

Technology Trends and AI Use Cases

Moderator: Chris Spaulding, TSG

Panel:

Alex Serman, CIPM, First Rate

Ian Thompson, Ph.D., BNY

Paul Farrar, RailPen





Where are you on your AI journey?

What we'll discuss

- Panel Introductions
- Interactive Polling
- Role of Performance Analytics Team Today
- Evolution and Impact of AI
- Audience Q&A



How do you feel about AI in our field?

Panel Discussion



AI Use Cases

**#1 Performance
Analytics and AI**
Ian Thompson

**#2 Practical Use
Case**
Paul Farrar

**#3 Generative AI
Agents for
Scalable
Intelligent
Advisory**
Alex Serman



How are you using AI today (You can select more than one)?

Performance Analytics and AI

Dr. Ian Thompson

BNY Data and Analytics

September 2025

Identifying The Right Problem Statements And Capabilities

IDEA IDENTIFICATION

11 Workshops

17 Lines of Businesses & Corporate Functions

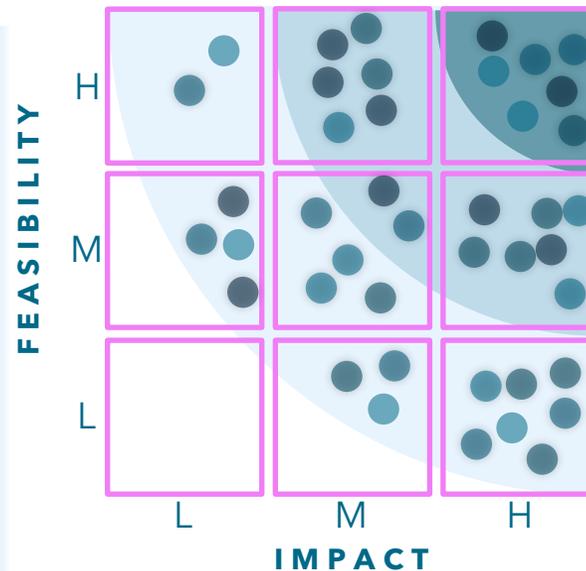
90 Participants

600+ PROBLEM STATEMENTS GENERATED

H/M/L PRIORITIZATION

PRIORITIZATION OF OPPORTUNITIES

PRIORITIZATION MATRIX



PRIORITIZATION FACTORS:

- **IMPACT** - qualitative factors, reach, commercial impact, cost avoidance/reduction, employee experience
- **FEASIBILITY** - probability of success from a technology readiness standpoint, SME, data availability

