

Generative AI

Tiger Analytics Capabilities

May 2024

Our Generative AI Expertise Overview

Current Gen AI Capability Snapshot



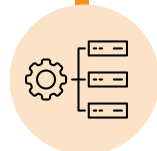
50+ Gen AI projects –
Implemented & Ongoing



150+ Data scientists and MLEs with
experience in Gen AI projects

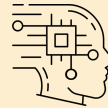


Dedicated Gen AI
R&D Lab



60+ ongoing project
discussions

Areas of Capability development



Query to
insights
generation



Custom LLM
model
development



Intelligent
search and
summarization



Conversational
agent



Content
Generation

Some of our current Gen AI client engagements



Notable Gen AI Industry Recognitions



AIM's Top Gen AI Service
Providers 2023



Minsky Award for Excellence in AI 2023
Best AI Implementation by a Service
Provider

LLMs are enabling a variety of Novel Experiences through these capabilities..

Niche Capabilities



Autonomous Agents

Specific solution Agents built to execute goal/s; LLMs are leveraged to decompose goals, execute tasks, leverage tools or APIs and gather necessary data/insights.

Advanced Capabilities



Next Gen. Chatbots

Chatbots that can answer FAQs contextually, troubleshoot issues effectively, and even make small talks

Query to Insights

NLP-based conversational layer to analyze the data and respond to a question

Information Summarization

Intelligent AI and NLP based technology to understand queries and provide concise summary

Information Search

Insights from efficient information retrieval using NLP and Indexing

Foundational Capabilities



Content Generation

Ability of foundational models to generate contextual & descriptive text from natural language prompts








Speech-to-text Generation

Ability of Generative AI model to understand and convert speech to text

Code Generation

Ability to foundational models to generate code from understanding natural language query

Accelerating implementation of various use cases across industries

	Retail & CPG	Banking & Insurance	Manufacturing	Health Care	Operations
 Text Summarization	Summarize customer reviews, Sales reports, Social media outlook	Summarize financial reports, Customer feedback, Regulatory compliance reports	Summarize production reports, Quality control data, Maintenance reports	Summarize patient records, Medical research, Health outcome data	Summarize incident reports, Performance reports, Meeting minutes
 Text Categorization	Categorize products, Customer inquiries, Customer reviews	Categorize transactions, Customer inquiries, Customer complaints	Categorize parts, Maintenance requests, Safety incidents	Categorize diseases, Patient inquiries, Medical research	Categorize tasks, Incident reports, Customer inquiries
 Generate New Content	Product descriptions, Marketing emails, Social media posts	Customer emails, Marketing materials and reports	Equipment manuals, Safety procedures, Product catalogs	Medical research articles, Patient education materials, Health newsletters	Process documentation, Training materials, Internal communications
 Language Translation	Multilingual customer service, Translate product descriptions, Customer reviews	Multilingual banking services, Translate financial reports, Customer communications	Multilingual product manuals, Translate safety procedures, Production reports	Multilingual patient communication, Translate medical records, Research articles	Multilingual operations management, Translate process documentation
 Generate Code	Automate website updates, POS system updates, Inventory management system updates	Automate banking software updates, ATM software updates, Mobile banking app updates	Automate production line software, QC and Inventory Management software updates	Automate health record system updates, Hospital mgmt. and Imaging software updates	Automate system updates, Workflow automation, IT infrastructure updates
 Sentiment Analysis	Analyze customer feedback, Social media sentiment, Product reviews	Analyze customer feedback, Social media sentiment, Customer service interactions	Analyze employee feedback, Customer feedback, Supplier feedback	Analyze patient feedback, Social media sentiment, Patient satisfaction Survey	Analyze employee feedback, Customer feedback, Supplier feedback
 Conversational Agent	Chatbots for Customer service, Sales, Feedback collection	Chatbots for Banking, Financial advice, Customer service	Chatbots for Production line troubleshooting, Maintenance scheduling, Supplier comms	Chatbots for Patient communication, Appointment scheduling, Medical advice	Chatbots for IT helpdesk, HR, Procurement

Unlocking Value | Differentiators of Tiger's Generative AI Solutions



Full Stack Gen AI Solutions

We build comprehensive solutions for our clients, covering data processing, model training, deployment, and UI/UX development, supported by a robust LLM governance framework



Diverse and Comprehensive Skillset

With 150+ global experts in Data Science, Data and ML Engineering dedicated to Gen AI projects, we offer diverse expertise to craft holistic solutions, delivering significant value to clients.



