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DIGITAL

Regulatory implications of AI in Insurance

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Meet your presenter

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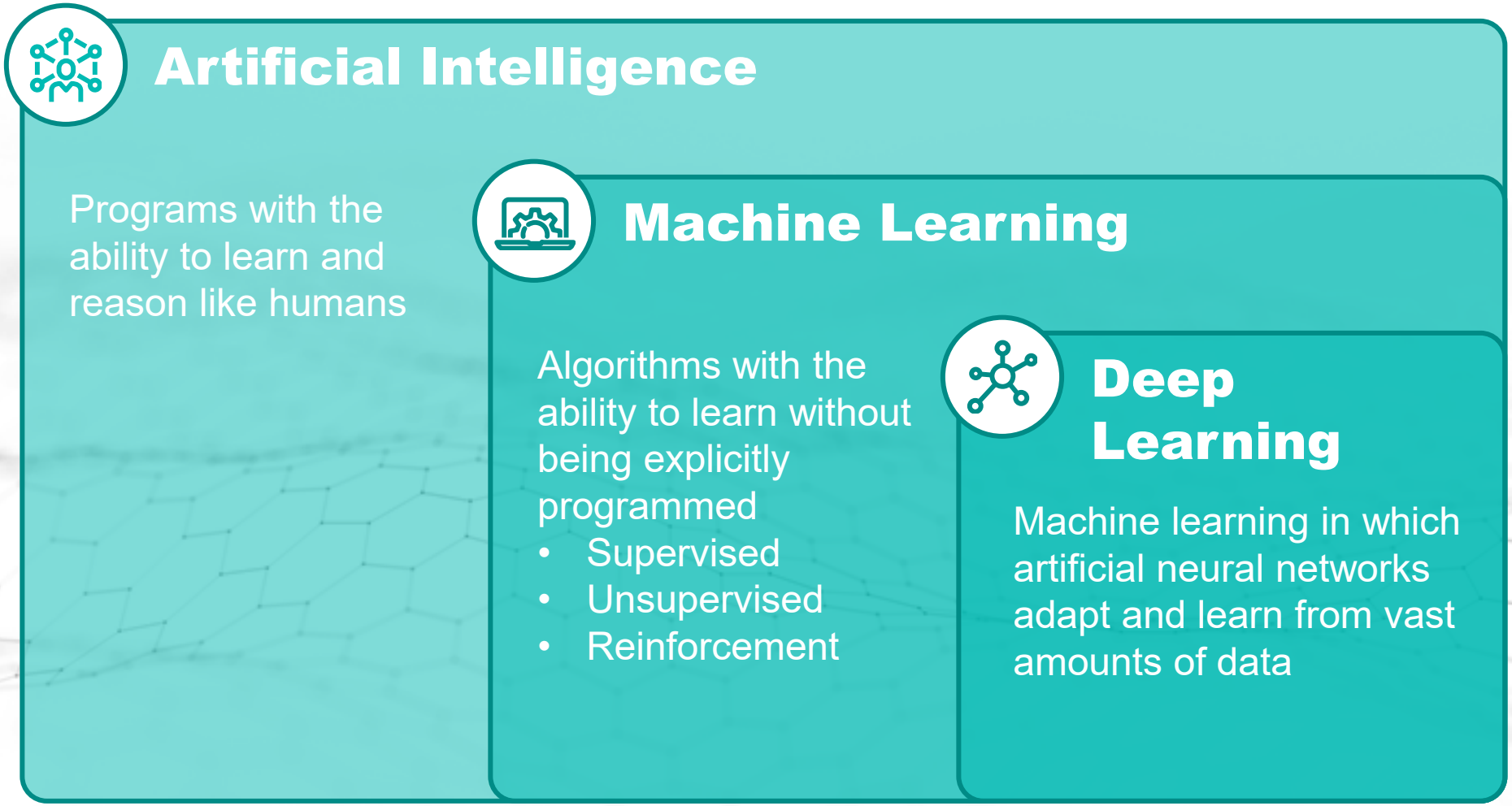
Learning objectives