CATEGORIZATION BY THEMES

6 DOMAIN THEMES CATEGORIZED

AI Enabled Automation

Uplift People Experience

Enhancing Business Processes

Client Insights

Streamlining Engineering

Product R&D

CAPABILITY IDENTIFICATION

9 CORE CAPABILITIES IDENTIFIED

Prediction / Classification

Unstructured Data Q&A

Content Generation

Virtual Assistant

Anomaly Detection

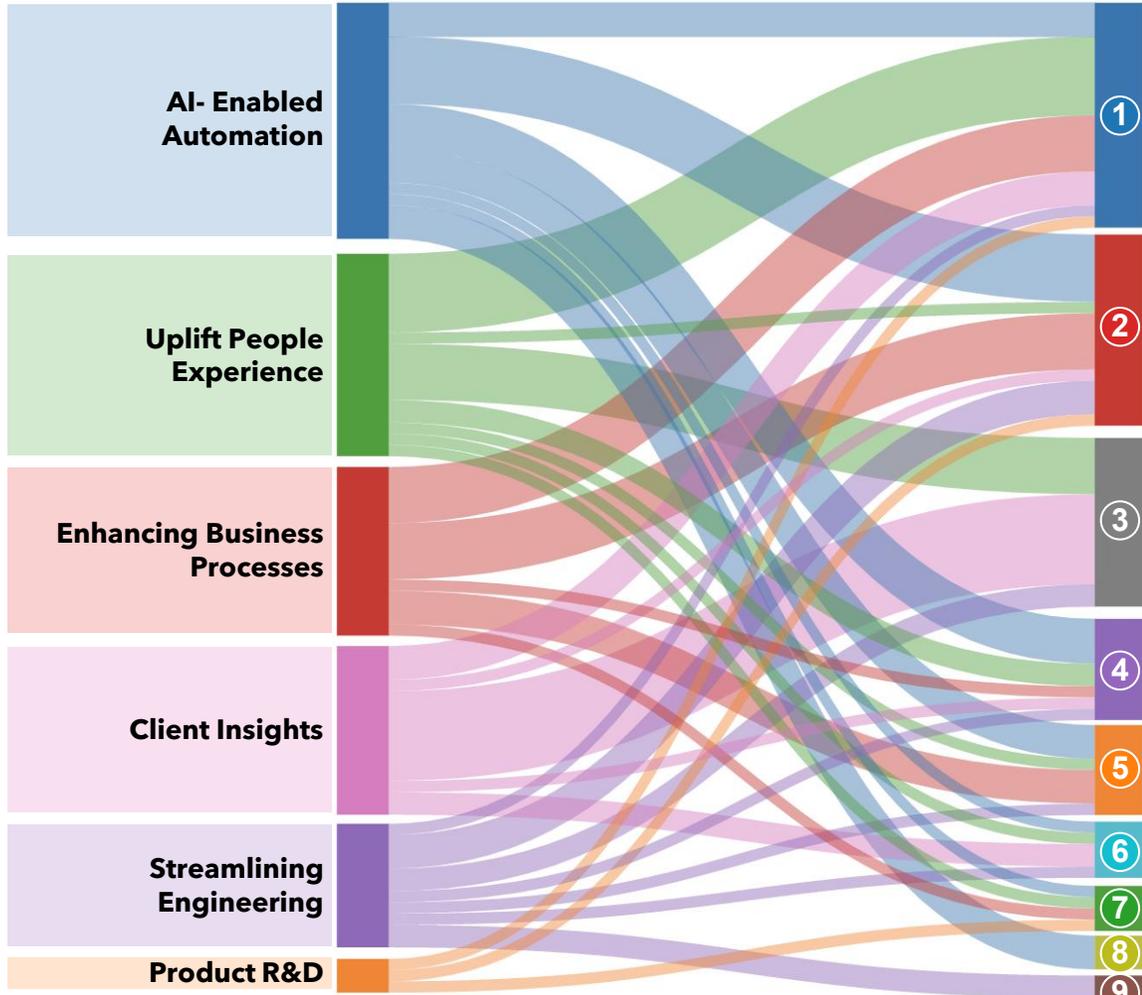
Decision Reapplication

Scenario Creation

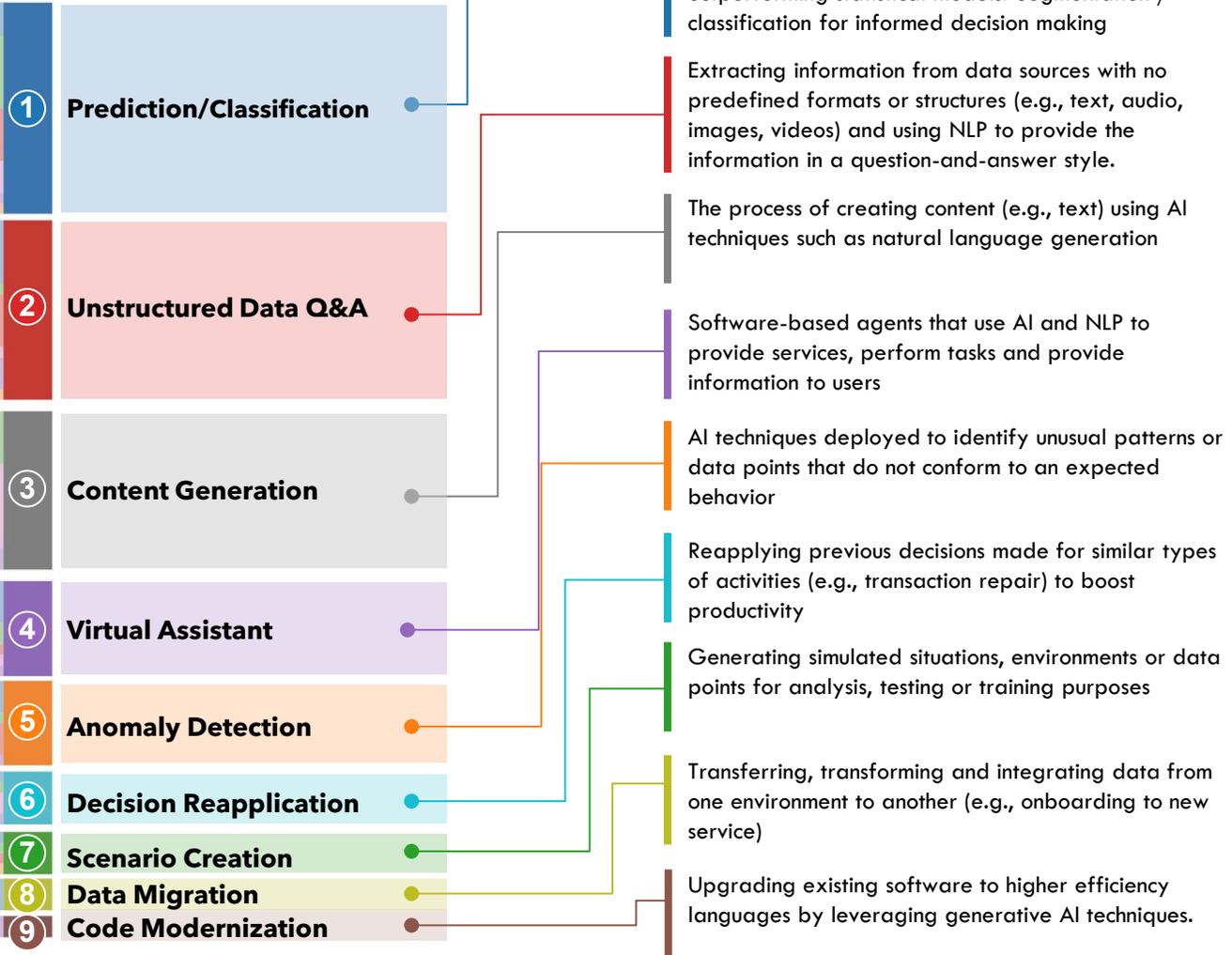
Data Migration

Code Modernization

DOMAIN THEMES



CORE CAPABILITIES



How best to leverage automation and AI in Performance?

Where can / should AI be utilized?

- Improving data quality
- Optimising workflows
- Integrating unstructured data - Intelligent Document Processing
- Answering queries
- Designing UX prototypes
- Creating/testing code - enhancing developer productivity
- Creating narratives/ commentary
- Creating dashboards
- Improving / Supplementing analysis



Example: A case study in AI/ML

Improving data quality

Determining ideal rules and tolerances to be included in data quality management for performance:

Identify set of rules to be applied (to the calculated performance results)

Run a series of 'tests' were then run against these with different sets of input data, including data which would trigger both 'passes' and fails'.

The input data and the results (but not the rules) were then provided to the ML Algorithm, which was designed to identify it's own set of 'rules'.

The algorithm independently identified the top 10 required rules and parameters in priority order, thus allowing the definition of the 'ideal' rules that could be applied to the data set



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RAILPEN

DISCUSSION ON PRACTICAL USE-CASES OF AI IN THE FIELD OF INVESTMENT ANALYTICS

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RAILPEN

17 SEPTEMBER 2025

WHAT'S HOLDING US BACK?



Our direct use of AI tools is limited to what is pre-authorized by our IT security Team.



Therefore, we are largely reliant on our third-party systems and software to research, fund and deliver AI enhancements as part of their core solution.



There is a need to protect our data from third party usage.



We don't have unlimited budget, project resource, or data processing power



There is plenty of literature on how AI is transforming investing, but very little on how investment performance, or even investment analytics can change.

