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LeadLeo

Best Practices of Generative AI Across Industries in China by 2024

AIGC, Content Innovation, Cross-Border Integration, Knowledge Graph, Data Governance

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Leadleo Research Institute
Frost & Sullivan

Description

Sullivan, in conjunction with Leadleo Research Institute, would like to release China Generative AI Industry Best Application Practices 2024, a series of reports on Generative AI in China. This report aims to sort out the development trend of generative AI technology, clarify the demand for generative AI in various industries, and screen out the best application practices of generative AI in various industries based on complete selection indexes and processes.

Sullivan, in collaboration with Leadleo, has conducted research on Generative AI vendors and the downstream enterprise customers they work with. The current development status of Generative AI in various industries provided in this market report also reflects the overall development trend of Generative AI. The report's selection of best practices is based on the cases submitted by vendors to Sullivan, and applies only to this year's development cycle of generative AI cases in China.

All figures, tables, and data in the text of this report are derived from surveys conducted by Frost & Sullivan Consulting (China) and Leadleo Research Institute, and the data are rounded to one decimal place.

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Introductory

- ❑ 0.1 Definitions and Scope
- ❑ 0.2 Background and Purpose of The Report
- ❑ 0.3 Best Practices Selection Process and Methodology

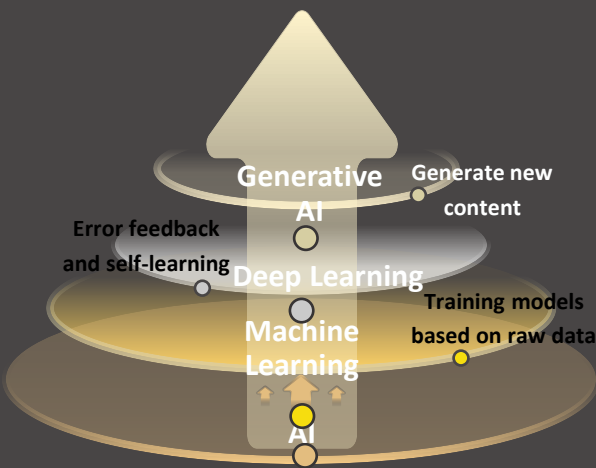
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- Through algorithms that simulate the human brain and decision-making process, generative AI can respond to user needs with newly generated content, releasing "cognitive surplus" opportunities for users and significantly reducing the cost and threshold of content creation. The operation of generative AI is a continuous iterative process, through continuous model readjustment and evaluation, so as to generate higher quality and more accurate content.
 - As generative AI formally moves into a rapid development phase, generative AI tools empowering various industries are blossoming, assisting enterprises to enhance strategic benefits such as reducing costs and increasing efficiency, accelerating innovation, and so on. This report integrates leading cases from various industry scenarios to provide enterprises and the market with a showcase of technical capabilities, inspiration for innovative thinking, and popularization of generative AI-enabling approaches.
 - The best case selection process is vendor registration and participation, case input, case assignment, and final case delivery and release. The case selection will combine industry cross big data with Sullivan's innovative all-dimensional selection metrics to objectively and fairly present the best cases in the generative AI industry.

0.1 Definitions and Scope

Key findings

Through algorithms that simulate the human brain and decision-making process, generative AI can respond to user needs with newly generated content, releasing “cognitive surplus” opportunities for users and significantly reducing the cost and threshold of content creation. The operation of generative AI is a continuous iterative process through continuous model readjustment and evaluation, so as to generate higher quality and more accurate content.

Generative AI Industry Definition



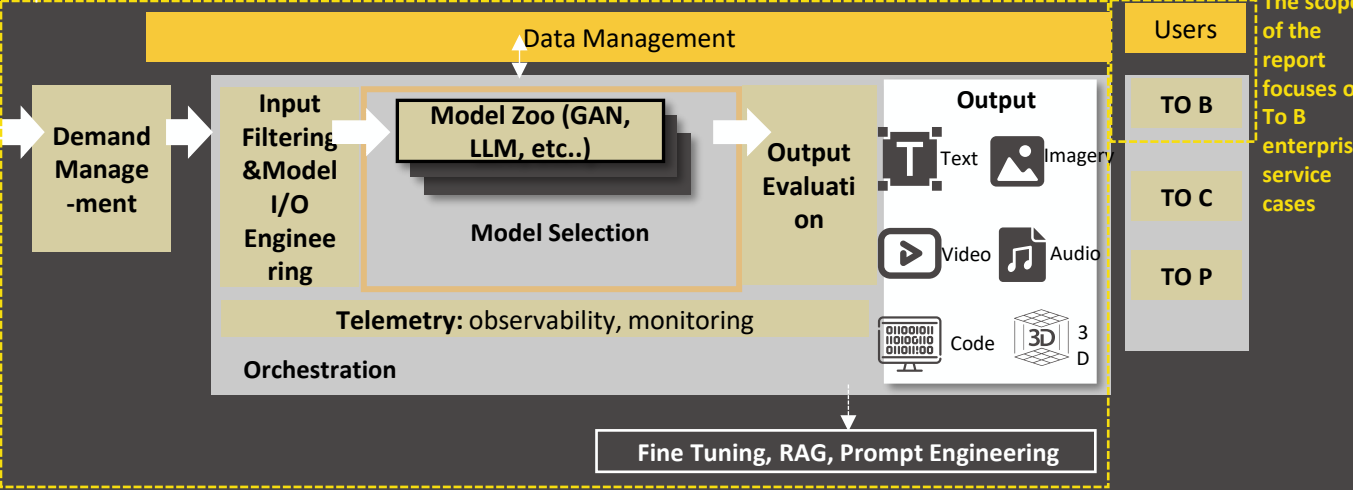
Generative AI starts with sophisticated deep learning models that can be used to create new ideas and content in response to user prompts and requests.

Generative AI analyzes and encodes structures and patterns in large amounts of existing data to process a user's natural language request and generate new content in response. Generative AI typically requires larger datasets for training to improve its ability to generate diverse content. However, specific data requirements may vary depending on the task and model architecture. These AI systems can be used to create new and meaningful content, including images, video, code, audio, and more.

Generative AI Operational Process and Scoping

Generative AI operates as a continuous iterative process that requires constant model tuning and evaluation of the generated results to arrive at better quality generated results.

The operation process of generative AI contains four main phases: model training, model selection, content generation evaluation and model retuning, of which model retuning is an important step for generative AI model updating, accuracy and relevance improvement.



Source: Sullivan

0.2 Background and Purpose

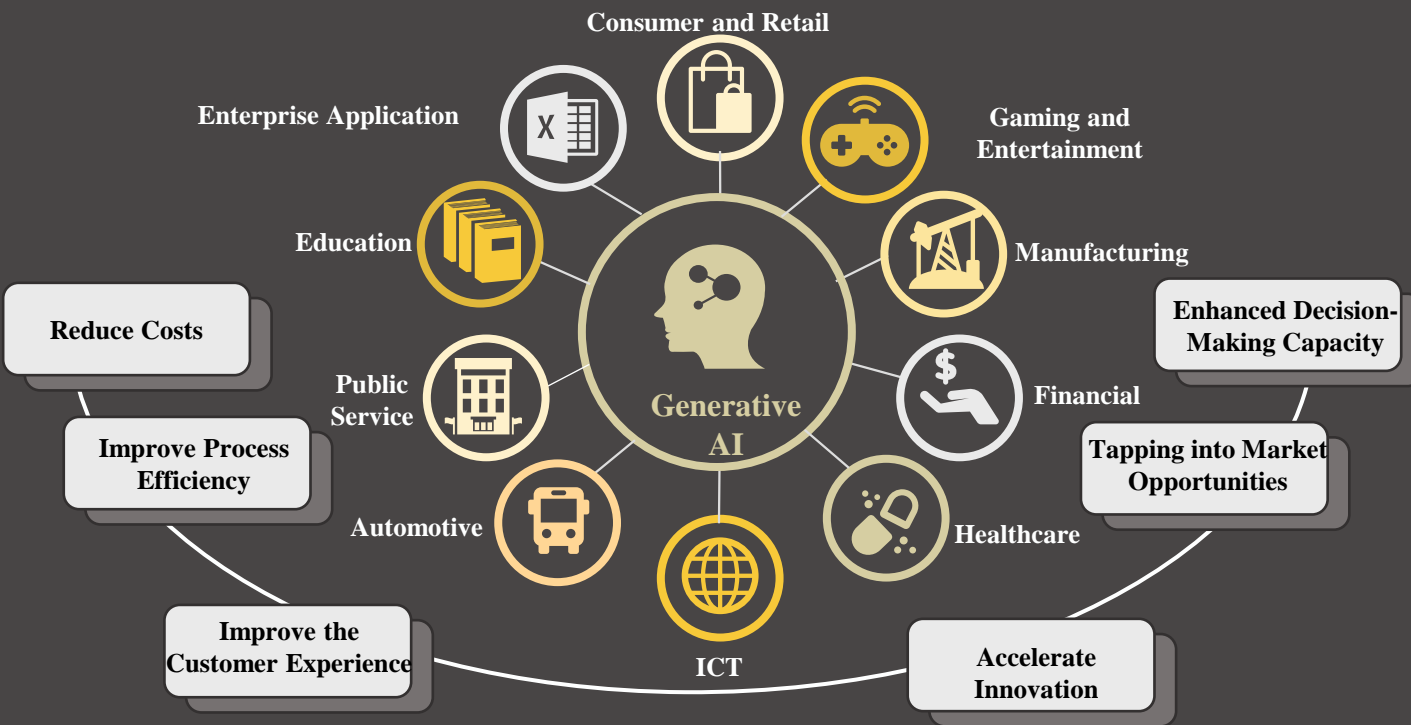
Key findings

As generative AI formally moves into a rapid development phase, generative AI tools spring up, assisting enterprises to enhance strategic benefits such as reducing costs and increasing efficiency, accelerating innovation, and so on. This report integrates leading cases from various industry scenarios to provide enterprises and the market with demonstrations of technical capabilities, inspiration for innovative thinking, and popularization of generative AI-enabling approaches.

Background and Purpose

Background of the report: Generative AI has entered a rapid development phase.

Since 2012, when deep learning algorithms made major breakthroughs in speech and image recognition, generative AI has begun to enter a period of rapid development. Today, coupled with the macro environment of accelerating enterprise digitization, enterprises in various industries have started to build and deploy generative AI in different ways in order to create more strategic benefits.



Purpose of the report: To provide industries actively exploring generative AI with demonstrations of technical capabilities, inspirations for innovative thinking, and ways for generative AI to empower industries through the presentation of the best case studies.

- ① **Demonstration of technical capabilities:** The technical dimension assessment in the excellent cases intuitively demonstrates the core technical capabilities and innovative performance of the generative AI service solutions to various industries, providing significant and practical value benefits for enterprise practices.
- ② **Inspiration of innovative thinking:** the report integrates leading cases from multiple industries and modes to help enterprises with the intention of deploying generative AI to explore the integration of various scenarios with generative AI and to inspire innovative thinking on generative AI functional scenarios in various industries.
- ③ **Popularization of Generative AI Empowerment Methods:** By demonstrating how Generative AI assists enterprises in solving their actual pain points, it helps industries better understand the principles and applications of Generative AI and enhances the market's attention to Generative AI.

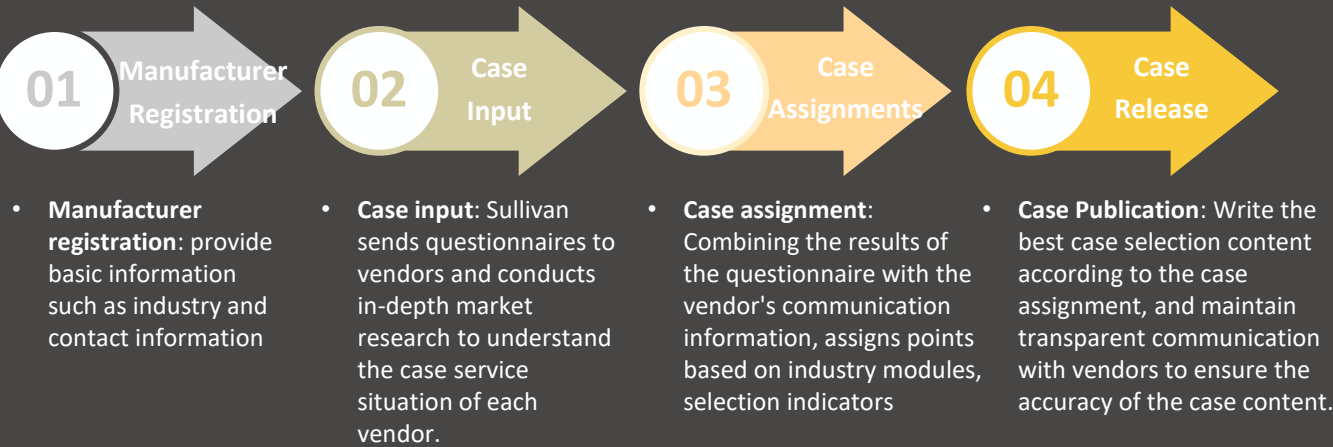
Source: Sullivan

0.3 Selection Process and Methodology

Key findings

The best case selection process is vendor registration and participation, case input, case assignment, and final case delivery and release. The case selection will combine industry cross big data with Sullivan's innovative all-dimensional selection metrics to objectively and fairly present the best practices in the generative AI industry.

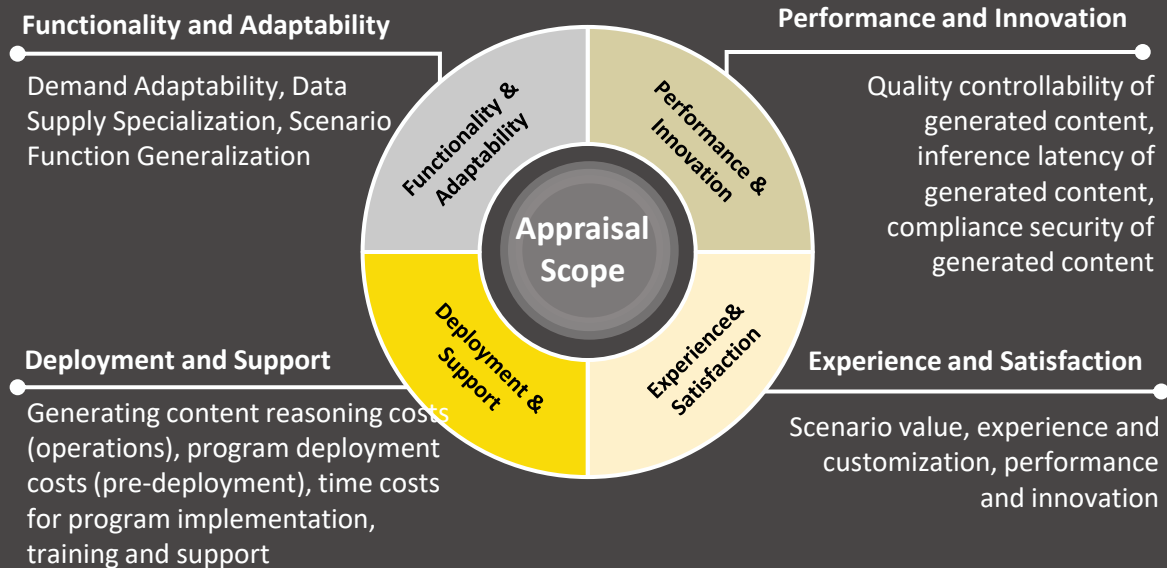
Best Practices Selection Process



Best Practices Selection Methodology

Methodology: Comprehensive assessment of case service capabilities of various modules in different industries around four dimensions: functional value and applicability, technical performance and innovation, implementation and support, and customer experience and satisfaction feedback.

Sullivan blends traditional and innovative research methodologies, combines industry-crossing big data, and presents the best cases in the generative AI industry objectively and impartially through diversified research methodologies and innovative all-dimensional assessment metrics.





Chapter I

Scoring Dimension Analysis

-
- ❑ **Functionality and Adaptability Dimension**
 - ❑ **Performance and Innovation Dimension**
 - ❑ **Deployment and Support Dimension**
 - ❑ **Experience and Satisfaction Dimension**
-

- Functional value and applicability dimensions measure whether the solution fits the needs of practical applications, including the adaptability to the needs of the customer's enterprise, the specialization of data supply, and the generalization of functions in different business scenarios.
- The performance and innovation dimension focuses on measuring the core technical capabilities and innovations included in the program at the level of generated content benefits, specifically Controllability of the quality of generated content, generated content inference latency and generated content compliance security.
- The deployment and support dimension evaluates the economics of the program based on different customer usage scenarios and the vendor's ability to provide training and support services in implementation, specifically including the cost of generating content reasoning, program deployment costs, program implementation practice costs, and training and support metrics.
- Experience and satisfaction Dimension intuitively judges the benefit value of the solution in practical implementation through the perspective of enterprise customers, specifically including Scenario value, experience and customization, performance and innovation satisfaction.

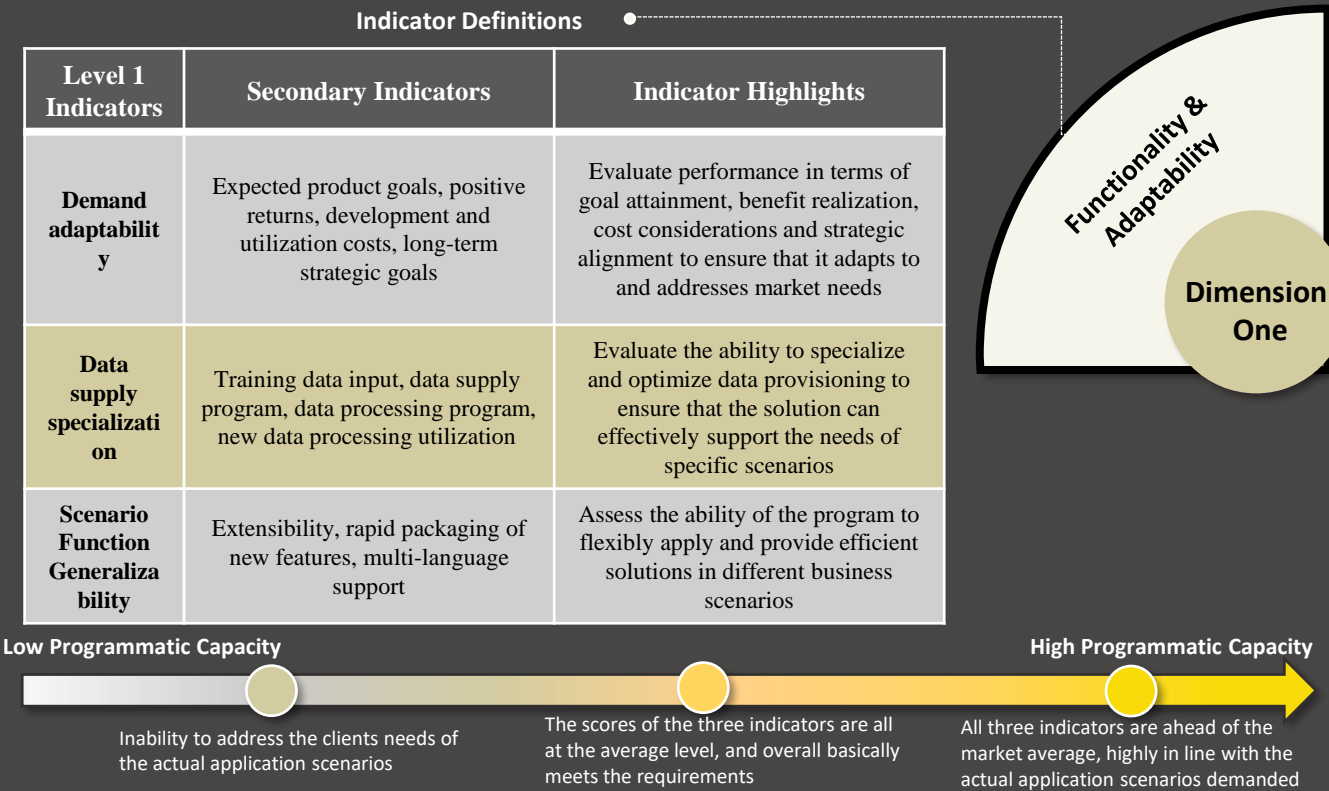
1.1 Functionality and Adaptability Dimension

Key findings

Functional value and applicability dimensions measure whether the solution fits the needs of practical applications, including the adaptability to the needs of the customer's enterprise, the specialization of data supply, and the generalization of functions in different business scenarios.

