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Managing AI Risks in the Caribbean Insurance Industry

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Meet our Presenters

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Table of Contents

Introduction

Introduction

The advancements in AI tools and their availability over the last 12 months have started to really challenge the current way of working

Gen AI Tools

Copilot

Gemini Enterprise

ChatGPT

Claude

perplexity

Google veo3.1

Adobe Firefly

Impact

Generative AI Technology Advances

Large-scale foundation models like LLMs and multimodal AI can generate text, images, audio, video, and code.

Agentic AI Systems

AI systems are evolving to autonomously plan, reason, and complete complex multi-step tasks. There is a use case for insurance processes e.g., underwriting, claims processing, sales and distribution etc.

Market Integration of AI Tools

Generative AI tools like *Copilot* and *Gemini* are embedded in productivity suites and enterprise software.

Broad Applications and Responsible AI

Generative AI supports content creation, cybersecurity, and finance while emphasizing responsible governance.

Emerging Risks

Impact on Stakeholders

Generative AI can drive productivity for practitioners if they pick up new skills and adopt responsible use practices.

Emerging Risks and Governance

Key risks include data privacy, bias, hallucination, inaccuracies, and compliance challenges, demanding proactive management and governance frameworks.

Opportunities to integrate AI with our way of working

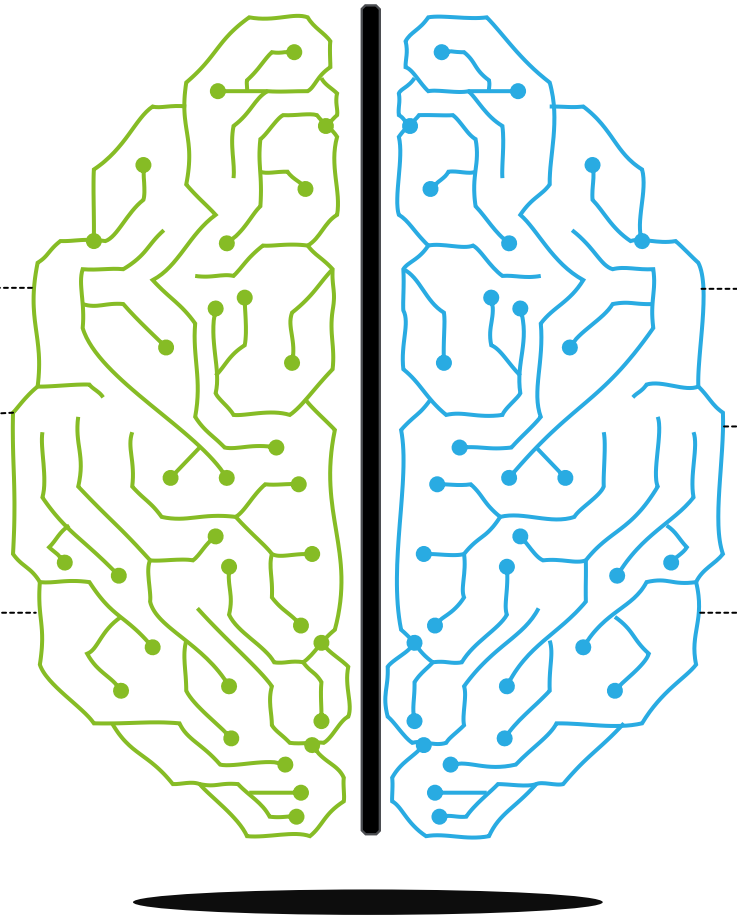
Opportunities to integrate AI with our way of working

