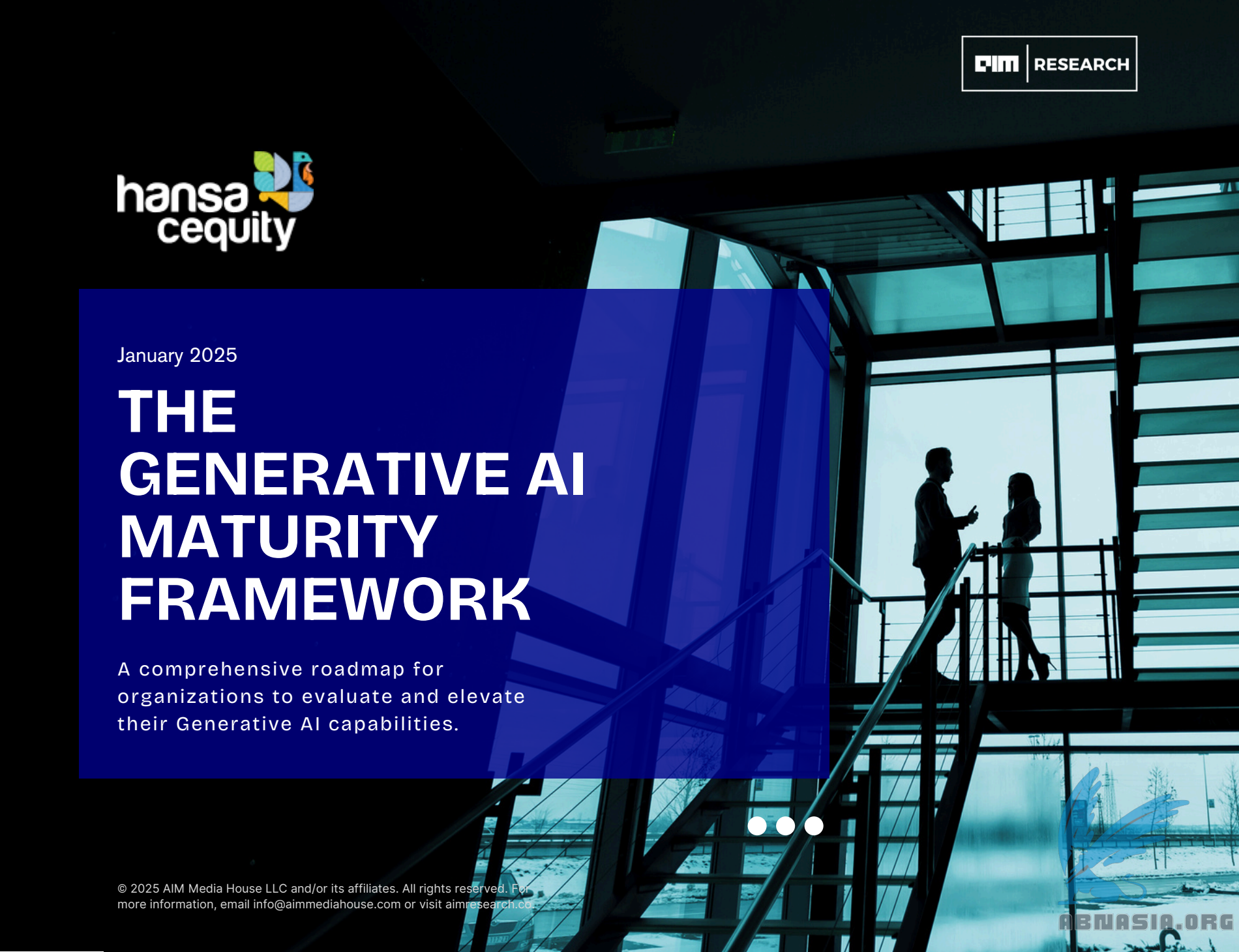
AIM RESEARCH

hansa cequity

January 2025

THE GENERATIVE AI MATURITY FRAMEWORK

A comprehensive roadmap for organizations to evaluate and elevate their Generative AI capabilities.



Organisations across the world utilize us for advice and tools to lead their digital transformation using data.

Gain insights, advice and tools to embed AI within your organization. Equip yourself better to make decisions on AI capabilities.

aimresearch.co

Neeraj Pratap Sangani
CEO, Hansa Cequity

Decoding the AI Frontier: Measuring Enterprise Readiness in the Gen AI Era

Generative AI (Gen AI) has emerged as a transformative force in the technological landscape, captivating the attention of businesses, researchers, and innovators worldwide. This groundbreaking field of artificial intelligence has its roots in decades of research and development, culminating in recent breakthroughs that have propelled it to the forefront of technological innovation. The journey of Gen AI began long before its current surge in popularity. Key milestones in its evolution include the development of transformer models, Large Language Models (LLMs), and Generative Adversarial Networks (GANs). These advancements laid the foundation for the sophisticated AI systems we see today.

A pivotal moment in the history of Gen AI came in 2017 when Google researchers published their seminal paper "Attention is All You Need" at the NeurIPS conference. This work introduced the transformer architecture, revolutionizing natural language processing and enabling the training of LLMs on massive datasets. The result was the creation of powerful language models capable of generating human-like text with unprecedented fluency and coherence.

Another significant contribution to the field came from Ian Goodfellow and his colleagues in 2014 with their pioneering work on GANs. This innovation demonstrated the potential for adversarial training to generate highly realistic data samples, opening up new possibilities in image and video generation. The evolution of Gen AI has been further accelerated by continuous improvements in machine learning algorithms, increased computational power, and the availability of vast amounts of data. These factors have collectively driven the rapid advancement of Gen AI technologies, leading to their current state of sophistication.

(Continued on the next page)

The launch of ChatGPT in November 2022 marked a watershed moment for Gen AI, catapulting it into the mainstream consciousness and sparking widespread interest across industries. Since then, Gen AI has become a top priority for executive leadership in large enterprises, with many recognizing its immense potential to transform business operations and drive innovation. Agentic AI, a rapidly evolving field of artificial intelligence, is poised to make significant strides by 2025. Unlike traditional AI systems that simply respond to prompts, agentic AI possesses the ability to autonomously perform complex tasks, make decisions, and adapt to changing environments with minimal human intervention. The enthusiasm for Gen AI is evident in the significant investments being made by companies to explore its use cases, hire specialized talent, fund necessary infrastructure, and expedite production. This surge of interest is not unfounded, as academics studying emerging technologies highlight the high potential of Gen AI in terms of productivity gains. They also emphasize the potential costs of delayed adoption, underscoring the importance of a proactive investment stance.

Approximately 18 months into this wave of Gen AI adoption, the excitement among senior executives remains palpable. Many continue to invest heavily in its potential, recognizing the transformative impact it could have on their businesses. Conversations with industry leaders suggest that around 10% of Gen AI use cases or projects are already in production and making a tangible impact.

However, it is important to note that while the potential of Gen AI is widely acknowledged, there is still limited research quantifying its impact on large businesses. Experts in the field suggest that it may be too early to provide precise measurements of its effects. Some indicative studies have attempted to categorize Gen AI use cases based on their potential value generation, but comprehensive, data-driven analyses are still in their infancy.

As with any rapidly evolving technology, the Gen AI landscape is not without its challenges. Hansa Cequity's experience indicates that as costs begin to outweigh the perceived value, there may be a slowdown in investments. This could potentially lead to nearly half of enterprises abandoning their efforts to build LLMs from scratch. This situation presents a delicate balancing act for businesses. On the one hand, they cannot afford to deprioritize Gen AI given its potential to revolutionize industries and create competitive advantages. On the other hand, they must invest judiciously, recognizing the experimental nature of many Gen AI applications and the lack of guaranteed returns on investment.

Hansa Cequity's advice for companies in this environment is to focus on creating an organizational structure that is conducive to Gen AI success. This involves developing the necessary infrastructure, fostering a culture of innovation, and building the skills and capabilities required to effectively leverage Gen AI technologies.

(Continued on the next page)

As we stand at the cusp of this AI revolution, it becomes crucial to develop frameworks for measuring and understanding the maturity of Gen AI adoption in large enterprises. Such frameworks can provide valuable insights into the readiness of organizations to harness the power of Gen AI, identify areas for improvement, and guide strategic decision-making.

Moreover, as Gen AI continues to evolve and integrate into various aspects of business operations, it is essential to address the challenges that hinder its implementation and adoption. These challenges range from technical issues like hallucinations and consistency in output to broader concerns such as copyright infringement and change management. This study represents a collaborative effort between AIM Research and Hansa Cequity to advance our understanding of Gen AI maturity within large enterprises.

By developing a comprehensive framework and evaluating market trends, we aim to provide valuable insights that will guide strategic decision-making and drive innovation in the Gen AI space. The report will also enable its readers to understand the current challenges in the adoption and scalability of Gen AI and how it ties to the maturity levels of their organisation.

In conclusion, the rise of Gen AI represents a pivotal moment in technological advancement, offering unprecedented opportunities for innovation and growth. As businesses navigate this new landscape, Hansa Cequity is very aware of its role as a custodian of client centricity and thought leadership to large enterprises in India. It also understands the need for comprehensive research, robust frameworks, and strategic guidance to navigate the potential and challenges of Gen AI and help organisations better position themselves to leverage its power and drive meaningful transformation in the years to come.

Objective

The primary objective of this report is to provide organizations with a comprehensive framework to evaluate, measure, and elevate their Generative AI (Gen AI) capabilities. Developed through extensive research and collaboration between AIM Research and Hansa Cequity, the framework aims to:

1. **Assess Maturity Levels**: Help organizations determine their current Gen AI maturity across five distinct levels and six critical components—Strategic Alignment, Technology and Infrastructure, Talent and Skills, Data Management, Process Integration, and Governance and Ethics.
2. **Identify Growth Opportunities**: Offer insights into the specific areas where organizations can improve to advance their Gen AI initiatives and align them with business goals.
3. **Understand Key Challenges**: Highlight the obstacles organizations face in adopting and scaling Gen AI, such as talent shortages, data silos, and governance gaps.
4. **Provide Industry Insights**: Deliver actionable intelligence on the state of Gen AI adoption across industries and geographies, with a focus on large enterprises in India, Singapore, and Dubai.
5. **Guide Future Readiness**: Empower decision-makers with practical recommendations and best practices to overcome challenges and build scalable, cost-efficient, and ethically governed Gen AI solutions.

This report serves as a strategic tool for enterprises to align their Gen AI initiatives with measurable business outcomes and prepare for a future driven by transformative AI capabilities.

Methodology

The methodology consists of the following steps:

1. Literature Review

- Conducted an extensive review of existing academic research, industry reports, and case studies related to Generative AI.
- Analyzed methodologies and frameworks for assessing AI maturity to identify critical gaps and areas of improvement.
- Examined the key challenges faced by enterprises in adopting Gen AI, including hallucinations, copyright issues, governance, and infrastructure limitations.

