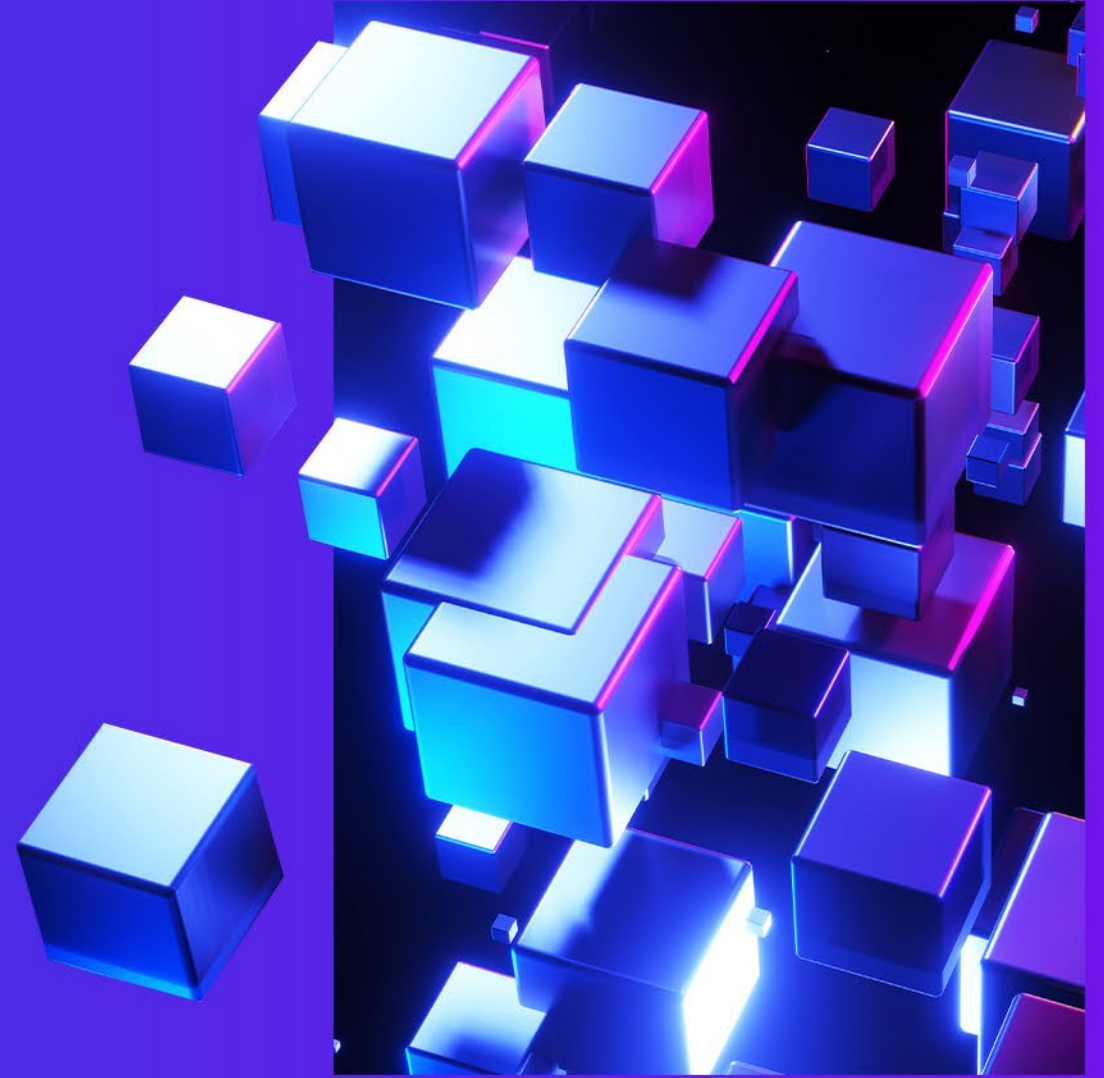




GenAI in the accounting/finance function



Elevating finance

Transforming finance: GenAI in the workplace

Generative AI is a big deal...

Because of its broad applicability, ease of use and low cost as well as its focus on creativity. For the first time, we've democratized AI from B2B to B2C and now C2B

ChatGPT took just 5 days to reach 1 million users

It's being hailed as the next big breakthrough

Time taken to reach 1 million users (months)

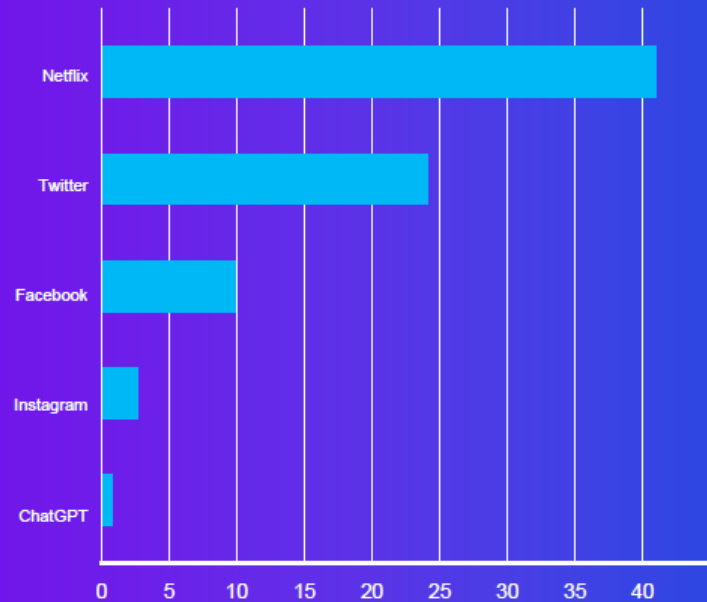
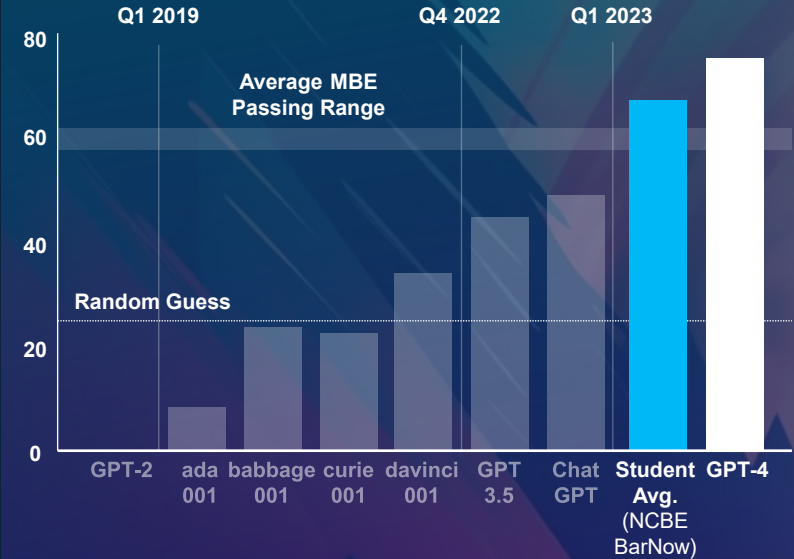


Chart: Financial Review. Source: Genevieve Roch-Decter, CFA

Progression of GPT Models on the Multistate Bar Exam*



In the last 4 months, GPT4 has passed:

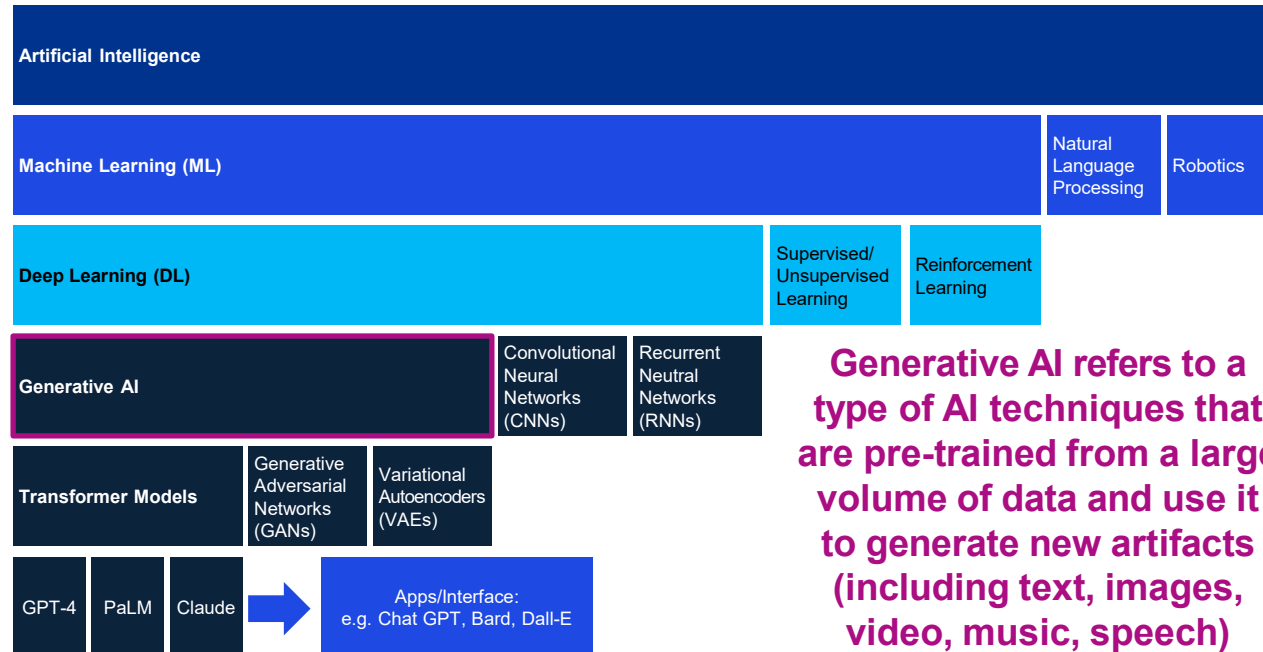
- The Uniform Bar Exam
- The GRE
- US medical licensing exam
- USA Biology Olympiad Semifinal
- Law School Exams
- AP Exams
- Stanford Medical School clinical reasoning final
- AMC 10/12
- The SAT
- Sommelier Exams (written portion, not taste)

*Source: <https://www.iit.edu/news/gpt-4-passes-bar-exam>

GenAI is a subset of AI

Traditional Artificial Intelligence (AI) has been around for years, and is adept at performing specific tasks typically requiring human intelligence such as identifying patterns, making predictions, and automating routine tasks.

Generative AI is a major advancement because of its broad applicability (pre-trained on huge amount of internet data), ease of use (models work for many tasks with no additional inputs), low cost, speed, and ability to create brand new content.



Generative AI refers to a type of AI techniques that are pre-trained from a large volume of data and use it to generate new artifacts (including text, images, video, music, speech)

Generative AI can write narratives and code, synthesize massive documents in seconds, analyze huge datasets, provide insights or recommendations, and create realistic images.

01 Create

02 Explain

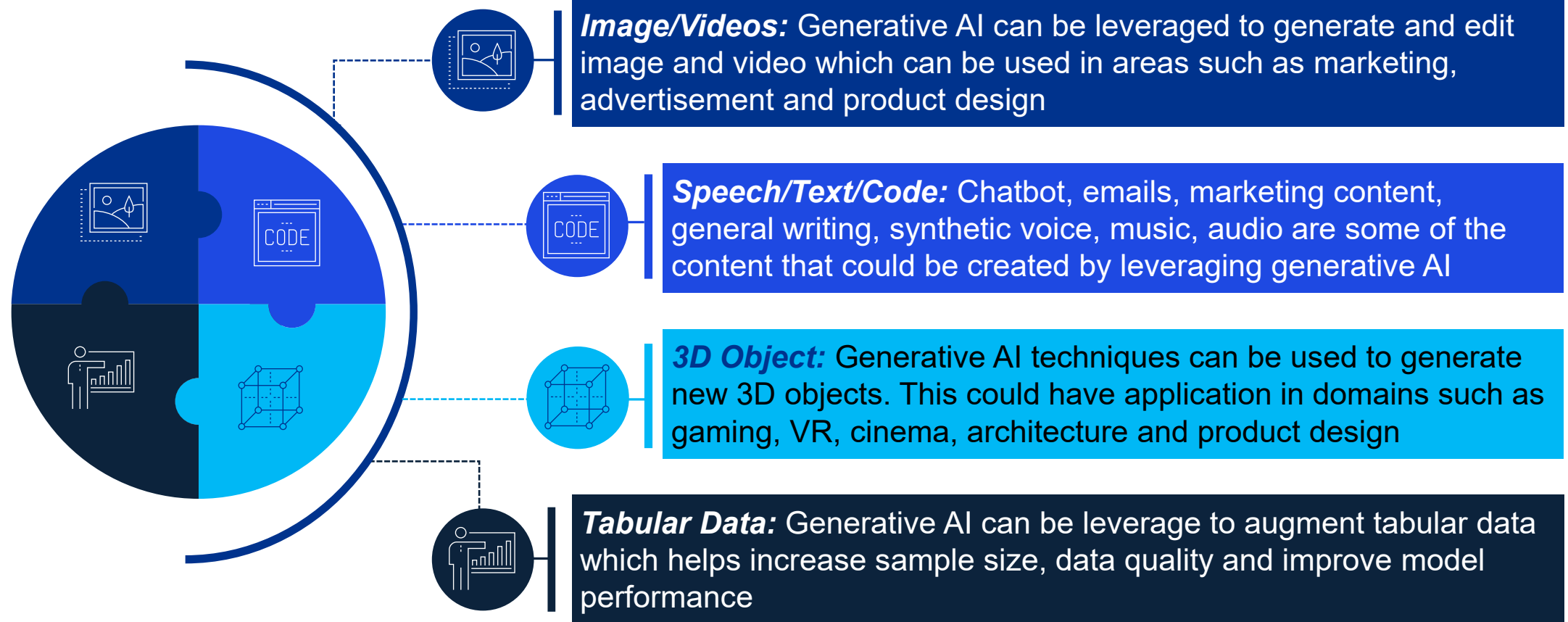
03 Edit

04 Compare

05 Coach

How is Generative AI used?

Generative AI is a branch of deep learning that involves unsupervised and semi-supervised algorithms that enable the generation of new content and data.