Leveraging AI for our way of work

Use Cases of AI

Operational & Customer Uses

- Claims Processing
- Customer Experience & Distribution
- Fraud Detection



Decision-Making & Analytical Uses

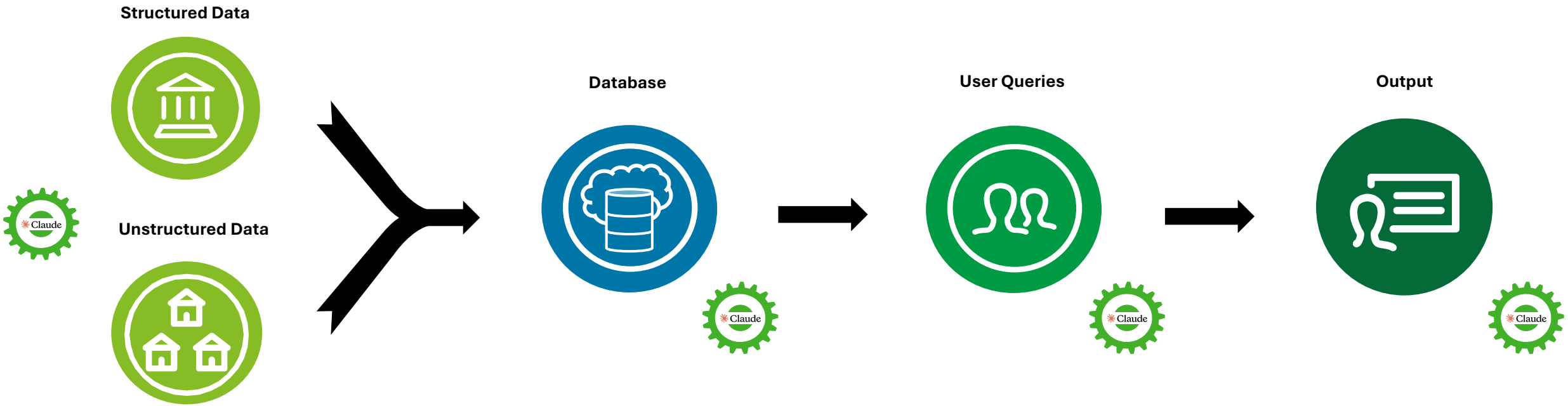
- Underwriting & Risk Assessment
- Portfolio Management
- Actuarial & Broader Data Analysis

Opportunities to integrate AI with our way of working

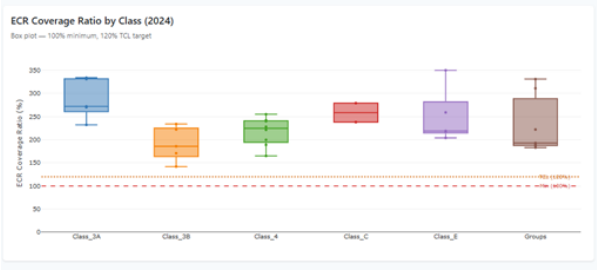
Leveraging AI for our way of work

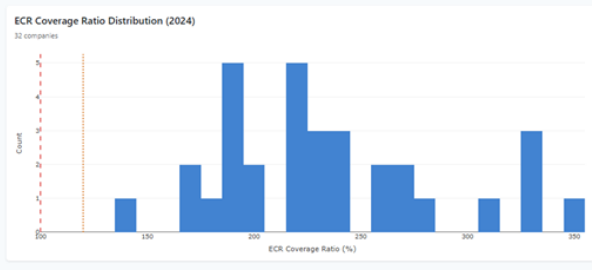
Use Case 1: Collation of market data and insights

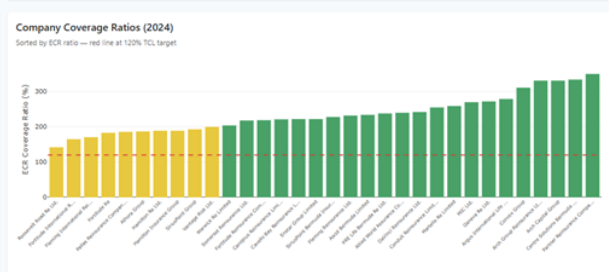
Collation of data from large datasets and multiple sources