2. Framework Development

- Designed a structured maturity framework based on insights from the literature review, aligning it with industry best practices and organizational priorities.
- Defined six core components of maturity—**Strategic Alignment, Technology and Infrastructure, Talent and Skills, Data Management, Process Integration, and Governance and Ethics.**
- Established five maturity levels—**Initial, Managed, Defined, Quantitatively Managed, and Optimizing**—to represent the progression of Gen AI capabilities within organizations.

3. Focus Group Discussions

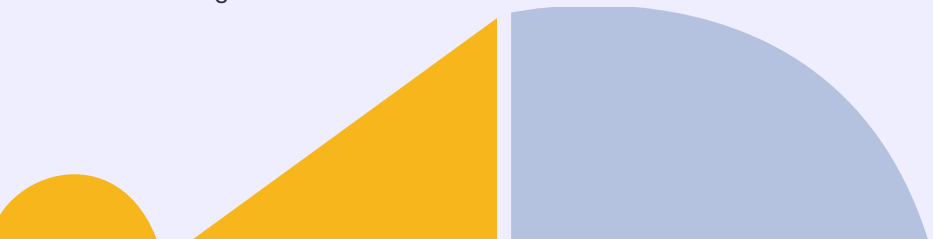
- Engaged with industry leaders and domain experts through targeted focus group discussions.
- Gathered qualitative insights on practical challenges, success factors, and evolving trends in Gen AI adoption.
- Refined the framework to enhance its relevance and applicability based on real-world feedback.

4. Survey Design and Execution

- Developed a detailed survey questionnaire informed by the findings from the literature review and focus group discussions.
- Distributed the survey to a broad sample of enterprises across key geographies (India, Singapore, and Dubai) and industries.
- Collected quantitative data on organizational readiness, challenges, and adoption trends, correlating maturity levels with business outcomes.

5. Report Development

- Synthesized findings from the literature review, focus group discussions, and survey analysis to produce actionable insights.
- Organized the report into clear sections, including the maturity framework, survey results, key challenges, and future outlook.
- Developed strategic recommendations for enterprises to advance their Gen AI maturity.



Contents

Introduction to Gen AI and its Adoption

AIM RESEARCH

Introduction to Gen AI

One of the most significant and transformative advancement in the past few years has been the increase in the adoption and use of Gen AI across organizations. Generative AI (Gen AI) has been significantly transformed over the past few years, and several organizations have increased the adoption of Gen AI. Based on integration and adoption of Gen AI, the maturity of the model can be determined.

The popularity of Gen AI has increased over the years, and companies are increasing the integration of Gen AI, and are placed at different stages in terms of maturity level. Moreover, with the rise in popularity of language learning models, the development of Gen AI generates modalities of content and increasing adoption of Gen AI in enterprise applications.

The users of Gen AI have assumed significant roles in the market, by adopting an array of methods, including adoption of advanced tools and technologies to upgrade organizations in terms of technologies. It also includes hiring of organised and specialised talent pools to develop and increase organization's proficiency in Gen AI, thereby driving innovation and strategy.

The roles and level of the maturity of companies in terms of Gen AI, can be determined, based on several factors, including key dimensions, and stages at which the company is at, in terms of the adoption of Gen AI. Companies are at several stages of adoption of Gen AI, while some companies have reached their peak in the adoption of Gen AI, while some are experimenting with new capabilities in the organization. Moreover, several companies in the nascent stage are focused on formulation of plans to enhance its stage in Gen AI.

As the companies are formulating and understanding its position in terms of maturity in Gen AI, it is essential to understand its development needs, and readiness for the adoption of Gen AI, in relation to its strengths and weaknesses.

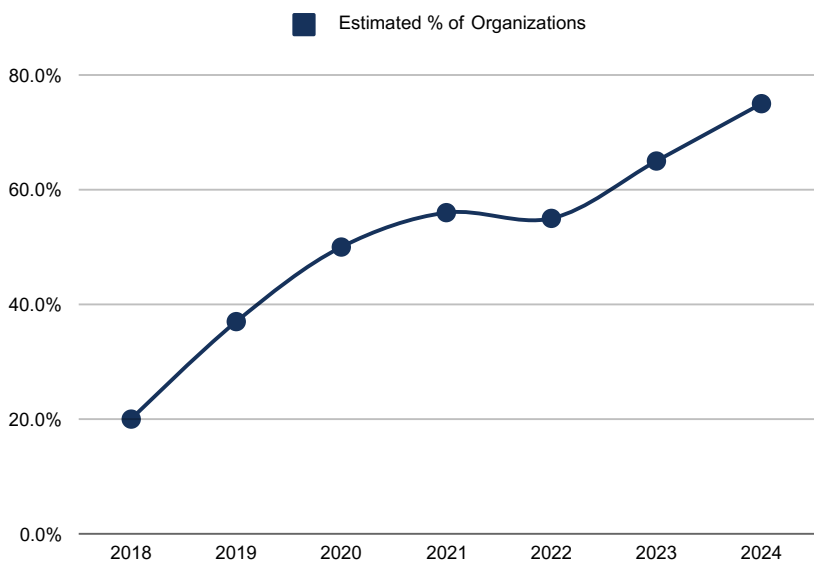
"Generative AI is not just a technology; it's a transformative force driving competitive advantage and innovation. At our organization, we've made it a cornerstone of our strategy, dedicating a significant portion of our R&D budget to its advancement. By aligning our Generative AI initiatives with measurable strategic goals, we ensure that every innovation contributes to meaningful business outcomes. Whether it is for employees, businesses or customers across various applications, our actively optimized strategy underscores our commitment to staying at the forefront of AI-driven growth and transformation!"

- Anirban Nandi
Rakuten India, Vice President, AI Products and Analytics

Increase in Adoption of Gen AI Across Enterprises

The graph below illustrates the increase in AI adoption across enterprises from 2018 to 2024. The data reveals a notable upward trend, with the percentage of enterprises adopting AI rising from 20% in 2018 to 75% in 2024. The significant growth in adoption during 2023 and 2024 reflects the widespread integration of generative AI technologies as they gained prominence, enabling organizations to enhance their workflows.

AI Adoption Across Enterprise (2018-2024)



Key Observations

1. **Enterprise-wide adoption:** Gen AI is expected to move beyond isolated initiatives, becoming integrated into core business strategies and operations.
2. **Reliance on external expertise:** While there is recognition of the potential benefits of Generative AI, significant gaps remain in strategic alignment, infrastructure readiness, talent availability, and governance frameworks, driving an increased demand for Gen AI service providers to bridge these critical deficiencies.
3. **Focus on cost optimization:** As organizations adopt Gen AI, there will be a strong emphasis on cost-effective models and infrastructure.

"**Enterprises are beginning to see the benefits of Generative AI on some of the low-hanging opportunities like summarization and translation. However, realization of benefits at a larger scale are dependent on multiple factors such as development of Gen AI tech stack for faster development, effective data governance and employee upskilling.**"

- Vishal Nagpal

Best Buy, Director of Data and AI

The Gen AI Maturity Framework

AIM RESEARCH

The Generative AI Maturity Framework

Mapping the Journey to Generative AI Mastery in Enterprises

Definition of the Gen AI Maturity Framework

The Generative AI Maturity Framework is a comprehensive, structured approach designed to evaluate an organization's ability to adopt, implement, and scale Generative AI technologies effectively. Developed by AIM Research in collaboration with Hansa Cequity, the framework provides enterprises with a roadmap to assess their current state of maturity, identify growth opportunities, and align AI initiatives with strategic business objectives. It serves as both a diagnostic and a prescriptive tool to guide enterprises toward achieving sustained success in leveraging Gen AI.

Core Components

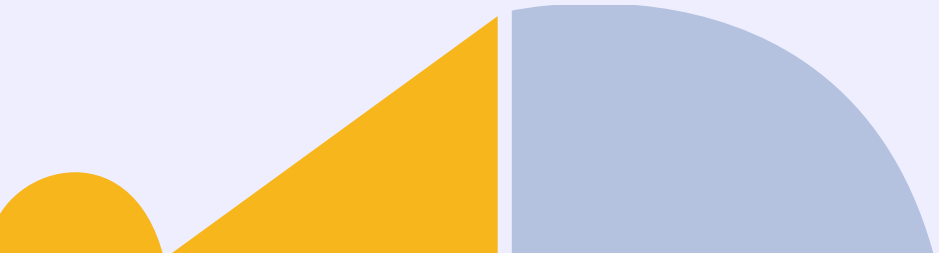
The framework is built upon six strategic drivers, each representing a critical area of focus for successful Gen AI adoption:

1. **Strategic Alignment**: The degree to which Generative AI initiatives align with organizational objectives and long-term goals.
2. **Technology and Infrastructure**: The readiness and scalability of an enterprise's technology stack to support Gen AI initiatives.
3. **Talent and Skills**: The depth and maturity of the organization's talent pool in AI/ML and its readiness to support innovation.
4. **Data Management**: The robustness of data practices, including governance, accessibility, and quality, which are foundational to AI success.
5. **Process Integration**: The extent to which Gen AI processes are embedded into the organization's workflows and business operations.
6. **Governance and Ethics**: The presence of frameworks to manage risks, ensure compliance, and address ethical concerns associated with AI.

Maturity Levels

The framework categorizes organizations into five levels of maturity, each representing a stage in the journey toward AI mastery:

1. **Initial**: Ad-hoc and unstructured practices with minimal organizational alignment or infrastructure.
2. **Managed**: Basic recognition and management of AI processes, with limited scalability and alignment.
3. **Defined**: Standardized processes that are consistently applied across the organization, enabling better predictability and performance.
4. **Quantitatively Managed**: Metrics-driven management where KPIs and performance indicators ensure predictability and control.
5. **Optimizing**: Continuous improvement and innovation with processes that are seamlessly integrated and aligned with organizational objectives.



The 5 Levels of Gen AI Maturity Framework

The Gen AI enterprise maturity framework is based on 5 levels that form the foundation of the framework. A set of factors/metrics are considered for each level of the maturity framework in an organization.

Level 1 - Initial

Ad-hoc and chaotic: Practices are informal, unstructured, and lack consistency

Level 2 - Managed

Basic and reactive: Initial recognition and basic management of processes; more structured but still reactive.

Level 3 - Defined

Standardized and documented: Processes are clearly defined, documented, and standardized across the organization.

Level 4 - Quantitatively Managed

Measured and controlled: Performance metrics and KPIs are used to measure and manage processes, ensuring control and predictability.

Level 5 - Optimizing

Continuous improvement: Processes are continuously reviewed and improved through feedback and innovative practices, aiming for optimization and excellence.

The 6 Components of Generative AI Maturity

For enterprises, the components are Strategic Drivers—key organizational priorities and objectives that guide the adoption and implementation of Gen AI initiatives.

1

Strategic Alignment

How well is Generative AI aligned with the organization's strategic goals?

2

Technology and Infrastructure

What level of technology and infrastructure is available to support Generative AI?