A TANGIBLE USE CASE...



A market crises indicator

TANGIBLE AI USE-CASES: DETECTING A 'MARKET CRISES'

Context:

- **Railpen's Investment Risk Governance Framework** defines the structure and relevant processes for the governance concerning the management of investment risks across Railpen's pension schemes, and Pooled Funds. It catalogues all key investment decisions and outlines the approval authority for each.
- **Limits and thresholds** are essential components of the investment risk governance framework. They are used to define the boundaries within which investment decisions can be made and risks can be managed.
- **In a market crises...** Railpen's tolerance of breaches to risk limits and thresholds is increased. This is to ensure that moving the portfolio quickly inside limits does not lead to perverse client outcomes.
- Railpen's **Investment Risk Committee has the final say** on the identification of a market crises – the investment analytics team is responsible for providing it with the appropriate market intelligence to make an informed decision.

TANGIBLE USE-CASES: DETECTING A 'MARKET CRISES'

How can the AI tools we have available help us?

Ask it...

Help on defining a crises *"How can data be used to identify a market crises?"*

Help on identifying variables/metrics to signal a market crises.

Machine learning and data training to improve signal identification.

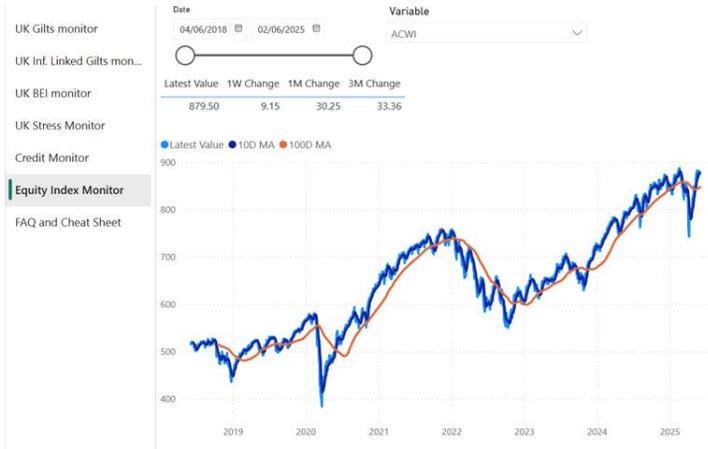
Coding a solution.

TANGIBLE AI USE-CASES: WHAT WE DID...

We used the AI tools at our disposal to...

- Help us explore various definitions of a market crises, and the metrics that can be used to identify them ([Gemini Deep Research](#), [Chat GPT](#), [Co-Pilot](#), [Perplexity](#), [Consensus](#), and [NotebookLM](#))
- Utilise both classification and regression [Machine Learning algorithms](#) in our crisis prediction tool. The classification algorithm tries to predict if the crisis will happen over the next time period in question, whereas the regression algorithm can be used to predict the severity of the crisis. The specific tools employed are either [gradient boosting based methods](#) ([k-means](#), [XGBoost](#) and [LightGBM libraries](#)) or [random forest methods](#) ([RandomForest](#) from [scikit-learn library](#)).
- Help create the code needed to [automate the reporting solution](#) in Streamlet and Power-bi ([Github](#)), utilising python and SQL.