Reserving Tool Exhibit





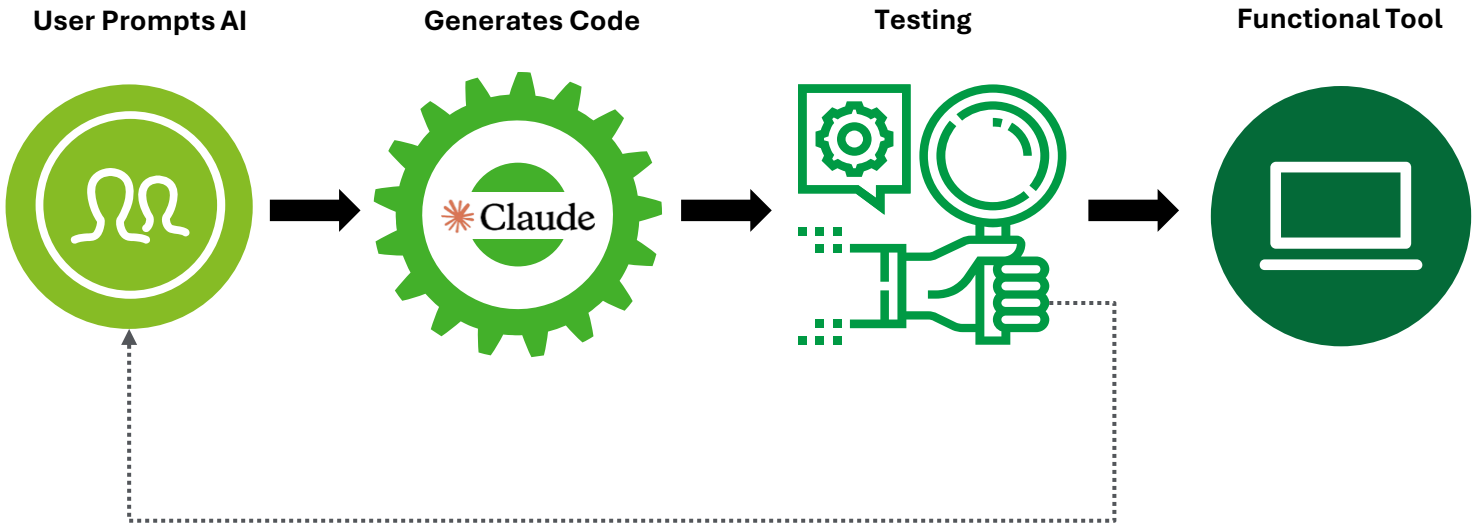


Opportunities to integrate AI with our way of working

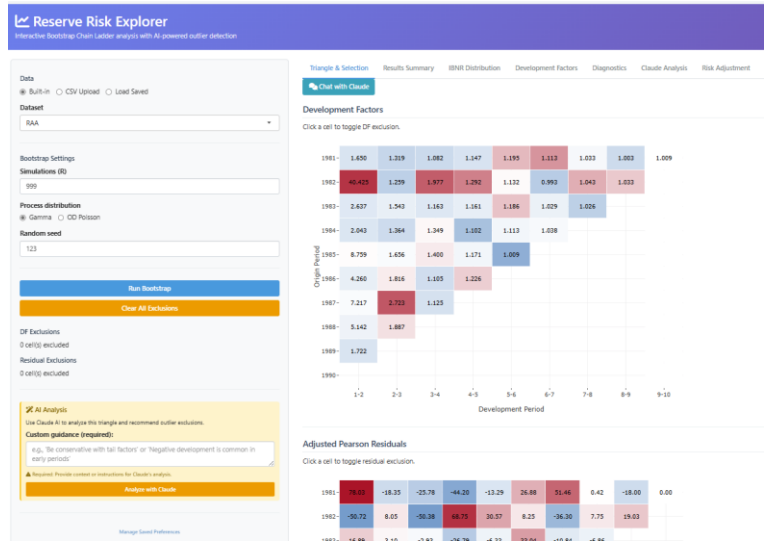
Leveraging AI for our way of work

Use Case 2: Tool Development

We are developing tools, with AI assisting in writing the code



Human feedback loop through the testing process



Reserving Tool Exhibit

Risks associated with using AI

How will risks evolve with the adoption of AI?