3

Talent and Skills

What is the maturity of the organization's talent pool in terms of AI/ML skills?

4

Data Management

How advanced are the organization's data management practices?

5

Process Integration

How well are Generative AI processes integrated into business operations?

6

Governance and Ethics

What governance and ethical practices are in place to manage Generative AI?

Gen AI Maturity Assessment Framework

The Gen AI Enterprise Maturity Framework is structured around five distinct levels that form its foundation, supported by six components that serve as Strategic Drivers. This framework provides organizations with a comprehensive evaluation of their Gen AI capabilities and readiness.

Components	Level 1: Initial	Level 2: Managed	Level 3: Defined	Level 4: Quantitatively Managed	Level 5: Optimizing
Strategic Alignment	Ad-hoc, no alignment or formal AI strategy.	Recognized, loosely linked to strategic goals.	Documented strategies, consistently aligned with goals.	Measured, monitored with KPIs for alignment.	Integrated, continuous improvement for strategic alignment.
Technology and Infrastructure	Minimal infrastructure, limited AI tools access.	Fundamental infrastructure, basic tools underutilized	Comprehensive infrastructure, standardized tools organization-wide.	Measured performance, advanced tools integrated seamlessly.	Cutting-edge infrastructure, scalable and continuously improved.
Talent and Skills	Scarce expertise, limited AI/ML training opportunities	Some skills present, initial training programs launched	Systematic skill development, comprehensive training programs.	Advanced skills measured, integrated tools and platforms.	Deep expertise, proactive recruitment and continuous development.
Data Management	Rudimentary practices, silos hinder AI initiatives	Basic practices, improving accessibility and governance.	Robust frameworks, standardized governance and integration.	Measured performance, advanced practices ensure data quality.	Optimized, real-time access with continuous innovations.
Process Integration	Isolated, experimental processes lack operational integration.	Initial frameworks enable partial operational integration	Well-defined, standardized workflows integrate Gen AI	Efficiency measured, processes monitored and optimized.	Fully embedded, continuously improved for excellence.
Governance and Ethics	No governance, ethical risks remain unmanaged	Basic structures address initial risks and ethics.	Comprehensive frameworks systematically manage AI risks.	Practices measured, audits ensure compliance and standards.	Continuous improvement ensures innovative, high governance standards.

Survey Analysis: Generative AI Maturity Survey - 2024

AIM RESEARCH

The Generative AI Maturity Survey 2024

The Generative AI Maturity Survey - 2024, conducted by AIM Research in partnership with Hansa Cequity, is a comprehensive assessment of how enterprises across industries and geographies are adopting and integrating Generative AI technologies. The survey captures key data points, trends, and insights to evaluate the readiness, challenges, and maturity of organizations in leveraging Gen AI for strategic business outcomes.

Purpose:

- Understand the current state of Gen AI adoption across large enterprises.
- Evaluate organizations' capabilities across six critical components of maturity: **Strategic Alignment, Technology and Infrastructure, Talent and Skills, Data Management, Process Integration, and Governance and Ethics**.
- Identify the challenges and gaps hindering widespread adoption and scaling of Generative AI technologies.
- Offer actionable insights and benchmarks for enterprises to improve their AI maturity.

Sample and Methodology:

- **Geographical Focus**: The survey targeted enterprises in India, Singapore, and Dubai.
- **Industry Coverage**: Participants spanned sectors including BFSI, Retail, CPG, Industrial, and others.
- **Participants**: Senior executives and decision-makers from organizations at various stages of AI adoption

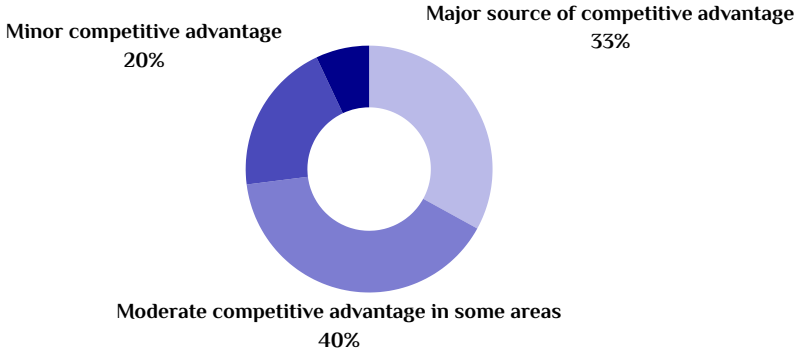
Significance:

The survey provides valuable benchmarks for enterprises to evaluate their own Gen AI maturity and identify actionable steps to enhance their AI initiatives. By understanding the survey analysis, readers gain a deeper appreciation of the current landscape, challenges, and future directions for Generative AI adoption in enterprises.

1. Strategic Alignment

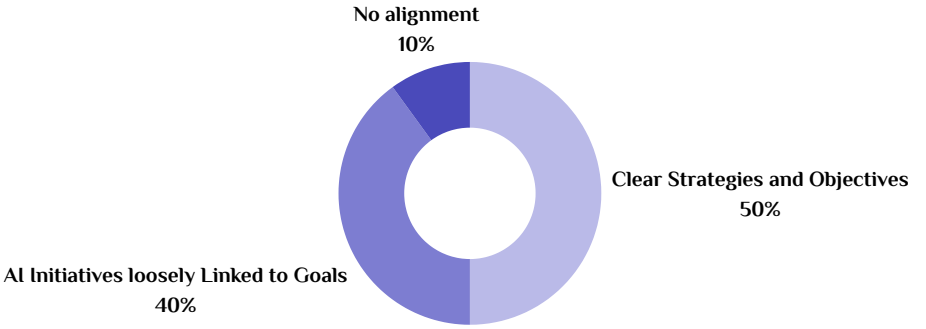
1.1 Competitive Edge from Generative AI

Insight: While most organizations recognize the potential of Generative AI as a competitive advantage, only one-third view it as a major driver.



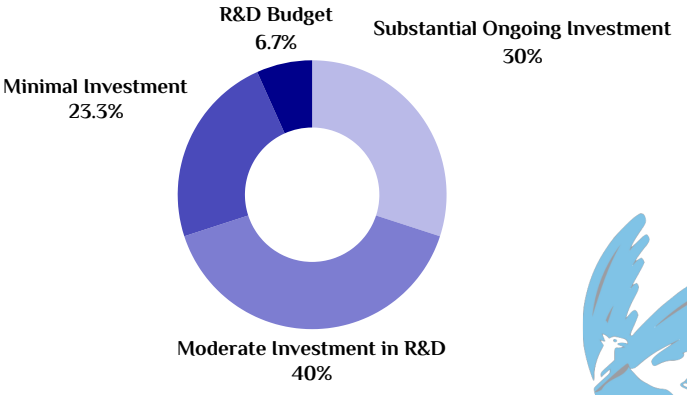
1.2 Investment in R&D for Generative AI

Insights: Investments in Generative AI R&D are moderate to substantial for most organizations, with limited allocation as a significant budget focus.



1.3 Alignment with Strategic Goals

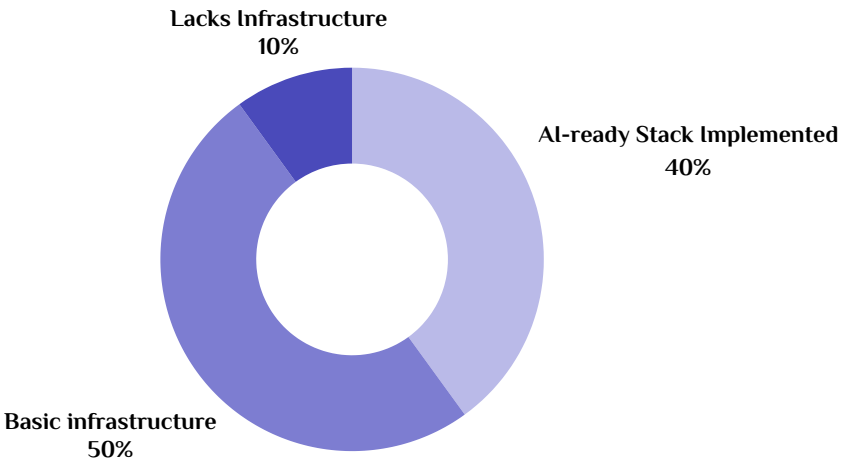
Insights: Strategic alignment is evident in half the respondents, though a significant proportion still report only loose connections.



2. Technology and Infrastructure

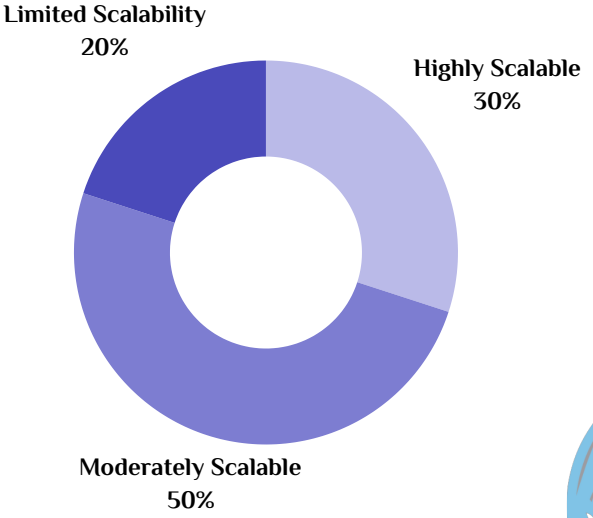
2.1 Readiness of Technology Stack

Insights: While foundational readiness is prevalent, advanced technology stacks for Generative AI are present in fewer organizations.



2.2 Scalability of Infrastructure

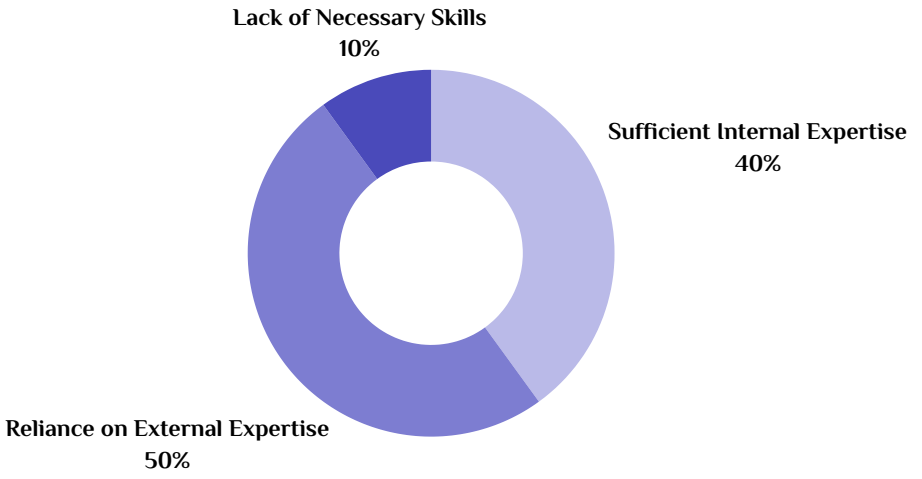
Insights: Scalability remains an area for improvement, with only a third having highly scalable infrastructure.