Scoring Analysis – Functionality and Adaptability

❑ **Definition of Functional Value and Applicability Dimension:** Focus on the overall performance of the program in realizing the expected functions, bringing benefits, resource management and multi-scenario application to ensure that it has the ability of high efficiency, adaptability and strategic alignment, and lay down the direction to be able to conform to the scenario requirements in the actual application.



Success Criteria - Functionality and Adaptability

E.g

AWS × CIMC

- Demand Adaptability:** AWS provides CIMC with a number of in-depth communication activities, digital employees built through LLM on Amazon Bedrock for the Group to comprehensively improve productivity, the on-line Financial Secretary Assistant and the Maintenance Assistant built based on the Amazon Bedrock Knowledge Base to assist in intelligent Q&A for enterprise employees.
- Data supply exclusivity:** Proprietary data on CIMC's internal information such as maintenance documents are used for training input, and the business data is entered into the data lake in a uniform manner.
- Scenario Functionality Generalization:** The solution supports a multi-language environment, through the RAG knowledge base, the Agent to create a digital employee to achieve multi-departmental connectivity within the group.

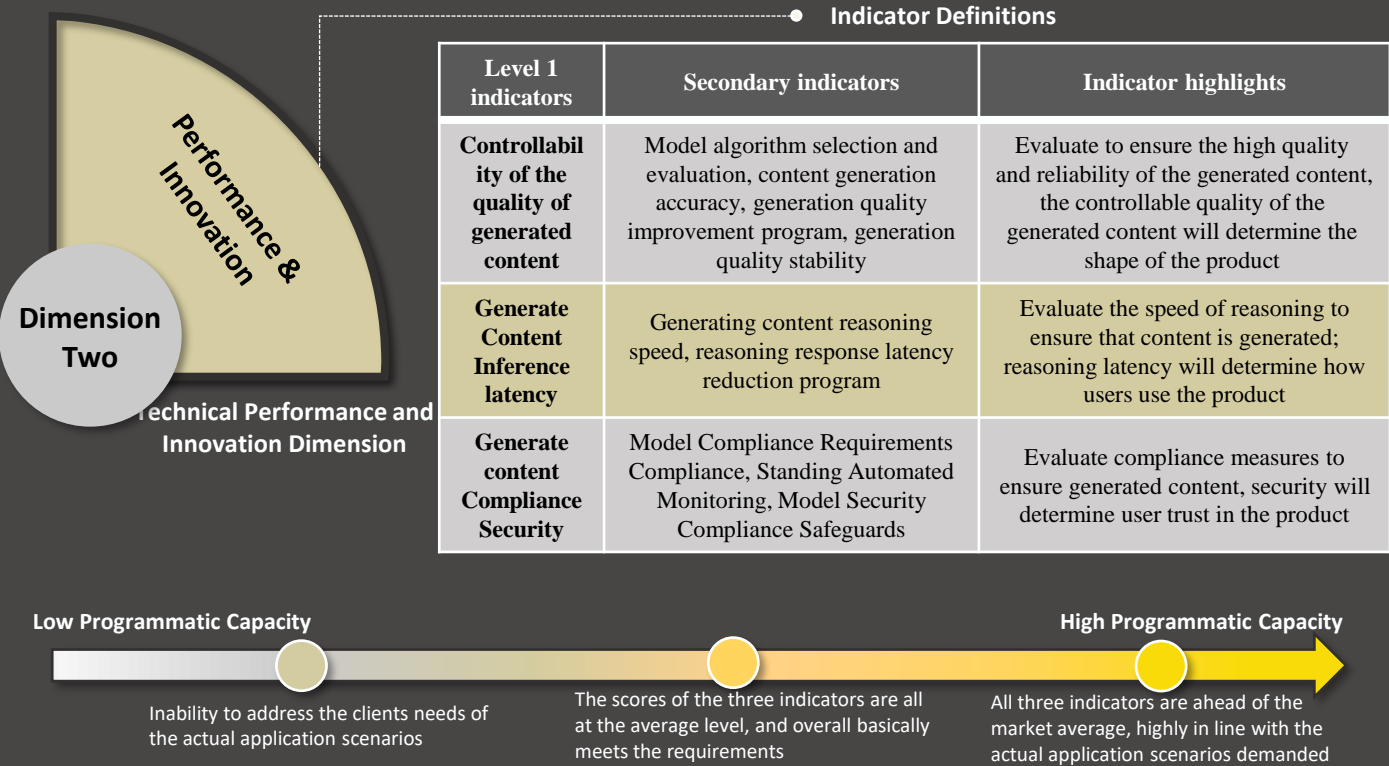
1.2 Performance and Innovation Dimension

Key findings

The performance and innovation dimension focuses on measuring the core technical capabilities and innovations included in the program at the level of generated content benefits, specifically Controllability of the quality of generated content, generated content inference latency and generated content compliance security.

Scoring Analysis - Performance and Innovation

Technical Performance and Innovation Dimension Definition: focuses on the core technical capabilities and innovative performance of the program in terms of generation quality, inference speed, compliance and security, which can demonstrate significant and effective value in real-world applications.



Success Criteria - Performance and Innovation

E.g

ALIBABA CLOUD × HELLO-INC

- Generated Content Accuracy:** Conch Robot has demonstrated high accuracy and user adoption in roles such as office assistant and code assistant, with an accuracy rate of up to 88%, which significantly improves business efficiency. In addition, Alibaba Cloud continues to improve the quality of content generation through the SFT fine-tuning and the RAG knowledge base.
- Inference efficiency optimization:** Alibaba Cloud designs optimized inference solutions for Hello, including but not limited to inference framework performance optimization, API and terminal network optimization.
- Security Compliance:** Enabling Minword Filtering with Alibaba Cloud Content Security API to achieve legal compliance filing.

1.3 Deployment and Support Dimension

Key findings

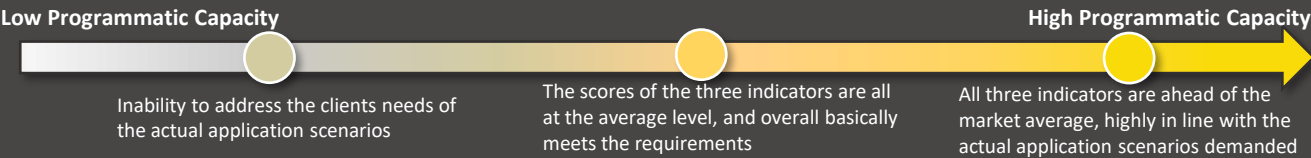
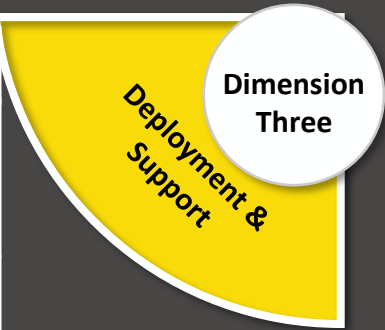
The deployment and support dimension evaluates the economics of the program based on different customer usage scenarios and the vendor's ability to provide training and support services in implementation, specifically including the cost of generating content reasoning, program deployment costs, program implementation practice costs, and training and support metrics.

Scoring Analysis - Deployment and Support

❑ **Definition of landing implementation and service support dimension:** The program's economy, scalability, landing efficiency and continuous support are assessed to have high efficiency and reliability, so as to meet the customer's needs in the actual application, and to enhance customer satisfaction and the long-term value of the program.

Indicator Definitions

Level 1 indicators	Secondary Indicators	Indicator Highlights
Generating content inference costs (using operations)	Cost per million tokens, reduced inference cost scheme	Evaluate the cost of generating content versus ongoing measures to reduce inference costs. Costs will determine application usage and iteration frequency
Program deployment costs (pre-deployment)	Infrastructure deployment cost structure, cost optimization center solution, capacity cap expansion solution	Evaluate the initial acquisition cost of the customer of interest and consider expansion flexibility and cost management capabilities
Time cost of program implementation	Generated content accuracy and reliability, service stability and sustainability, input and output content compliance	Evaluation focuses on the time cycle to achieve feature go-live based on the vendor's understanding of the customer's needs
Training and Support	Unique innovative features, innovative inputs and outputs, iterative model update cycle	Evaluate the resources and services that focus on the vendor's support of the client's continued empowerment after the implementation of the buildout



Success Criteria - Deployment and Support

E.g ALIBABA CLOUD × Lenovo

- **Reasoning and deployment cost optimization:** The solution meets Lenovo's performance and cost optimization needs under different business scenarios by providing models of different sizes, which is very economical and cost-effective. In addition, AliCloud provides Hundred Refinement API for Lenovo's capacity expansion, with no capacity limit.
- **Training and Support Services:** At the solution service support level, Alibaba Cloud regularly arranges communication activities for Lenovo, synchronizes model progress with the customer side, and cooperates to optimize the internal model. In addition, it provides SLA 7x24-hour work order support and nail group support with a minute response speed for cloud resources and LLMs respectively.

Source: Sullivan

1.4 Experience and Satisfaction Dimension

Key findings

Experience and satisfaction Dimension intuitively judges the benefit value of the solution in practical implementation through the perspective of enterprise customers, specifically including Scenario value, experience and customization, performance and innovation satisfaction.

Scoring Analysis - Experience and Satisfaction

Experience and Satisfaction Feedback Dimension Definition: Judge the overall value and customer satisfaction of the solution in actual application from the user's perspective, providing a strong basis for enterprises in selecting and optimizing GenAI solutions.

Indicator Definitions

Level 1 Indicators	Secondary indicators	Indicator highlights
Scenario value	Degree of customer business understanding, degree of matching customer needs, maturity and scale of GenAI products, willingness to invest in product solutions in the long term, and degree of data governance system improvement.	Evaluate whether the program understands and meets the needs of the case clients, delivers substantial business enhancement, and is supported and invested in over the long term.
Experience and customization	Interactive experience of the program, integration of the program with existing process systems, effectiveness in meeting growth needs	Evaluate whether the solution can provide users with a user-friendly and intuitive operating experience, integrate efficiently with existing systems, and meet the growth needs of the organization through comprehensive support services.
Performance and Creation	Satisfaction with the quality of generated content, satisfaction with the speed of generation, satisfaction with the security compliance needs of the organization, and the degree of vendor innovation and uniqueness met	Ensure that the program can provide an efficient and reliable program in terms of quality of generated content, responsiveness, and security compliance in real-world applications, taking into account its sophistication and innovativeness from the user's perspective

Low Programmatic Capacity

Inability to address the clients needs of the actual application scenarios

The scores of the three indicators are all at the average level, and overall basically meets the requirements

High Programmatic Capacity

All three indicators are ahead of the market average, highly in line with the actual application scenarios demanded

Success Criteria - Experience and Satisfaction

E.g SenseTime × Haitong Securities

- Satisfied with the value of the scenario:** intelligent Q&A, code and other programs fully meet the expectations of Haitong's needs, and significantly improve the efficiency of Haitong's internal work.
- Willingness to cooperate in the long term:** the person in charge of Haitong Securities said that in the future, it will combine with the full-stack AI capability of SenseNova to continue to jointly promote the securities industry's business processes, interactive changes and digital intelligent business system reconstruction, and explore the experience of LLMs in industry verticals.

Source: Sullivan

Chapter II

Compendium of Best Practice for Generative AI Industry

- ❑ Collection and Analysis of Best Practices for Generative AI
 - ❑ State of Generative AI Core Technology Applications
 - ❑ Comprehensive Atlas of Best Practices for Generative AI
 - ❑ Challenges and Developments in Various Industries
 - ❑ Potential Application Risks of Generative AI in Various Industries
 - ❑ Best Practices in Various Industries
-

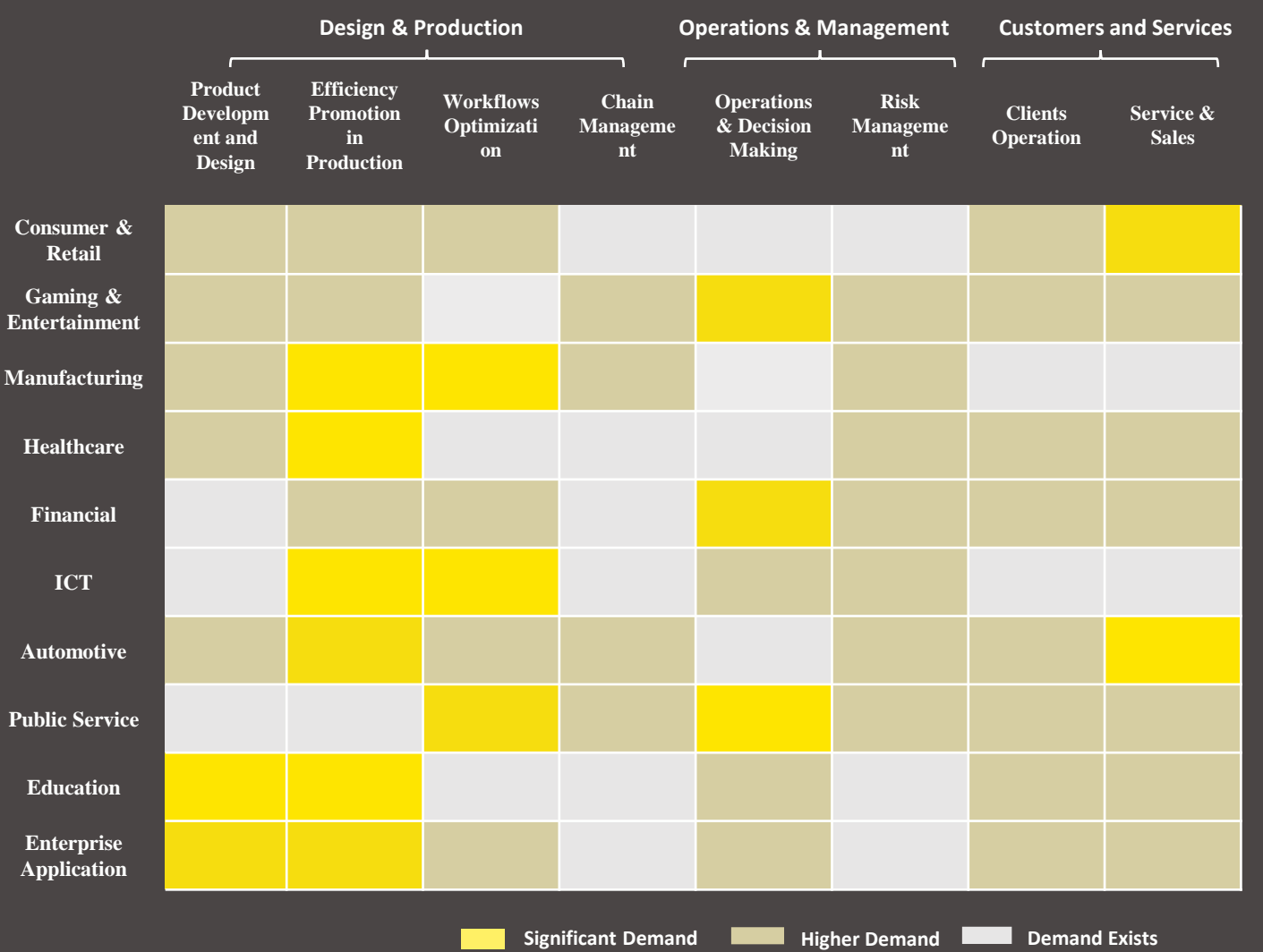
- At this stage, generative AI is first applied in data-intensive or high-tech industries such as consumer, finance and healthcare. Due to the maturity of generative AI technology and the primary need for enterprise digital transformation, the technology is now more focused on the benefits of enterprise work efficiency improvement.
- The development of core technologies, exemplified by GANs, VAEs, Transformers, etc., has fueled various industries and multiple types of content generation applications, such as the application of GANs in medical imaging and the application of VAEs in equipment inspection in the manufacturing industry.

2.1 Collection and Analysis of Best Practices for Generative AI

Key findings

At this stage, generative AI is first applied in data-intensive or high-tech industries such as consumer, finance and healthcare. Due to the maturity of generative AI technology and the primary need for enterprise digital transformation, the technology is now more focused on the benefits of enterprise work efficiency improvement.

Distribution and Value of Generative AI by Industries



- Generative AI gradually and the economic activities of various industries to produce a close combination of high quality to empower the industrial efficiency of various industries, improving the productivity of enterprises.

Industry penetration:

Generative AI models need to rely on larger data sets for training, so at this stage, generative AI is more effective in data-intensive high-tech industries that are more accepting of new technologies.

Main optimization benefits:

It is found that generative AI is still mainly focused on improving the efficiency of the enterprise, on the one hand, generative AI is still in a rapid development stage, and its ability to analyze and process large-scale datasets and repetitive work is more mature; on the other hand, relative to the design of innovations, the work of improving the efficiency of the enterprise is the primary task under the background of the digital transformation.

2.2 State of Generative AI Core Technology Applications

Key findings

The development of core technologies, exemplified by GANs, VAEs, Transformers, etc., has fueled various industries and multiple types of content generation applications, such as the application of GANs in medical imaging and the application of VAEs in equipment inspection in the manufacturing industry.