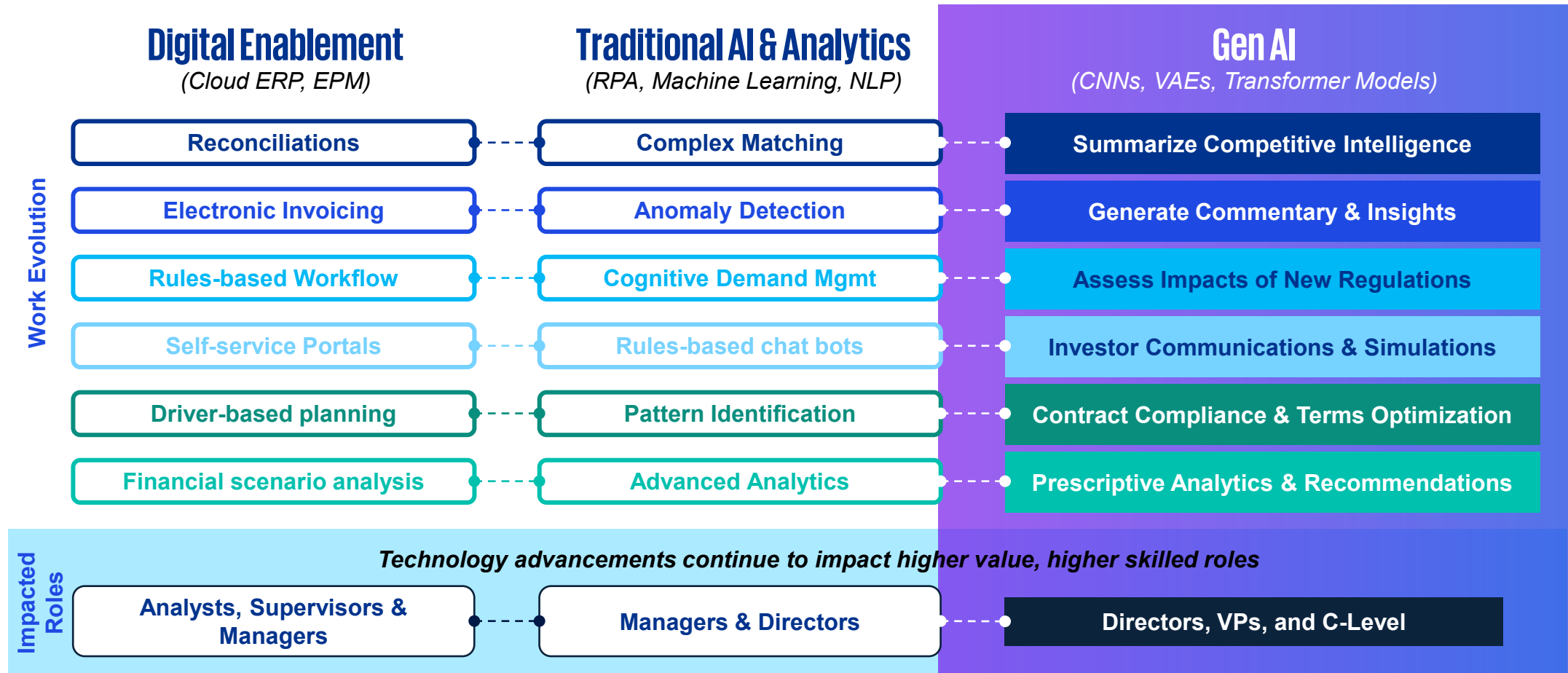
The Gen AI finance value proposition

Finance Leaders must embrace disruption to realize tangible value



How is GenAI different than traditional digital & AI?

GenAI automates more complex analytical and decision support activities



But it isn't all roses.

Oncology AI assistant quickly went from future of healthcare to sold off for parts after **misdiagnosing patients** – \$5B+ investment.

Real estate giant announces \$304 million write down on homes it purchased based on **outdated price-forecasting** algorithms for amounts higher than they could be sold for.



Where can finance start with GenAI adoption?

Finance's role as a business partner puts them in an ideal position to lead enterprise adoption

1

Forecasting & budgeting

Integrating predictive models, creating scenarios, and generating insights on potential financial outcomes.

4

Generating strategic insights

Partner with other functions to provide insights across the business. Use finance's position to inform strategic decisions and solve problems with pricing, performance, and benchmarking metrics.

2

Generating commentary

Reduce the time and effort needed to create recurring materials required for financial reporting, business reviews, management reports, and board meetings.

5

Managing contracts

Generative AI tools can draft contracts with preferred term and prioritize contract reviews based on deviations from standard terms and conditions.

3

Collecting marketing intelligence

Powerful research tool able to find and synthesize public data to generate insights on markets, competitors, and customers.

6

Detecting anomalies

Generative AI shows promise as a tool for detecting errors and potential fraud. It can compare new data with past patterns to identify anomalies.

GenAI is a natural extension to CFO's responsibilities related to strategy, enabling technologies and risk management

Where can finance start with GenAI adoption? (continued)

Finance's role as a business partner puts them in an ideal position to lead enterprise adoption

1

Forecasting & budgeting

Integrating predictive models, creating scenarios, and generating insights on potential financial outcomes.

4

Generating strategic insights

Partner with other functions to provide insights across the business. Use finance's position to inform strategic decisions and solve problems with pricing, performance, and benchmarking metrics.

2

Generating commentary

Reduce the time and effort needed to create recurring materials required for financial reporting, business reviews, management reports, and board meetings.

5

Managing contracts

Generative AI tools can draft contracts with preferred term and prioritize contract reviews based on deviations from standard terms and conditions.

3

Collecting marketing intelligence

Powerful research tool able to find and synthesize public data to generate insights on markets, competitors, and customers.

6

Detecting anomalies

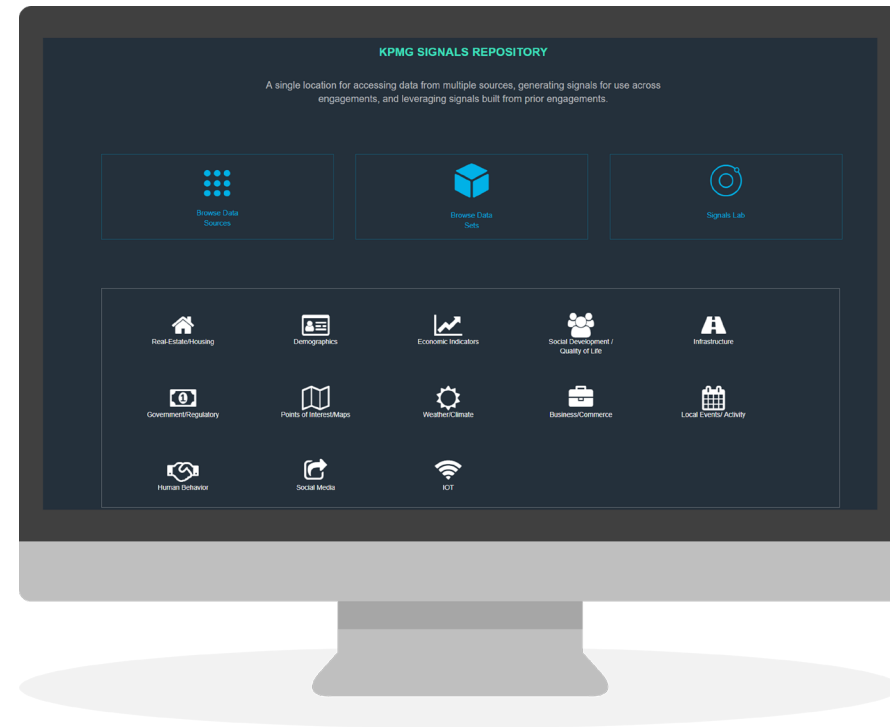
Generative AI shows promise as a tool for detecting errors and potential fraud. It can compare new data with past patterns to identify anomalies.

GenAI is a natural extension to CFO's responsibilities related to strategy, enabling technologies and risk management

Demo: Generating commentary (Generative AI)



Working with KPMG: Generative AI



Explore how finance organizations are automating meeting notes into minutes

Where can finance start with GenAI adoption?

Finance's role as a business partner puts them in an ideal position to lead enterprise adoption

1

Forecasting & budgeting

Integrating predictive models, creating scenarios, and generating insights on potential financial outcomes.

4

Generating strategic insights

Partner with other functions to provide insights across the business. Use finance's position to inform strategic decisions and solve problems with pricing, performance, and benchmarking metrics.

2

Generating commentary

Reduce the time and effort needed to create recurring materials required for financial reporting, business reviews, management reports, and board meetings.

5

Managing contracts

Generative AI tools can draft contracts with preferred term and prioritize contract reviews based on deviations from standard terms and conditions.