3. Talent and Skills

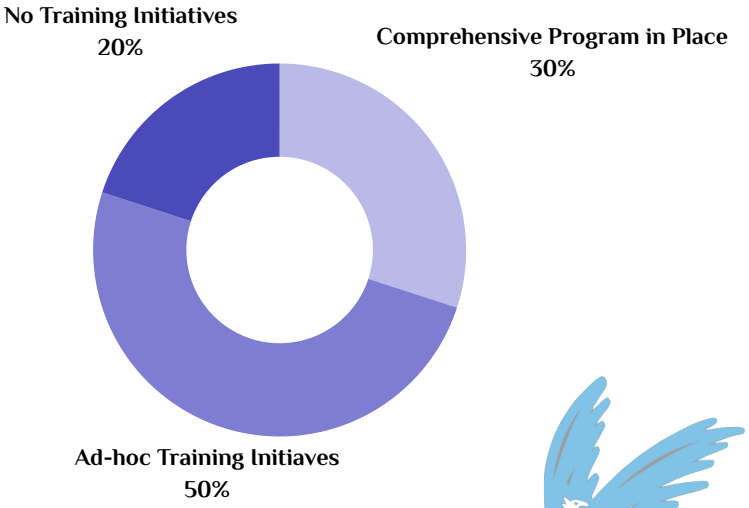
3.1 Availability of Skilled Talent

Insights: Half the organizations rely on external expertise, indicating a skill gap in Generative AI.



3.2 Training and Upskilling Efforts

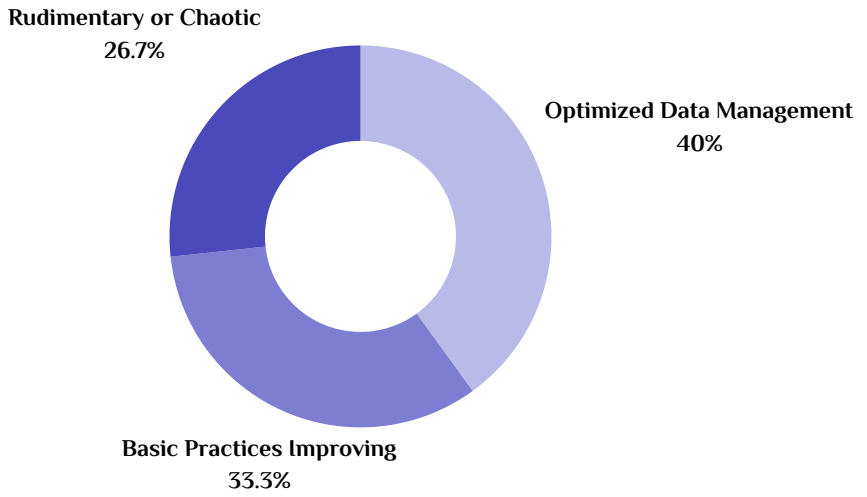
Insights: Training efforts are often unstructured, with only a third having comprehensive programs.



4. Data Management

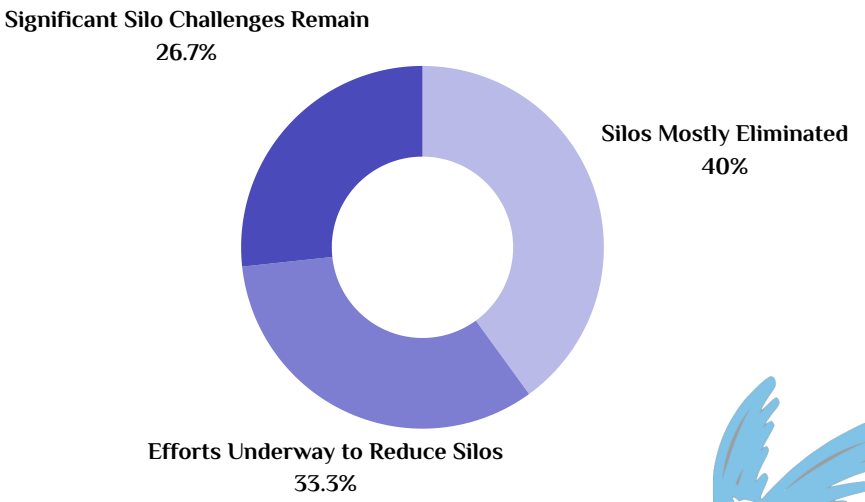
4.1 Data Practices for Generative AI

Insights: Data management practices vary widely, with a substantial proportion still in the early stages.



4.2 Challenges with Data Silos

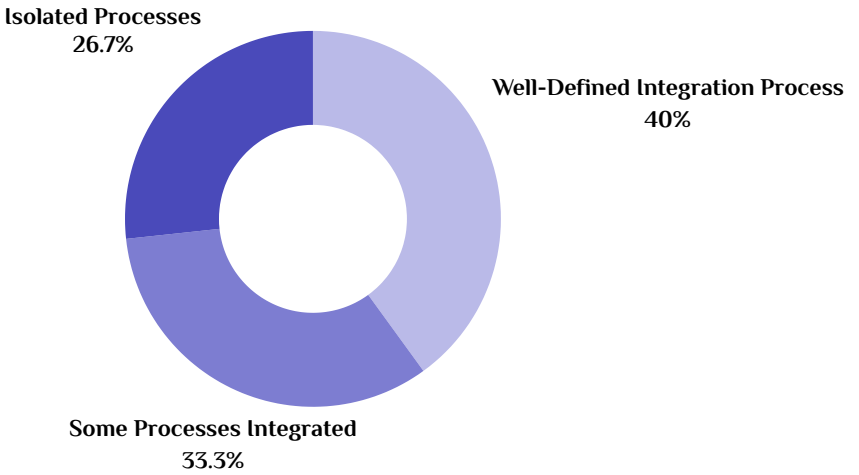
Insights: Data silos remain a challenge for many organizations, though efforts are being made to address them.



5. Process Integration

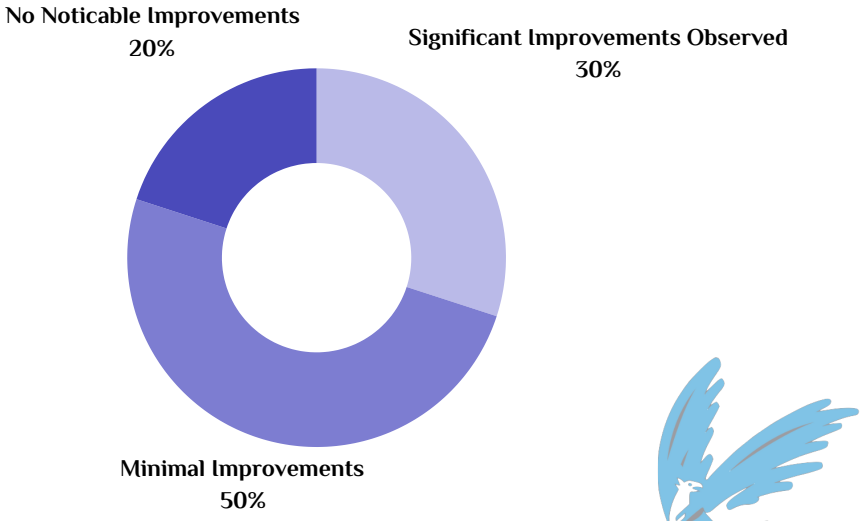
5.1 Integration of Generative AI into Business Processes

Insight: Process integration is a work in progress for many organizations, with a third still in the experimental phase.



5.2 Notable Improvements in Business Processes

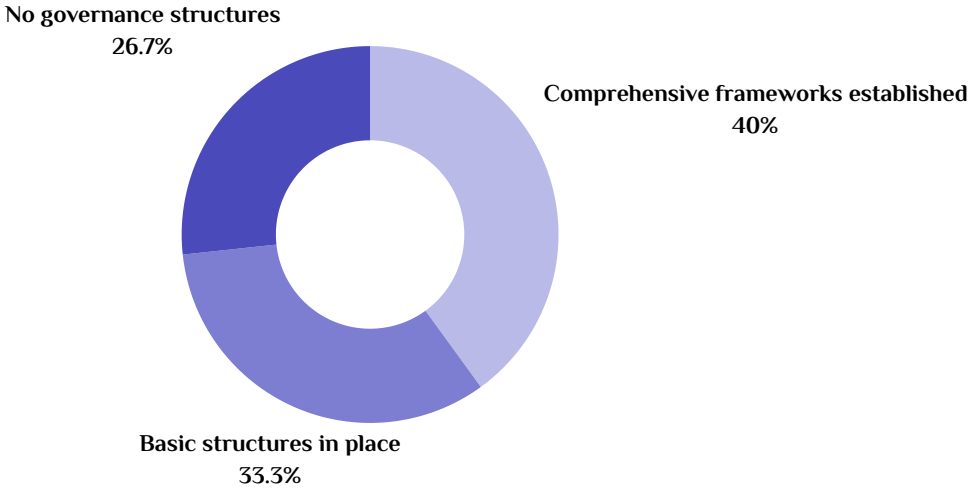
Insights: Impact on business processes remains limited, with half reporting only minimal improvements.



6. Governance and Ethics

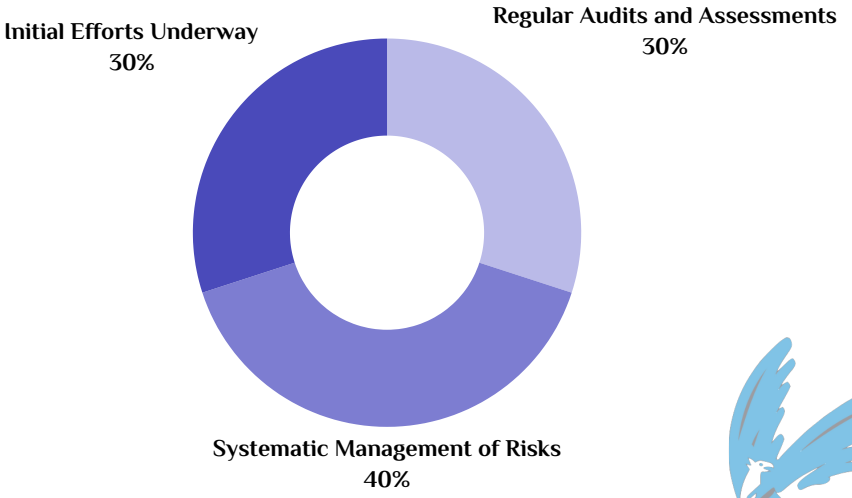
6.1 Governance Frameworks for Generative AI

Insights: Governance is still evolving, with a third lacking formal structures.