State of Generative AI Core Technology Applications

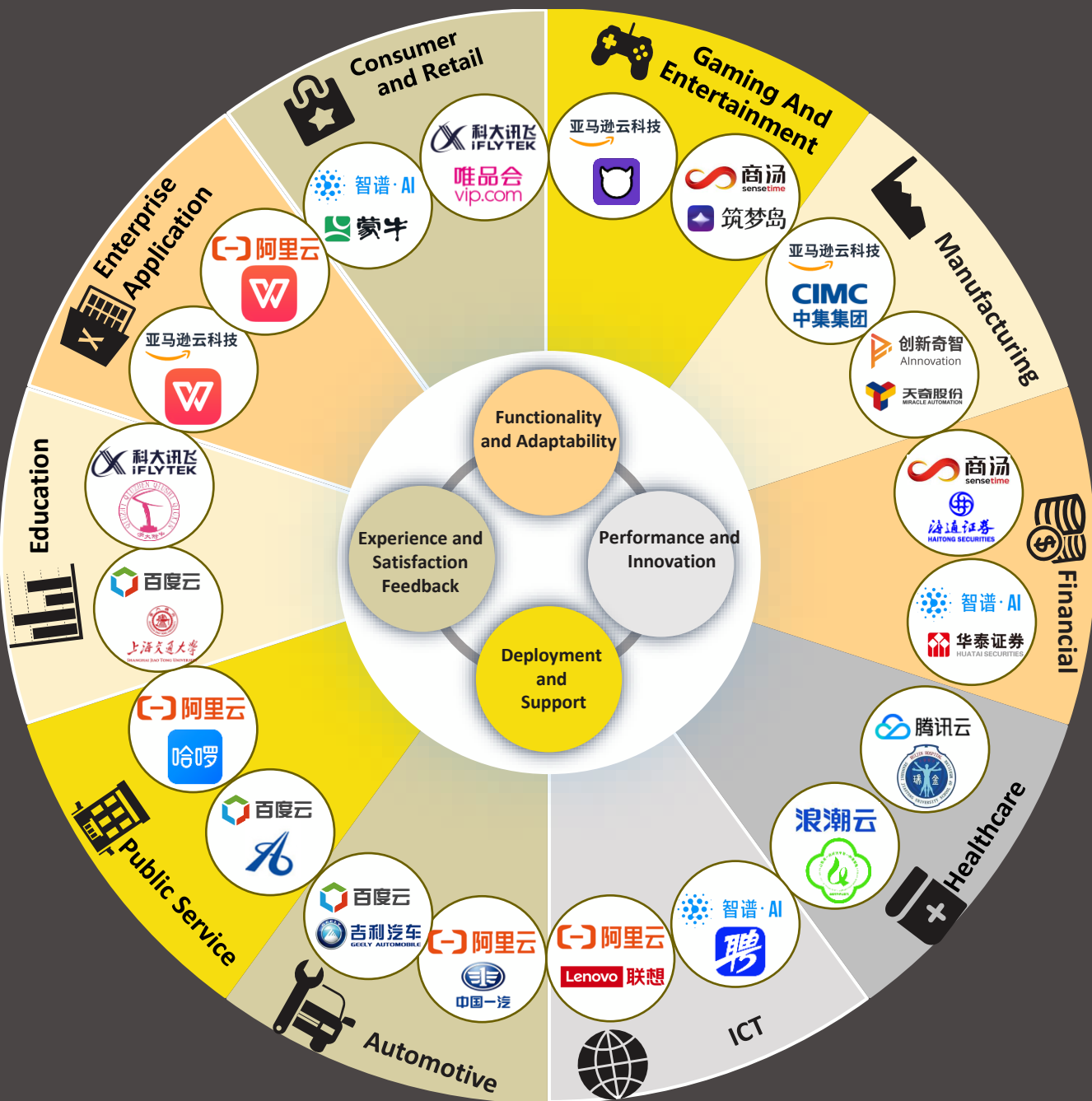
Core Technology	Practical Application Cases		
GANs	Image Generation	Data Enhancement	Art
	<ul style="list-style-type: none">Commonly used in the media and gaming industry to generate realistic face images	<ul style="list-style-type: none">Enhancement of training datasets with newly generated data samples, commonly used in medical imaging	<ul style="list-style-type: none">Generate artworks by training models to assist artists and designers in exploring new art forms
VAEs	Image Generation	Data Downgrading	Anomaly Detection
	<ul style="list-style-type: none">VAEs mainly generate realistic handwritten digital images, and can enhance the diversity of image generation by sampling the potential space	<ul style="list-style-type: none">VAEs achieve effective data compression and denoising by compressing and reconstructing the data	<ul style="list-style-type: none">Identify anomalous samples that are significantly different from the training data by comparing reconstruction errors,.
Autoregressive Models	NLP	Speech Production	Image Generation
	<ul style="list-style-type: none">Autoregressive models generate text word by word based on a given context, mainly used in machine translation, text generation, etc..	<ul style="list-style-type: none">Generate high-quality speech signals by modeling the conditional probability of audio samples, often used in speech synthesis, editing and, etc..	<ul style="list-style-type: none">Generate high quality images by capturing complex dependencies in images, commonly used in natural image generation, etc..
Transformers	NLP	Computer Vision	Cross-Modal Generation
	<ul style="list-style-type: none">Based on BERT and GPT models, it significantly improves the performance of various tasks, which is commonly used in dialog systems and code generation.	<ul style="list-style-type: none">ViT processes image data by dividing the image into fixed-size chunks and treating them as sequence elements, commonly used in image classification tasks	<ul style="list-style-type: none">Generate high-quality content by combining different modal data, often used in advertising design, art creation, etc..

❑ Core technologies exemplified by GANs, VAEs, autoregressive models, and Transformers underpin the application of generative AI to multiple types of content generation tasks, such as image, text, and audio, in various industries.

- Generative Adversarial Networks GANs have certain advantages in image generation quality and detail processing, and are widely used in game design and face image generation in film and television; VAEs excel in realistic data distribution, and are widely used in data compression and denoising, as well as anomaly detection, which is more commonly used in the manufacturing industry; autoregressive models are also prominent in the field of data generation as are VAEs, and autoregressions are more commonly used in text generation, etc.; Transformers have made breakthroughs in natural language processing and multimodal generation, and are commonly used in dialog systems. Autoregressive models and VAEs are also prominent in the field of data generation, with autoregression being more commonly used in text generation, etc.. Transformers have made breakthroughs in natural language processing and multimodal generation, and are commonly used in dialog systems.

Source: Baidu Cloud, Sullivan

2.3 Best Practices in Various Industries





Challenges and Developments in The Gaming and Entertainment Industry and Best Practices

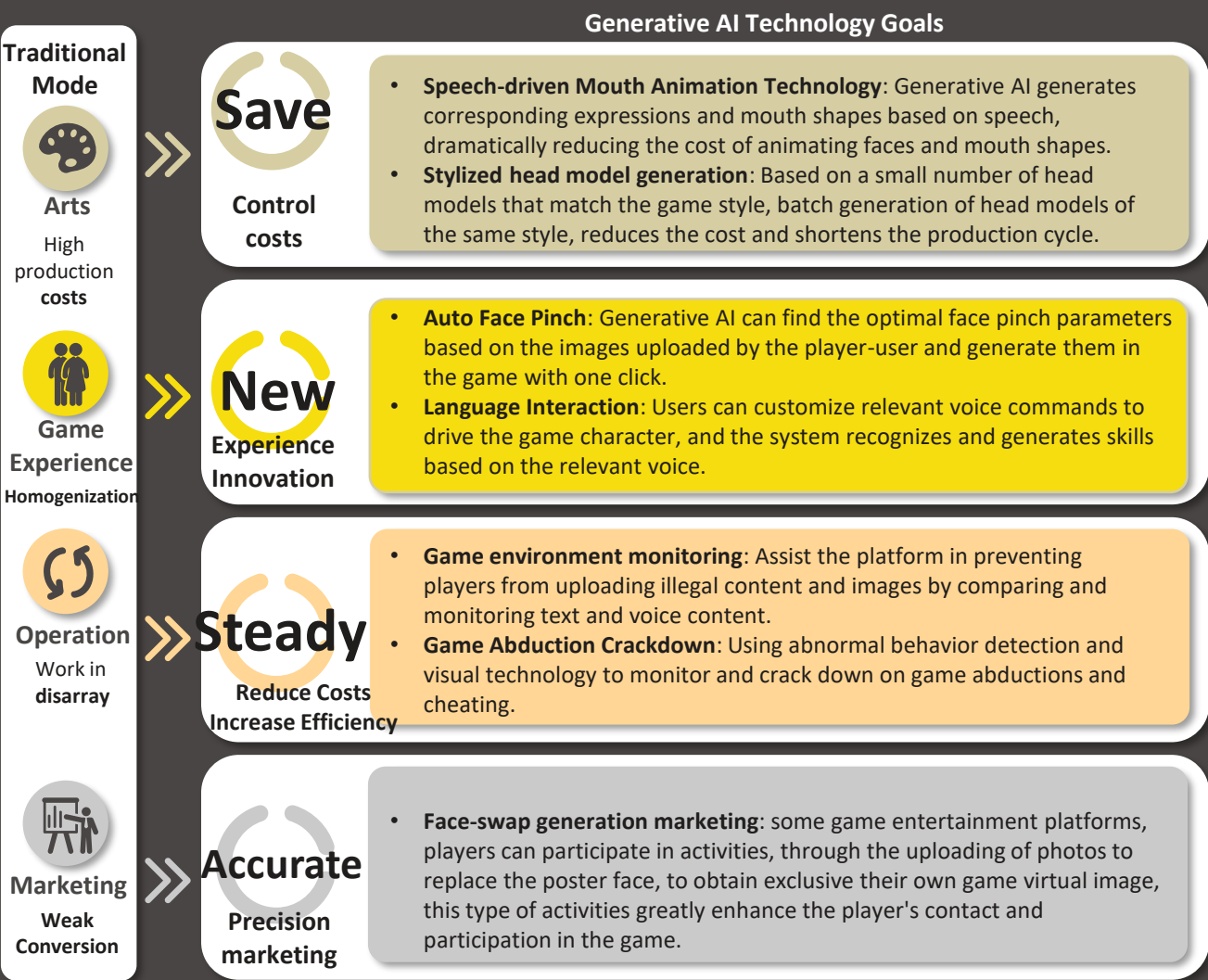
- Generative AI technology empowers the game entertainment industry to subvert the traditional art production, game experience, operation, and marketing model, and leading technologies such as resource super-scoring and automatic face pinching have been applied to the game entertainment industry one after another to promote the technological innovation of the industry.
- Generative AI empowers the various process stages of the game entertainment industry, in which the product development stage, assisted by generative AI technology, accelerates the enterprise creation process and significantly reduces the cost of art resource creation; in addition, the risk of copyright issues for game entertainment can also be detected and analyzed by generative AI.
- Generative AI is widely used in the development and creation of the game and entertainment industry, but the creation of content, in addition to the general consideration of privacy and data risks, a large number of short and fast game and entertainment content relying on the relevant technology may lower the threshold of the industry, crowd out the industry's high-quality resource space, and bring challenges to the industry.

2.4.1 Challenges and Developments in The Gaming and Entertainment Industry (1/2)

Key findings

Generative AI technology empowers the game entertainment industry to subvert the traditional art production, game experience, operation, and marketing model, and leading technologies such as resource super-scoring and automatic face pinching have been applied to the game entertainment industry one after another to promote the technological innovation of the industry.

Industry's challenges and The New Form of "GenAI+Gaming and Entertainment"

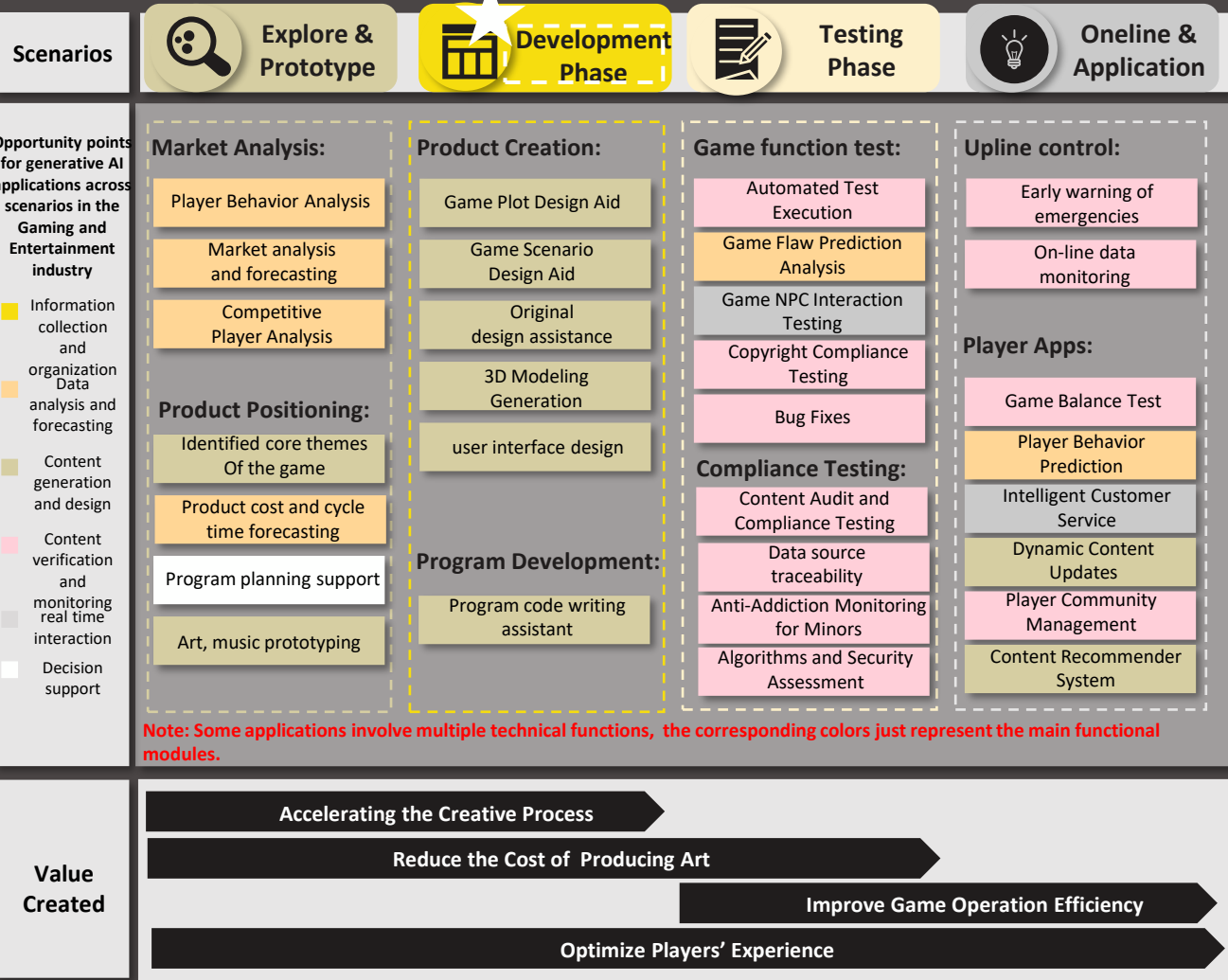


2.4.1 Challenges and Developments in The Gaming and Entertainment Industry (1/2)

Key findings

Generative AI empowers the various process stages of the game entertainment industry, in which the product development stage, assisted by generative AI technology, accelerates the enterprise creation process and significantly reduces the cost of art resource creation; in addition, the risk of copyright issues for game entertainment can also be detected and analyzed by generative AI.

Generative AI Opportunity Points Graph



- Generative AI empowers all stages of the development process in the game entertainment industry, in which the product development stage accelerates the creation process of game entertainment enterprises and significantly reduces the production cost of art resources under generative AI technology.
- 1

Exploration and prototype phase: Generative AI assists companies to better implement product positioning and program planning through market and player data analysis.
- 2

Development phase: Generative AI assists companies in this phase by dramatically shortening and reducing creation cycles and art production costs through art design assistance.
- 3

Testing phase: Generative AI can be used to automate testing to reduce compliance risk for the functionality and copyright risk issues that are key considerations in the gaming and entertainment industry.
- 4

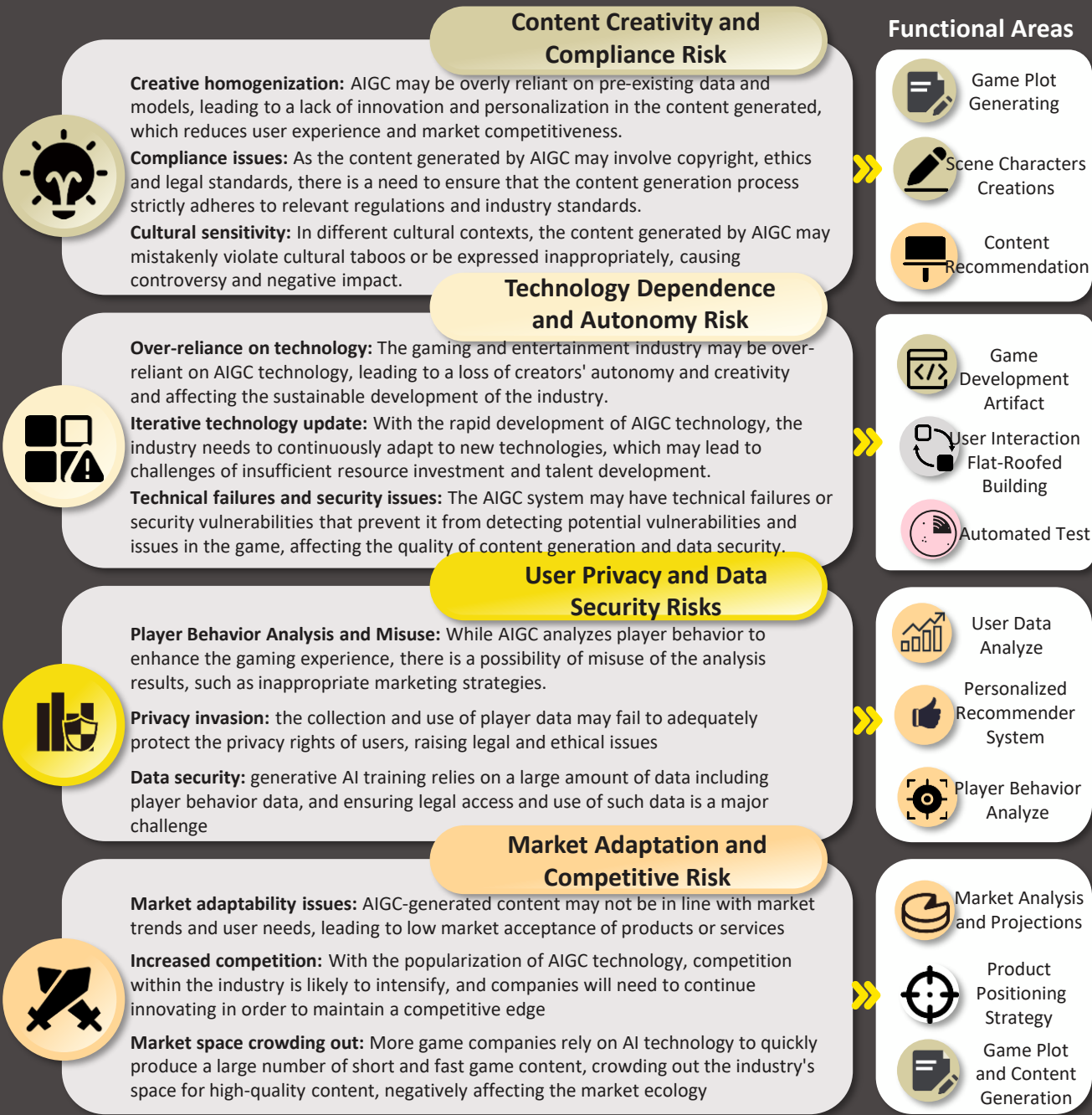
On-line and application phase: based on the analysis and prediction of player behavior, generative AI optimizes the game experience by enhancing the interactivity between NPCs and players, etc.

2.4.2 Potential Application Risks in The Gaming and Entertainment Industry

Key findings

Generative AI is widely used in the development and creation of the game and entertainment industry, but the creation of content, in addition to the general consideration of privacy and data risks, a large number of short and fast game and entertainment content relying on the relevant technology may lower the threshold of the industry, crowd out the industry's high-quality resource space, and bring challenges to the industry.