3

Collecting marketing intelligence

Powerful research tool able to find and synthesize public data to generate insights on markets, competitors, and customers.

6

Detecting anomalies

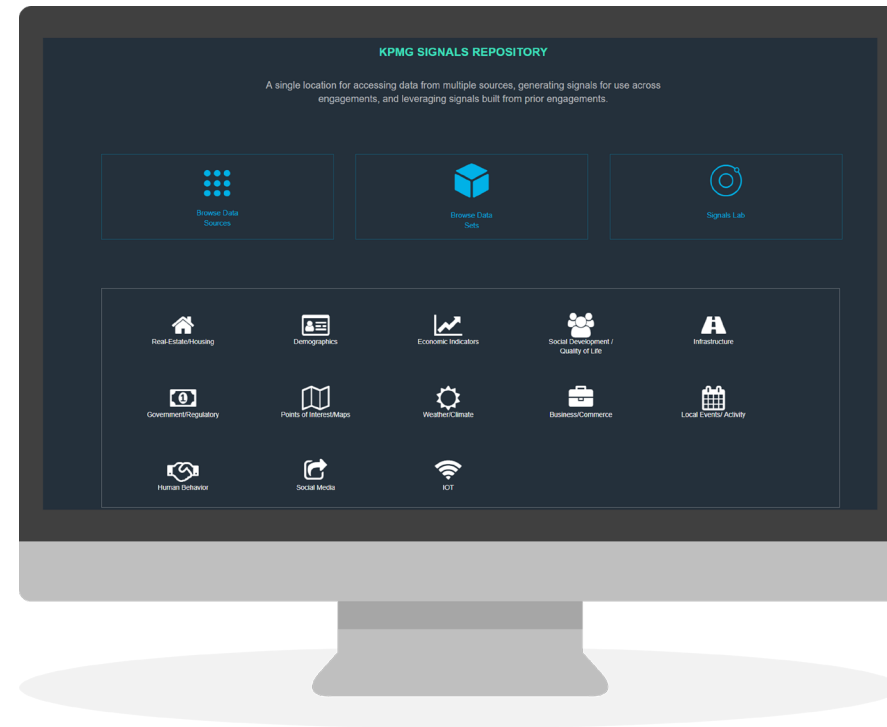
Generative AI shows promise as a tool for detecting errors and potential fraud. It can compare new data with past patterns to identify anomalies.

GenAI is a natural extension to CFO's responsibilities related to strategy, enabling technologies and risk management

Demos: Unlock intelligence from data (Generative AI)



Working with KPMG: Generative AI



Explore how finance organizations are automating financial commentary and the analysis of competitor intelligence

Critical success factors for deploying Generative AI



Connecting GenAI to enterprise strategy, business value, financial goals and the workforce with great clarity is critical to launching and scaling a successful Gen AI program



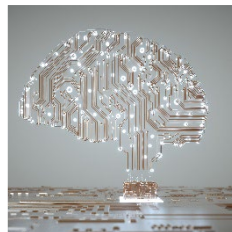
ROI & Business Value

Smart Experimentation



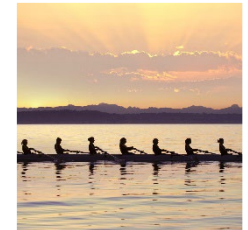
Strategic Partnerships

Technology and Infrastructure



Workforce Strategy

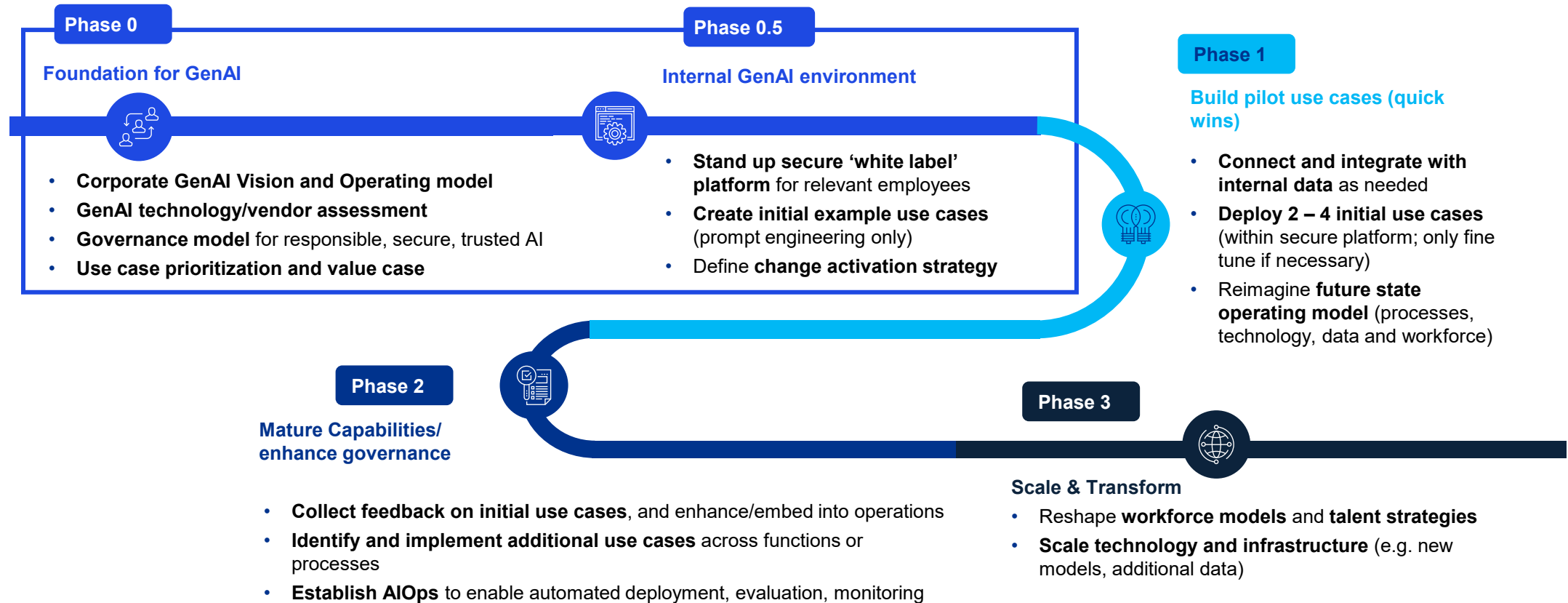
Change Activation



Responsible AI

GenAI Roadmap to adoption and scale (client example)

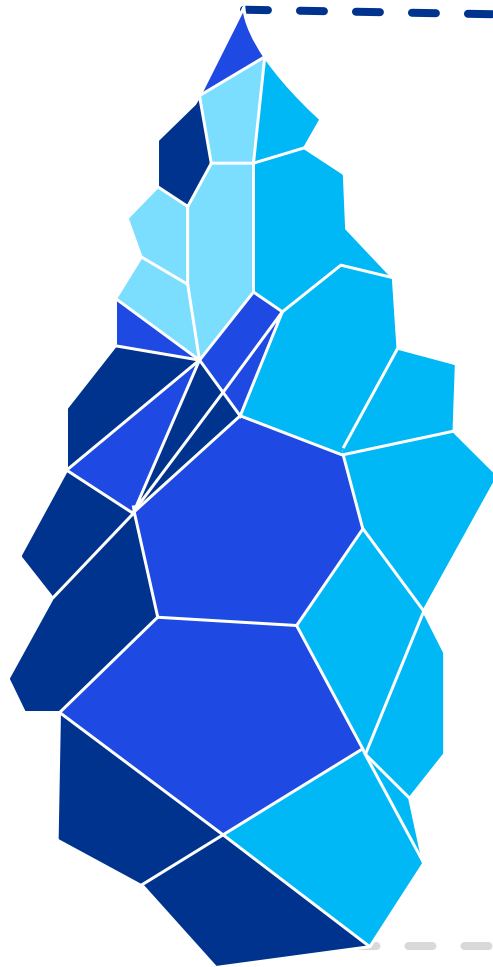
Establishing the program foundations will allow you to embark on the journey responsibly, identify initial use cases, and understand the technology requirements to get started, while keeping in mind the longer-term vision



Appendix

Intelligent forecasting

Lessons learned from our experience



What is obvious?

