

Generative AI

FEI Central PA Chapter

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Agenda

1 Generative AI overview

2 Market trends

3 Use case perspective

4 Demos

With you today



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01

Generative AI overview

So what is

Generative

AI?

Generative AI (Gen AI) is a subset of Deep Learning that involves training a model to generate new data that is similar to the training data it was given. This type of AI can be used to create art, music, text and even entire virtual worlds, among other applications.



Artificial intelligence

Artificial Intelligence

AI is the theory and development of systems embedded in an environment, that sense, make decisions, and act to achieve a specific purpose.



Machine learning

Machine Learning

A subfield of AI focused on building systems that automatically improve their performance over time and through experience.



Deep learning

Deep Learning

A type of ML technique based on artificial neural networks in which multiple layers of processing are used to extract progressively higher-level features from data.



Generative AI

Generative AI

Algorithms that use a large amount of data and large pre-trained models to generate new content:

- Written: text, code
- Visual: images, videos
- Auditory: audio

Used by
Data
Scientists

AI is now
accessible
to
developers
and end
users

The impact

Generative AI we believe will transform every business
Scale further
Work faster
Reduce costs
Enable new business models

Businesses can...



Scale with fewer resource constraints

Empower your workforce to **focus on higher value** work

Enable workers to have access to industry-leading knowledge

Enhanced customer experience: Convert the unique knowledge of your business into **new services you can provide** to customers

Improve the speed and quality of all text and coding work

Improve the **speed and quality** of decisions

Automate for efficiency and lower costs

Accelerate time to realize value

02

Use case perspectives

Business models and approaches

Companies are approaching GenAI differently or combining a mix of approaches for different parts of their business.



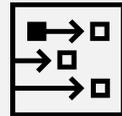
Wait and see



Light experimentation



A few use case implementations



Use case factory execution



Full business transformation

Steps on a GenAI journey – leading practices

1 Taking a trust-by-design approach via Responsible AI and establishing **security policies and secure environment** for Generative AI

2 Defining **AI strategy** to prioritize transformational use cases and enterprise readiness

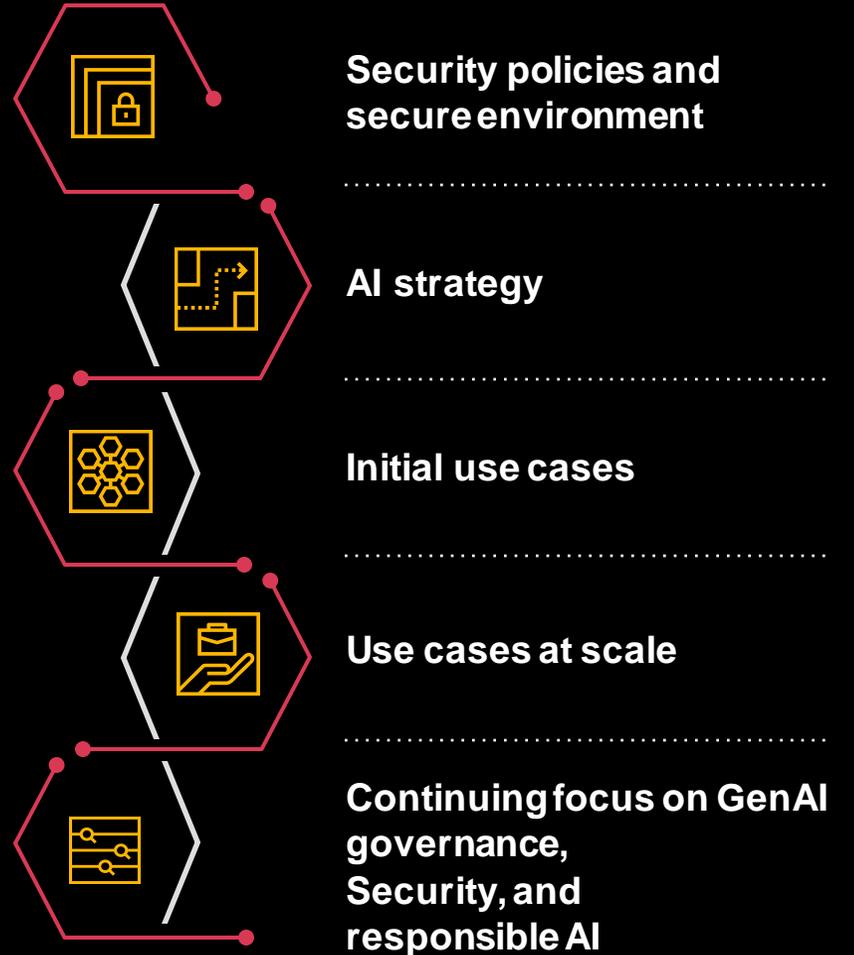
3 **Building initial use cases** by establishing a core team to accelerate speed, repeatability and control