Potential Application Risks



Source: Sullivan

2.4.3 Best Practices in The Gaming and Entertainment Industry

- Next Generation AI-powered UGC 3D Interactive Content Platform

A New Generation of AI-driven UGC 3D Interactive Content Platforms



Application Scenario: Gaming and Entertainment Industry + Generative AI-driven UGC 3D Interactive Content Platform

Core Evaluation Keywords

- Innovative Models of Personalized Interaction

Low Cost, Low Latency

Well-Established Deployment and Support

Leading Comprehensive Technical Performance

Capacity Analysis

Functionality and Adaptability

- **Solutions meet the existing practical needs:** AWS assists BUDs with efficient open source model deployment through SageMaker's integration with Huggingface; and Claude3 Haiku models on Amazon Bedrock enable low-cost and near-instantaneous response for BUDs to build mimetic seamless AI experiences that mimic human interactions.
- **Fitting in with BUD's long-term strategic direction:** The solution provided by AWS is in line with BUD's long-term strategic goal of creating a disruptive user experience in the gaming + social + meta-universe through new technologies, and partnering with BUD to create a new frontier in gaming.

Performance and Innovation

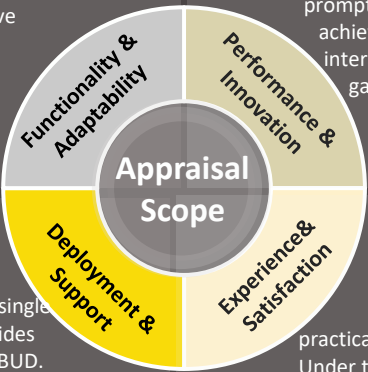
- **Leading integrated technical performance:** Amazon ensures the high quality, stability and compliance of the output content of the solutions provided to BUD with its leading integrated capabilities in infrastructure behind the LLM, data analytics and security compliance.
- **Prompt engineering to optimize the innovative product experience:** Strongly structured, logical prompt engineering assists BUDs in achieving enhanced game character interactions, innovations and optimizing game backgrounds.

Deployment and Support

- **Economy of implementation:** Amazon Bedrock is a fully hosted service that offers many leading AI foundation models through a single API, among them the Haiku model, which provides a high-performance and affordable option for BUD.
- **Completeness of Solution Implementation:** The globalization of AWS's resources assists BUD to better cover overseas users in close proximity, and provides BUD with complete documentation support, online and offline training, and regular sharing sessions to respond to customers' needs for support at any time.

Experience and Satisfaction

- **Customer Recognition of Existing Solution:** The solution provided by AWS for BUD fully meets the customer's practical needs and expectations for cooperation. Under this solution, BUD has achieved new performance breakthroughs in terms of the number of player interactions creations.
- **Strong long-term cooperation and willingness to invest:** BUD and Amazon in addition to the existing optimization results, game innovation level, both sides still have ongoing innovation and experimental cooperation. BUD has a long-term investment in the cooperation of strong will.

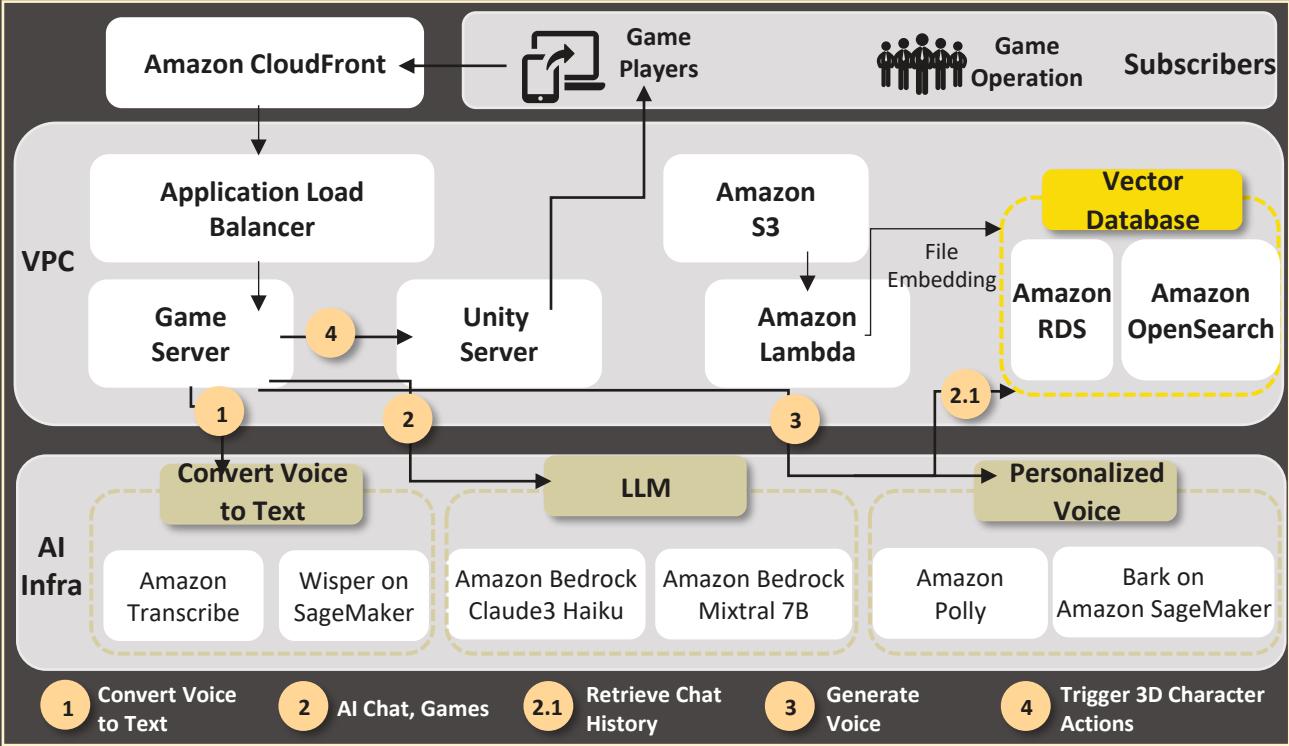


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AWS X BUD

AWS has built a perfect content platform and ecosystem for BUD's overseas game business, realizing an innovative AI-driven game model with high randomness and interactivity, and assisting BUD to reach a new breakthrough in the number of overseas players.

Product Structure and Core Advantages



Solution Effectiveness

Client's Demands	Solutions
<ul style="list-style-type: none">Innovative experience: Enrich the platform content, so that users have new gaming experience.Cost and time reduction: The BUD enterprise faces time-consuming, labor-intensive, inflexible expansion, etc.. For the optimization of prompt engineering in different game scenarios, the exploration time of model selection process needs to be compressed.	<ul style="list-style-type: none">The Claude3 Haiku model on Amazon Bedrock: Cost-effective and fast reasoning, and fast API calls using Bedrock to meet customer needsHuggingface + Amazon SageMaker: More efficient open source model deployment for BUD.Amazon Polly Generative Engine: Generates highly personable speech while maintaining low latency.

Effectiveness of Implementation




- AI intelligences based on Amazon Bedrock Claude3 Haiku are more realistic at the level of contextualization and semantic understanding, making users feel more connected.
- Games developed based on AI modules have greater randomness and interactive personalization.
- As of April 2024, the number of AI Buddy interactions reached **5 million**, the number of AI Intelligences created exceeded **1.5 million**, and the number of AI Intelligence interactions surpassed **50 million**.

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2.4.3 Best Practices in The Gaming and Entertainment Industry

- AI Native Virtual Social Ecology

AI Native Virtual Social Ecology



Application Scenarios: Game entertainment industry + personalized character creation + emotional accompaniment, film and television / animation / net article IP characters + star / net celebrity / artist AI doppelganger + language role-playing and other anthropomorphic dialogue scenarios

Core Evaluation Keywords

Industry-leading Knowledge Base Building

Data Security Compliance

Highly Customizable Characters

Long Dialogue Memory

Capacity Analysis

Functionality and Adaptability

- Demand Adaptation:** In response to the demand for AI character refinement in ZHUMENGDAO, SenseTime relies on the Sensechat-character to provide users with a PUGC AI character production process.
- IP character customization:** Sensechat-character can quickly and qualitatively complete customized IP characters, enabling industry-leading character dialogues, personas, and plot promotion capabilities.
- Knowledge content specialization:** negotiating the availability of Sensechat-character's ability to build in-depth knowledge bases, it can accurately respond to characterization, character relationships, worldview, and event memory related content.

Performance and Innovation

- Long Dialogue Memory:** Sensechat-character combined with 32K ultra-long context processing capability, with short and long term memory fusion algorithm, Zhumengdao can realize accurate memory of AI characters.
- Safety Compliance:** SenseTime provides customers with technical support for safety compliance related to the landing application of LLMs. In addition, SenseCore big device support enterpris to deploy a proprietary cloud to meet the needs of data security.

Deployment and Support

- Matrix of models adapted to different application scenarios:** SenseChat-Character -Pro and SenseChat-Character, respectively, for scenarios that require optimal results and scenario that have high concurrency requirements.
- Stable and Reliable Reasoning Service:** SenseTime provides customers with standardized API products, enabling enterprises to quickly build specialized LLM application with 99.5% availability.
- Deployment Cost:** : SenseChat-Character has introduced different versions of the model according to the needs to support the optimization of the cost-effectiveness of customer enterprises.

Experience and Satisfaction

- Satisfaction with the value of the scenario:**The relevant person in charge of ZHUMENGDAO said that Sensechat-character fully meets the expectations of enterprises at the level of AI character setting fit and scene dialogue.
- Satisfaction with experience and customization:** SenseTime and ZHUMENGDAO worked together on R&D to give the popular IP characters in ZHUMENGDAO more dynamic, emotional and other abilities to optimize the user experience. In addition, the team of ZHUMENGDAO said that during the period of cooperation : Sense Time fully provided rapid response technical service support for them.

Appraisal Scope

Functionality & Adaptability

Performance & Innovation

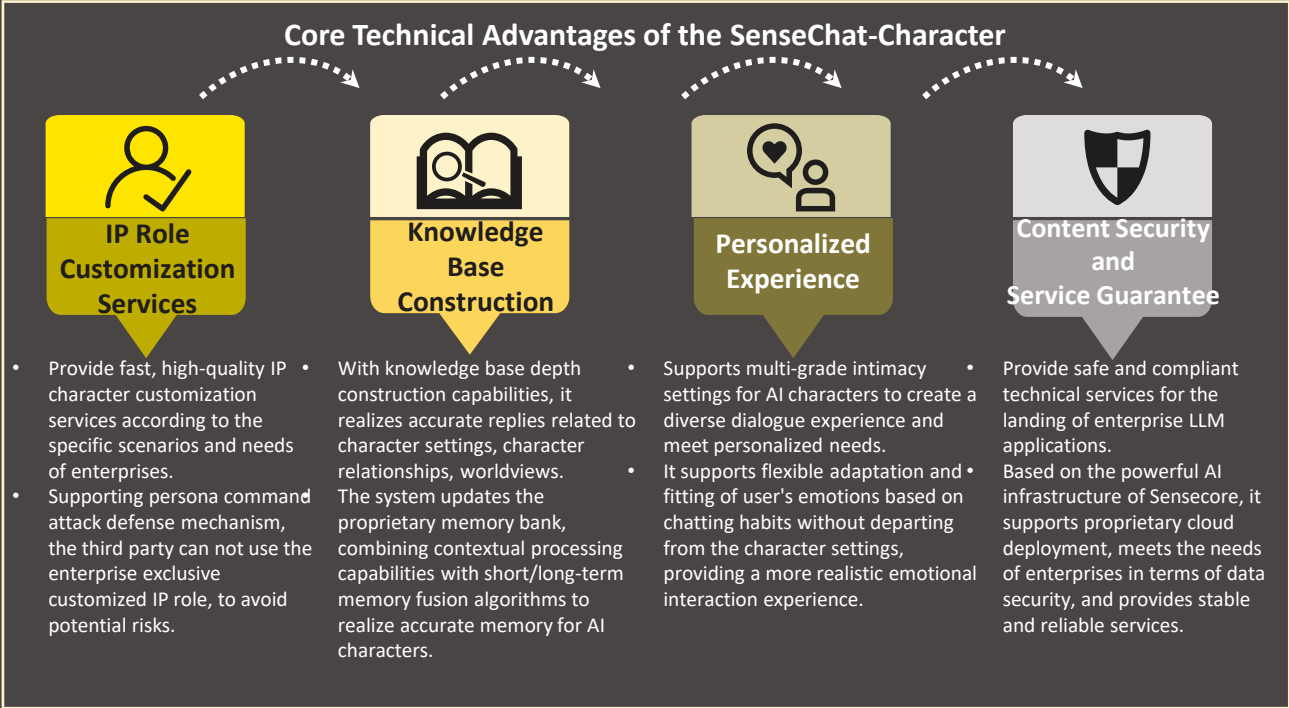
Experience & Satisfaction

Deployment & Support

SenseTime X ZHUMENGDAO

Based on SenseChat-character, SenseTime and ZHUMENGDAO jointly realized the AI character display with accurate persona, providing users with a more realistic and temperature-rich virtual social experience, and the implementation of the program assisted Zhumengdao to achieve an eye-catching performance in user activity and number of interactions.

Product Structure and Core Advantages





Challenges and Developments in The Manufacturing Industry and Best Practices

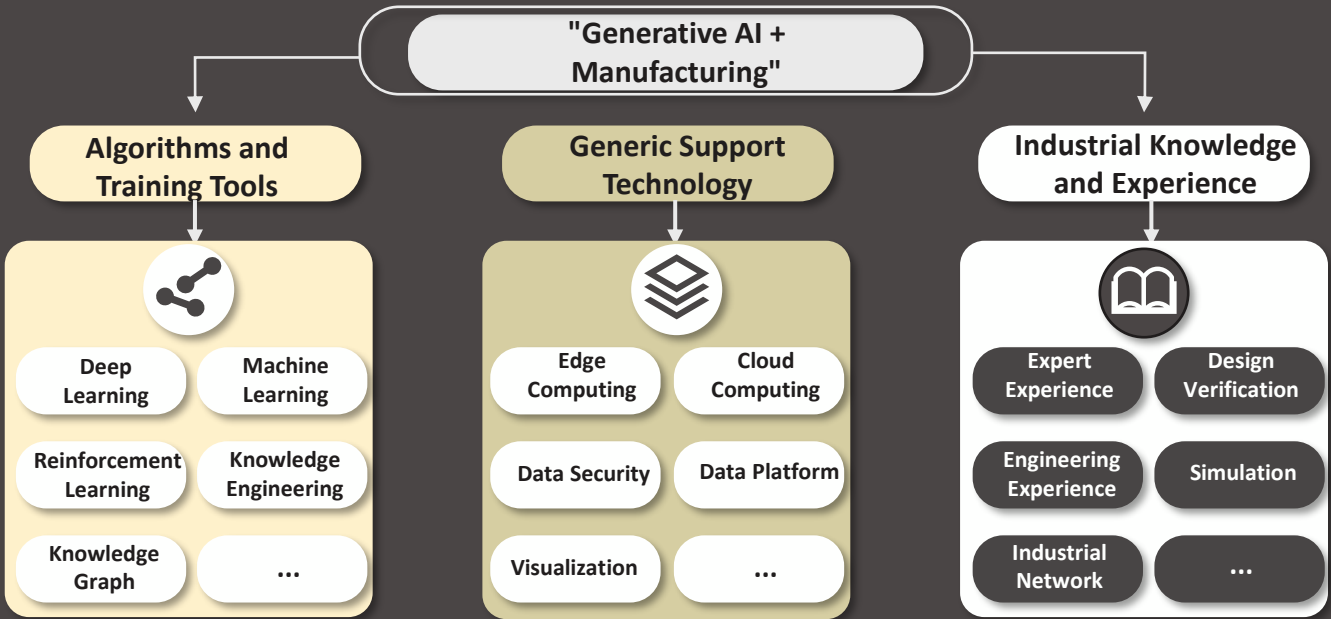
- On the basis of the original application paradigm of the integration of manufacturing and artificial intelligence, the generative and generalization capabilities of generative AI technology support some of the complexity and innovative problems in the industrial manufacturing industry to be solved, and will continue to expand the application space of artificial intelligence in the manufacturing industry.
- Manufacturing as the core of the industrial manufacturing industry has been the existence of environmental protection and safety of the two major industry challenges, generative AI in the environmental analysis and assessment as well as the production of risk monitoring level to empower enterprises to optimize the point; in addition, generative AI in the logistics and production management links, enhanced to assist the original system to further enhance the process of various aspects of management efficiency.
- Industrial manufacturing segments for the operation of the accuracy and real-time requirements of high, generative AI generated content deviation may bring serious risks to the safety of workers and equipment; in addition, the industrial data structure is diverse and complex, the enterprise in the pre-training and deployment of generative AI resource cost is extremely high and the input-output ratio is not yet clear.

2.5.1 Challenges and Developments in The Manufacturing Industry (1/2)

Key findings

On the basis of the original application paradigm of the integration of manufacturing and artificial intelligence, the generative and generalization capabilities of generative AI technology support some of the complexity and innovative problems in the industrial manufacturing industry to be solved, and will continue to expand the application space of artificial intelligence in the manufacturing industry.

Industry's challenges and The New Form of "GenAI+Manufacturing"



Generative AI meets specific needs in different parts of industrial manufacturing, and the ability to generate and generalize new knowledge and insights supports the industrial manufacturing industry in solving a broader range of more complex challenges.