1. Explore trends in AI / ML uses throughout organizations
2. Understand regulatory pronouncements and implications to organizations
3. Introduce a standardized approach to governing AI / ML programs within your organization

Setting the stage

AI/ML overview



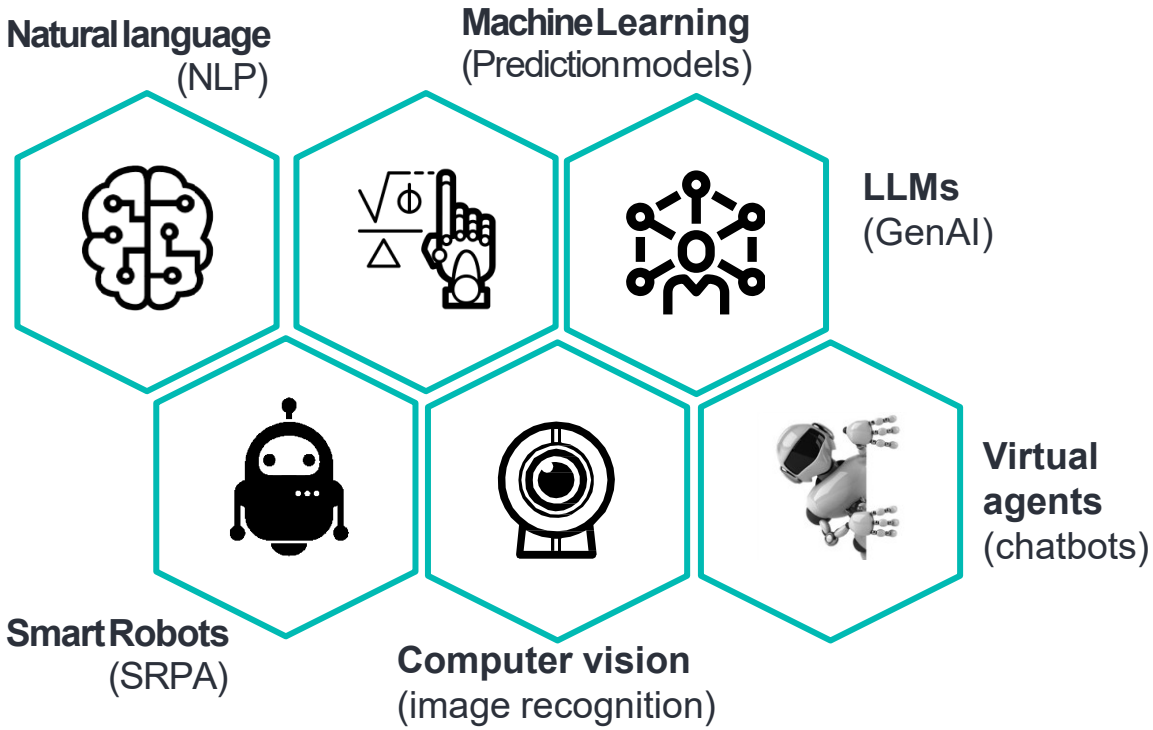
Artificial Intelligence (AI) vs Machine Learning (ML)

What is Artificial Intelligence?

Artificial intelligence (AI) is the theory and development of computer systems able to perform tasks that traditionally have required human intelligence. It is broadly applied when a machine mimics cognitive functions that humans associate with other human minds, such as learning and problem solving.

What is Machine Learning?

Machine learning (ML) is a sub-category of artificial intelligence that gives computers the ability to learn without being explicitly programmed. Machine learning explores the study and construction of algorithms that can learn from and make predictions on data with limited or no human intervention versus traditional algorithmic models used in financial services firms to identify casual relationships and patterns.