Adoption of AI will result in a change in how organizations view risks with potential introduction of new risks






	Manual Error	Processing Delays	Human bias	Model Risk	Regulatory Scrutiny	Reputational Risk
Impact of AI Use	↓ Decrease	↓ Decrease	↓ / ↑ Mixed	↑ Increase	↑ Increase	↑ Increase
How might this risk evolve?	Automation improves consistency	Faster triage, and execution of tasks. Additional review may be needed initially	Can reduce human inconsistency but encode data bias	More complex, opaque models	Higher expectations and obligations	Visible errors affect trust quickly
Potential risks to emerge?	Errors in historical data could repeat	Process changes could create new operational issues	Overreliance on AI. Future knowledge gaps in management	New model structures could fail to consider broader contexts	Instances where models are unexplainable	Customer expectations change and expect more service and lower costs

Managing AI Risk

Risks associated with using AI

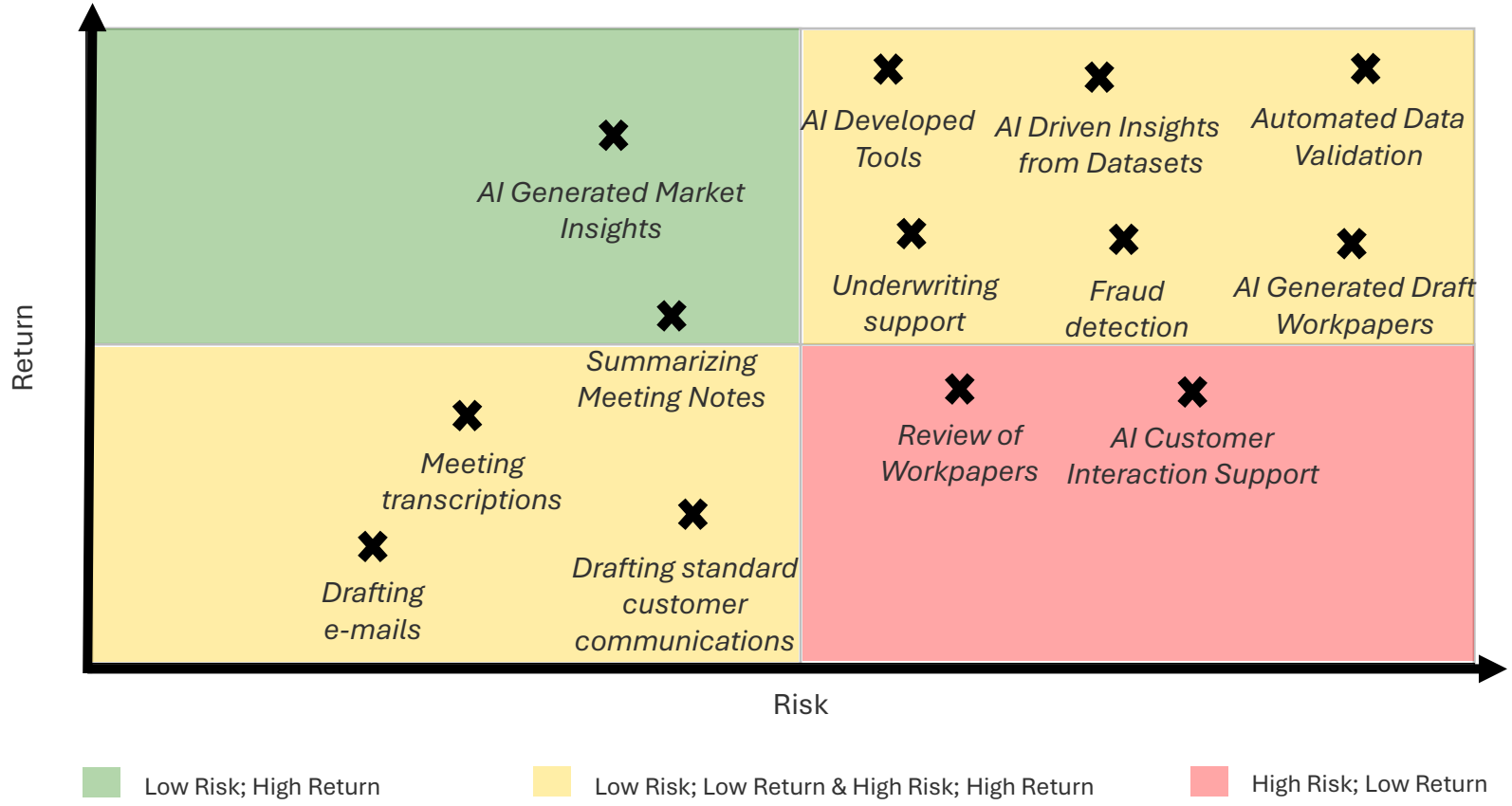
How do we manage the risks associated with embedding AI in our processes?