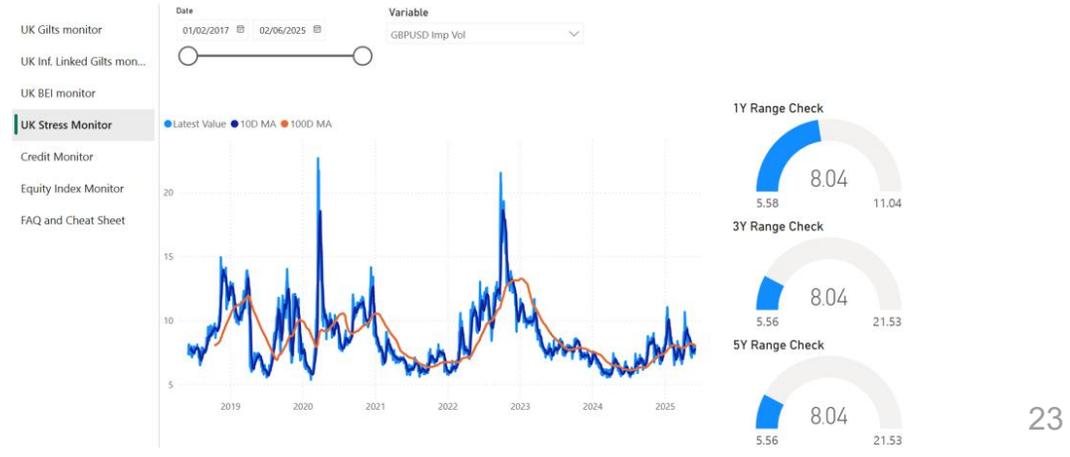
MARKET CRISES DASHBOARD EXAMPLES WE BUILT...



Market Crisis Monitor Dashboard

	FX_LAST	ID	1W	1M	3M	YTD	HIGH_52WEEK	LOW_52WEEK	From High	From Low
Equities										
S&P 500	5,919.24	0.0%	1.9%	3.9%	-0.7%	0.3%	6,147.43	4,835.04	-4%	22%
Nasdaq	21,424.00	0.4%	2.4%	6.0%	2.6%	2.0%	22,222.61	16,542.20	-4%	30%
Russell 2000	2,065.93	0.0%	1.3%	2.2%	-4.5%	-7.4%	2,466.49	1,732.99	-16%	19%
Euro Stoxx 50	5,365.56	-0.2%	1.3%	2.2%	-2.0%	9.4%	5,568.19	4,473.94	-4%	20%
Nikkei 225	37,470.67	-1.3%	-0.2%	1.7%	-0.8%	-6.3%	42,426.77	30,792.74	-12%	22%
FTSE 100	8,774.26	0.0%	0.6%	2.1%	-0.4%	7.4%	8,908.82	7,544.83	-2%	16%
Hang Seng China Ent.	8,359.26	-0.9%	-0.9%	1.6%	-0.7%	14.7%	9,211.13	5,771.61	-9%	45%
Rates										
US Treasury 2yr	3.94%	0.04%	-0.05%	0.11%	-0.05%	-0.31%	4.90%	3.43%	-0.96%	0.51%
US Treasury 10yr	4.46%	0.06%	-0.05%	0.15%	0.25%	-0.11%	4.81%	3.60%	-0.35%	0.87%
US Treasury 30yr	5.00%	0.07%	-0.04%	0.21%	0.53%	0.21%	5.15%	3.89%	-0.15%	1.11%
UK Gilt 2yr	4.03%	0.01%	0.05%	0.17%	-0.15%	-0.37%	4.63%	3.47%	-0.60%	0.56%
UK Gilt 10yr	4.67%	0.02%	-0.01%	0.16%	0.19%	0.10%	4.92%	3.73%	-0.25%	0.94%
UK Gilt 30yr	5.41%	0.04%	-0.07%	0.11%	0.32%	0.28%	5.66%	4.32%	-0.25%	1.09%
EU Govt. 2yr	1.79%	0.01%	0.01%	0.03%	-0.24%	-0.29%	3.11%	1.62%	-1.32%	0.17%
EU Govt. 10yr	2.52%	0.02%	-0.04%	-0.01%	0.12%	0.16%	2.94%	2.01%	-0.42%	0.51%
EU Govt. 30yr	3.01%	0.03%	-0.05%	0.04%	0.31%	0.42%	3.25%	2.26%	-0.24%	0.75%
JGB 2yr	0.77%	0.03%	0.05%	0.16%	-0.04%	0.17%	0.89%	0.25%	-0.12%	0.53%
JGB 10yr	1.51%	0.01%	-0.01%	0.25%	0.14%	0.41%	1.60%	0.74%	-0.68%	0.77%
JGB 30yr	2.95%	-0.02%	-0.11%	0.17%	0.59%	0.63%	3.20%	1.90%	-0.26%	1.04%
Credit										
CDX Investment Grade	0.56%	0.00%	-0.03%	-0.08%	0.05%	0.06%	0.86%	0.46%	-0.30%	0.10%
CDX High Yield	3.51%	-0.01%	-0.19%	-0.42%	0.33%	-0.39%	4.96%	2.60%	-1.47%	0.64%
ITRAXX Main	0.58%	0.00%	-0.03%	-0.07%	0.05%	0.00%	0.88%	0.51%	-0.30%	0.07%
ITRAXX Xover	3.00%	0.00%	-0.16%	-0.34%	0.14%	-0.13%	4.38%	2.75%	-1.38%	0.25%
FX										
GBPUSD	1.35	0.50%	-0.20%	1.91%	0.50%	0.07%	1.35	1.21	-0.5%	11.8%
EURUSD	1.14	0.69%	0.33%	1.13%	0.94%	10.34%	1.15	1.01	-0.6%	12.7%
USDJPY	142.89	0.79%	-0.03%	1.45%	4.63%	19.01%	161.85	138.58	-11.8%	2.4%
Vol										
S&P 500 Imp Vol (VIX)	18.94	-0.37%	-3.37%	-3.74%	-0.69%	-1.58%	65.73	19.62	-47	11
US TSY 10yr Imp. Vol	92.11	-0.56%	-6.80%	-9.29%	12.36%	-6.69%	139.88	82.40	-48	82
Commodities										
Copper	485.60	3.82%	1.03%	4.94%	7.56%	20.00%	527.76	392.10	-8%	24%
Gold	3,375.48	2.62%	0.95%	4.17%	16.89%	28.01%	3,500.10	2,286.86	-4%	48%
Crude Oil	63.11	3.82%	2.57%	8.27%	-6.53%	-12.01%	84.52	55.12	-25%	14%