Generative AI – Silly example *(created with OpenAI / ChatGPT)*

The Mandalorian was on a mission to find a rare artifact on a remote planet. He was traveling on his speeder bike when he saw a herd of cows grazing nearby. Suddenly, he noticed that one of the cows was different from the others. It was bigger and stronger than the rest. The Mandalorian realized that this cow could be useful for his mission.

He approached the cow slowly and tried to tame it. At first, the cow was aggressive and tried to attack him. But the Mandalorian didn't give up. He kept trying until he finally succeeded in taming the cow.

The Mandalorian rode the cow across the planet, searching for the artifact. Along the way, he encountered many dangers, but he and the cow worked together to overcome them.

Eventually, they found the artifact and completed their mission. The Mandalorian realized that he had formed a bond with the cow during their journey. He decided to leave it on the planet where it could live peacefully.

Major vendor AI platforms

Trends, Uses & Risks

Benefits and impacts of AI

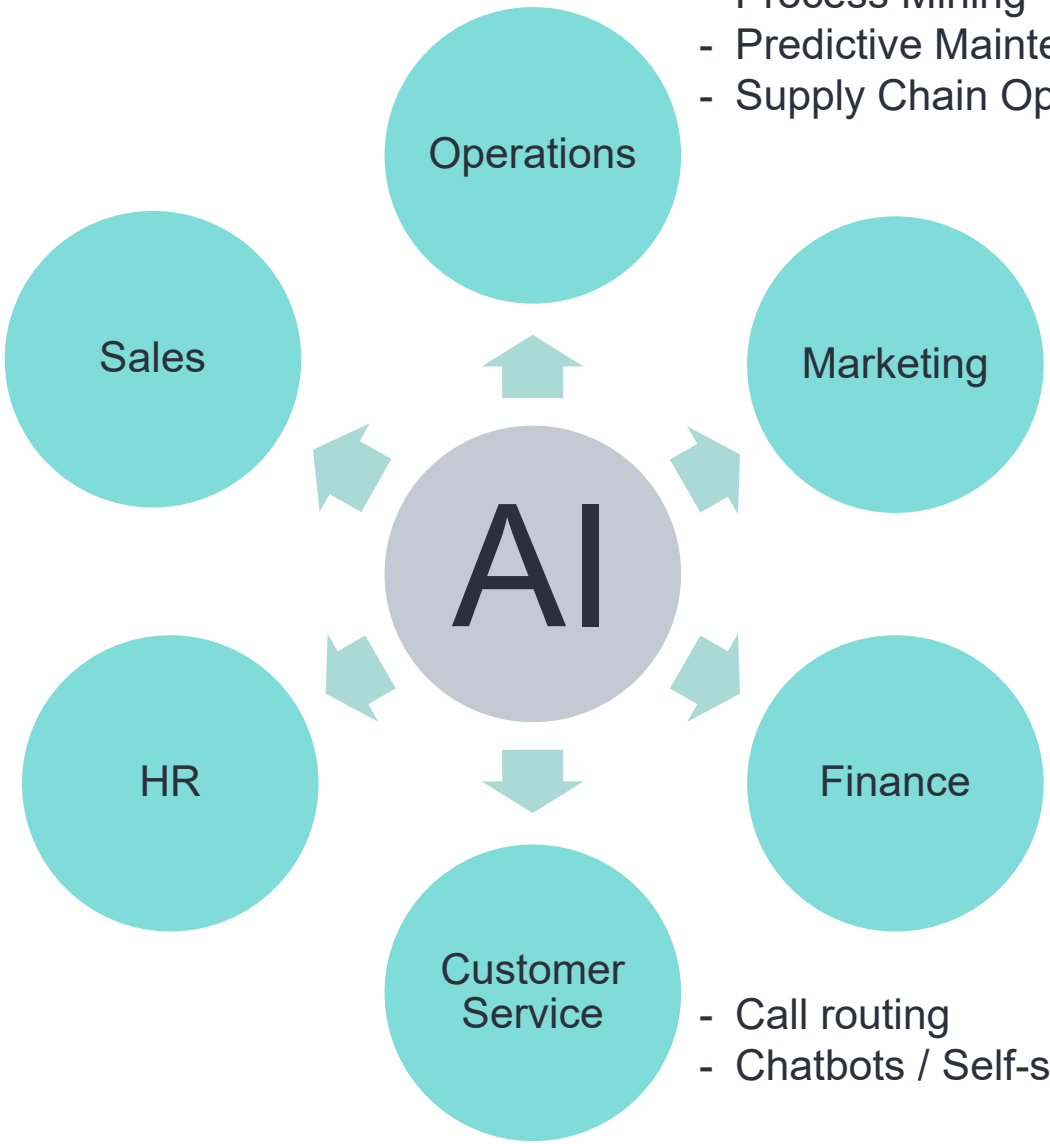
Benefits

1. Efficiency and productivity gains
2. Improved speed to market
3. New capabilities and business model expansion
4. Improved customer service
5. Improved monitoring

Skills required

1. Statistics/Mathematics
2. Programming
3. Distributed Computing
4. Prompt Engineering

Current uses of AI



- Process Mining
- Predictive Maintenance
- Supply Chain Optimization

- Marketing Analytics, clustering
- Hyper personalization

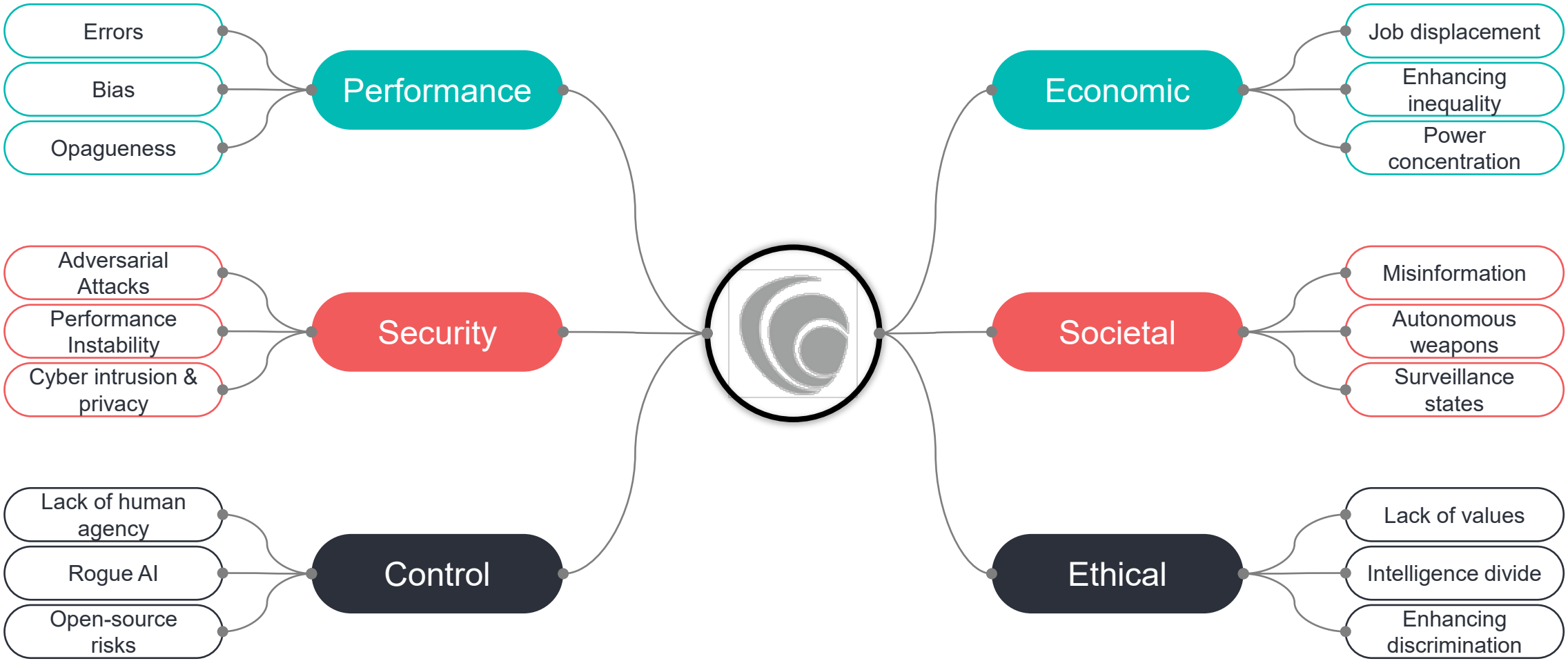
- Fraud detection
- Travel and expense management