- Defining a future state vision and blueprint
- Implementing accounting logic consistent with your policies
- Enhancing reporting for business users
- Managing governance and the program

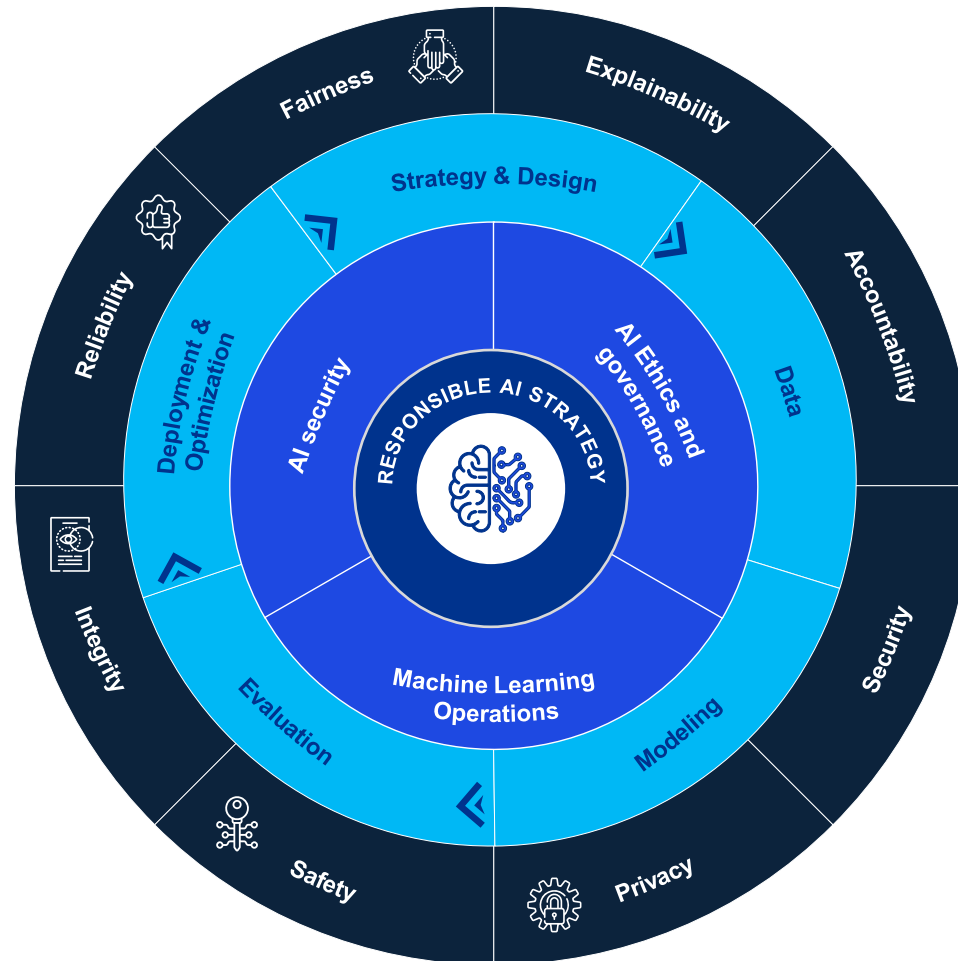
What is not as obvious, but a critical success factor?

- Establishing a resilient system design that leverages AI/ML and other cutting-edge technologies to proactively identify and address errors across the lifecycle
- Understanding the implications of new contract types and/or commission plans, and how to keep the program in sync with evolving requirements
- **Embedding compliance at each design step** rather than as an afterthought so that system controls are built along with other key functionalities
- Driving integration with your **complex organizational landscape** – confirm that integration points are established early, both technically and organizationally, with internal and external stakeholders across dependent initiatives such as SAP ERP and Future State Operating Model.
- Using a cross-functional team with a **well-established governance model** to drive through key decisions in an effective manner and evaluate requirements and system design from multiple viewpoints
- Aligning process changes so you can confidently achieve the **true-north of continuous close** and near-real-time reporting
- **Using this program to address and improve data quality to support the new implementation (rather than bring dirty data into a new system)**

KPMG's responsible AI framework

We understand responsible AI is a complex business, regulatory, and technical challenge, and we are committed to helping clients put it into practice

We help develop, and deploy an end-to-end Responsible AI program across the AI/ML lifecycle