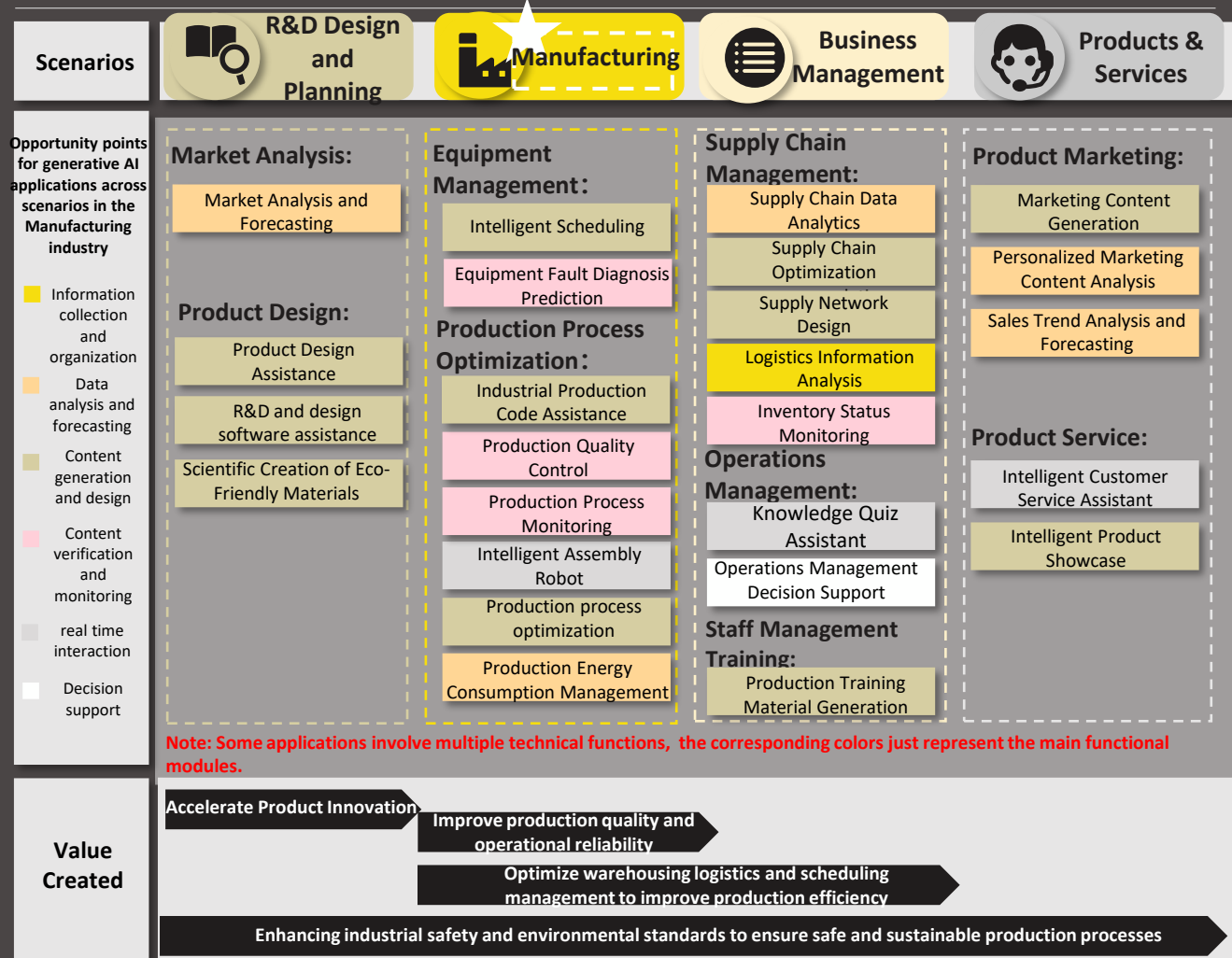
- The traditional industrial manufacturing industry faces challenges such as production costs, environmental governance, and risks to the safety of workers and equipment. With the integration of artificial intelligence into all aspects of the manufacturing industry, artificial intelligence empowers the overall process of forecasting, production, management, and decision-making, helping industrial enterprises to reduce costs and increase efficiency. According to data from the Ministry of Industry and Information Technology, with the empowerment of artificial intelligence in the manufacturing industry, the industry's research and development cycle has been shortened by about **20.7%**, production efficiency has been improved **by** about **34.8%**, the rate of defective products has been reduced by about **27.4%**, and carbon emissions have been reduced by about **21.2%**.
- Before the integration of generative AI into the manufacturing industry, AI functions such as quality inspection and equipment maintenance prediction have been deeply applied to the manufacturing industry, and a mature application paradigm has been formed, including algorithms and training tools, general support technologies, and industrial knowledge and experience adapted to manufacturing scenarios.
- With the evolution of generative AI macromodels, specific needs have been added to the application paradigm of industrial manufacturing. For example, **at the level of algorithms and training tools**, architectures such as Transformer have laid the foundation for generative AI to enter the manufacturing industry; **at the level of general support technologies**, vector databases and other critical digital infrastructures; **at the level of industrial knowledge and experience**, generative AI 's requirements for high-quality data such as text, images, and documents are increasing. Under the original application paradigm, the integration of generative AI technology solves more complex and extensive manufacturing difficulties, will continue to expand the application space of AI in the manufacturing industry.

2.5.1 Challenges and Developments in The Manufacturing Industry (2/2)

Key findings

Manufacturing as the core of the industrial manufacturing industry has been the existence of environmental protection and safety of the two major industry challenges, generative AI in the environmental analysis and assessment as well as the production of risk monitoring level to empower enterprises to optimize the point; in addition, generative AI in the logistics and production management links, enhanced to assist the original system to further enhance the process of various aspects of management efficiency.

Generative AI Opportunity Points Graph



Generative AI effectively mitigates environmental and safety issues in the manufacturing industry. At the logistics management and production level, generative AI combines with the industry's original system to empower enterprises to enhance the efficiency of scheduling and management in all aspects.

- 1 R&D design and planning:** AIGC combines the results of market analysis and introduces image generation capabilities into industrial design scenarios such as CFM design and channel customization.
- 2 Manufacturing:** AIGC is used in the core manufacturing process for shop floor equipment management to improve safety and productivity and optimize the overall workflow.
- 3 Operation Management:** Realize intelligent analysis of management data through natural language interaction and other ways, and empower CRM and other management software to improve the quality of supply chain management.
- 4 Product service:** AIGC empowers products to achieve intelligent interaction and personalization and differentiation in product marketing and after-sales service.

Source: Sullivan

2.5.2 Potential Application Risks in The Manufacturing Industry

Key findings

Industrial manufacturing segments for the operation of the accuracy and real-time requirements of high, generative AI generated content deviation may bring serious risks to the safety of workers and equipment; in addition, the industrial data structure is diverse and complex, the enterprise in the pre-training and deployment of generative AI resource cost is extremely high and the input-output ratio is not yet clear.

Potential Application Risks

Technology Dependency Risk

Robustness: Generative AI models have the potential to fail to recognize details in equipment inspection, resulting in outputs that cannot be correlated to real-world environments, leading to inaccurate or risky behavioral decisions, including unhealthy impacts on future maintenance and management planning for equipment assets.

Reliability: For the industrial manufacturing industry, the accuracy of the output content is particularly important, inaccuracy of the model output results may bring hidden dangers and serious industrial risk results for worker safety, normal operation of equipment, etc..

Functional Areas

- Equipment Failure Sensing
- Production Process Monitors
- Equipment Maintenance

Attribution Risk

Attribution of environmental responsibility: The new materials and products designed by generative AI have the potential to negatively impact the environment, and it is not possible to clearly delineate the subject of responsibility for long-term negative impacts on the environment.

Liability attribution for accidents: lack of clear guidelines and procedures for penalizing liability for shop floor accidents caused by incorrect information and advice from generative AI.

- New Material Developmental Design
- Product Development Design Aid
- Intelligent Assembly Robot

Supply Chain Risks

Supply discrimination: When generative AI is used in the evaluation of suppliers in the supply chain management chain, there is a risk that bias in the data or models may lead to unfair screening, and companies should improve the transparency of this through, for example, fair contract terms.

Supplier Credit Risk: Problems with data or models when generative AI evaluates supplier credit can lead to the selection of unreliable suppliers and affect supply chain stability.

Supply chain disruptions: the application of generative AI in supply chain management can lead to supply chain disruptions, affecting production and delivery, if predictions or decisions are wrong.

- Supply Chains Data Analysis
- Supply Chains Optimization Recommendations
- Supply Network Devise

Application Challenges

Training data quality: the industrial manufacturing field covers a wide range of data structure is diverse and complex, generative AI application data before spending a lot of time and resources for data clarity, preprocessing and calibration.

Application real-time: Many production scenarios in the manufacturing industry have high real-time requirements, requiring generative AI application models to respond in milliseconds and microseconds.

Input-output ratio: the training of generative AI models and the cost of private deployment is expensive, and the current industrial application of generative AI is still in the primary stage, for which the input-output ratio is not clear.

- Production Process Make Superior
- Production Process Monitors
- Supply Chains Data Analysis

Source: Sullivan

2.5.3 Best Practices in The Manufacturing Industry

- CIMC Generative AI Platform

CIMC Generative AI Platform

亚马逊云科技

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CIMC
中集集团

Application Scenarios: Manufacturing + generative AI empowers functional applications to improve human efficiency + scenario-based applications (financial secretary assistant, maintenance assistant, etc..)

Core Evaluation Keywords

Highly Convergent and Integrated

Innovation in Cooperation

Data Security and Compliance

One-Stop Shop for Efficiency Gains

Capacity Analysis

Functionality and Adaptability

- Demand Adaptation:** AWS built digital employees through the big language model on Amazon Bedrock for CIMC to comprehensively improve productivity. Also the on-line Financial Secretary Assistant and the Maintenance Assistant built based on the Amazon Bedrock Knowledge Base to assist in intelligent Q&A for enterprise employees.
- Data supply exclusivity:** Proprietary data on CIMC's internal information are used for training input, and the business data entered into the data lake in a uniform manner.
- Scenario Functionality Generalization:** The solution is very useful in supporting multiple language environment, through the RAG knowledge base, creating digital workforce to realize multi-sectoral connectivity.

Performance and Innovation

- Controlled quality of generated content:** AWS improves the quality of generated content through data quality proofreading, dataset categorization, and hybrid search, and ensures the stability of the generated quality through content traceability, user scoring, and RAG revision.
- Low inference latency:** The solution reduces the inference response latency of the generated content by means of contextual filtering, frequently asked questions, and high-frequency content RAG.
- Compliance and Security:** All data in Amazon Bedrock is encrypted in transit for CIMC to ensure that user data privacy and security.

Deployment and Support

- Upfront Deployment and Implementation Cost Optimization:** Amazon offers Bedrock managed Services combined with API Gateway and Lambda, providing CIMC with capacity limit expansion. Also, Provide API unified release to call related capabilities to integrate into CIMC's internal system.
- Training and Support:** AWS provides CIMC with comprehensive functional operation documentation guidelines, relevant regular training activities and round-the-clock support services.

Experience and Satisfaction

- Scenario Value Satisfaction:** Amazon and CIMC based on the "Joint Laboratory Mechanism", jointly constructed the a mature programme that combines the actual needs of enterprises and achieves a comprehensive improvement in internal productivity.
- Experience and customization satisfaction:** CIMC generative AI platform efficiently integrates the enterprise's existing system platforms, integrates all kinds of processes, and basically reaches barrier-free use.
- Satisfactory performance and innovation:** The solution is based on the 6+3 technical, which simultaneously meets the security compliance requirements as well as the guarantee of the performance of LLM capabilities.

Appraisal Scope

Functionality & Adaptability

Performance & Innovation

Experience & Satisfaction

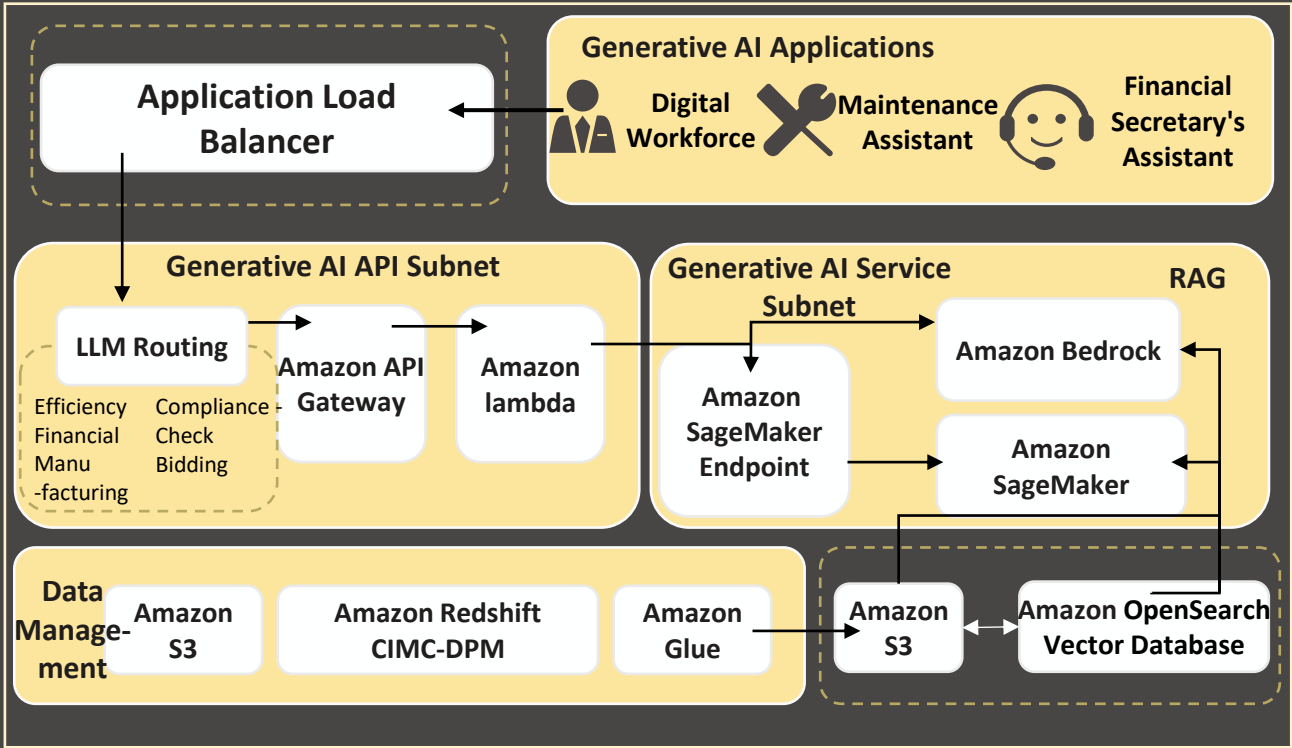
Deployment & Support

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AWS X CIMC

Combined with CIMC's internal practical needs, AWS has co-designed and constructed an enterprise-grade generative AI capability base to support three types of applications, namely digital employee, maintenance assistant and finance assistant, to comprehensively improve enterprise productivity, operational efficiency and maintenance efficiency.

Product Structure and Core Advantages



Solution Effectiveness

Client's Demands	Solutions
<ul style="list-style-type: none">Innovative Technology Pursuit: CIMC attaches great importance to technological innovation and hopes to utilize generative AI to drive business innovation.Generative AI application landing is difficult: LLM has general knowledge without specialization, "hundred model mixing", related technology update iteration is too fast and other difficult problems, become generative AI in the CIMC within the landing application of the hurdle.	<ul style="list-style-type: none">"6+3" framework design: Amazon Cloud and CIMC jointly designed the "6+3" generative AI application framework for enterprises, integrating and applying multiple models, intelligently triaging and selecting the appropriate model according to business scenarios and requirements, and achieving a good balance between user experience, performance and cost while ensuring enterprise safety and compliance. The user experience, performance and cost are well-balanced, while ensuring enterprise security and compliance.

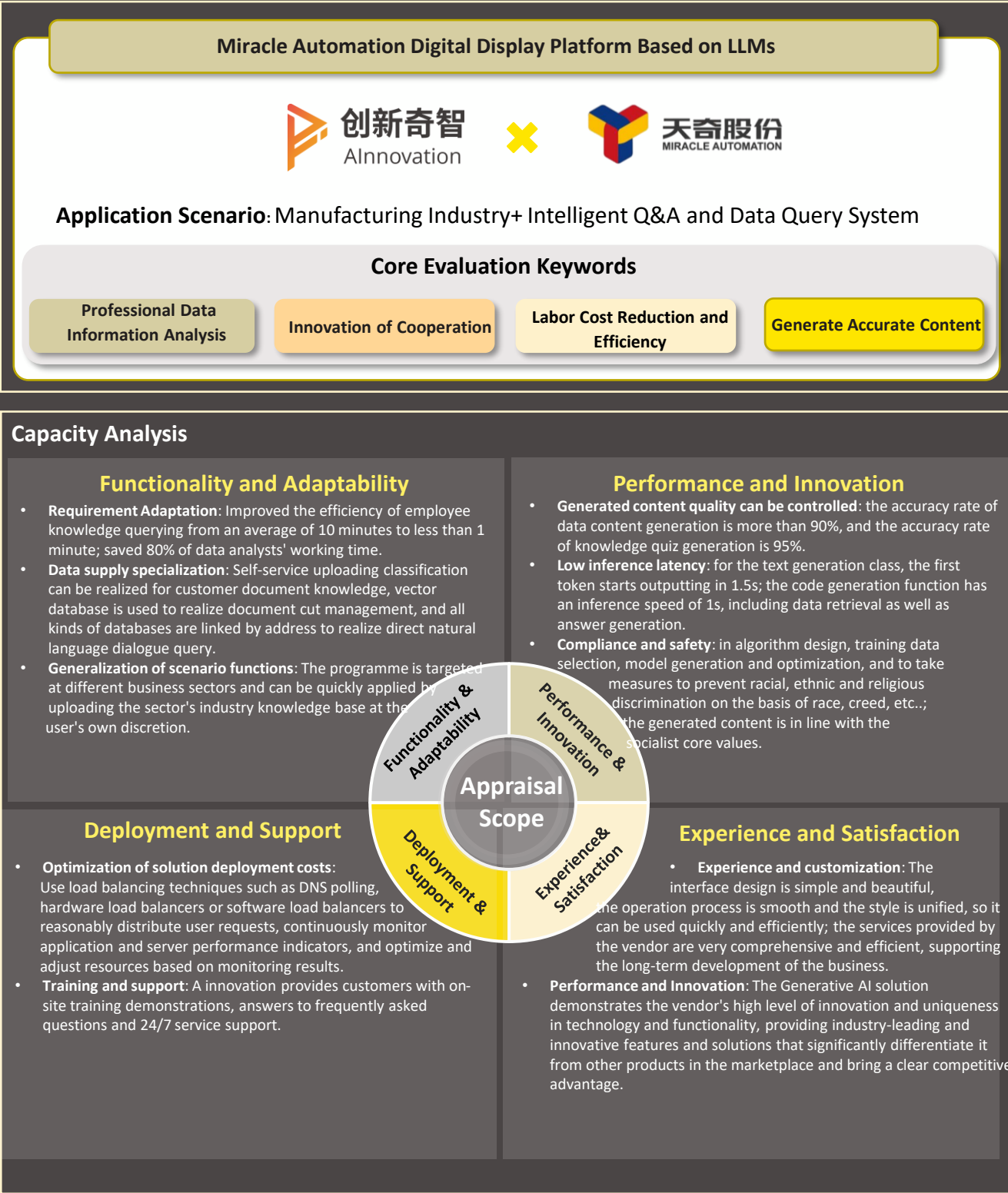
Effectiveness of Implementation

- Currently based on the generative AI ability platform to create onboarding of various functions of the digital staff has more than **10**, all kinds of enhancement effect **> 100**.
- The Financial Secretary's Assistant is online, providing a fast response within 30 seconds, 24/7, with an answer adoption rate of **99.6%**.
- With the help of the maintenance assistant, the downtime for "critical failures" has been reduced **by 20%** and the familiarization time for new employees has been reduced from one year to **six months**.
- Promoting the popularity of CIMC's generative AI applications, **98% of** employees think they can improve efficiency for their jobs.

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2.5.3 Best Practices in The Manufacturing Industry

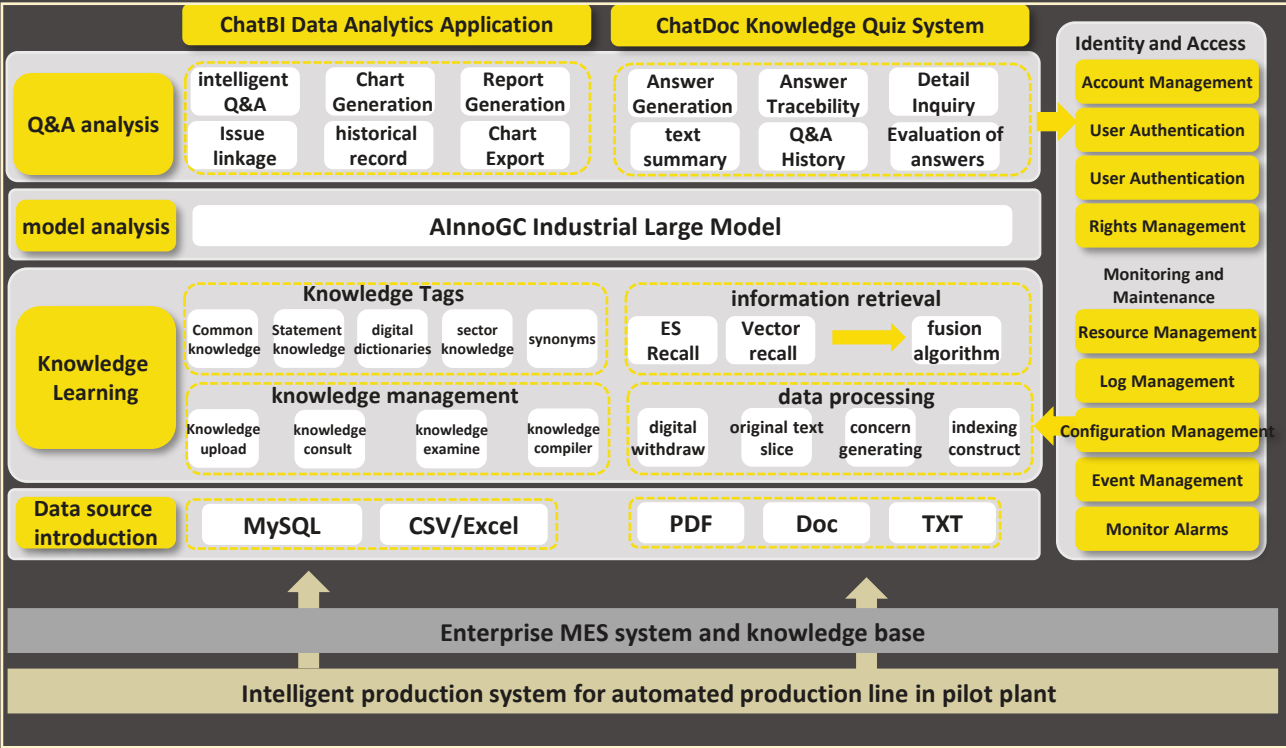
- Miracle Automation Digital Display Platform Based on LLMs



Alnovation X Miracle Automation

In response to the practical needs of Miracle Automation's internal process optimization, Alnovation provided the company with an intelligent interaction and digital display platform based on LLM, which optimized the process of the company's workshop as well as the efficiency of the company's office in an all-round way.