- Most common early focus areas include a private ChatGPT application, software development lifecycle solution, and customer sales/service solutions

4 **Scaling use cases**, building into workflows and applications and adapting use case patterns across the business

- Generally includes new tooling and integration services with enterprise data and applications

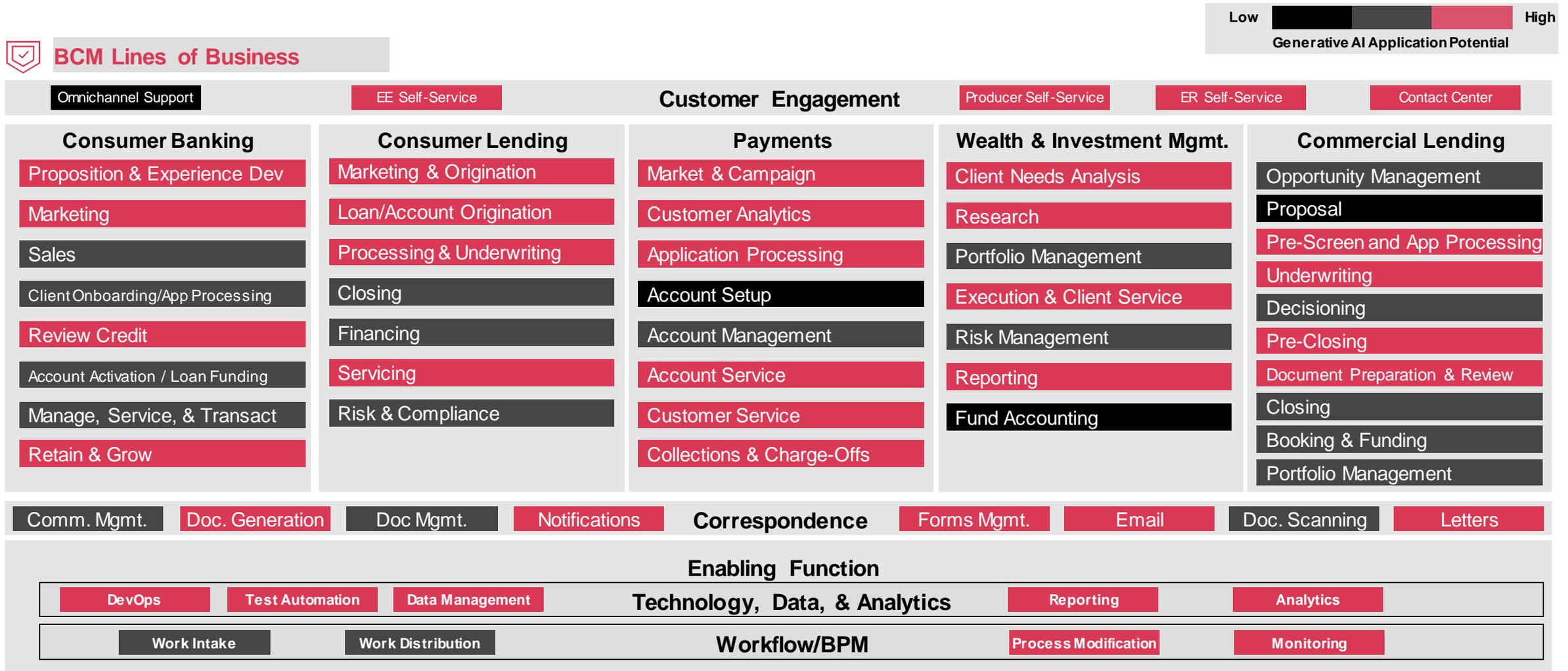
5 Continuing focus on GenAI governance, security, and Responsible AI



GenAI patterns and codebases enable a multitude of use cases and accelerate time to value

	Summarize	Q&A	Improve	Improve	Q&A	Create
	 Summarization	 Deep Retrieval	 Transformation	 Augmentation	 Q&A (Dialogue)	 Net-new Creation
Description	Producing an abbreviated form of a given document, coded program, or other body of text.	Searching for specific information within a given document or set of documents.	Creating a transformed version of data, such as image style transfer, text translation, or text personalization.	Expanding upon existing content, such as auto-complete or synthetic data creation.	Responding to a given question. Chatbots, service bots, and virtual assistants support Q&A.	Generating net-new content based on a user-provided prompt (instruction).
Examples	<ul style="list-style-type: none"> Summarize new regulations Summarize code documentation Summarize call center transcripts 	<ul style="list-style-type: none"> Query a specific document or corpus of documents by asking questions (e.g., unstructured claims documentation) 	<ul style="list-style-type: none"> Personalize marketing message to customer segment preference Translate text to a different language Format code according to company standards 	<ul style="list-style-type: none"> Impute missing values with synthetic data Auto-complete code Enhance customer data with sentiment 	<ul style="list-style-type: none"> Respond to customer queries with service options Generate human-like dialogue for in-product functionality (e.g., coverage overviews) 	<ul style="list-style-type: none"> Create images for marketing content Generate titles for risk management thought leadership Generate code from textual description