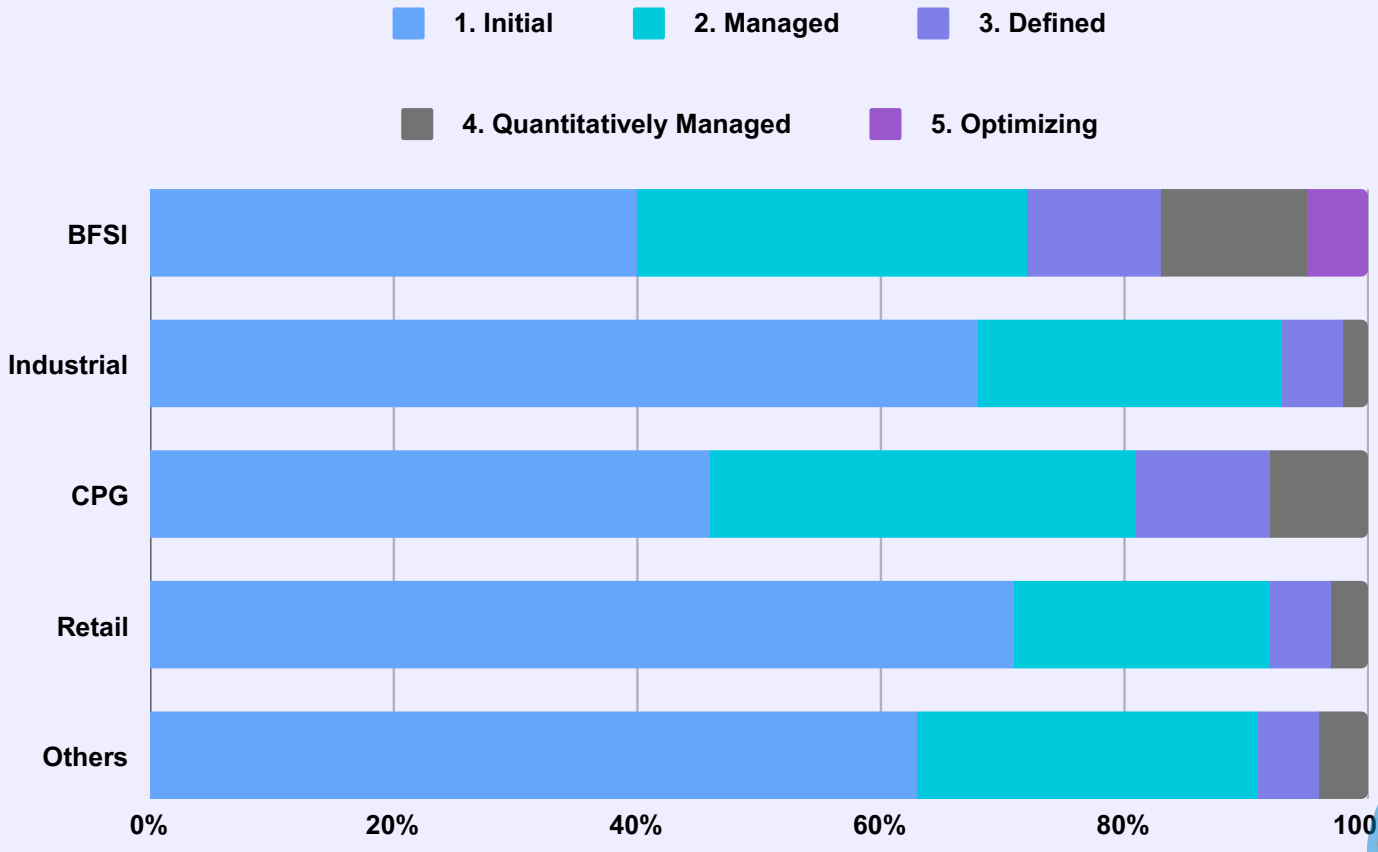


6.2 Management of AI Risks and Ethics

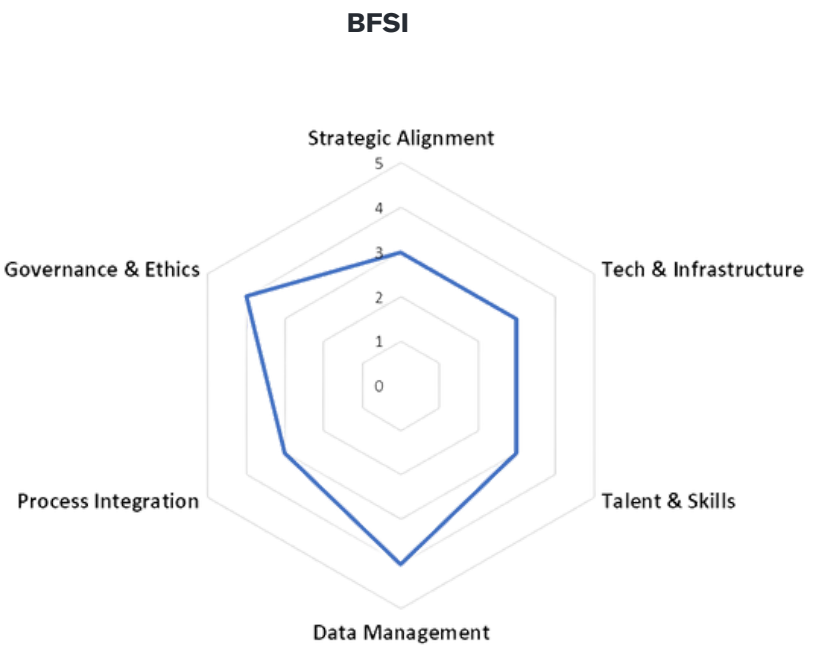
Insights: Ethical considerations are being addressed, though regular compliance mechanisms are less common.

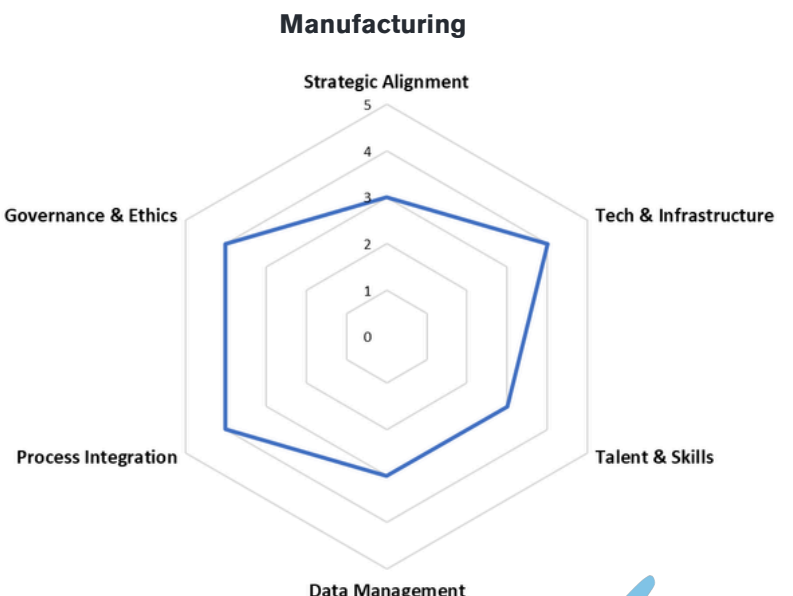


Sector-wise Distribution of Organizations Across Different Maturity Levels

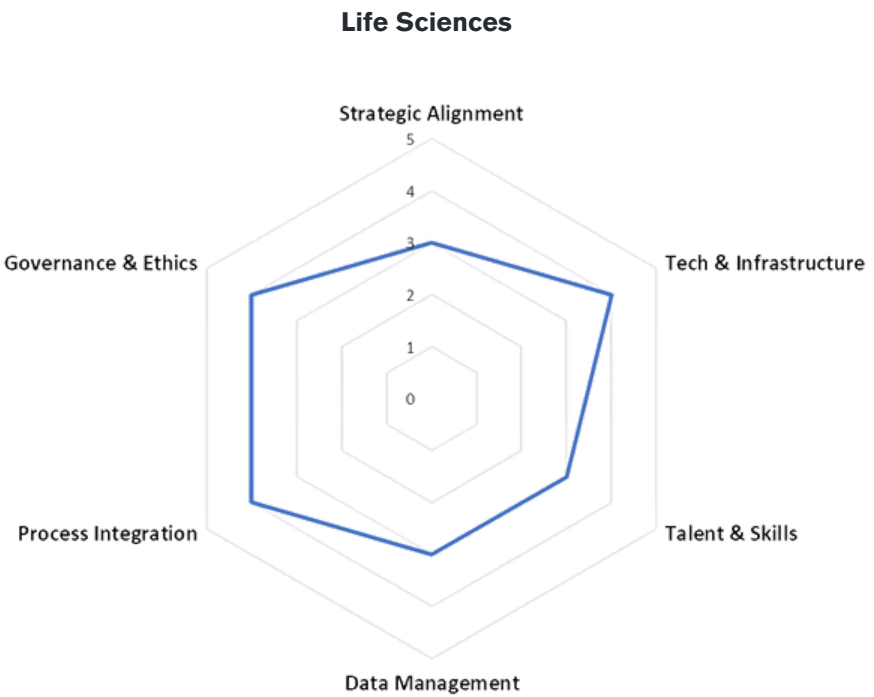


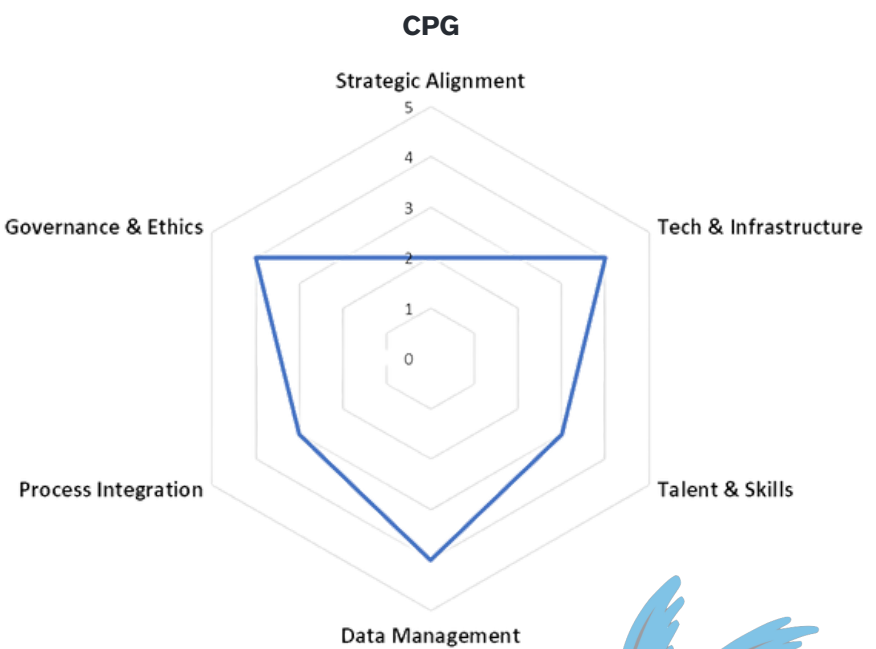
Sector-wise Scores for Gen AI Maturity Components...(1/2)





Sector-wise Scores for Gen AI Maturity Components...(2/2)





Key Takeaways from the Survey...(1/3)

Moderate Strategic Alignment

- **Current State**: While most organizations recognize the transformative potential of Generative AI, only about 50% have clearly aligned their AI initiatives with strategic goals. The remaining enterprises are either loosely aligned (40%) or entirely disconnected (10%).
- **Implication**: A lack of strong strategic alignment may limit the ability of enterprises to achieve measurable business outcomes from their Gen AI initiatives.
- **Recommendation**: Organizations need to establish well-documented strategies and KPIs that tightly integrate Gen AI with their broader business objectives.