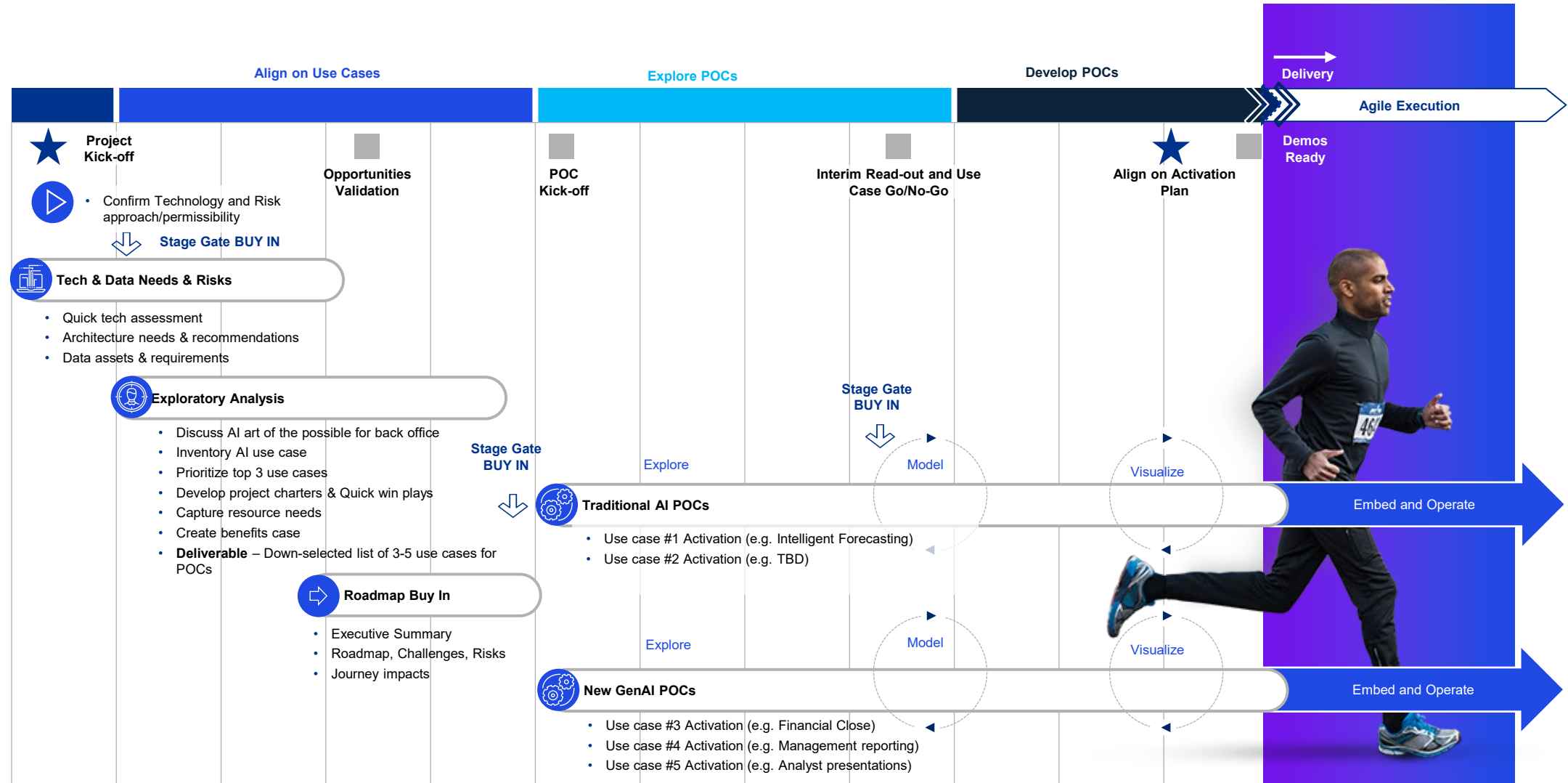


- 
Fairness
 Ensure models are free from bias and equitable.
- 
Explainability
 Ensure AI can be understood, documented, and open for review.
- 
Accountability
 Ensure mechanisms are in place to drive responsibility across the lifecycle.
- 
Security
 Safeguard against unauthorized access, corruption, or attacks.
- 
Privacy
 Ensure compliance with data privacy regulations and consumer data usage.
- 
Safety
 Ensure AI does not negatively impact humans, property, and environment.
- 
Data integrity
 Ensure data quality, governance, and enrichment steps embed trust.
- 
Reliability
 Ensure AI systems perform at the desired level of precision and consistency.

Example opportunities by function for Generative AI

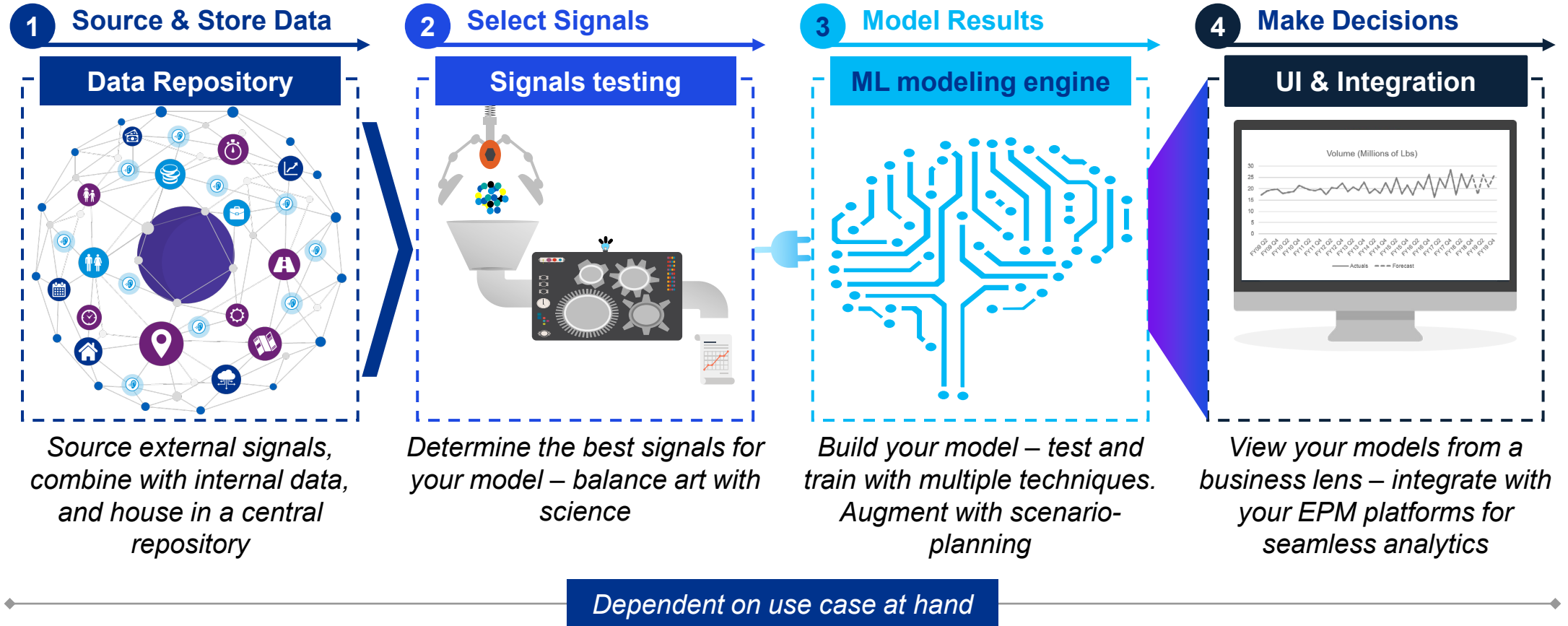
<p style="text-align: center;">Marketing</p> <ul style="list-style-type: none"> • Write marketing and sales copy including text, images, and videos • Create product user guides of industry dependent offerings • Improve sales support chatbots and sales force • SEO optimization, SDR automation, sales coaching 	<p style="text-align: center;">Operations</p> <ul style="list-style-type: none"> • Identify production errors, anomalies, and defects • Streamline customer service, manual tasks and research • Identify clauses of interest such as penalties • Create or improve customer support chatbots 	<p style="text-align: center;">IT/Engineering</p> <ul style="list-style-type: none"> • Generate test cases and create test automation • Automatically generate or auto-complete data tables • Generate synthetic data to improve training accuracy • Create or improve customer support chatbots
<p style="text-align: center;">Risk and Legal</p> <ul style="list-style-type: none"> • Draft and review legal documents • Legal to non legal translation • Answer questions from large amounts of legal documents • Summarize and highlight changes in documents 	<p style="text-align: center;">HR</p> <ul style="list-style-type: none"> • Create interview questions • Provide self-serve HR functions • Job description writing, interviewing • Performance reviews, training 	<p style="text-align: center;">Finance</p> <ul style="list-style-type: none"> • Business and operations reviews • Commentary and presentations • Recommendations/Corrective actions • Competitive intelligence • Customer behaviors and sales performance • Dispute resolution
<p style="text-align: center;">Utility/Employee optimization</p> <ul style="list-style-type: none"> • Optimize employee communication • Create business presentations based on text prompts • Synthesize a summary from text, slide decks or online video meetings • Enable search and question answering on private knowledge 	<p style="text-align: center;">Product</p> <ul style="list-style-type: none"> • Next gen Wikipedia • Gaming studios • Movie studios • News Channels 	<p style="text-align: center;">Customer Success</p> <ul style="list-style-type: none"> • User Insights • Churn prediction • Answering tickets