- Call routing
- Chatbots / Self-service

- Digital Assistants
- Skills recommendations

- Forecasting
- Sales content personalization
- Sales chatbot / cross sell

Risks


Errors
Bias
Opagueness
Performance
Adversarial Attacks
Performance Instability
Cyber intrusion & privacy
Security
Lack of human agency
Rogue AI
Open-source risks
Control
Job displacement
Enhancing inequality
Power concentration
Economic
Misinformation
Autonomous weapons
Surveillance states
Societal
Lack of values
Intelligence divide
Enhancing discrimination
Ethical

Regulations & Guidance

Early NAIC Actions on AI

- On August 14, 2020, the National Association of Insurance Commissioners (NAIC) adopted principles for AI and its use
- Principals require insurers to…
  - **Proactively avoid discrimination** against protected classes
  - **Monitor AI operations** and resolve harmful, unintended consequences
  - **Disclose use of AI** and give consumers an opportunity to inquire / **challenge AI decisions**
  - Embed **risk management** throughout the AI life-cycle
- The **principles are not a law and not enforceable**, but they set out the regulators' expectations and will form the basis for future regulatory workstreams

NAIC's AI Principles (FACTS)

** AI Actor = anyone with a role in the AI lifecycle*

Principle	Definition
Fair and Ethical	AI Actors* should respect the rule of law throughout the AI lifecycle. This will include, but is not limited to, laws and regulations with respect to insurance, including those relating to trade practices, unfair discrimination, promotion of fair access to insurance, underwriting, privacy, consumer protection and eligibility practices, ratemaking standards, advertising decisions, claims practices and solvency.
Accountable	AI Actors* should be accountable for ensuring that the proper functioning of AI systems operate in compliance with all stated principles, consistent with the actors' roles, the risk-based situational context, and evolving best practices.
Compliant	AI Actors* must have specific knowledge of all applicable federal and state insurance laws and regulations.
Transparent	AI Actors* should commit to transparency and responsible disclosures regarding AI systems to relevant stakeholders while maintaining the ability to protect confidentiality of proprietary algorithms and adherence to individual state regulations in all states where AI is deployed.
Secure, Safe and Robust	AI systems should be robust, secure and safe throughout the entire life cycle so that, in conditions of normal use or reasonably foreseeable use or misuse, or other adverse conditions, the AI system can function accurately and appropriately.

https://content.naic.org/sites/default/files/inline-files/NAIC%20Principles%20on%20AI.pdf

NAIC Model Bulletin – USE OF ALGORITHMS, PREDICTIVE MODELS, AND ARTIFICIAL INTELLIGENCE SYSTEMS BY INSURERS *(v. July 17, 2023)*

- Model Bulletin drafted by NAIC and out for public comment.
- Discussed at recent NAIC Meeting in Seattle, revisions planned.
- Organized into 4 core sections:

Section 1 - INTRODUCTION, BACKGROUND, AND LEGISLATIVE AUTHORITY

Section 2 - DEFINITIONS

Section 3 - REGULATORY GUIDANCE AND EXPECTATIONS

Section 4 - REGULATORY OVERSIGHT AND EXAMINATION CONSIDERATIONS

NAIC Model Bulletin *(v. July 17, 2023)*

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Artificial Intelligence (AI) techniques, including the application of sophisticated algorithms and machine learning (ML) to big data (BD), are transforming the insurance industry. AI techniques are deployed across all stages of the insurance life cycle, including product development, marketing, sales and distribution, underwriting and pricing, policy servicing, claim management, and fraud detection. AI can facilitate the development of innovative products, improve consumer interface and service, simplify and automate processes, and promote efficiency and accuracy. At the same time, using AI can bring unique risks, including the potential for inaccuracy, unfair bias resulting in unfair discrimination, and data vulnerability.

The Department encourages the development and use of innovation and AI Systems that contribute to safe and stable insurance markets. The Department also **expects that Insurers that use AI Systems** to support decisions that impact consumers will do so in a manner that **complies with and is designed to assure that the decisions made using those systems meet the requirements of all applicable federal and state laws**.

The Department **recognizes the *Principles of Artificial Intelligence* that the NAIC adopted in 2020** as an appropriate source of guidance for Insurers as they develop and use AI systems. Those principles emphasize the importance of the fairness and ethical use of AI; accountability; compliance with state laws and regulations; transparency; and a safe, secure, fair, and robust system.

These fundamental principles should guide Insurers in their development and use of AI Systems and underlie the expectations set forth in this bulletin.

SECTION 2: DEFINITIONS

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Informational – future reference only

- "**AI Systems**" is an umbrella term describing artificial intelligence and big data related resources utilized by Insurers.
- "**Algorithm**" means a computational or machine learning process that augments or replaces human decision-making in insurance operations that impact consumers.
- "**Artificial Intelligence**" is a term used to describe machine-based systems designed to simulate human intelligence to perform tasks, such as analysis and decision-making, given a set of human-defined objectives. This definition treats machine learning as a subset of artificial intelligence.
- **"Bias"** is the differential treatment that results in favored or unfavored treatment of a person, group or attribute.
- "**Big Data**" are data sets that are characterized by, at a minimum, their volume (i.e., size), velocity (i.e., speed of transmission), and variety (i.e., internal, external, including third-party data) that requires scalable computer architecture to analyze and model.
- **"Machine Learning**" is a subset of Artificial Intelligence that simulates human learning by identifying patterns in data either supervised, unsupervised or through reinforcement learning styles to make decisions. "Predictive Analytics" and "Predictive Modeling" are related terms that refer to methods to identify patterns in data to make predictions.
- "**Third-Party**" for purposes of this bulletin means an organization other than the Insurer that provides services, data or other resources related to AI.

SECTION 3: REGULATORY GUIDANCE AND EXPECTATIONS

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Directly quoted from the Model…

…all Insurers authorized to do business in this state are encouraged to **develop, implement, and maintain a written program** for the use of AI Systems that is **designed to assure that decisions impacting consumers made or supported by AI Systems are accurate and do not violate unfair trade practice laws or other applicable legal standards** (AIS Program).

An AIS Program that an Insurer adopts and implements should be reflective of, and **commensurate with, the Insurer's assessment of the risk posed by its use of an AI System**, considering the nature of the decisions being made, informed, or supported using the AI System; the nature and the degree of potential harm to consumers from errors or unfair bias resulting from the use of the AI System; the extent to which humans are "in-the-loop"; and the extent and scope of the Insurer's use or reliance on data, models, and AI Systems from third parties.