Infrastructure Gaps:

- **Current State**: Only 30% of organizations have highly scalable infrastructure capable of supporting advanced Gen AI technologies. A significant number (50%) operate with moderately scalable systems, while 20% struggle with limited scalability.
- **Implication**: Without robust and scalable infrastructure, enterprises face difficulties in deploying Gen AI at scale and optimizing costs.
- **Recommendation**: Investing in advanced, scalable infrastructure—such as cloud-based solutions and AI-ready tech stacks—is essential to support Gen AI growth.

Key Takeaways from the Survey...(2/3)

Talent Shortage

- **Current State**: Half of the surveyed organizations rely on external expertise due to an internal skills gap, and only 30% have comprehensive training programs in place. This indicates significant reliance on ad-hoc or incomplete talent development initiatives.
- **Implication**: The scarcity of skilled talent in AI/ML limits innovation and scalability, forcing organizations to outsource critical AI functions.
- **Recommendation**: Enterprises should invest in systematic upskilling programs and proactive recruitment of AI/ML experts to build internal capabilities.

Data Management Needs Improvement

- **Current State**: Data silos and rudimentary practices continue to pose challenges, with only 40% of enterprises having optimized data management practices. Nearly 27% still operate with fragmented or chaotic data systems.
- **Implication**: Poor data governance and accessibility impede the ability of organizations to train, deploy, and scale effective Gen AI models.
- **Recommendation**: Breaking down silos and adopting advanced data governance frameworks is critical to ensure the quality and availability of data for AI initiatives.

Key Takeaways from the Survey...(3/3)

Integration Challenges

- **Current State**: Generative AI processes remain poorly integrated into core business operations for many organizations. A third of enterprises are still in the experimental phase, with minimal or isolated integration efforts.
- **Implication**: Limited integration reduces the impact of Gen AI on overall business efficiency, creating a bottleneck for achieving scalability and ROI.
- **Recommendation**: Enterprises should develop standardized workflows and frameworks to fully embed Gen AI into their operations, enabling seamless and scalable integration.

Governance and Ethics in Early Stages

- **Current State**: Governance frameworks for managing risks and ethical concerns are underdeveloped in many organizations. While 40% have comprehensive frameworks, the remaining 60% are either in the early stages or lack formal governance structures altogether.
- **Implication**: Without strong governance, organizations risk non-compliance, ethical breaches, and reputational harm
- **Recommendation**: Establishing robust governance frameworks with regular audits and assessments is crucial to address risks and ensure ethical AI usage.

Gen AI Adoption Future Outlook

AIM RESEARCH

Saving Costs for Gen AI Solutions will become the Top Priority

With the growing complexity of Gen AI deployments, businesses will prioritize cost-efficient AI models, compute resources, and infrastructure, turning to options like open-source tools, quantization of small models, and AI-as-a-Service to scale effectively without overburdening their budgets.

Incorporating cost reduction strategies for running LLMs—such as optimizing prompts, reducing the number of API calls, selecting the right LLM for desired performance, and improving server utilization and resource optimization—will become a necessity for organizations in 2025.

For example, recent developments highlight significant cost-saving measures:

- **IBM's Intelligent LLM Routing:** Reduces inferencing costs by up to 85% by directing queries to smaller, specialized models for simpler tasks, optimizing resource allocation.
- **AWS's Prompt Caching System:** Lowers costs by up to 90% by avoiding repetitive computations for similar or repeated queries, while also improving response latency.
- **Intel's RAG Foundry Framework:** Streamlines workflows and fine-tunes models, leading to consistent performance improvements across knowledge-intensive tasks, reducing overhead and enhancing efficiency.

Key Cost Reduction Methods

1. **PROMPT COMPRESSION**
   Reduce the size of input prompt data while preserving its essential meaning
2. **LLM CACHING**
   Save cost by reducing the number of API calls made to the LLM provider
3. **MODEL ROUTING/ CASCADE**
   Review performance and cost of LLMs and route each query to the best LLM in real-time
4. **OPTIMIZING SERVER UTILIZATION**
   Focusing on including batching features to optimize memory and throughput
5. **SMARTER DATA AND RETRIEVAL PROCESSES**
   Leverage frameworks like RAG Foundry to enhance LLM training and inference efficiency

Guidance for Gen AI Adoption in 2025

Success in 2025 will depend on finding the right balance between innovation and practical implementation, ensuring that technological adoption aligns with business objectives while maintaining cost efficiency and ethical considerations.

1. Cost Reduction Strategies: Understand the trade-offs and implement the cost-reduction methods

Saving costs for AI solutions will be a top priority in 2025 as organizations transition from experimentation to building scalable, production-ready Gen AI solutions. With increasing pressure to demonstrate clear ROI, businesses will focus on cost-efficient models, resource optimization, and innovative strategies to ensure AI deployments are both effective and financially sustainable.

2. Specialised Solutions: Deploy the right mix of general and domain-specific AI

Small Language Models (SLMs) are gaining focus as businesses realize the need for a portfolio approach, combining small and large models to tailor solutions to specific scenarios. This is particularly crucial for regulated industries and sectors requiring high-quality results while maintaining data privacy. The future of Gen AI adoption will depend on balancing specialized AI models with general intelligence, ensuring AI models work effectively across domains.

3. The Rise of Agentic AI and Workforce Transformation

Organizations will prioritize workforce adaptation through AI-powered automation, with a strong emphasis on human-AI collaboration. The rise of agentic AI, where autonomous AI agents make decisions and collaborate seamlessly, will redefine how complex problems are solved across industries. These agentic systems, powered by Gen AI, will enhance efficiency, adaptability, and decision-making, transforming workflows and driving greater innovation.

4. Governance and Observability: Ensure robust monitoring and oversight

As Gen AI moves from experimentation to production, robust monitoring and governance frameworks will become essential. Organizations must implement comprehensive observability solutions to ensure reliability and compliance.

Guidance for Gen AI Adoption in 2025

5. Talent Management and Data Management are crucial areas for organizations to differentiate as the maturity of Generative AI and its adoption improves

Prioritizing talent and data management is pivotal for organizations adopting generative AI in 2025, enabling workforce enhancement and leveraging refined data assets for strategic advantage.

"Talent Management and Data Management are crucial areas for organizations to differentiate as the maturity of Generative AI and its adoption improves. Talent Management will be about determining how people can best contribute in the organization given the availability of information, decision choices and automation through Generative AI, and equipping people accordingly. Talent Management Maturity will be a function of how well organizations can augment the intelligence and effectiveness of their workforce to enable differentiated customer, employee & stakeholder experiences with effective use of Generative AI. The People Capability Maturity Model (PCMM) will also need to be enhanced accordingly.

Data Management will be about creating differentiated data assets to augment / fine-tune / develop foundational models.

Organizations which get Talent & Data Management right in the context of Generative AI will position themself for sustainable success."

- Dr. Sai Krishnan Mohan
Vice President (Data & Analytics), Bajaj Auto Ltd

The Six Components of the GenAI Maturity Framework

AIM RESEARCH

1. Strategic Alignment

How well is Generative AI aligned with the organization's strategic goals?

Levels of Strategic Alignment

Levels	Key requirement
Level 1: Initial	• Generative AI efforts are ad-hoc and lack alignment with organizational strategic goals. • No formal strategy or vision for AI within the company.
Level 2: Managed	• Generative AI initiatives are recognized and loosely linked to broader strategic objectives. • Some projects are aligned with business goals, but not systematically.
Level 3: Defined	• Clear strategies and objectives for Generative AI are established and documented. • AI initiatives are consistently aligned with the organization's strategic goals.
Level 4: Quantitatively Managed	• Generative AI contributions to strategic goals are measured and monitored. • Performance metrics and KPIs are in place to assess alignment.
Level 5: Optimizing	• Generative AI is fully integrated into strategic planning processes. • Continuous feedback and improvement mechanisms ensure ongoing alignment and optimization with strategic objectives.

2. Technology and Infrastructure

What level of technology and infrastructure is available to support Generative AI?

Levels of Technology and Infrastructure

Levels	Key requirement
Level 1: Initial	• Basic or non-existent infrastructure for Generative AI. • Limited access to necessary tools and technologies.
Level 2: Managed	• Fundamental AI infrastructure is in place, but often underutilized. • Access to basic AI/ML tools and technologies is available.
Level 3: Defined	• Comprehensive infrastructure supports Generative AI development and deployment. • Standardized tools and technologies are in use across the organization.
Level 4: Quantitatively Managed	• Infrastructure performance is measured and optimized for AI workloads. • Advanced tools and platforms are integrated into the IT landscape.
Level 5: Optimizing	• Cutting-edge infrastructure supports scalable and flexible Generative AI applications. • Continuous improvements and innovations in technology and infrastructure are implemented.

3. Talent and Skills

What is the maturity of the organization's talent pool in terms of AI/ML skills?

Levels of Talent & Skills

Levels	Key requirement
Level 1: Initial	• Scarcity of AI/ML expertise within the organization. • Limited training and development opportunities for staff.
Level 2: Managed	• Some AI/ML skills are present, with a few trained individuals or small teams. • Initial efforts to develop talent through training programs.
Level 3: Defined	• AI/ML skills are systematically developed and managed. • Comprehensive training programs and career development paths are established.
Level 4: Quantitatively Managed	• Infrastructure performance is measured and optimized for AI workloads. • Advanced tools and platforms are integrated into the IT landscape.
Level 5: Optimizing	• Organization boasts a deep pool of AI/ML talent, continuously improving skills. • Proactive talent management with strategic recruitment and retention of top AI/ML experts.

4. Data Management

How advanced are the organization's data management practices?