Cutting-edge Solution Accelerators

Our Gen AI solution accelerators empower clients to leverage LLMs for maximum impact, unlocking their data's full potential and revolutionizing business processes.



Dedicated Research on Gen AI Tech

Our Gen AI Center of Excellence conducts ongoing research on topics like LLM Benchmarking, Guardrail evaluation, and Gen AI tools, improving solutions for clients.

Wide Execution Spectrum

Experience implementing diverse use cases, across domains, and complexities

Partnership Ecosystem

Extensive solution development with leading cloud providers: AWS, Azure & GCP

Transparency / Open IP

White box approach with no licensing costs or proprietorship for our solutions

Our experience with Gen AI and the impact we delivered to our clients

Retail

Large Luxury Apparel and Accessories Retailer:

Product Attribution Tool using Gen AI based CV model on Vertex AI that will help extract the product attribute, product title, product hierarchy and product description across 3 product categories

- Potential to **reduce merchandising effort by more than 50%** in year 1 through automation and streamlined collaboration
- Achieved **extraction accuracy of 90%** across product attributes for all 3 categories & **90% appropriateness** of product titles

CPG

A multinational food, snack and beverage company: Developed a query engine with a realistic, talking human avatar-based user interface for the firm's R&D team that will enable users to query and search for data.

- **88% accuracy** of transcription for the speech to text model
- Provides the ability to scale, connecting to various LLMs and third-party organizational directories, to multiple languages and to serve various departments within the organization

Pharma

A multinational pharmaceutical company: Instant accurate information retrieval on Market Research, Biotech production and lab materials to enable better insights

- Built a **framework that can scale** to multiple business units, through specialized chatbots with minimal hallucinations.
- With **75%** acceptance from SMEs, the solution answers user queries on market research documents with a response time of 9 seconds.

Call Center | BPO

A global CX outsourcing leader with a network of 30K customers: Enable faster search for agents and retrieve relevant information to reduce turnaround time and improve call center efficiency

- **40% reduction** in **Average Handling Time** of the agents
- Improved agent productivity generating **75% agent satisfaction** at an **accuracy of 80%**
- Enhanced customer experience

More Gen AI Success stories

1

Open AI based search and personalized product recommendation solution for a large American retailer

2

Leveraging Azure Open AI Chatbot for uncovering integrated insights around property search for a Real Estate Company

3

Gen AI Platform using Insights Pro to understand patient journey and market performance of a drug for a Leading Pharmaceutical firm

4

Conversational Chatbot to enable information retrieval across 6 different engineering disciplines for a leading construction engineering firm

5

Integration of Custom LLM (Open AI) for generating interactive insights for a Large Health Insurance Company

6

Gen AI based Sales Agent Assistant for a Large Luxury Travel Retailer

7

Evaluating LLMs across various cloud platforms to enable information retrieval for a Leading North American Manufacturer