Opportunity/Risk Identification → Risk Assessment → Risk Treatment → Monitoring

Taking a risk management approach to integrating AI we can look at how we can embed AI in our way of working.

We have plotted a sample set of opportunities for AI and provided a preliminary assessment of the relationship between risk and return for these opportunities.

We are going to focus on the AI Driven Insights from Structured Data.



Risks associated with using AI

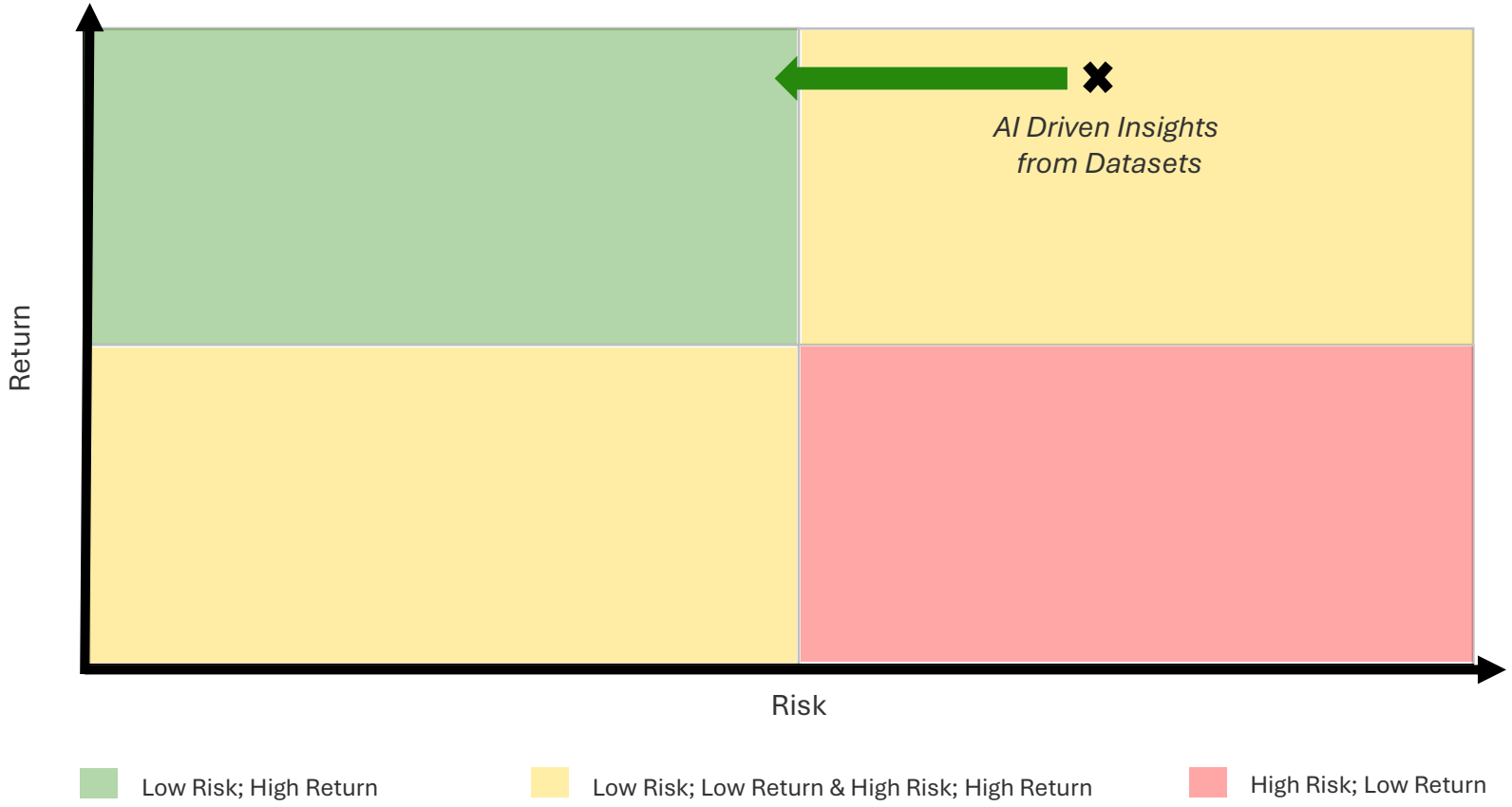
How do we manage the risks associated with embedding AI in our processes?