Reference Levels	Covid	GFC	Black Monday	Euro Crisis	Sept 1th	2022 Inflation	Liberation Day
-33.9%	-37.4%	-28.9%	-13.7%	-11.6%	-24.8%	-12.1%	
-27.9%	-29.1%	-22.7%	-10.1%	-17.5%	-32.8%	-12.7%	
-40.8%	-33.6%	-18.7%	-20.2%	-14.0%	-25.9%	-13.9%	
-35.7%	-45.4%	-10.7%	-31.2%	-16.4%	-22.8%	-10.0%	
-27.8%	-34.9%	-2.5%	-24.7%	-6.3%	-9.9%	-7.6%	
-33.0%	-34.2%	-12.7%	-15.1%	-11.9%	-6.6%	-8.1%	
-19.8%	-32.0%	-26.3%	-7.7%	-28.2%	-12.9%		
-1.11%	-1.94%	-0.41%	-0.47%	-0.64%	3.55%	-0.13%	
-0.78%	-0.49%	-0.22%	-1.62%	-0.14%	2.32%	0.16%	
-0.66%	-0.12%	-0.08%	-1.76%	0.15%	1.87%	0.26%	
-0.45%	-3.03%	-1.07%	-0.27%	3.55%	-0.21%		
-0.17%	-0.82%	-1.52%	0.00%	3.12%	-0.03%		
-0.31%	0.10%	-1.32%	0.19%	2.71%	0.10%		
-0.05%	-2.60%	-0.94%	-0.46%	2.38%	-0.20%		
0.04%	-0.95%	-0.99%	0.03%	2.29%	-0.09%		
-0.13%	-0.41%	-0.87%	0.22%	1.90%	-0.05%		
-0.04%	-0.40%	-0.09%	0.01%	0.04%	-0.19%		
0.12%	-0.15%	-0.28%	-0.03%	0.17%	-0.21%		
0.08%	-0.15%	-0.34%	-0.02%	0.70%	0.06%		
1.50%	2.60%	1.40%	1.10%	0.83%			
8.70%	20.00%	8.50%	6.25%	4.90%			
1.40%	2.30%	1.90%	1.40%	0.84%			
7.00%	17.00%	9.50%	6.70%	4.25%			
-10.7%	-17.1%	2.0%	-5.0%	0.0%	-17.5%	-1.9%	
-0.7%	-3.8%	2.7%	-3.3%	1.9%	-13.8%	1.0%	
0.1%	16.0%	1.4%	7.0%	3.8%	-20.5%	2.1%	
83	81	48	44	36	65		
164	264	117	145	160	140		
-18.7%	-26.5%	-27.9%	0.8%	-23.5%	-17.8%		
-3.6%	10.2%	4.7%	21.1%	7.2%	-9.2%	-4.8%	
-56.2%	-27.2%	0.5%	12.3%	-6.0%	5.7%	-16.9%	