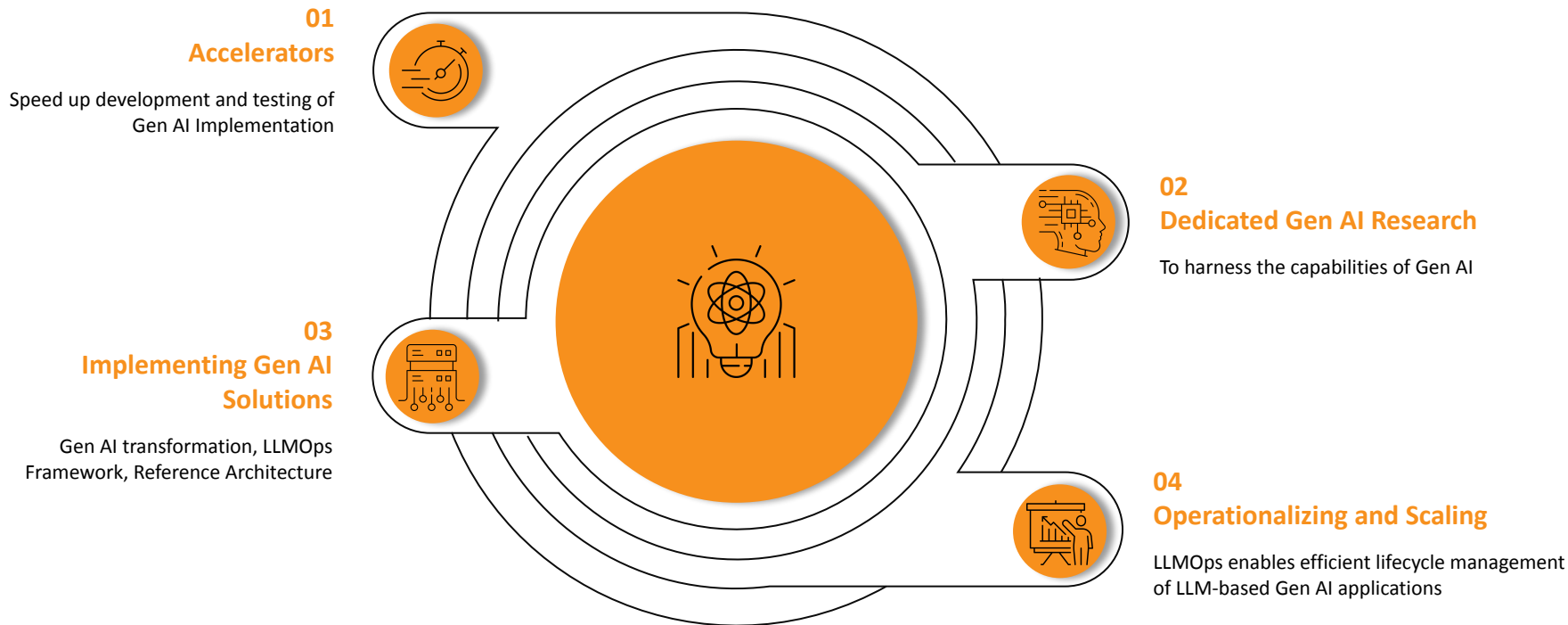
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Technology firm integrating Generative AI to track user statistics and create relevant dynamic dashboards