Levels of Data Management

Levels	Key requirement
Level 1: Initial	• Data management practices are rudimentary or chaotic. • Data silos and poor data quality hinder AI initiatives
Level 2: Managed	• Basic data management practices are in place, improving data accessibility and quality. • Initial efforts to break down data silos and establish data governance.
Level 3: Defined	• Robust data management frameworks are established. • Data governance, quality controls, and integration practices are standardized.
Level 4: Quantitatively Managed	• Data management performance is measured and continuously improved. • Advanced data practices support high-quality, accessible, and integrated data.
Level 5: Optimizing	• Data management is optimized for AI, with seamless data flow and real-time access. • Continuous enhancements and innovations in data practices.

5. Process Integration

How well are Generative AI processes integrated into business operations?

Levels of Process Integration

Levels	Key requirement
Level 1: Initial	• Generative AI processes are isolated and experimental. • Lack of integration with business operations
Level 2: Managed	• Some AI processes are integrated into business operations. • Initial frameworks for process integration are developed
Level 3: Defined	• Well-defined processes ensure Generative AI is integrated into key business functions. • Standard operating procedures and workflows incorporate AI.
Level 4: Quantitatively Managed	• AI process integration is measured for efficiency and effectiveness. • Continuous monitoring and optimization of AI processes within operations
Level 5: Optimizing	• Generative AI processes are fully embedded and optimized within all business operations. • Proactive improvements and innovations drive operational excellence

6. Governance and Ethics

What governance and ethical practices are in place to manage Generative AI?

Levels of Governance & Ethics

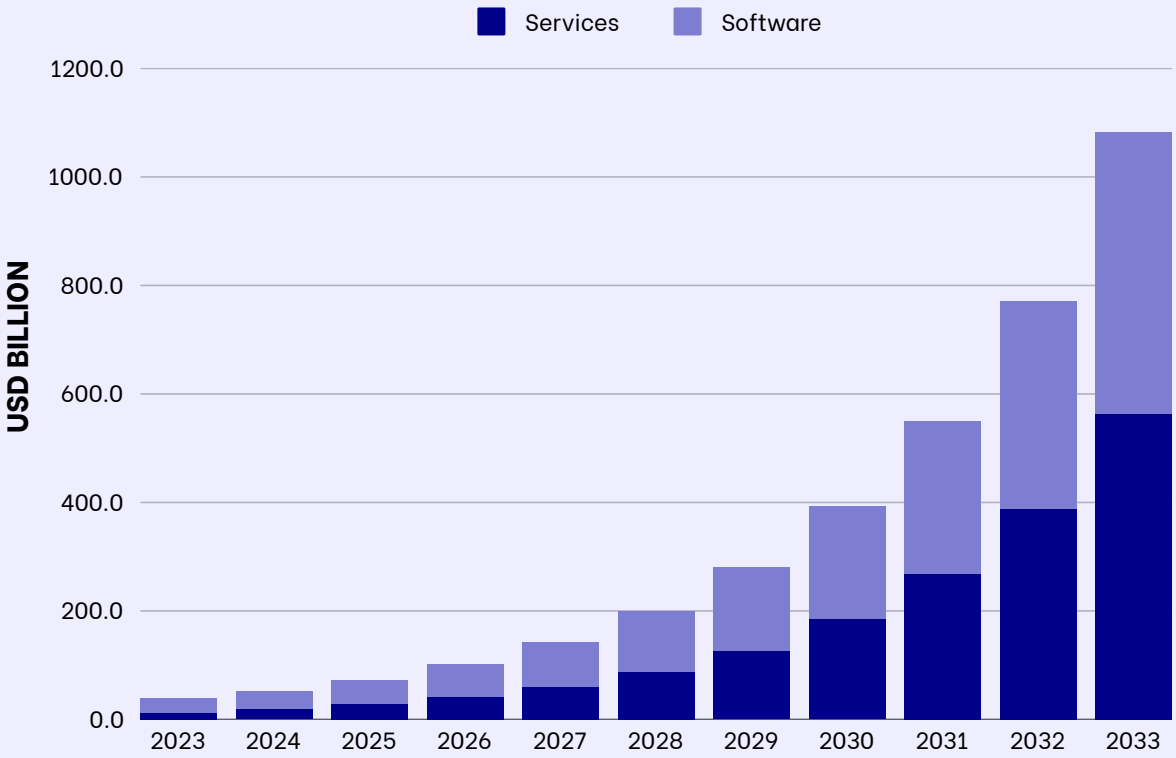
Levels	Key requirement
Level 1: Initial	• No formal governance or ethical guidelines for Generative AI. • Potential risks and ethical considerations are unmanaged
Level 2: Managed	• Basic governance structures and ethical guidelines are recognized. • Initial efforts to address AI risks and ethical concerns.
Level 3: Defined	• Comprehensive governance frameworks and ethical guidelines are established. • AI risks and ethics are systematically managed and monitored.
Level 4: Quantitatively Managed	• Governance and ethical practices are measured and managed. • Regular audits and assessments ensure compliance and ethical standards.
Level 5: Optimizing	• AI governance and ethics are continuously improved and optimized. • Best practices and innovative approaches ensure high standards of governance and ethics.

Gen AI Startup Landscape in India 2024

AIM RESEARCH

Gen AI
Global Market Size Overview

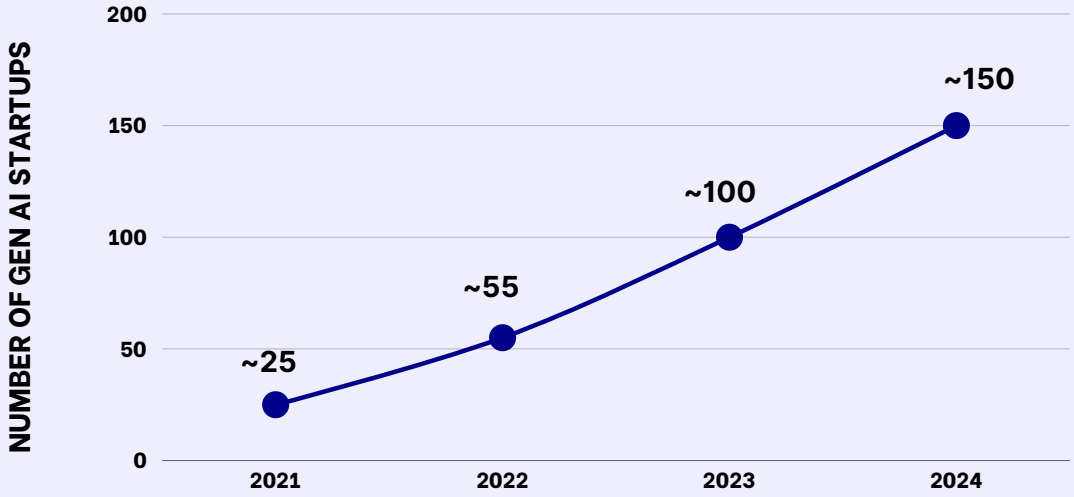
Total Market Size by Key Components (2023-2033)



- **The global Gen AI market is projected to grow from USD 39.2 billion in 2023 to USD 1082.4** billion by 2033. The market is anticipated to expand at a CAGR of 40.22% from 2024 to 2033.

- **By 2033, Gen AI services will grow to USD 564.5 billion, while software grows to USD 517.9 billion.** This indicates that services will eventually surpass software in terms of market size, despite starting from a smaller base.

Growth of India's Gen AI Startups Between 2021 and 2024



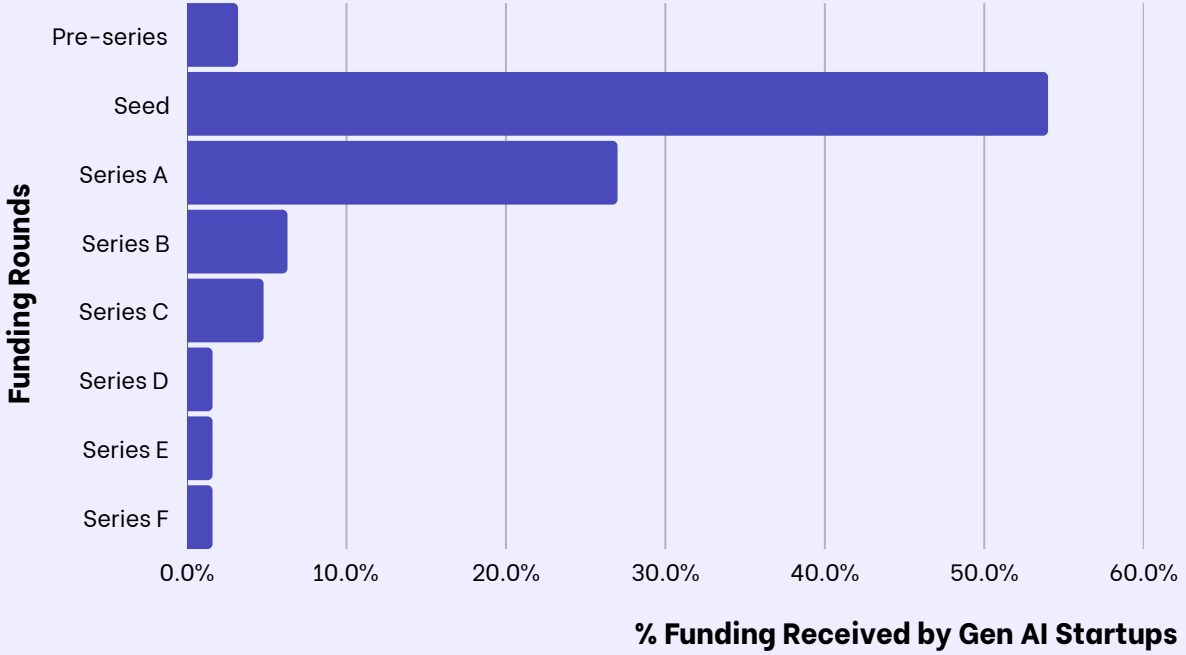
Growth of Gen AI Startups between 2021 to 2024

In 2022, the number of Gen AI startups in India doubled to over 55, highlighting a significant increase in early-stage investments and growing recognition of AI's potential. This increase drew more entrepreneurs and investors to the sector, driven by promising applications and technological advancements. The rise in startups reflects an ecosystem with increased innovation, as new ventures explored several use cases and fine-tuned the business models. This year laid the foundation for continued growth and advancement in the Gen AI sector.

In 2023, the number of Gen AI startups in India surpassed 100, highlighting a substantial increase in the number of Gen AI startups from previous years. This rise underscores the growing adoption of Gen AI and its various applications. The expansion of startups suggests a boost in confidence among investors and entrepreneurs, driven by the business models and favorable outcome.