Generative AI has broad applicability across the BCM Value Chain



03

Threats and risks

Generative AI strategy involves new considerations based on the scale and capabilities it brings

Transformation & Change

- Lack of coordination across use case development
- Lack of alignment with overall organization strategy
- Lack of clear ownership
- Change management challenges implementing new operating models
- Difficulty aligning strategy with overall mission and social impact

Maintaining Trust

- Lack of compliance with evolving regulatory landscape
- Responsible AI practices are not embedded in end-to-end AI governance
- Inadequate stakeholder engagement, communication, and feedback solicitation
- Current internal controls do not mitigate novel GenAI risks or address evolving AI risks
- Inadequate cybersecurity, data governance, and privacy protocols

Build and Execution

- Lack of diversified development team
- Inadequate monitoring of third-party content and services
- Validation and explainability challenges of models, data, algorithms, systems, and outputs
- Lack of ongoing AI model performance monitoring and retraining
- Loss of reputation due to unintended bias/harmful output in models

Workforce

- Loss of institutional knowledge/opportunities
- Insufficient resources and/or skillsets to implement the AI strategy
- Inadequate training for personnel engaged in AI activities
- Additional workforce strain due to the changing nature of roles

PwC's responsible AI leading practice framework

PwC's Responsible AI leading practice framework is about building trust. Sound strategy and governance, grounded in key guiding principles and good data science can help clients deliver consistently and responsibly **from strategy to execution.**



Establish Strategy

Data & AI Ethics

Consider the moral implication of uses of data and AI and codify them into your organization's values.

Policy & Regulation

Anticipate and understand key public policy and regulatory trends to align compliance processes.



Implement Controls

Governance

Enable oversight of systems across the three lines of defense.

Compliance

Comply with regulation, organizational policies, and industry standards.

Risk Management

Expand transitional risk detection and mitigation practices to address risks and harms unique to AI.



Ensure Responsible Practices in the Factory

Interpretability & Explainability

Enable transparent model decision-making.

Sustainability

Minimize negative environmental impact.

Robustness

Enable high performing and reliable systems.

Bias & Fairness

Define and measure fairness and test systems against standards.

Security

Enhance the cybersecurity of systems.

Privacy

Develop systems that preserve data privacy.

Safety

Design and test systems to prevent physical harm.



Ensure Quality Through Core Practices

Problem Formulation

Identify the concrete problem you are solving for and whether it warrants an AI/ML solution.

Standards

Follow industry standards and leading practices.

Validation

Evaluate model performance and continue to iterate on design and development to improve metrics.

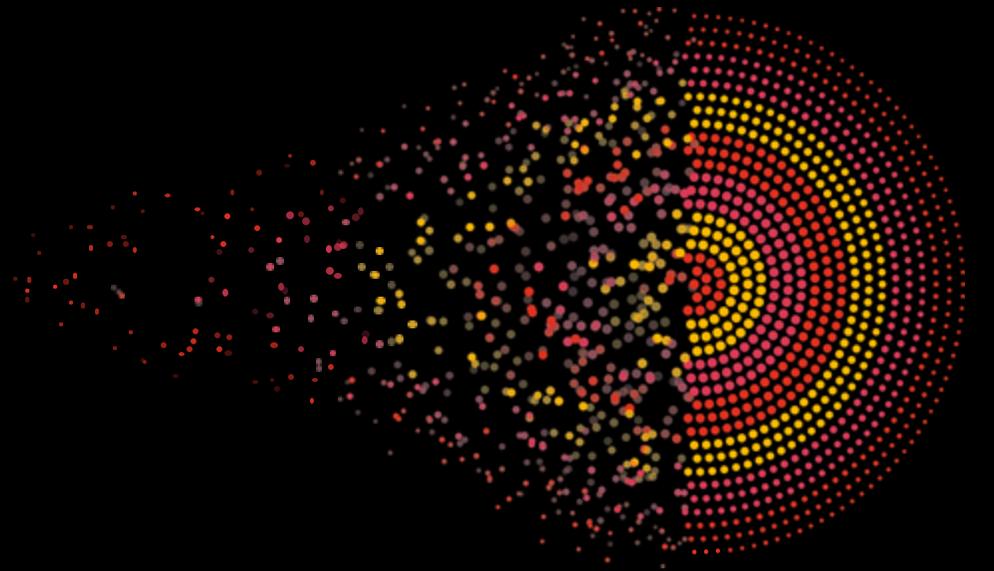
Monitoring

Implement continuous monitoring to identify performance drift and risks.

04

Demos

Thank you.



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