Opportunity/Risk Identification | **Risk Assessment** | Risk Treatment | Monitoring

Now that we have identified the opportunity that we want to explore our next step is to assess the risks associated.

AI Driven Insights from Datasets:

- The AI may not be able to understand the datasets that are provided.
- Patterns or trends identified by AI may not reflect the true underlying drivers
- The user could place too much trust in the AI-generated insights and not validate and challenge the rationale behind the assumptions
- The insights generated may be misleading if data quality issues are present



Risks associated with using AI

How do we manage the risks associated with embedding AI in our processes?

Opportunity/Risk Identification → Risk Assessment → **Risk Treatment** → Monitoring

Now that we have identified the opportunity that we want to explore our next step is to address mitigation of the risks.

Identified Risk	Mitigation	How is that implemented?
The AI may not be able to understand the datasets that are provided	Team members are instructed to provide details about the dataset to the AI	Data dictionaries are provided to the AI model and commands provided to ensure it doesn't make unnecessary assumptions.
	Validation of the outputted AI insights.	Checklist of test questions that the AI should be able to answer in order to validate the insight.
	The AI is given instructions to request more details if it doesn't understand something rather than guess or work on the basis of other assumptions.	Initial prompts can be modified to include this instruction.
Patterns or trends identified by AI may not reflect the true underlying drivers	Feedback loop provided to the AI	Recording a log of issues discovered by human users that is maintained.
The user could place too much trust in the AI-generated insights	Feedback loop provided to the AI	Recording a log of issues discovered by human users that is maintained.
	The human user is required to confirm that they are comfortable with the results.	Sign off by a team member on the results that are reported.

Risks associated with using AI

How do we manage the risks associated with embedding AI in our processes?