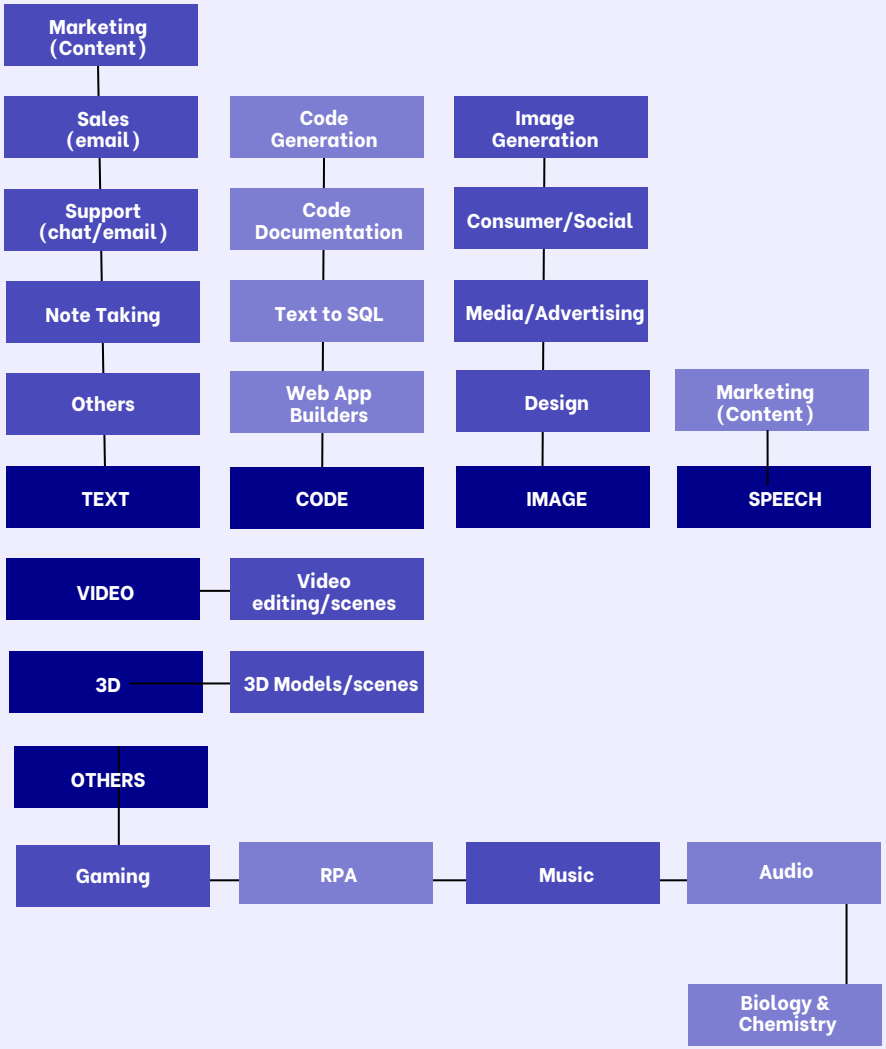
As of 2024, around 150 Gen AI startups are operating in India, highlighting a 50% increase from 2023. This growth can be attributed to factors such as significant investments from venture capitalists and the presence of a skilled workforce. Several Gen AI startups are concentrated in tech hubs including Bengaluru, Mumbai, and Delhi-NCR, leveraging the abundant talent pool and resources.

Funding received by Gen AI Startups



The funding for Gen AI startups across India has significantly increased in the past few years. This surge is driven by a growing number of startups in the sector, attracting substantial investment from venture capitalists and investors. Government initiatives such as the National Programme on Artificial Intelligence (NPAI) and Startup India are further supporting this trend by fostering innovation and entrepreneurship. As a result, there is a substantial rise in financial support for Gen AI startups, reflecting strong investor confidence and the sector's expanding potential.

The Gen AI Application Landscape



Gen AI Startups Receiving High-value Investment in India - 2024

Gen AI Startups Receiving High-Value Investment (USD Million)

Krutrim : Krutrim is chat box which is developed to understand the languages in India. Additionally, it also helps users to provide specific instructions on something, the user is searching for a specific topic. The company has raised a total funding of USD 50 million as of July 2024.

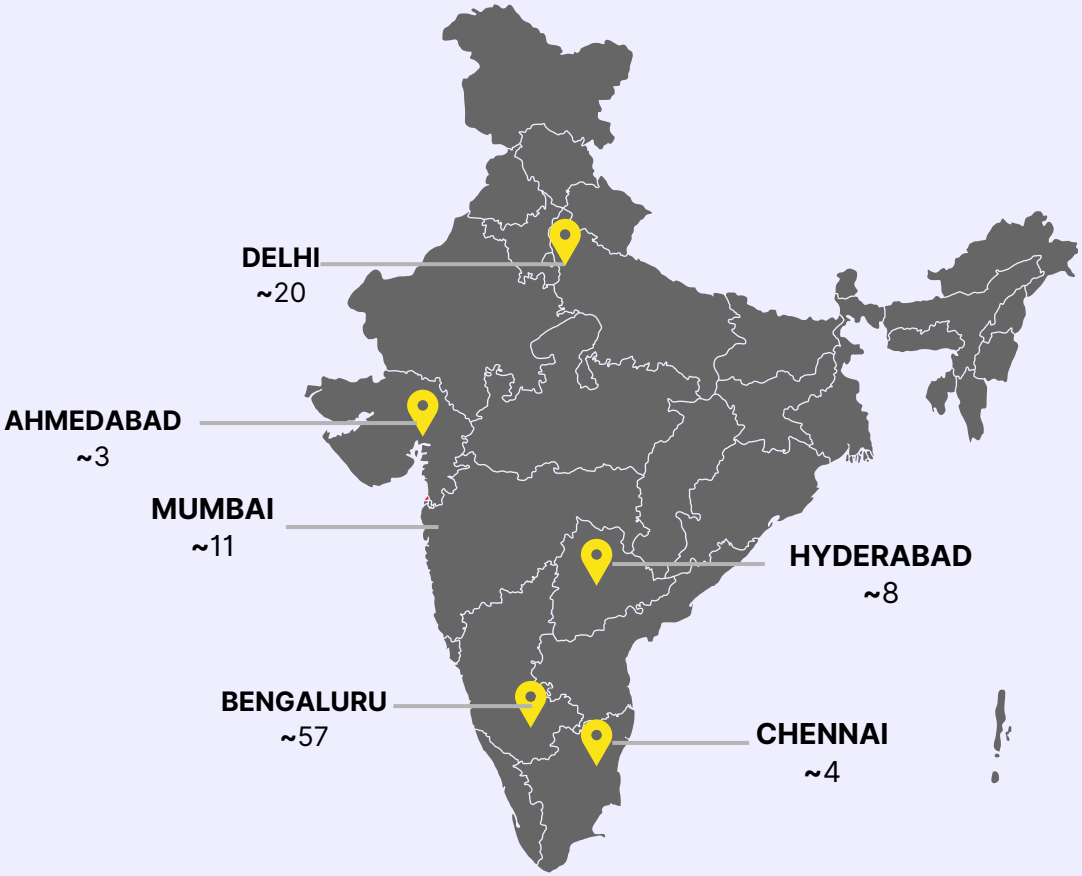
Sarvam AI: Sarvam AI is focused on development of full-stack for Gen AI. It is focused on the development of large language models (LLMS) that can understand Indian languages. The company raised around USD 41 million as of December 2023.

EMA: EMA raised USD 36 million from Accel Partners. The company offers AI-powered solutions like advanced chatbots, predictive analytics tools, and personalized marketing automation systems to enhance customer engagement and experience.

Neysa Networks: Neysa Networks is focused on providing a cloud-based platform-as-a service (PaaS) solutions for enterprises to develop and deploy Gen AI applications. Additionally, the company also offers tools for monitoring and optimising AI model performance. In 2024, the company received a funding of USD 20 million from Matrix Partners India, Nexus Venture Partners, and NTTVC.

RagaAI: RagaAI specializes in Gen AI solutions, focusing on developing advanced AI-driven products for various applications. The company has raised around USD 4 million in funding from Pi Ventures, Anorak Ventures, TenOneTen Ventures, Arka Ventures, Mana Ventures, and Exfinity Venture Partners.

Geographical Distribution of Gen AI Startups Across Major Cities in India



Geographical Distribution of Gen AI Startups Across Major Cities in India

51.4% ***Bengaluru***

Bengaluru

Bengaluru is among the top cities in India for Gen AI startups owing to number of factors, some of which include the following:

1. **Deeptech Startup Ecosystem**: Bengaluru is known as the "Silicon Valley of India" with a significant presence of established tech companies, research institutions, and a growing pool of engineering talent. This ecosystem allows founders to connect with mentors, and recruit talent to to drive the development of innovative generative AI solutions.
2. **High-end Innovation**: Major Indian institutions, such as IISc and IIIT-B, are at the forefront of AI research, developing new tools and developing workforce skills for the expanding AI sector.

18.0% ***Delhi-NCR***

Delhi-NCR

18.0% of Gen AI startups are in Delhi-NCR. It is India's second-largest Gen AI startup center. Some of the factors include:

Investor Interest: The presence of established financial institutions and a growing venture capital firms in Delhi NCR makes it attractive for Gen AI startups seeking funding. Investors are likely drawn to the potential of this rapidly growing field.

Focus on Specific Applications: Delhi NCR might have a specific concentration of Gen AI startups catering to certain industries or applications. This specialization contributes to its robust position in the Gen AI ecosystem.

Geographical Distribution of Gen AI Startups Across Major Cities in India

9.9% ***Mumbai***

Mumbai

Mumbai, with 9.9% of India's Gen AI startups, stands as the third-largest hub in the country. Some of the factors leading to the rise in the presence of Gen AI startups include:

Startup Ecosystem: Mumbai's startup landscape is backed by substantial funding and mentorship, provides an environment for Gen AI startups to flourish, develop new solutions, and gain early adoption in the local business sector.

Focus on FinTech: Mumbai's status as India's financial center extends beyond traditional finance, emerging as a hub for Gen AI startups that cater to this unique ecosystem. There is a notable concentration of startups developing AI solutions specifically for the finance industry (FinTech) and marketing automation. These startups utilize generative models to perform tasks such as creating personalized marketing content and more effectively assessing financial risks.

Hyderabad, Chennai and Ahmedabad

Hyderabad continues to be an emerging hub for the deep tech ecosystem owing to its infrastructure, hosting 7.2% of Gen AI startups. Furthermore, the city's thriving economy contributes to an environment for technological innovation.

Chennai, with 3.6% of India's Gen AI startups, is becoming one of the key hubs in the AI sector. Its emphasis on SaaS leadership, dynamic innovation ecosystem, and strong R&D support, combined with a focus on healthcare and fintech, is driving its rise as a key center for AI and Gen AI advancements.

2.7% of Gen AI startups are based in Ahmedabad and it is emerging as a hub for innovation. Leading universities including IIM Ahmedabad support the city's growing number of tech ventures, and encourage a flourishing entrepreneurial culture.

AIM RESEARCH

AIM Americas
2955, 1603 Capitol Avenue, Suite 413A, Cheyenne, WY, Laramie, US, 82001

AIM India
1st Floor, Sakti Statesman, Marathahalli – Sarjapur Outer Ring Rd, Green Glen Layout, Bellandur, Bengaluru – 560103

www.aimresearch.co

info@aimresearch.co