Product Structure and Core Advantages



Solution Effectiveness

Client's Demands	Solutions
<ul style="list-style-type: none">Difficulty in accessing and analyzing data: Data analysis needs need to be provided by professionals, and companies do not have access to real-time data analysis and reporting.High cost of knowledge acquisition: The number of knowledge documents within the enterprise is large, and the cost of knowledge acquisition is relatively high.Difficulty in real-time querying: Enterprise personnel cannot query internal knowledge and data in real-time and need to access internal systems for knowledge acquisition.	<ul style="list-style-type: none">ChatDoc knowledge Q&A application, with excellent knowledge extraction, positioning, summarization and reasoning capabilities, can help enterprises quickly achieve intelligent Q&A, summarization and answer traceability of internal knowledge.ChatBI data analysis applications, support for a variety of formats of data sources, support for the user's full process can be intervened, editable, confirmable, data analysis results are reliable and credible; Text-To-SQL, Text-To-Chart ability to reduce the threshold of data analysis, enhance the efficiency of data analysis.

Effectiveness of Implementation

- Generated content quality can be controlled:** the accuracy rate of data content generation is more than **90%**, and the accuracy rate of knowledge quiz generation is **95%**.
- Improved efficiency:** Employee knowledge query efficiency, from an average of 10 minutes of query time to less than **1 minute**.
- Reduce operation difficulty:** Simple dialog can be real-time query of all production data, without professional data engineers can quickly build data Kanban, saving **80% of** the data analysts' work time.
- Enhance competitiveness:** More convenient equipment control and more flexible data insights reduce reliance on manual operations and help enhance market competitiveness.



Challenges and Developments in The Healthcare Industry and Best Practices

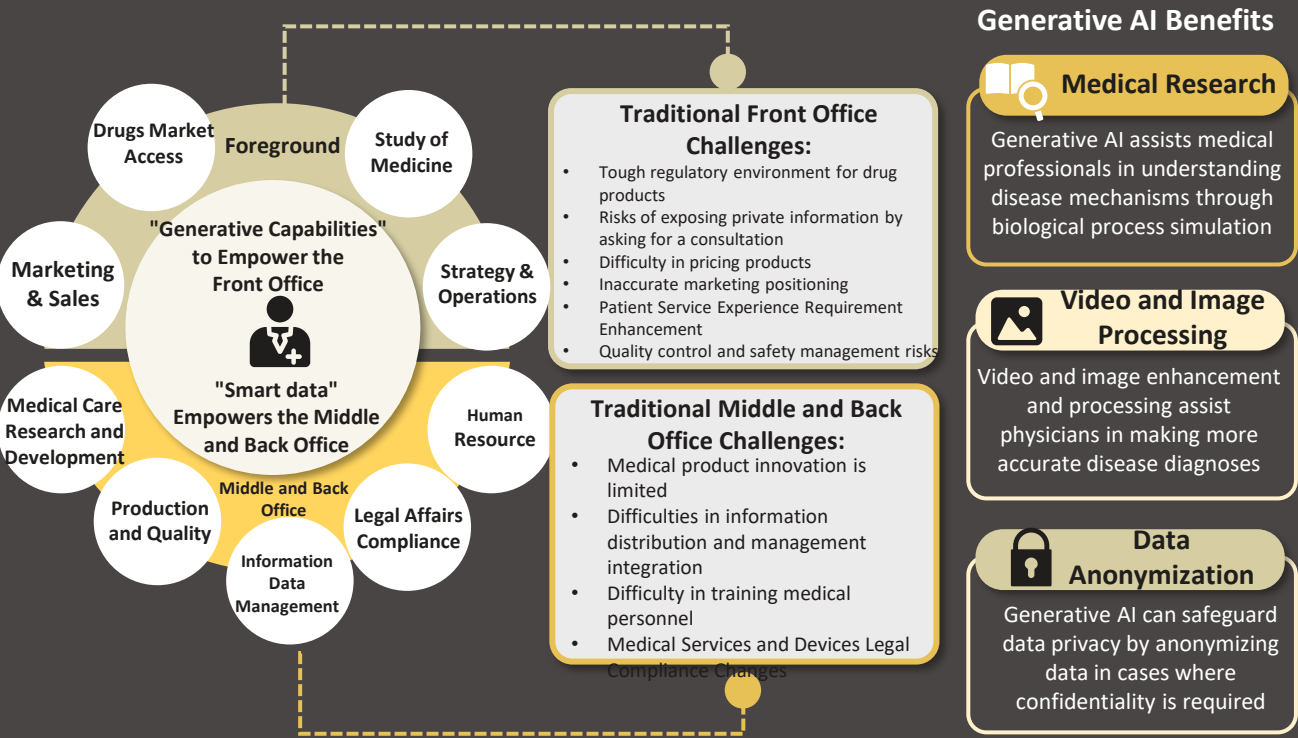
- Generative AI's ability to generate data and information assists pharmaceutical companies to break through the customary difficulties of new drug development and listing, and personalized medical advice helps the industry to shift from passive medical treatment to a precise and active medical treatment model; in addition, generative AI solves the privacy problem of doctor-patient information data through synthetic data.
- Generative AI brings a series of value benefits to the healthcare industry, such as pharmaceutical R&D innovation, management efficiency optimization, medical research and service support, customized marketing, etc., of which pharmaceutical innovation and medical service optimization are the key areas of the current generative AI layout.
- While boosting the transformation and upgrading of the healthcare industry, generative AI also brings challenges such as medical content bias, liability and accident attribution, patient privacy and security protection, fairness and transparency, and whether the new model incorporating generative AI is effective or not still needs to be confirmed by a large number of clinical trials and multi-party verification.

2.6.1 Challenges and Developments in The Healthcare Industry (1/2)

Key findings

Generative AI's ability to generate data and information assists pharmaceutical companies to break through the customary difficulties of new drug development and listing, and personalized medical advice helps the industry to shift from passive medical treatment to a precise and active medical treatment model; in addition, generative AI solves the privacy problem of doctor-patient information data through synthetic data.

Industry's challenges and The New Form of "GenAI+Healthcare"



❑ The healthcare industry faces limitations such as high regulation, confidentiality of doctor-patient information sharing, and upgraded demand for patient service experience. Generative AI provides the industry with more accurate medical advice and anonymized doctor-patient information data support through the generation of new data and information.

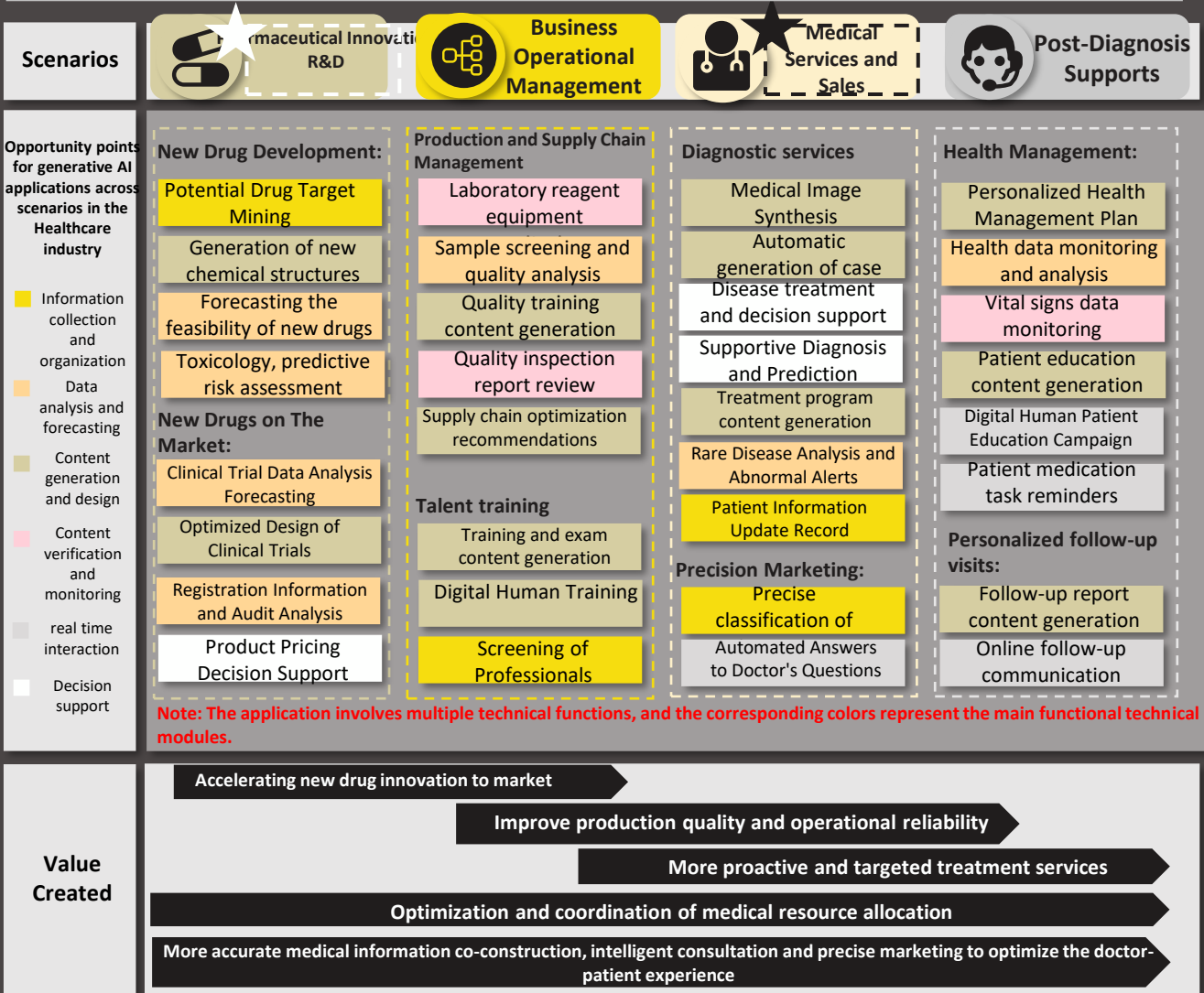
- Traditional challenges in the industry:** Healthcare is one of the highly regulated industries, with high market access thresholds for drugs and devices, so companies face challenges in new drug development, launching and pricing; in addition, the accuracy of medical diagnosis and the privacy of doctor-patient data sharing are also traditional difficulties in the industry.
- The new form of "Generative AI + Healthcare"** : Compared with traditional AI, generative AI generates more creative and accurate content based on data processing and analysis capabilities, helping pharmaceutical companies accelerate the efficiency of new drug R&D in the process of market launch and boosting the process of market access; in addition, the generative capabilities also focus on patient service and marketing levels. Besides, the generative capability also focuses on patient service and marketing, providing patients with personalized marketing plans and consultation suggestions through accurate and targeted diagnostic suggestions, helping to promote the healthcare field from the traditional passive medical treatment to active medical treatment mode; finally, for the use and sharing of sensitive doctor-patient information and data, generative AI can achieve data sharing by synthesizing data under the premise of safeguarding data privacy.

2.6.1 Challenges and Developments in The Healthcare Industry (2/2)

Key findings

Generative AI brings a series of value benefits to the healthcare industry, such as pharmaceutical R&D innovation, management efficiency optimization, medical research and service support, customized marketing, etc., of which pharmaceutical innovation and medical service optimization are the key areas of the current generative AI layout.

Generative AI Opportunity Points Graph



- Based on the risk and high accuracy requirements, generative AI directly used in surgical operations use case is still relatively small, new drug development assistance and medical service optimization for generative AI currently focus on the layout of the field.
- 1 **Pharmaceutical Innovation R&D:** GenAI can assist pharmaceutical companies in exploring potential drug targets and new chemical structures, shortening the drug development cycle and marketing process.
 - 2 **Enterprise Operations Management:** GenAI helps companies strengthen control at the drug product quality and supply chain levels through contextual understanding and data analytics.
 - 3 **Medical services and sales:** generative AI improves the efficiency of medical services and the doctor-patient experience through the rapid collection of medical data, and provides customized marketing plans based on patient information.
 - 4 **Post-diagnosis support services:** Through real-time interaction, applications such as digital human health education and publicity are integrated into post-diagnosis support to provide better health management for patients.

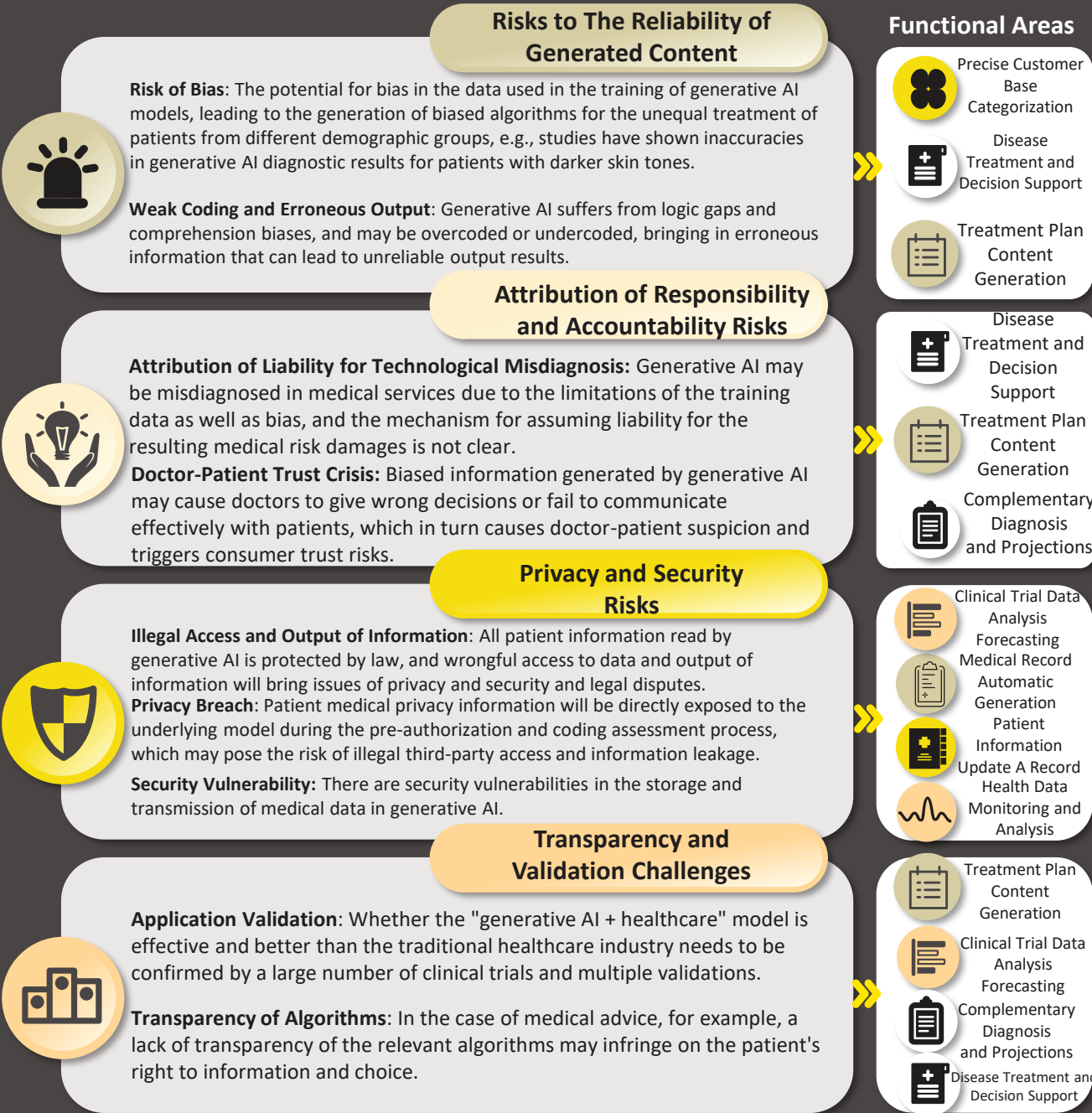
Source: Baidu Cloud, Sullivan

2.6.2 Potential Application Risks in The Healthcare Industry

Key findings

While boosting the transformation and upgrading of the healthcare industry, generative AI also brings challenges such as medical content bias, liability and accident attribution, patient privacy and security protection, fairness and transparency, and whether the new model incorporating generative AI is effective or not still needs to be confirmed by a large number of clinical trials and multi-party verification.

Potential Application Risks






Source: Sullivan

3.6.3 Best Practices in The Healthcare Industry

- Intelligent Generation and Sharing Platform for Electronic Medical Records

Intelligent Generation and Sharing Platform for Electronic Medical Records



Application Scenario: Medical and Healthcare Industry + Intelligent Generation and Sharing Platform for Electronic Medical Records

Core evaluation keywords

Intelligent Medical Record Generation

High Quality of Text Generation

Compliance Assurance

Optimization of The Doctor-Patient Process

Capacity Analysis

Functionality and Adaptability

- Demand Adaptation:** Inspur is highly adapted to customer demands, automatically generating medical record information and significantly reducing the workload of doctors.
- Data supply specialization:** Specialized knowledge datasets, section-specific datasets, and customer-private high-quality labeled data were used.
- Scenario Function Generalization:** Customers can utilize new proprietary data for enhanced training based on Model Ops and Agent Store to implement new functional applications.

Performance and Innovation

- Controlled quality of generated content:** 90% accuracy of generated content, 80% user adoption rate, high quality control.
- Low inference latency:** The inference speed (response latency) of the generated content is 1 second, showing a faster inference speed.
- Compliance and safety:** Meet the compliance requirements of the National Internet Information Office algorithm filing and LLM on-line filing, and the normalization of automatic monitoring flaws safeguard the content.

Deployment and Support

- Generating content inference costs:** In the direction of model lightweighting on the optimization, which effectively reduces the inference cost.
- Solution Deployment Costs:** The localized deployment uses GPU servers and achieves the expansion of the capacity limit through load balancing, showing good scalability and flexibility.
- Time cost of program implementation:** The time cycle from project creation to functional validation POC was 30 days, and the time cycle from POC to formal go-live was 2 months, showing a faster implementation speed.