Illustrative delivery timeline

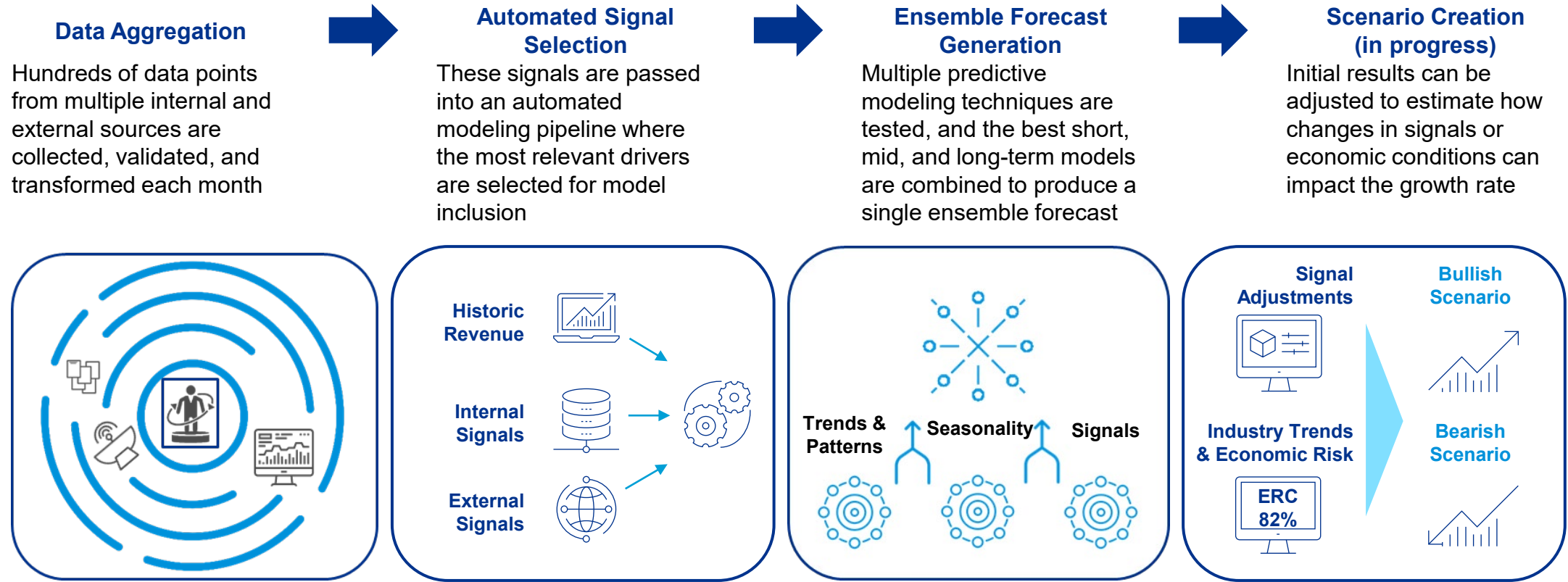


What is intelligent forecasting

When exploring 'Intelligent forecasting' capabilities, there are four main components, spanning from design to deployment. All must be carefully considered and tightly integrated to unlock the full value to your organization.




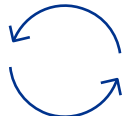
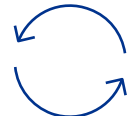
Advisory intelligent forecasting process



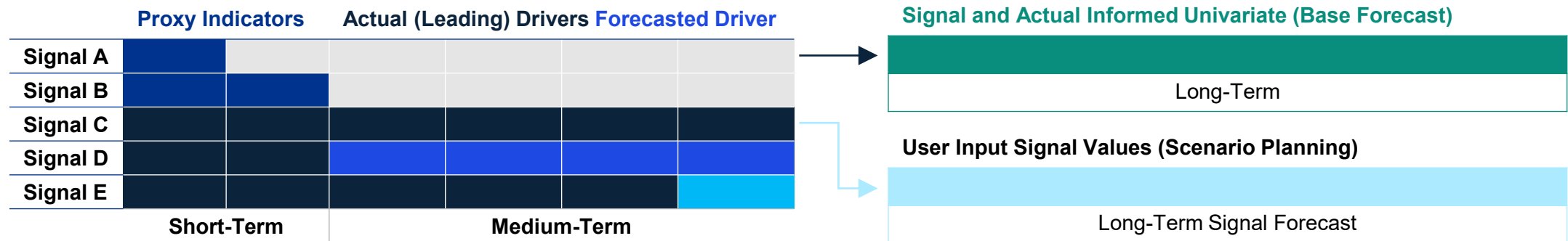
- External signal analysis performed at the Service Group and Advisory level, internal signals are leveraged at the Service Line and LOB level, and results are reconciled using a top-down approach
- Forecast is run on the 7th day of each month, or as soon as all relevant data is available (takes <1 day to run and compile)

Creating the most accurate and useful predictive model

The model selection process automatically develops and tests multiple model types with the selected signals in order to identify the signal and model composition providing the greatest predictive accuracy.

Short-Term Models	Medium-Term Models	Long-Term Models
<ul style="list-style-type: none"> Regression with Proxy Indicators (Lasso, ElasticNet, Bayesian Ridge, VAR) Regression with Time Series Components (BSTS-Regression, TSLM, Theta-Regression) 	<ul style="list-style-type: none"> Regression with Proxy Indicators* (Lasso, ElasticNet, Bayesian Ridge, VAR) Regression with Time Series Components (BSTS-Regression, TSLM, Theta-Regression) 	<ul style="list-style-type: none"> Univariate Time Series (BSTS, Theta, ARIMA) Multivariate Time Series* (BSTS-Regression, Theta-Regression, Prophet)  <p><i>*Not recommended approach</i></p>

Intelligent Forecasting deployments typically leverage a time-banded approach to maximize the value of signals, forecast accuracy, and business levers across short, medium, and long-term horizons



Illustrative model composition

Benefits of intelligent forecasting

Use of data and advanced analytics methods can improve the forecasting process, and provide insights, at different levels of KPMG's business.

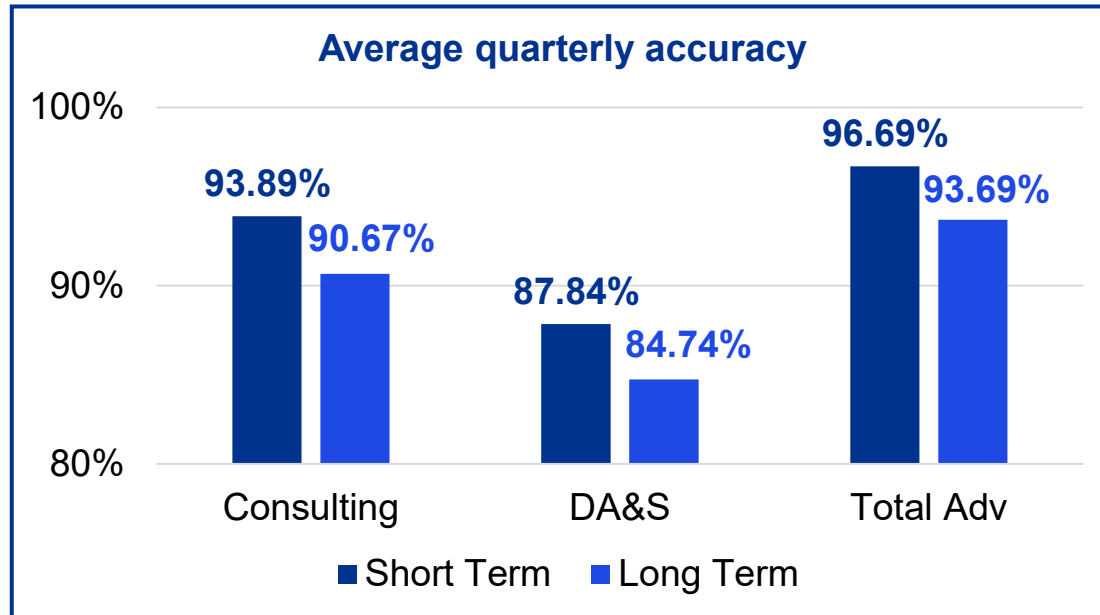
Short-term

- Create more rapid forecasts without the need for bottoms-up planning
- Improve forecast accuracy through statistically-proven, data-driven results up to 18 months out
- Better understanding of key internal and external drivers of your business
- Improve evaluation and setting of goals/targets

Longer-term

- Improve transparency by making forecasts available to multiple users in the organization through a single platform
- Allow various scenarios or positive/negative forecasts to be tested and presented
- Identification of opportunities to improve internal data collection