FINAL THOUGHTS...

For what we do at Railpen, as an investment analytics function that provides qualitative opinion on investment risk and performance of our investment funds, the AI tools we have available are **not yet a reliable partner that we can use in isolation.**

There are lots of 'helpful' use-cases, but taken on their own, they are just that...'helpful', but not **transformational** for us yet.

It's our responsibility to **keep exploring**, and to keep experimenting as the technology advances. We are constantly looking for ways to integrate AI into our everyday work to improve on what we deliver.

“Every team in your organisation is looking to the IT team to help them to deliver AI powered experiences. And I know we don't want to admit it, but IT doesn't have all the answers. Because AI isn't as easy as just turning it on. Delivering great AI experiences requires time, expertise and data.”

Ahyoung An, Mulesoft

FINAL THOUGHTS (2)...

‘**How**’ we use the AI tools at our disposal makes a real difference. We can ask ‘better’ questions, and reference better input to improve the results our AI tools provide us.

Ultimately, investment practitioners will **remain responsible** for what we produce, regardless of the source and method of production.

IT and data security, accuracy, independence, and quality are paramount to what we do.

“AI will not replace humans, but those who use AI will replace those who don’t.” ...

Ginni Rometty, former CEO of IBM

First Rate ArtIE in Wealth Management

Empowering Operations, Oversight, and Client Experience for senior leaders across trust, wealth management, private banking, and family offices.

Alex Serman, CIPM



FIRST **1R** RATE™

Generative AI Agents for Scalable Intelligent Advisory

In today's complex financial landscape, large bank trust and institutional wealth teams are under immense pressure to deliver high-touch advisory services at scale—while navigating data fragmentation, regulatory complexity, and evolving client expectations. First Rate's proprietary generative AI platform, ArtIE (Artificial Intelligence Engine), was built to meet these demands through intelligent automation, task-specific agent creation, and cognitive architectures that adapt to each firm's operational and advisory model.

The bottom of the slide features a decorative graphic consisting of multiple thin, wavy lines in a light blue-green color, creating a sense of motion and depth against the dark blue background.



Active Advising w/Intelligent Agents

- ASSET AGGREGATION AGENT
- REBALANCING AGENT
- SENSING AGENT
- PRIVATE PLACEMENT MEMORANDUM AGENT
- CLIENT TWIN AGENT
- ADVISOR TWIN AGENT
- PORTFOLIO ATTRIBUTION AGENT



- Time to Develop
 - Key Successes
 - Key Learning Moments
- 
- The bottom of the slide features a decorative graphic consisting of multiple thin, light blue lines that flow in a wavy, undulating pattern across the width of the page.

- **Governance, Explainability, and Oversight**
 - AI often brings a “black box” concern—how are you ensuring transparency and auditability in AI-generated outputs?
 - What checks and balances are needed to maintain trust in AI-driven processes (e.g., Team’s use of AI for email)?
 - How are you mitigating hallucinations and training the models?
- 

- The Future Role of Performance Professionals in an AI world
 - How do you structure teams to blend human expertise with AI driven processes?
 - How do you see the role of performance analysts evolving as AI becomes more embedded?
 - Will AI replace performance analysts?
- 

- AI Opportunities and Pitfalls

- What's the most overhyped AI use case in performance measurement today?

- What's the most underutilized or promising AI use case nobody's talking about?

- How does AI enhance the value of critical thinking?



Your thoughts?

Questions?



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