Experience and Satisfaction

Business satisfaction with the program: Customer satisfaction Inspur's understanding of business and process requirements, as well as the solution's scenario suitability, was highly evaluated.

- Maturity and scale of the program:** The GenAI program is currently being tested and validated on a small scale, and has not yet been fully applied to formal production, but shows a certain degree of maturity.
- Willingness to invest in the long term:** The First Affiliated Hospital of SDFMU has a strong willingness to invest in generative AI technology in the long term, regards it as a strategic technology, and plans to continue to increase investment and resources.

Appraisal Scope

Functionality & Adaptability

Performance & Innovation

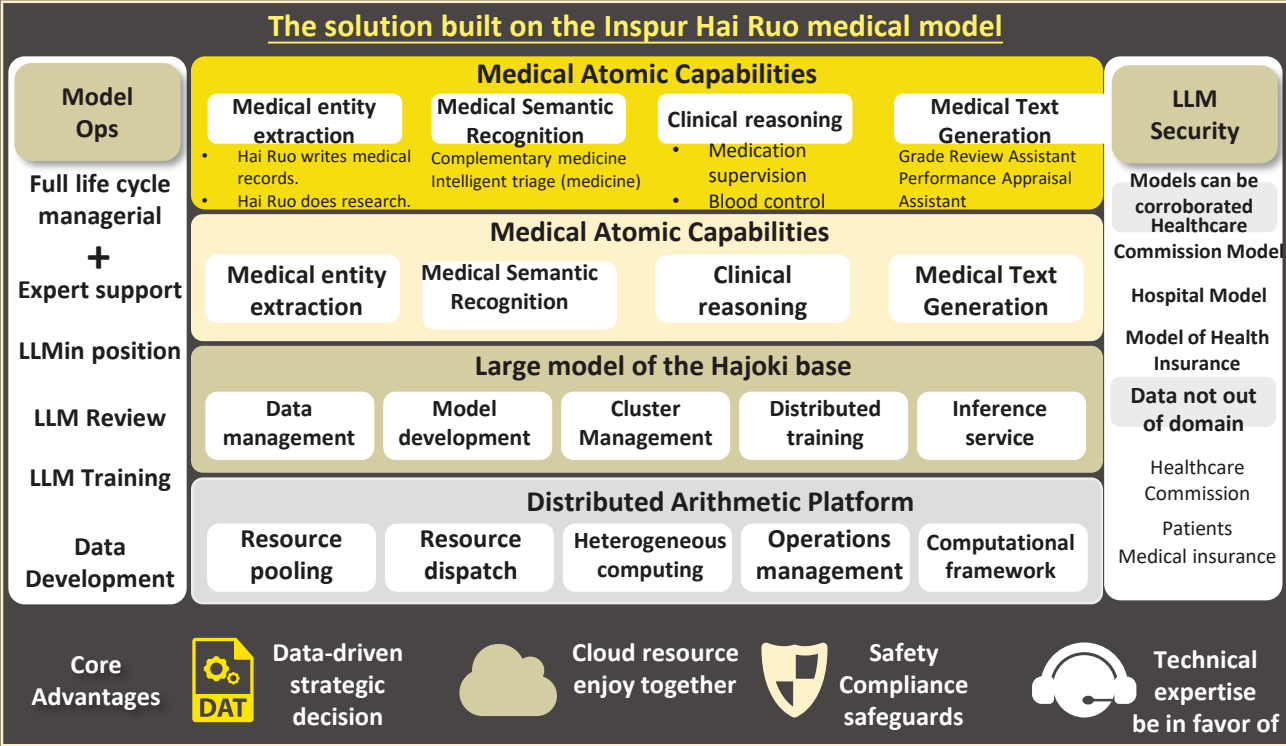
Experience & Satisfaction

Deployment & Support

Inspur X The First Affiliated Hospital of Shandong First Medical University

Inspur cooperated with the First Affiliated Hospital of Shandong First Medical University to realize the intelligent generation of electronic medical records through generative AI technology, which comprehensively improved the efficiency of medical document processing for the hospital, ensured data security and compliance, optimized doctors' workflow, and enhanced the patient service experience.

Product Structure and Core Advantages



Solution Effectiveness

Client's Demands

- Time-consuming collection of information from doctors and patients:** Doctors need to collect information on patients' signs and condition development during their hospitalization, it is time-consuming to organize all the records and other paperwork.
- Optimization of hospital staff's office process needs:** for a large number of repetitive paperwork collection and collation work, hospitals need to optimize the repetitive workflow with new technology to improve the efficiency.

Solutions

- Intelligent Generation and Sharing Platform for Electronic Medical Records:** Through the operation of cell phone APP in the process of consultation and the acquisition of voice technology for doctor-patient dialogues, it realizes the rapid generation of instruments and supports the synchronization of the doctor's modification and confirmation to the electronic medical record system.


Effectiveness of Implementation


- The work efficiency is significantly improved, greatly reducing the workload of doctors and helping them to reduce their workload input **by 70%**.
- It guarantees the security and compliance of the platform and meets the encryption and auditing requirements for medical data.
- The simplified design of the user interface and the ease of use of the system allows physicians to get started quickly and easily.

2.6.3 Best Practices in The Healthcare Industry

- Ruijin Hospital Medical Model

Ruijin Hospital Medical Model

 腾讯云



Application Scenario: Healthcare Industry + Medical Intelligence Q&A + Follow-up Recommendation Generation

Core evaluation keywords

Medical Intelligence Quiz

High Quality of Text Generation

Follow-Up Proposal Generation

Optimization of The Doctor-Patient Process

Capacity Analysis

Functionality and Adaptability

- Demand Adaptation:** Tencent Cloud, in response to the practical needs of Ruijin Hospital, helped Ruijin Hospital build the Ruijin Hospital Medical Model, in which medical intelligent Q&A and follow-up recommendations were generated to meet the needs of the hospital's internal medical staff to improve their work efficiency.
- Data supply exclusivity:** Tencent Cloud's medical model is based on a hybrid grand model adding more than 2.85 million medical entities, 12.5 million medical relationships, and more than 98% of the medical knowledge of the knowledge breakthroughs and Medical Literature.

Performance and Innovation

- Compliance and Security:** Based on Tencent Cloud's Hunyuan model base, it strictly follows domestic and international laws and regulations, such as the European Union's General Data Protection Regulation and China's Cybersecurity Law, to ensure that the security and privacy of users' data are fully protected.
- Controllable quality of generated content:** the program is based on Tencent's Hunyuan model, which is regularly evaluated, and the model is evaluated according to the evaluation feedback results. Each performance is continuously optimized and upgraded.

Deployment and Support

- Perfect service technical support:** Tencent Cloud has rich experience in fine tuning industry LLM with regent requirements consulting services, solution design, landing the full process of program implementation, delivery of project management projects.

Experience and Satisfaction

- Scenario Value Satisfaction:** The solution provided by Tencent Cloud for Ruijin Hospital effectively and efficiently alleviated a large amount of repetitive writing work for healthcare professionals and significantly improved the efficiency of healthcare professionals within the hospital.
- Customers' willingness to invest in the long term:** Tencent Cloud and Ruijin Hospital's goals and are highly compatible, and Ruijin Hospital has indicated that it will continue to carry out long-term strategic cooperation to promote the development of a leading medical model.

Appraisal Scope

Functionality & Adaptability

Performance & Innovation

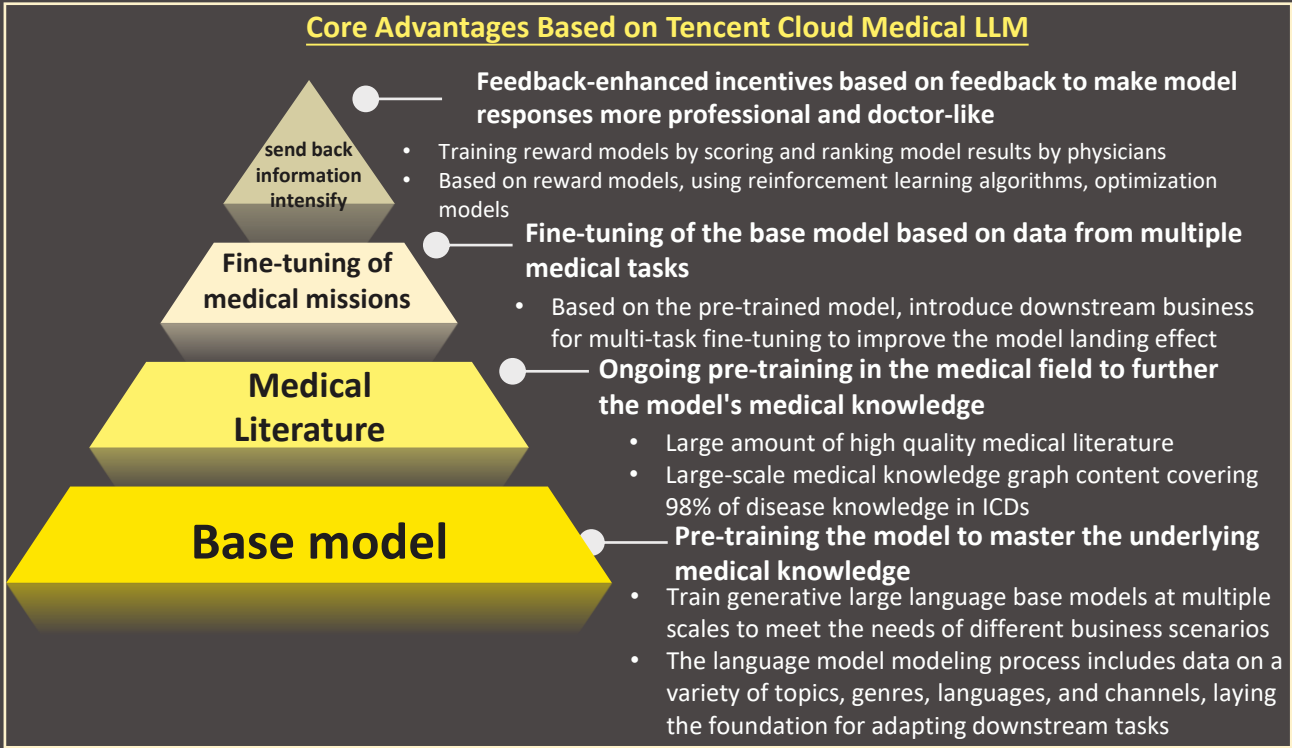
Experience & Satisfaction

Deployment & Support

Tencent Cloud X Ruijin Hospital

Tencent Cloud cooperated with Ruijin Hospital to build a medical model, in which intelligent Q&A and follow-up recommendations generate service solutions that help Ruijin Hospital save more than 50% of the internal doctors' writing time, dramatically improving the efficiency of the hospital's internal work, and optimizing the patient-physician process experience.

Product Structure and Core Advantages



Solution Effectiveness

Client’s Demands	Solutions
<ul style="list-style-type: none">• Complexity of the Q&A process: A large number of patients asking basic questions about their condition generates a lot of repetitive Q&A work for healthcare professionals.• Time-consuming Diagnostic Recommendation Writing: Doctors spend a lot of time writing recommendations and gathering information about the patient during the process of generating a diagnostic recommendation for the patient.	<ul style="list-style-type: none">• Medical Intelligent Q&A: Based on the common medical conditions in medicine, intelligent Q&A, systematic medical knowledge mapping and deep semantic analysis, it meet the patient's precise and personalized information acquisition requirements.• Follow-up suggestion generation: It can assist doctors in generating customized follow-up plans and follow-up suggestion content generation for in-depth patient management.

Effectiveness of Implementation

- **Increased efficiency of medical staff within the hospital:** After using Follow-up Suggestion Generation, Ruijin Hospital's Follow-up Suggestion Generation reached a clinically usable level, and Ruijin Hospital internally saved more than **50% of** the physicians' writing time.

Source: Tencent Cloud, Sullivan



Challenges and Developments in The Financial Industry and Best Practices

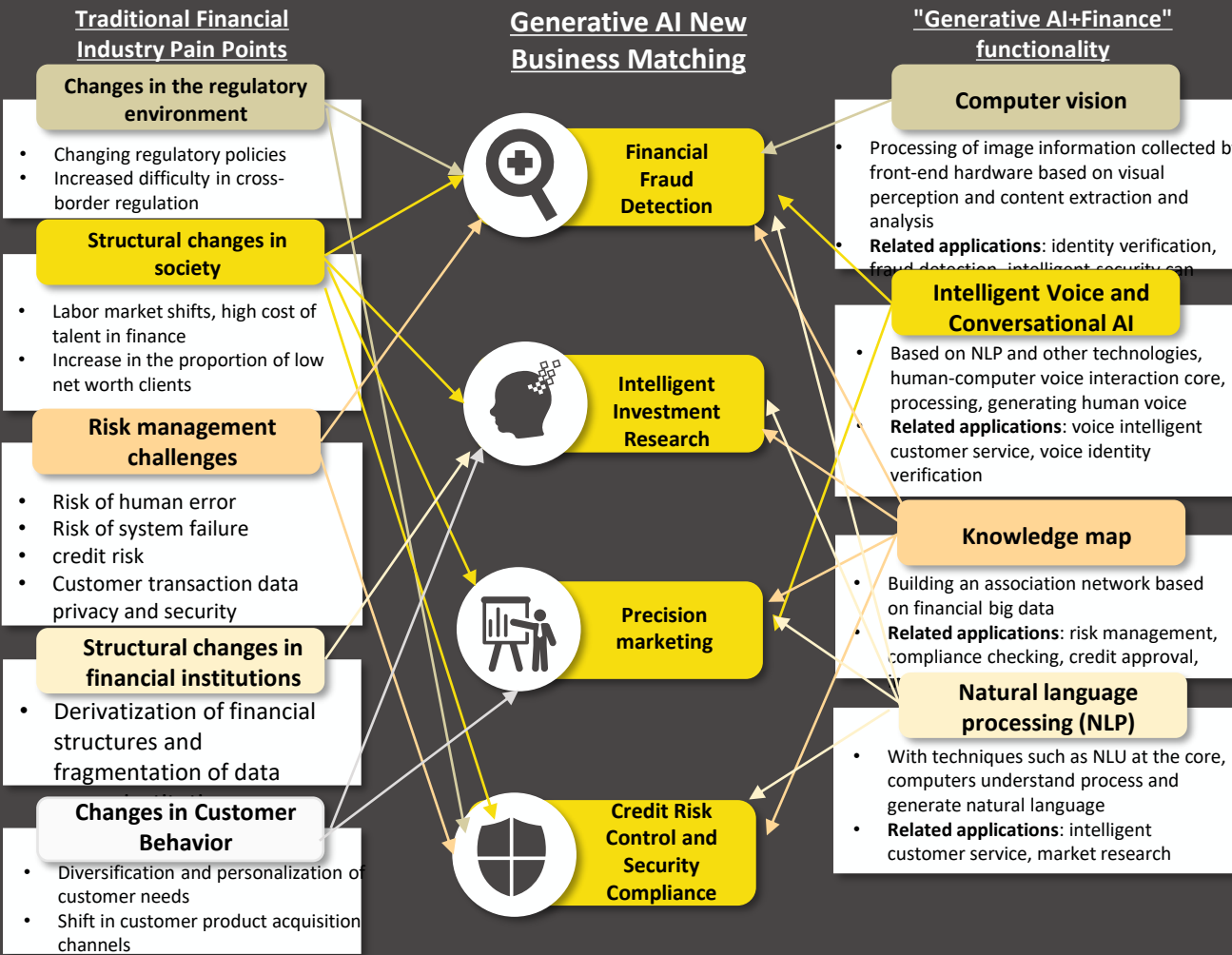
- The financial industry's unique high-intensity data attributes and the dynamic changes in the economic environment bring significant challenges in data analysis and prediction and data governance, and the difficulty of data analysis and prediction also limits the rationalization of customer service recommendations. The innovative generation capability of generative AI helps the financial industry to realize efficient and low-cost function expansion and data information processing.
- Generative AI enhances data connectivity in the financial industry, assisting institutions and analysts in shortening the length of time for massive data processing and analysis, improving the efficiency and accuracy of data processing decisions, and empowering institutions to identify risks such as fraud and abnormal data.
- Behind the high efficiency of data processing which enabled by generative AI, there are still potential risks such as sensitive data leakage, model bias and overfitting, etc., which bring about trading decision-making errors, so financial institutions and related departments need to establish a perfect data security management system and carry out secondary validation and verification of important information.

2.7.1 Challenges and Developments in The Financial Industry (1/2)

Key findings

The financial industry's unique high-intensity data attributes and the dynamic changes in the economic environment bring significant challenges in data analysis and prediction and data governance, and the difficulty of data analysis and prediction also limits the rationalization of customer service recommendations. The innovative generation capability of generative AI helps the financial industry to realize efficient and low-cost function expansion and data information processing.

Industry's challenges and The New Form of "GenAI+Finnace"



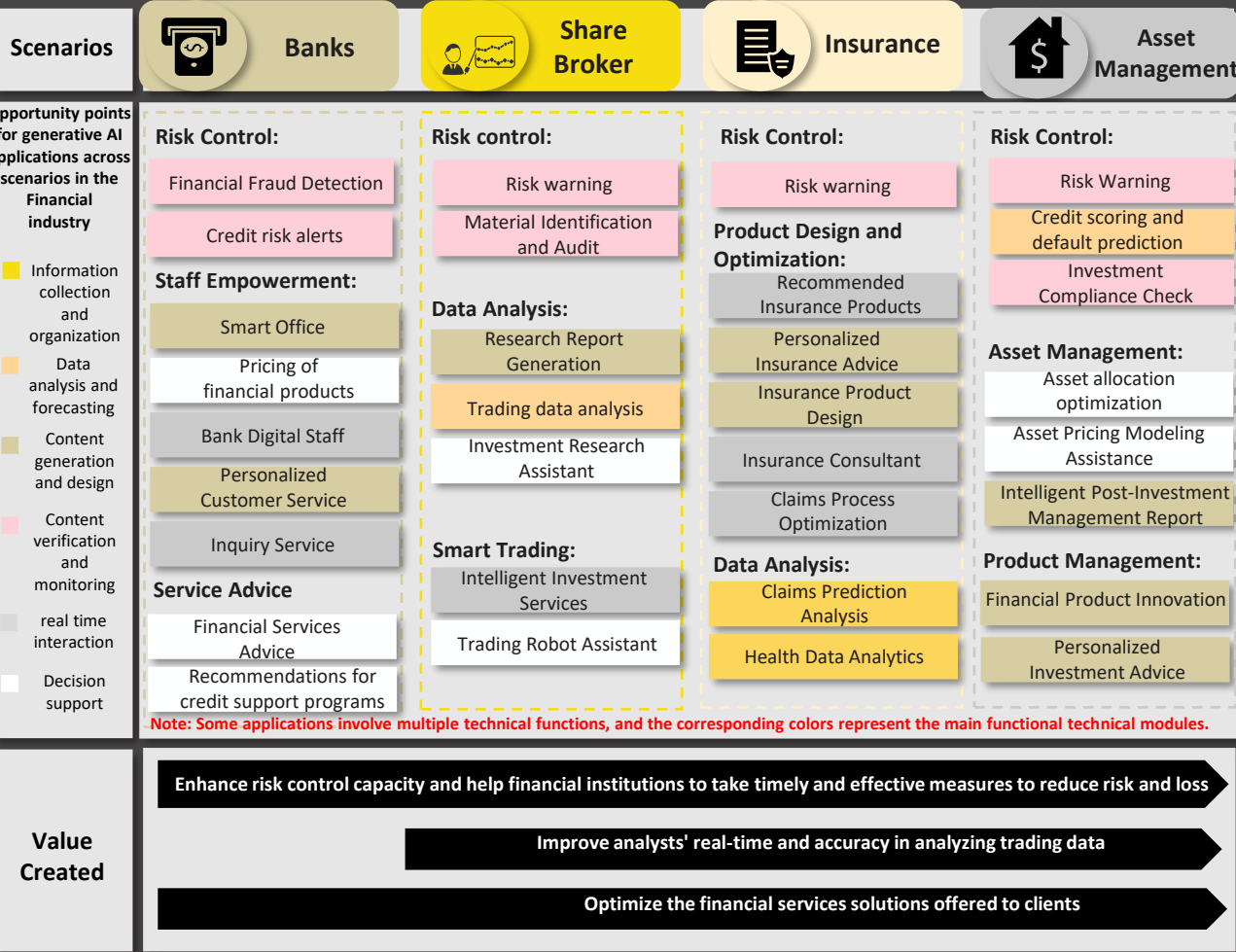
- Generative AI assists the financial industry to break through the challenges of the changing regulatory environment and complex risk management in the traditional model through innovative data models, strategies, and simulations of complex markets.
- Industry Traditional Challenges:** The financial industry's unique high-intensity data attributes and the dynamic changes in the economic environment make it challenging to analyze data, risk and data management.
 - New form of "Generative AI+Finance":** Based on knowledge graph, natural language processing and other technologies, generative AI creates new data models, strategies and personalized marketing content, and realizes risk monitoring and management by simulating complex market environments.