Accuracy of forecast results



Short Term = 1 quarter out; Long-term = 1 year out

Key Features to Maximize Accuracy

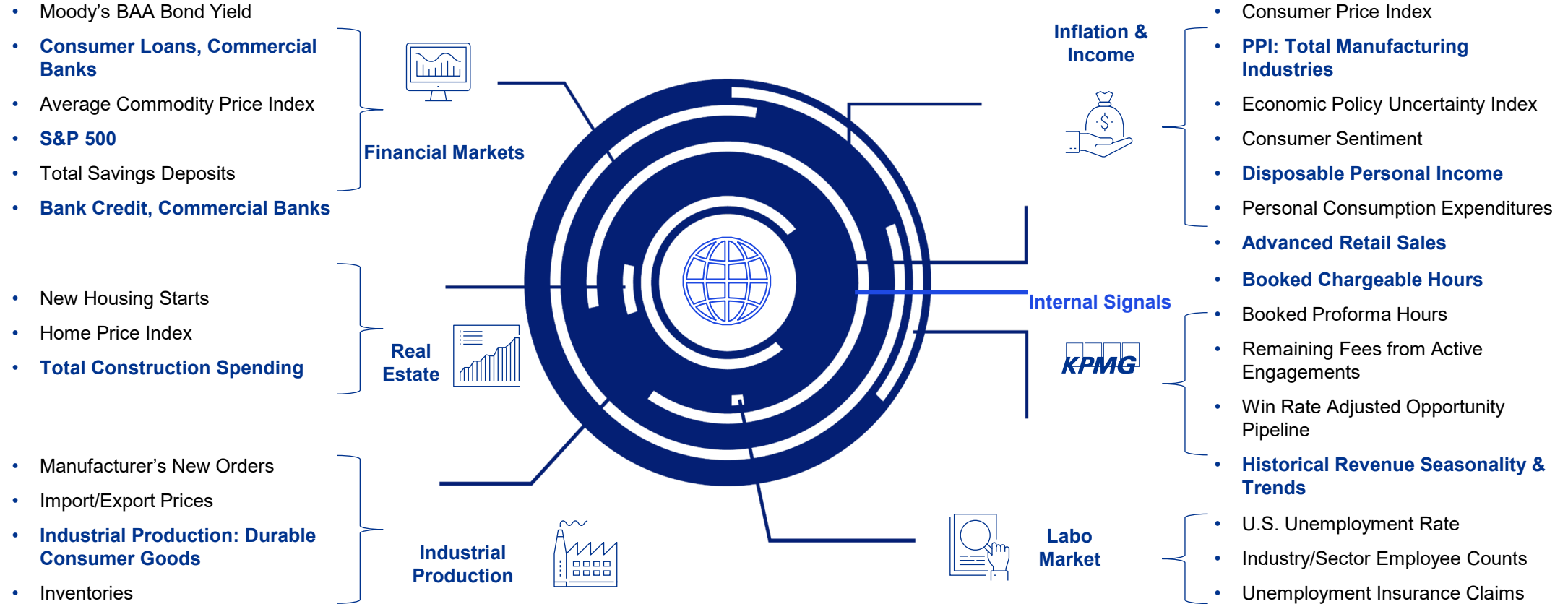
- Model trained on 7+ years of historical engagement revenue trends, patterns, and seasonality
- Internal data, such as booked chargeable hours, improves accuracy at the service line level
- External macroeconomic signals improve accuracy at the Service Group and Advisory level
- Combination of internal and external signals tested using different combinations and transformations
- Multiple leading predictive and machine learning modeling techniques tested and compared
- Accuracy lift optimized through ensemble technique that combines different horizons (short, mid, long term)

Considerations

- Professional Services in general is a challenging industry to accurately forecast due to it being very investment-driven
- Deal Advisory accuracy is more challenging to achieve than consulting due to rapid fluctuations of the deal market and less reliable internal pipeline/schedule data
- Accuracy test window includes COVID period (2020), so results are expected to be even better going forward

Internal & external signals tested

Out of hundreds of potential signals, 75+ external and 5 internal data sets were tested across the following key categories: Financial Markets, Real Estate, Inflation & Income, Industrial Production, Labor Market, and Internal Signals.



Signals in green were selected as the most valid drivers of Advisory revenue

External signal results

Correlated signals are tracked on a monthly basis, with trend changes easily visible at both the signal and industry levels.

Industry and M&A Signal Tracking														
Group/Industry	Signal Description	Lead	2022-Apr	2022-May	2022-Jun	2022-Jul	2022-Aug	2022-Sep	2022-Oct	2022-Nov	2022-Dec	2023-Jan	2023-Feb	2023-Mar
Consumer & Retail	Consumer & Retail Overall	-	100%	63%	38%	63%	75%	50%	88%	38%	50%	63%	29%	0%
Energy & Chemicals	Energy & Chemicals Overall	-	57%	57%	57%	43%	43%	43%	71%	43%	57%	71%	71%	50%
Financial Services	Personal Consumption, Pension Funds	0	↓	↓	↓	↓	↑	↑	↑	↑	↑	↑	↑	
Financial Services	Total Savings Deposits	0	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	
Financial Services	Moody's BAA Bond Yield	4	↓	↓	↓	↑	↑	↓	↓	↑	↑	↑	↓	↓
Financial Services	U.S. Treasury Inflation Compensation	5	↑	↑	↑	↑	↑	↑	↓	↑	↑	↑	↓	↑
Financial Services	All Commercial Banks Consumer Loans	7	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Financial Services	Number of Commercial Paper Issued	11	↑	↑	↑	↑	↑	↑	↑	↑	↓	↑	↓	↓
Financial Services	Economic Policy Uncertainty Index	12	↑	↓	↑	↓	↑	↓	↓	↑	↑	↓	↑	↓
Financial Services	Commercial & Industrial Loans	12	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↓	
Financial Services	Commercial Banks Real Estate Loans	12	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	
Financial Services	Financial Services Overall	-	67%	56%	67%	67%	89%	67%	56%	89%	78%	78%	44%	40%
Healthcare	Healthcare Overall	-	90%	70%	90%	90%	80%	70%	70%	70%	80%	90%	67%	100%
Industrial Manufacturing	Industrial Manufacturing Overall	-	100%	67%	56%	44%	78%	67%	67%	67%	67%	44%	33%	33%
Life Science	Life Science Overall	-	89%	67%	78%	44%	78%	67%	67%	56%	78%	67%	78%	100%
Technology, Media, Telecom	Tech, Media, Telecom Overall	-	88%	75%	75%	88%	63%	75%	75%	88%	75%	88%	71%	100%
Government	Government Overall	-	58%	58%	58%	58%	67%	67%	58%	50%	33%	58%	55%	100%
M&A	M&A Overall		67%	33%	33%	100%	67%	67%	33%	67%	33%	100%	33%	33%
Total	Overall	-	83%	65%	67%	67%	75%	67%	69%	65%	65%	74%	57%	70%

Expand each industry to view individual signal trends

Summary % values can be used to easily see how many signals are trending in a positive or negative direction

Take-away: Signals are trending more negatively than 2021 and early 2022, but are still positive overall (and much more positive than 2020)



Some or all of the services described herein may not be permissible for KPMG audit clients and their affiliates or related entities.



kpmg.com/socialmedia

The information contained herein is of a general nature and is not intended to address the circumstances of any particular individual or entity. Although we endeavor to provide accurate and timely information, there can be no guarantee that such information is accurate as of the date it is received or that it will continue to be accurate in the future. No one should act upon such information without appropriate professional advice after a thorough examination of the particular situation.

© 2023 KPMG LLP, a Delaware limited liability partnership and a member firm of the KPMG global organization of independent member firms affiliated with KPMG International Limited, a private English company limited by guarantee. All rights reserved. USCS002518-1A

The KPMG name and logo are trademarks used under license by the independent member firms of the KPMG global organization.