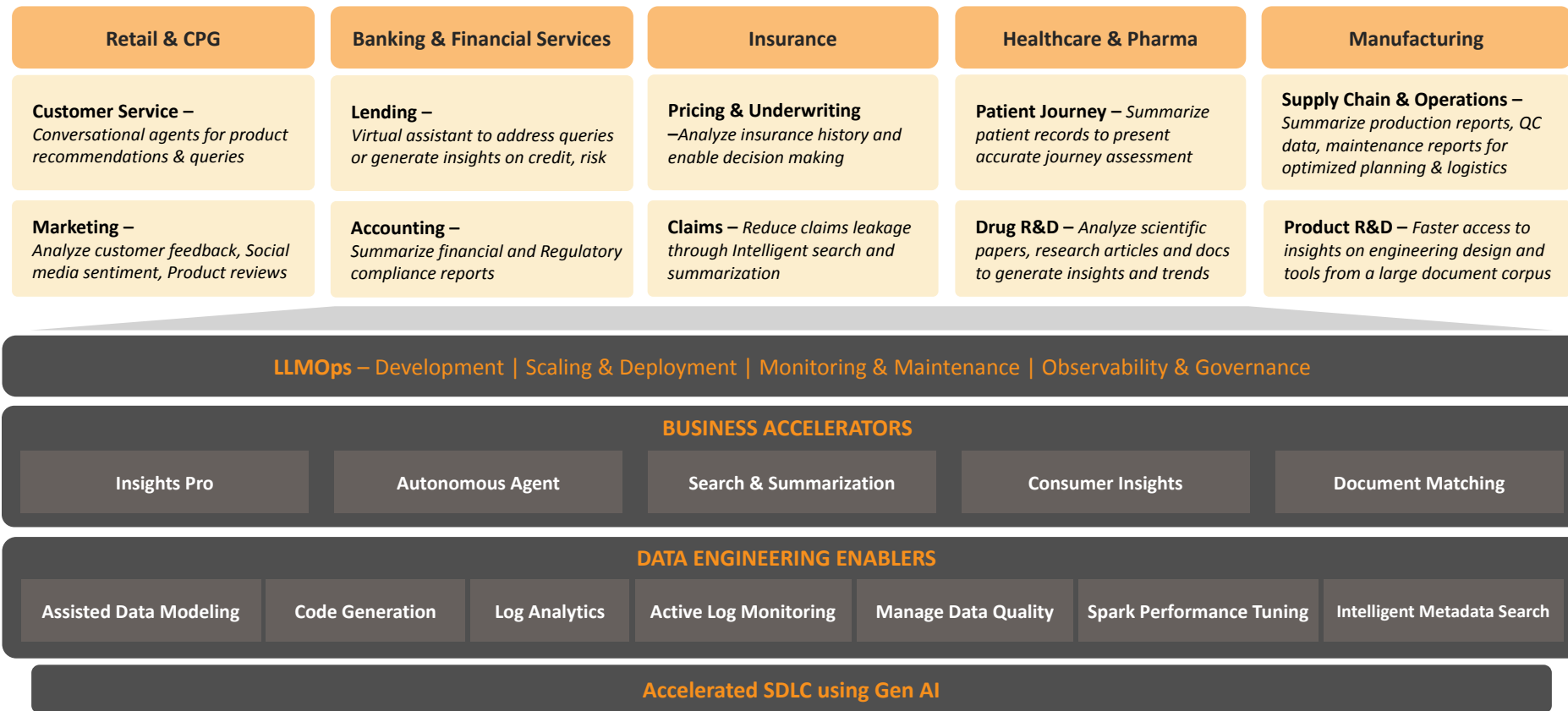
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Open AI based Knowledge Retrieval System for an Asian Government Agency

We have invested in developing core capabilities enabled by LLMs / Gen AI..



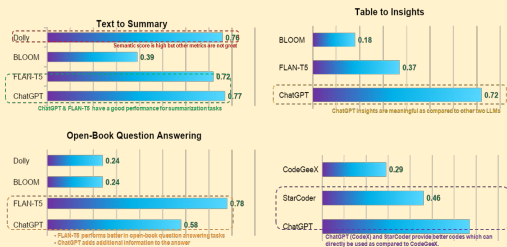
1. Resulting in the creation of several Gen AI Accelerators



*Use cases shown are representative/non-exhaustive list of problems Tiger's accelerators and enablers can address

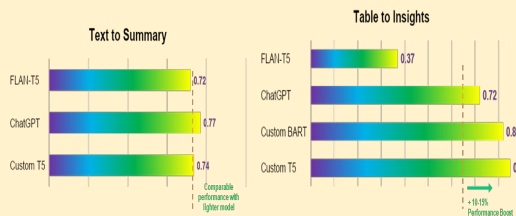
2. We continue to conduct dedicated Gen AI Research

Benchmarking LLMs



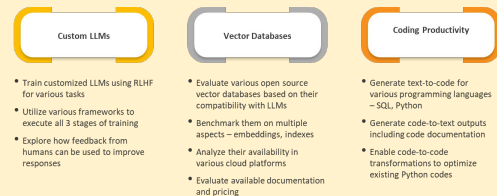
Comparing semantic similarity scores of LLMs Bloom, FLAN-T5, ChatGPT, Dolly across Text to Summary, Text to Insights and Open-Book Question Answering capabilities

LLMs vs Custom LLMs



Comparing LLMs and Custom LLMs performance on semantic similarity scores for FLAN-T5, ChatGPT, Custom T5, and Custom BART across Text to Summary, Table to Insights capabilities