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In terms of the data issues, let's use a visual example of a dataset:

POLICY_ID	TRANSACTION_DATE	POLICY_START	POLICY_END	COUNTRY	CLASS	GROSS_PREMIUM_USD	COMMISSION_RATE	NET_PREMIUM_USD
1	24/06/2024	28/06/2024	28/06/2025	Jamaica	Liability	$ 6,178.58	0.15	$ 5,251.79
2	09/08/2024	15/08/2024	15/08/2025	Trinidad and Tobago	Property	$ 20,603.34	0.1	$ 13,392.17
3	18/02/2023	23/02/2023	23/02/2024	Guadeloupe	Property	$ 8,924.00	0.12	$ 4,462.00
4	12/11/2024	13/11/2024	13/11/2025	Trinidad and Tobago	Motor	$ 2,798.59	0.13	$ 2,798.59
5	04/09/2024	13/09/2024	13/09/2025	Jamaica	Motor	$ 2,030.83	0.16	$ 2,030.83
6	05/10/2024	08/10/2024	08/10/2025	Martinique	Liability	$ 1,146.00	0.14	$ 974.10
7	19/12/2021	27/12/2021	27/12/2022	Suriname	Motor	$ 1,041.86	0.15	$ 1,041.86
8	17/07/2025	24/07/2025	24/07/2026	Jamaica	Motor	$ 1,375.43	0.16	$ 1,375.43
9	03/03/2020	05/03/2020	05/03/2021	Saint Lucia	Marine	$ 2,086.05	0.19	$ 2,086.05
10	10/12/2021	14/12/2021	14/12/2022	Suriname	Motor	$ 663.71	0.15	$ 663.71

Okay give me a summary of the premiums written in 2024 across each territory.

2024 Premium Summary by Territory

Top 10 Markets:

1. **Jamaica** - $185.9M gross (39.5% ceded) - 27,004 policies
2. **Trinidad and Tobago** - $93.6M gross (21.7% ceded) - 13,092 policies
3. **Guyana** - $61.2M gross (19.3% ceded) - 7,953 policies
4. **Suriname** - $37.1M gross (23.2% ceded) - 6,110 policies
5. **Belize** - $26.7M gross (28.5% ceded) - 4,151 policies
6. **Bahamas** - $22.4M gross (43.1% ceded) - 3,737 policies
7. **Barbados** - $17.2M gross (37.8% ceded) - 2,684 policies
8. **Guadeloupe** - $17.1M gross (31.2% ceded) - 3,580 policies
9. **Martinique** - $15.8M gross (30.4% ceded) - 3,327 policies
10. **Curaçao** - $7.3M gross (32.9% ceded) - 1,487 policies

2024 Net Premium Summary by Territory

Top 10 Markets by Net Retention:

1. **Jamaica** - $112.4M net (30.4% of portfolio) - 60.5% retention
2. **Trinidad and Tobago** - $73.2M net (19.8%) - 78.3% retention
3. **Guyana** - $49.3M net (13.3%) - 80.7% retention
4. **Suriname** - $28.5M net (7.7%) - 76.8% retention
5. **Belize** - $19.1M net (5.2%) - 71.5% retention
6. **Bahamas** - $12.8M net (3.4%) - 56.9% retention
7. **Guadeloupe** - $11.8M net (3.2%) - 68.8% retention
8. **Martinique** - $11.0M net (3.0%) - 69.6% retention
9. **Barbados** - $10.7M net (2.9%) - 62.2% retention
10. **Aruba** - $5.3M net (1.4%) - 75.9% retention

Calculate the growth rates in gross written premium in each region across 2021 to 2025

Gross Written Premium Growth Rates by Territory (2021-2025)

Fastest Growing Markets:

Territory	2021 GWP	2025 GWP	4-Year CAGR	Total Growth
Cayman Islands	$4.2M	$7.3M	**14.5%**	71.9%
Guyana	$46.2M	$70.9M	**11.3%**	53.5%
Turks and Caicos	$2.3M	$3.5M	**11.2%**	52.7%
Aruba	$5.3M	$7.8M	**9.8%**	45.3%
Trinidad & Tobago	$73.0M	$102.3M	**8.8%**	40.1%
Jamaica	$147.2M	$204.3M	**8.5%**	38.8%

Risks associated with using AI

How do we manage the risks associated with embedding AI in our processes?

