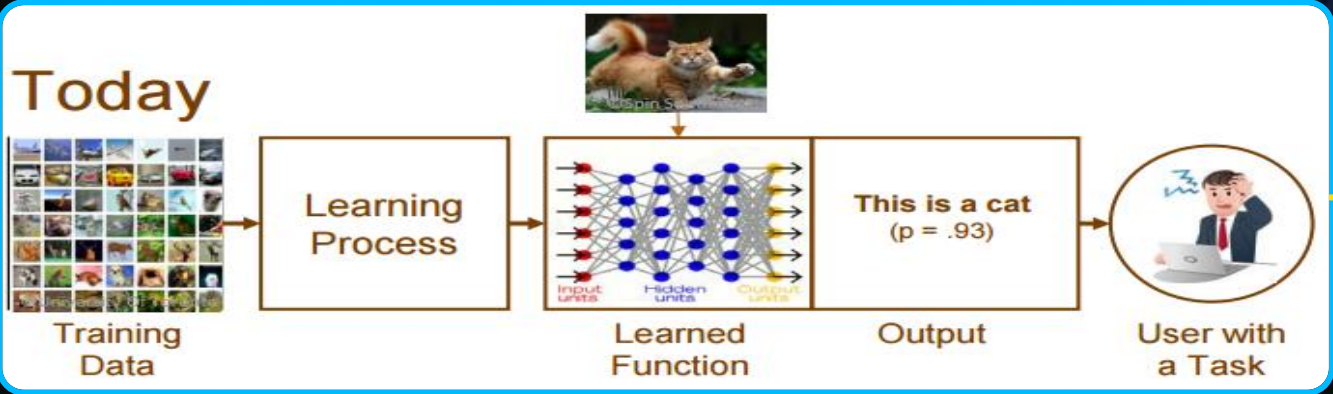
QUICK POLL

Q.3 Many AI systems operate as "Black Box". For key decisions (e.g. pricing/underwriting) if you had to pick between "Superior AI-based decisions" and "Transparency of Decision-making criteria", what would you pick?

A. Superior Decisioning

B. Transparency/Explanability

C. Uncertain

RESPONSIBLE AI FOR INSURANCE: SELECT CONSIDERATIONS

PRICING FOR PAST OR PREDICTED FUTURE

TELEMATICS/IOT/WEARABLES – SAFETY VS PRIVACY

INHERENT BIAS – HUMAN VS AI-ADVISOR

AI-BASED CLAIMS HANDLING – LOWER COST VS TRANSPARENCY

RISK TRANSFER/COVERAGE CONTRACT – WHO IS LIABLE

HUMANS LIVING WITH ROBOTS/AI – WHO WILL INSURE WHO?

WITH RESPONSIBLE AI, WHAT COULD TOMORROW LOOK LIKE?

	FROM	TO
INTERACTION	Human to Human	Human-to-Robot | Robot-to-Robot Human - Robot - Human
PRIVACY	Right to Information	Right to Explanation
COMPLIANCE	Reactive	Predictive
DATA	Ancillary	Lifeblood for Enterprise
REGULATION	Policy Construct & Price	Broad Advocacy across Eco-Systems

AI FEARED	AI ARCHITECTED WITH VALUE SYSTEM

QUICK POLL

Q.4 Do you believe that solving for "Black Box" nature of AI, to create more value from AI, is something that is better addressed by the following:

A. Individual Insurance Companies

B. Industry Consortium

C. Regulators (with inputs from Insurance Companies)

D. Outside the Insurance Industry Ecosystem (e.g. Academia)

THANK YOU