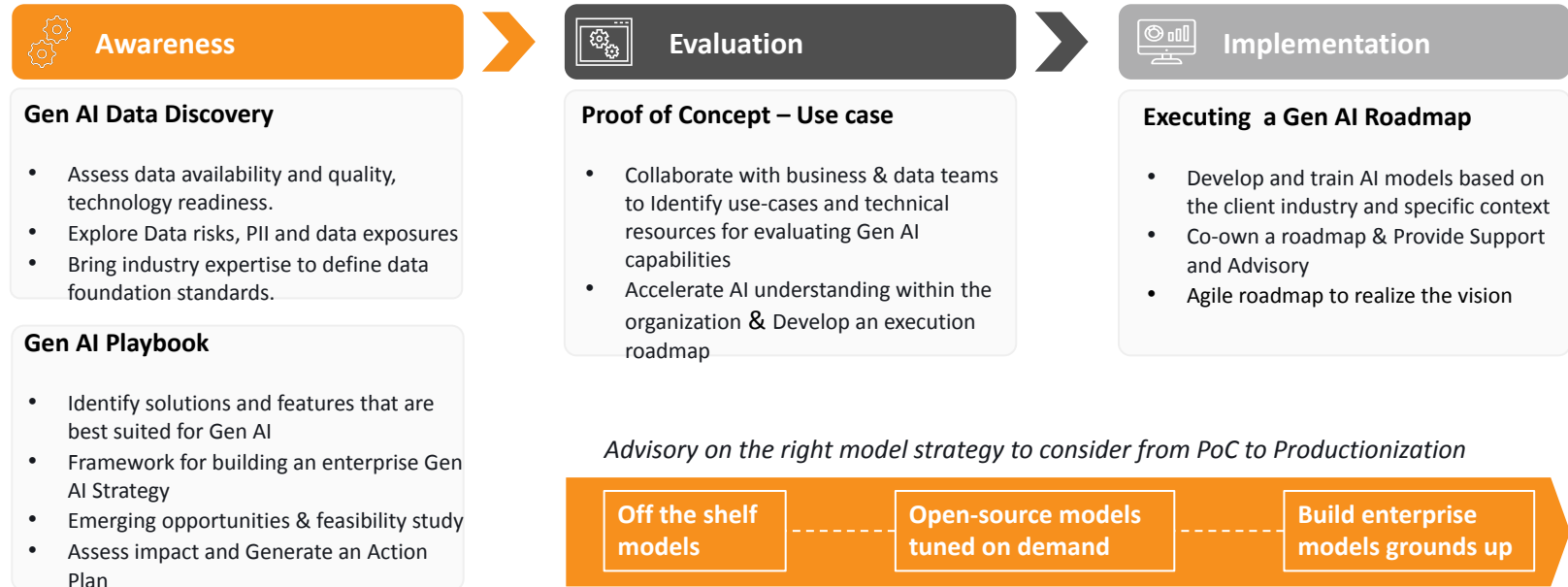
Other areas of research



Evaluating various open source vector databases based on their compatibility with LLMs, and Enabling code-to-code transformations to optimize existing Python codes.

3. Getting prepared to benefit from the Gen AI transformation journey

A Gen AI Center of Excellence approach can help lay the foundation and accelerate the journey



4. LLMOps – Operationalizing and Scaling Gen AI Solutions



Set of Tools and Best Practices - Manage the lifecycle of LLM-based Gen AI applications

Development, Deployment, Maintenance, and Governance of Applications

Advantages:

- Efficiency - faster go-to-market time
- Scalability - lower operational costs
- Secure and Agile Systems
- Strategic Decisions



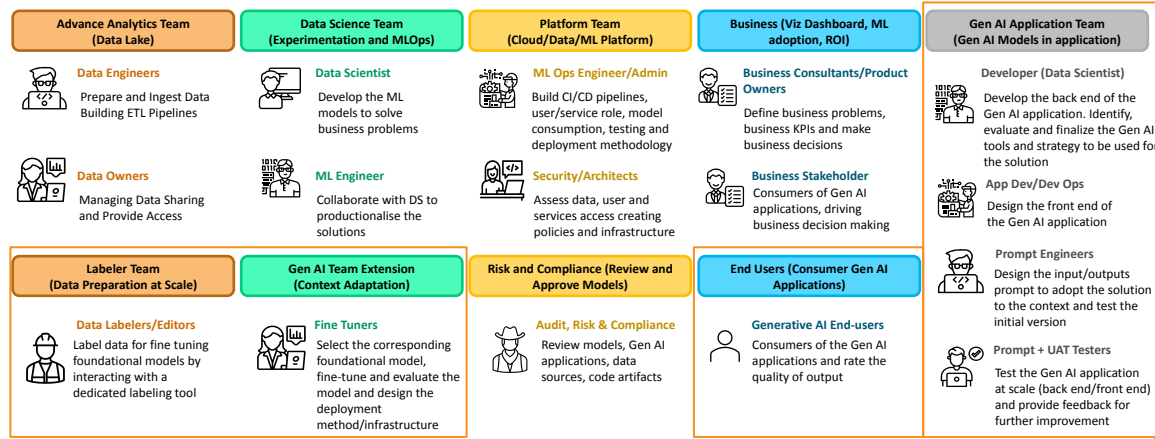
What are the additional components compared to MLOps?