Opportunity/Risk Identification → Risk Assessment → **Risk Treatment** → Monitoring

Now that we have identified the opportunity that we want to explore our next step is to address mitigation of the risks.

Identified Risk	Mitigation	How is that implemented?
Data quality issues cause misleading or unreliable results: Several systems recording policy/claims data resulting in different data formats and fields having different meanings.	Combining the datasets from different systems	Creating a consolidated data warehouse.
	Team members are instructed to provide details about the dataset to the AI	Maintaining a data dictionary
Data quality issues cause misleading or unreliable results: Different currencies being used to record values.	Maintaining documentation over what currencies have been used and when. Ensuring the organization has a single source of truth of the currencies that are in use.	Maintaining a centralized database available to everyone in the organization of the currency exchange rates that should be used.
Data quality issues cause misleading or unreliable results: Operational teams having different approaches to recording data in different territories	Encouraging teams to maintain data quality in a unified manner	Standard Operating Procedures for use of policy and claims admin systems.

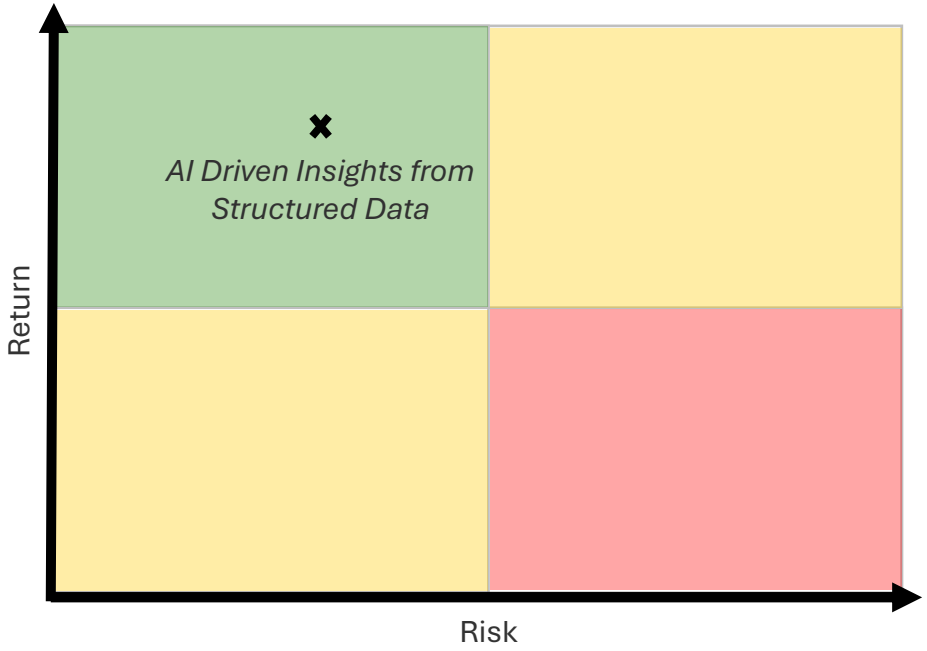
Risks associated with using AI

How do we manage the risks associated with embedding AI in our processes?

Opportunity/Risk Identification → Risk Assessment → Risk Treatment → **Monitoring**

As we use the tool we will monitor how the identified risks are evolving:

Identified Risk	Monitoring
The AI may not be able to understand the datasets that are provided	Track a *Retention Score* that would establish how many times the AI selected assumptions were ultimately selected by the human user responsible: $Retention\ Score\ (\%) = \frac{Sole\ AI\ Outputs}{Sole\ AI\ Outputs + Human\ Assisted\ Outputs}$
Data quality issues cause misleading or unreliable results	
Patterns or trends identified by AI may not reflect the true underlying drivers.	



Questions?

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