As discussed in Section 4, an Insurer's use of AI Systems is **subject to the Department's examination** to determine whether decisions made or actions taken in reliance on AI Systems are compliant with all applicable legal standards. Regardless of whether an Insurer adopts a formal AI Program or the scope of that Program, an Insurer's use of AI and AI Systems **is subject to investigation, including market conduct actions**…

SECTION 3: REGULATORY GUIDANCE AND EXPECTATIONS

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1.0 - GENERAL GUIDELINES

- Ensure AI Systems don't lead to arbitrary, discriminatory, or unfair trade practice-violating decisions affecting consumers
- Ensure program governance, risk management controls, and internal audits are built into the AI Program
- Establish and follow an AI strategy that is managed by Sr. Management (approved by the Board), and governs development, monitoring, and continued oversight
- Customize approach based on AI use, stand-alone or integrated with risk management.
- Utilize external frameworks, aligning with existing practices
- Encompass AI Systems throughout product life cycle, addressing all development phases, including third-party systems, for comprehensive coverage

2.0 - GOVERNANCE

- Prioritize transparent, fair, and accountable AI system design within existing or new governance structures. Cover standards, life cycle policies, and compliance documentation
- Define roles and responsibilities across the AI Program and each life cycle stage; centralize/federate representation
- Detail qualifications, responsibilities, communication, hierarchy; ensure independence of decision makers, and set escalation protocols
- Implement protocols for monitoring, auditing, and reporting.
- Describe processes from design to monitoring, error detection, and addressing discriminatory outcomes

SECTION 3: REGULATORY GUIDANCE AND EXPECTATIONS

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3.0 - RISK MANAGEMENT & INTERNAL CONTROL

- Documented Risk Identification and Control Framework across all life cycles / stages
- Ensure data quality, lineage, bias analysis, and accountability exists throughout development
- Manage algorithms and predictive models with inventory, documentation, interpretability, and auditability
- Evaluate against alternative models, evaluate for drift, and ensure traceability.
- Ensure data / algorithm validation, security, and retention meets expected standards / protocols
- Specify model objectives and validate throughout development

4.0 – THIRD PARTY AI SYSTEMS

- Establish standards, policies, procedures, and protocols for using third-party AI Systems.
- Due Diligence and Assessment to ensure alignment with legal/company standards
- Contractual Terms with Third Parties, including right to audit
- Conduct audits and confirmatory activities to verify third-party compliance with contracts and regulatory requirements.

SECTION 4: REGULATORY OVERSIGHT AND EXAMINATION CONSIDERATIONS

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Information and Documentation related to…

- **Written AI Program** (or rationale why not to develop), **record of adoption**, and monitoring
- **Policies and processes** for the development, adoption, or acquisition of AI Systems
- Pre-acquisition / **pre-use due diligence**, oversight and review / auditing of systems to be placed in service
- **Compliance with its AI Program**, including monitoring and audit activities to confirm compliance, such as:

  a) Executive oversight / **governance structure**
  b) Inventory and management of algorithms, predictive models, and AI Systems used
  c) Evidence to **support compliance** with all applicable AI Program policies, protocols, and procedures
  d) Data flow diagram / documentation on **data sources used**, provenance, **data lineage, quality, integrity, bias analysis** and minimization, suitability, and **traceability**
  e) Techniques, measurements, thresholds, benchmarking, and similar controls
  f) Validation, testing, and auditing, including evaluation of drift

Frameworks and Capabilities

AI Framework / Focus Areas

Governance | Strategy | Execution

AI / ML Definition & Inventory
Define what constitutes AI/ML deployments, maintain visibility

AI / ML Risk Assessment
Model risk tiering, prioritization on high-risk model evaluations

AI / ML Policies & Procedures
Framework(s) to facilitate consistent, cross-functional development and deployment

Corporate wide strategy enabling development, implementation, and scale in a controlled fashion