- Computation Resource
- Model Size and Complexity
- Efficient Inference & Latency
- Cost Effectiveness
- Prompt Management & Security
- Bias Mitigation
- Guardrails
- Human Feedback

Challenges Addressed

- Data Security/Leakage
- Prompt Security
- Secure Model Deployment
- Scaling Efficiency
- Data Maturity
- Business Context
- Silent Hallucinations
- Observability
- Reproducibility
- Responsible AI

Key Personas & Roles in LLMOps



4. LLM Governance | Tiger's Responsible AI Framework

Guardrails

Barriers that guide the ethical and responsible use of language models, ensuring adherence to established guidelines, preventing misuse, and promoting transparency and accountability in their deployment and decision-making processes

Input Guardrails

Prompt Guardrails

Output Guardrails



Evaluation

Comprehensive assessment of LLM performance, capabilities and behavior across various metrics to provide a thorough understanding of the solution's strengths and limitations, guiding responsible deployment and usage

Quantitative Metrics

Qualitative Metrics

Business Metrics

Monitoring

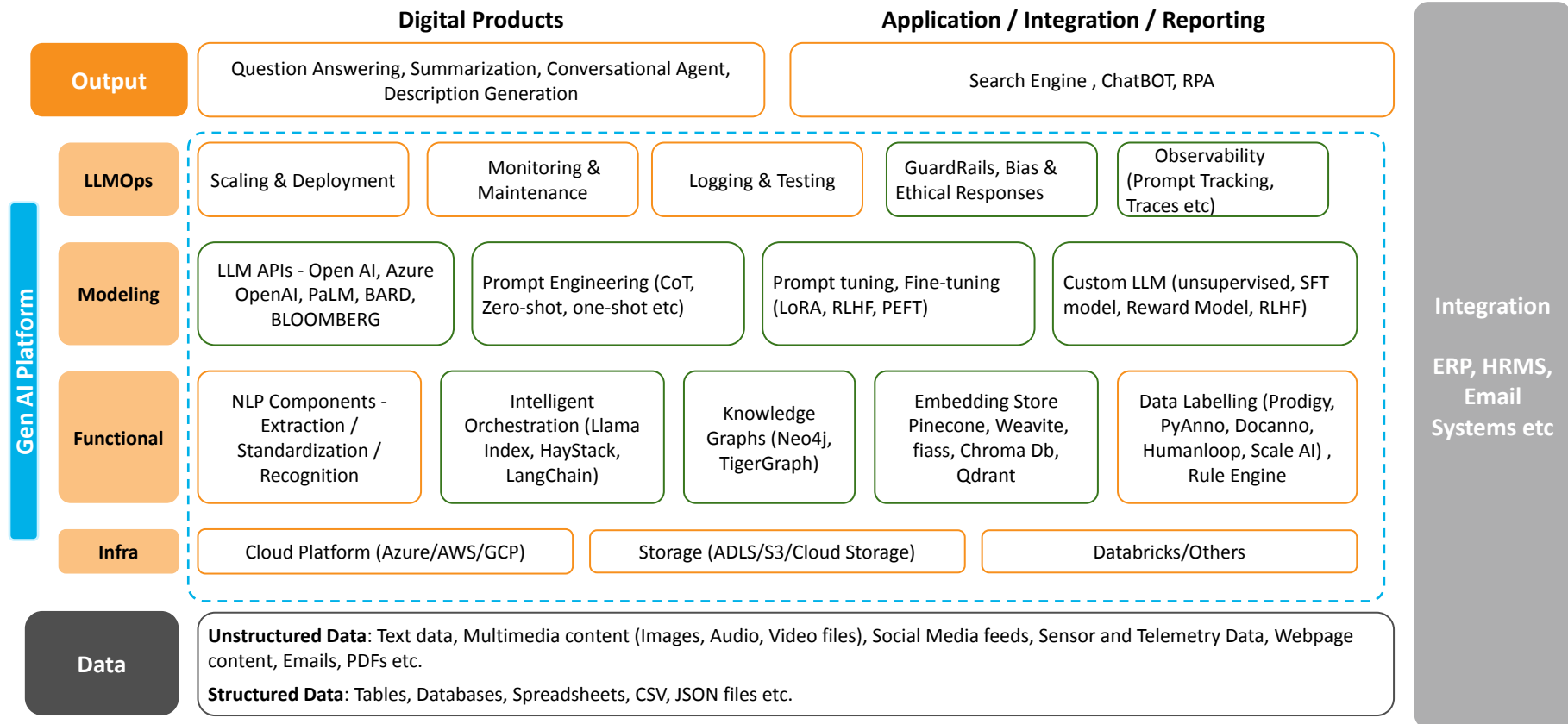
Framework to enable oversight of LLM implementations at model and application level across various metrics/parameters