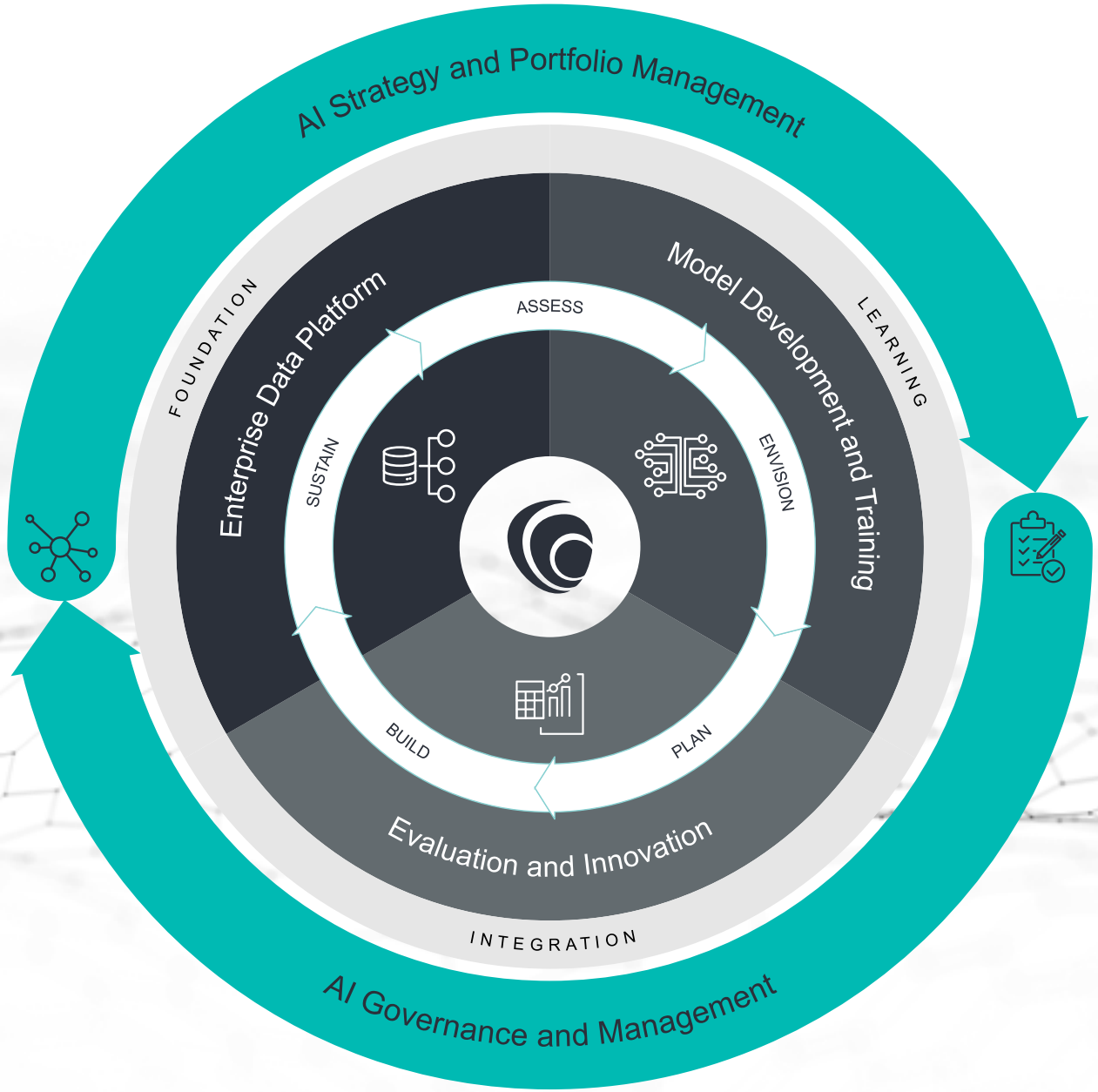
Resilient | Transparent | Unbiased | Performing | Explainable

AI / ML Development
Centralized COE for AI / ML knowledge to guide

AI / ML Implementation & Use
Stage gate / validation process, implemented across approved platforms / for approved use cases

AI / ML Monitoring & Reporting
Monitoring performance and security, reporting up through Governance structure

Baker Tilly's AI Capability Framework



Keep in touch

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Connect with us to discuss your journey and how we can help.