Model

Application

User

Gen AI – Reference Functional Architecture



Our Engagement Models



● Gen AI Center of Excellence

POD structure embedded into client ecosystem | Combined ownership of engagement and impact delivery

● Fixed Price Delivery

Managed Program | Time bound engagements | Delivery focused

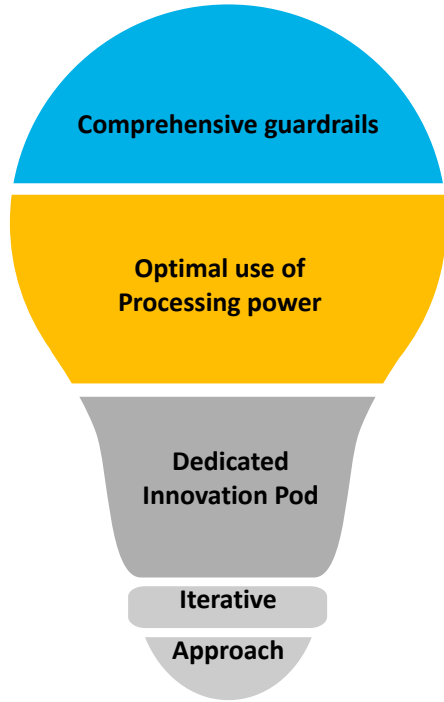
● Accelerator led Delivery

Abstracted accelerators | white-boxed solution (no license fee) | Faster implementation and time to value | Premium Pricing

● Outcome based Delivery

New implementations | Unknown risks | Outcome owned by Tiger | Premium charged based on success

In summary, a robust approach is required to lay a solid foundation for Gen AI led innovation



Goals

To ensure the outputs provided by Gen AI overcome the known issues such as Silent Hallucinations

To invoke LLMs only when necessary and prioritize use of Frequently Cached Queries and Q&A Databases

To support development team with the latest research, innovations and releases in Gen AI space

To frequently take user feedback to evaluate and improve insights

Business Impact

Robust outputs to drive confidence among users thereby increasing adoption

Significant reduction in processing cost and time

Ensuring the most up-to-date solution is deployed without any impact on release schedule

Allowing to deliver a user centric solution that is easy to use and adapt

About Us

Tiger Analytics is pioneering what AI and analytics can do to solve some of the toughest problems faced by organizations globally. We develop bespoke solutions powered by data and technology for several Fortune 500 companies. We have offices in multiple cities across the US, UK, India, and Singapore, and a substantial remote global workforce.

We have received multiple awards ranging from being recognized as a Leader by Forrester Research to being ranked among the fastest-growing tech companies by Inc. and Financial Times. We consistently feature in prestigious 'Best Analytics Firms' lists.

www.tigeranalytics.com