2.7.1 Challenges and Developments in The Financial Industry (2/2)

Key findings

Generative AI enhances data connectivity in the financial industry, assisting institutions and analysts in shortening the length of time for massive data processing and analysis, improving the efficiency and accuracy of data processing decisions, and empowering institutions to identify risks such as fraud and abnormal data.

Generative AI Opportunity Points Graph



- Generative AI empowers financial institutions, enhances connectivity between data, shortens the time to analyze massive amounts of complex data, and improves the efficiency of resource allocation, while strengthening transaction risk control within the market and institutions.
- 1

Risk control: Generative AI can predict and identify potential risks more quickly and comprehensively, allowing financial institutions to make the right decisions quickly to reduce losses. In banks, it can be used for financial fraud detection and comparison of loan documents, etc.; in brokerage organizations, it can be used to identify and review materials.
- 2

Data analysis: generative AI can quickly preprocess data, data mining and predictive analysis, etc., providing strong support for decision-making in financial institutions. It can be used for transaction data analysis in brokerage organizations; health data and claim prediction can be analyzed in the insurance field.
- 3

Product management: generative AI can enhance product innovation and can provide reasonable product pricing suggestions and more accurate product promotion strategies. In asset management it can provide personalized investment advice as well as financial product innovation.

2.6.2 Potential Application Risks in The Financial Industry

Key findings

Behind the high efficiency of data processing which enabled by generative AI, there are still potential risks such as sensitive data leakage, model bias and overfitting, etc., which bring about trading decision-making errors, so financial institutions and related departments need to establish a perfect data security management system and carry out secondary validation and verification of important information.

Potential Application Risks

Risks to The Reliability of Generated Content

- Market Decision Bias:** Financial services companies may suffer from inaccurate or incorrect market judgments generated by generative AI that can affect the analytical decisions.
- Over-Reliance on Generated Data:** Finance belongs to a highly data-intensive industry, and there are certain limitations on the scope of data that generative AI can synthesize, and over-reliance on synthesized financial data and may trigger invalid output results.
- Deviation in The Simulation of Insurance Scenarios:** In the process of claims prediction, the accuracy of insurance scenario simulation is particularly important, as deviations in the generated content can lead to incorrect claims payment, resulting in two-way losses for both the company and the customer.

Liability Attribution Risks

- Intellectual Property Risks:** The demand for large amounts of training data carries legal risks associated with intellectual property or copyright infringement, and organizations deploying models need to assess the IP compliance of their training sets.
- Data Access Rights:** In risk management and other aspects, data governance and analysis need to be shared among various departments, and for some sensitive transaction data, inappropriate rights restriction management will lead to data misuse and leakage.
- Risk Event Disclosure:** If a generative AI discloses a risk event that leads to a financial institution making an incorrect customer service decision, the rights and responsibilities of the relevant stakeholders should be documented and delineated.

Privacy and Data Security Risks

- Risk of Sensitive Data Leakage:** When training models and testing datasets, enterprises should try to safeguard data security and conceal the relevant data, otherwise the model might be attacked for leaking relevant confidential data due to malfunction or orientation.
- Risk of Customer Information Leakage:** Generative AI needs to generate personalized financial solutions through a large amount of customers' personal financial information, in which there is a risk of customer privacy data leakage. Enterprises should take measures, including model access rights management, to protect relevant customer information

Operational and Technical Risks

- Market Manipulation Risk:** Generative AI may be utilized to generate misleading information that can influence market sentiment and prices, ultimately creating the risk of market manipulation.
- Misuse of Technology:** Generative AI can be used for unethical or illegal purposes, such as creating false financial reports or engaging in financial fraud, and needs to be jointly regulated by the relevant authorities and agencies.

Functional areas

- Trading Data Analysis
- Research Report Generation
- Claims Prediction Analysis
- Smart Investment

- Risk warning
- Material Identification and Audit
- Trading Data Analysis

- Personalized Investment Suggestions
- User Health Data Analysis

- Trading Data Analysis
- Trading Robot Helper
- Risk warning

2.7.3 Best Practices in The Financial Industry

- LLM of Finance

LLM of Finance



Application Scenarios: Financial Industry + Intelligent Q&A + Compliance and Risk Control + Code Assistance + Office Assistant + Intelligent Research Reports

Core evaluation keywords

Financial Multimodal Full Stack LLM

Data Information Security Protection

Customized Corporate Services

Improving The Quality and Efficiency of Business Processes

Capacity Analysis

Functionality and Adaptability

- Data Specificity:** Based on its own leading LLM technology, combined with the real application scenarios within Haitong Securities, SenseTime has constructed a complete chain of thinking in line with the financial industry, in which the intelligent R&D assistant launched based on SenseTime's Raccoon provides developers with intelligent supplementation and dialog Q&A services through the Haitong's rich internal data accumulation and in-depth understanding of the customer's internal business logic.
- Long-term development strategy fit:** Haitong Securities has always insist on Technology+Data+Scenario"-drivenas force to comprehensively strengthen business development, and the solution provided by business intelligence fits the company's internal development strategy.

Performance and Innovation

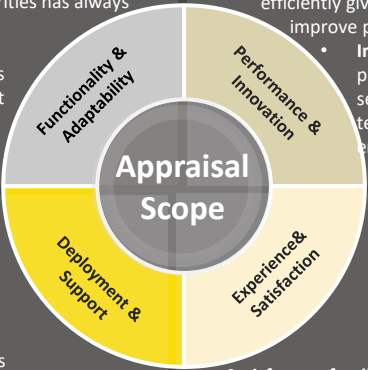
- Controlled generation quality:** Take intelligent code assistant as an example, the solution continuously improves the accuracy of generated content based on error detection, performance optimization suggestions and user feedback.
- Intelligent Q&A Assistant:** Based on the powerful language understanding and interaction capabilities of the SenseNova Model, superimposed on the financial industry-related knowledge and search engines, it can accurately understand the questions and efficiently give replies so as to improve productivity for internal employees.
- Intelligent R&D assistant:** Assist developers in code programming, provide code completion and dialog Q&A services, reduce the threshold of development technology, improve development efficiency and enhance the quality of software delivery.

Deployment and Support

- Upfront Deployment and Reasoning Costs:** Based on SenseNova Model - the first "cloud, end, edge " full-stack Big modeling product matrix that meets the different scale scenarios of the customer's requirements.
- Covering all aspects of securities trading in the pre-, mid- and post-trading phases:** Through the leading LLM technology, combined with the real application scenarios of Haitong Securities, SenseTime has constructed a complete chain of thinking that conforms to the financial industry, focusing on the landing of intelligent Q&A, intelligent research and development, and intelligent research and reporting and other business segments.

Experience and Satisfaction

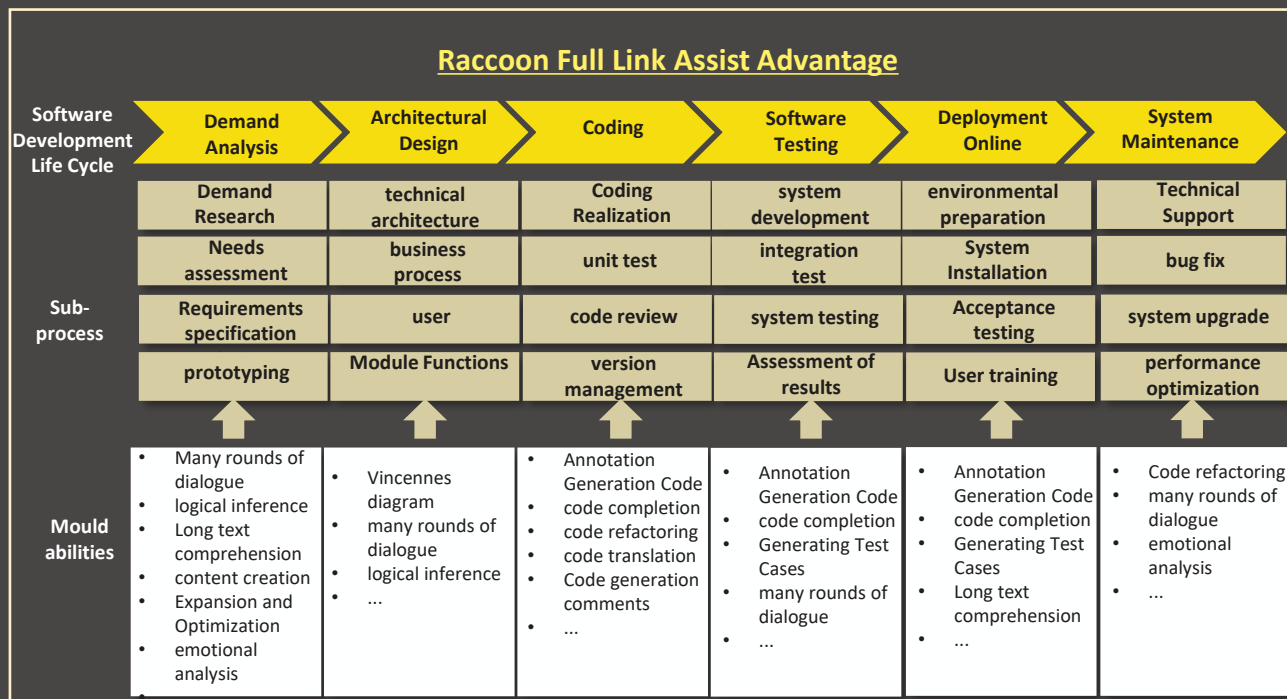
- Scenario value satisfaction:** Intelligent Q&A, intelligent code and other programs are fully in line with the expectations of the Haitong demand, which significantly improved efficiency within Haitong.
- Satisfactory feedback:** Through deep cooperation with SenseTime, Haitong Securities combine the full-stack AI capabilities to jointly promote the business process, interaction changes and digital business system reconstruction in the securities industry, and explore the experience for the landing of LLMs in industry verticals.
- Willingness to cooperate in the long term:** The person in charge of Haitong Securities said that in the future, Haitong Securities will take the multi-modal large model of Business Intelligence as the base capability, and will deeply explore the potential of a wider range of applications in finance, securities and other related industries, and will help Haitong Securities to improve its operational efficiency, risk control capability and customer experience.



SenseTime X Haitong Securities

In response to the industry and enterprise pain points such as complicated work content and highly intensive transaction data, SenseTime and Haitong have jointly built a new multi-modal, full-stack ecosystem for the industry based on the SenseNova model, in which Raccoon assists Haitong Securities in realizing the efficiency of development and meeting the needs of internal security protection and code data confidentiality.

Product Structure and Core Advantages– SenseTime Raccoon



Solution Effectiveness

Client's Demands

- **R&D Efficiency Challenges:** Haitong Securities has a huge business scale and faces a series of business process challenges in daily software development, such as high percentage of repetitive work, uneven level of developers, and unchanged internal information query, etc. The software development projects are getting more and more complicated, and the overall development efficiency of the development team is gradually becoming a bottleneck for business development.
- **Data information protection requirements:** The financial industry is a data-dense industry and data information involves a large amount of transaction data and other highly confidential business information, so there are high requirements for the security of data information within the enterprise.

Solutions

- Haitong Securities and **Raccoon** have jointly launched "eHay Yandao", an intelligent R&D assistant, which realizes a number of technological breakthroughs in the software R&D process, including code dialogue, completion, translation, refactoring, unit test generation, etc., significantly improving the efficiency and quality of R&D.

Effectiveness of Implementation


- **Business Efficiency Improvement:** Based on Raccoon's intelligent R&D assistant, Haitong saves a lot of repetitive development work, unifies the development behavior, code specification and comment style, and finally Haitong Securities achieves **40%** development efficiency improvement.
- **Customer Experience Enhancement:** In addition, Business Intelligence has enhanced digital human and other capabilities for Haitong, helping more customers realize more innovative, timely and accurate service experiences such as intelligent customer service and intelligent marketing.

Source: SenseTime, Sullivan

2.7.3 Best Practices in The Financial Industry

- Wealth Management Assistant

Wealth Management Assistant

 智谱·AI

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 华泰证券
HUATAI SECURITIES

Application Scenario: Financial Services Industry + Intelligent Customer Service + Wealth Management Assistant

Core evaluation keywords

Precise Recognition of User Intent

One-Stop Financial Services

Data Security Compliance

Financial Data Specialization

Capacity Analysis

Functionality and Adaptability

- Requirements adaptability:** Zahngle Fortune Path, a collaboration between Zhipuai and Huatai Securities, builds a new generation of wealth management assistants, accurately recognizes customers' needs, solves the shortcomings of the traditional system in terms of intent recognition and multiple rounds of interactions, and effectively improves customers' experience of using the project and the ability of one-stop wealth management services.
- Dedicated data supply:** the project uses a large amount of specialized financial data (e.g. financial books, information, regulations, announcements of listed companies), formed through incremental training and instruction fine-tuning dedicated Huatai Financial Model 1.0, which makes high accuracy in handling finance-related tasks and professionalism, demonstrating significant financial field advantage.

Performance and Innovation

- Controllability of the quality of generated content:** GLM model ensures the quality and professionalism of the generated content by overlaying specialized financial data and instruction set fine-tuning, and has a strong capability of generating content in the financial field.
- Compliance and Security of Generated Content:** As a homegrown self-developed model, Smart Spectrum GLM supports local private deployment, ensuring data security and Content compliance greatly enhances the credibility of the program.

Deployment and Support

- Generating content reasoning costs (using operations):** project may involve high computational costs in the reasoning process,especially when dealing with multi-round interactions and complex tasks.
- Solution Deployment Costs (Upfront Deployment):** Upfront deployment costs can be high due to the large amount of data processing and customization involved.
- Time cost of program implementation:** The implementation of the project requires some time cost, especially in the data preparation, model training and deployment phases.
- Training and Support:** The full range of support and technical training provided by Zhipuai ensures that the Huatai Securities team is able to fully utilize the system's features.

Experience and Satisfaction

- Scenario value satisfaction:** customer feedback shows that Huatai Financial Model 1.0 makes the end-user experience better by improving intent recognition and multi-round interaction capabilities, solving the problem that traditional technology is unable to accurately recognize the intention and carry out multiple rounds of interaction with customers, possessing the ability to strengthen the interaction experience with users and one-stop service.
- Performance and Innovation Satisfaction:** The project excels in technical performance and innovativeness, especially in the ability of semantic understanding of multiple rounds and multiple intents, as well as the accurate and effective summarization of documents, which is leading the domestic and international modeling capabilities.

Appraisal Scope

Functionality & Adaptability

Performance & Innovation

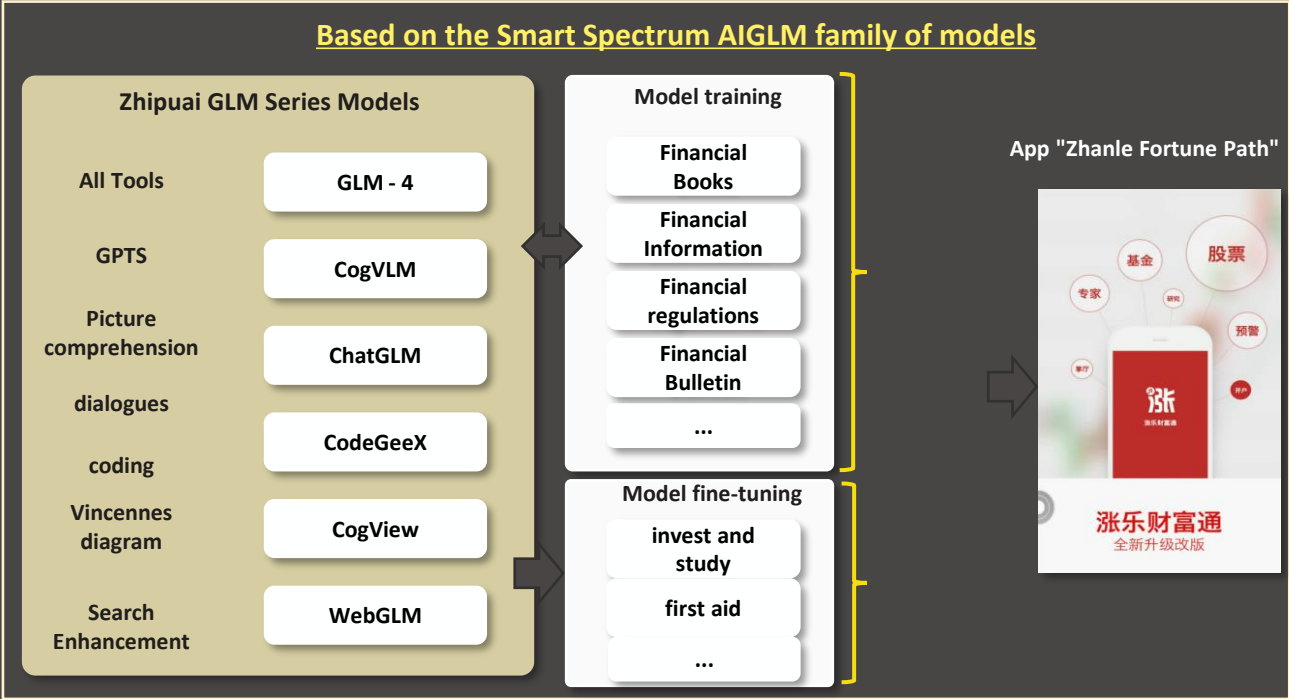
Experience & Satisfaction

Deployment & Support

ZhipuAI X Huatai Securities

Based on the GLM series, Huatai Securities and Zhipuai cooperated to develop wealth management assistant, which aims to respond to the complex and changing business needs of the financial industry, provide users with more accurate and efficient wealth management services, and help financial institutions reduce costs and increase efficiency.

Product Structure and Core Advantages



Solution Effectiveness

Client's Demands	Solutions
<ul style="list-style-type: none">Intent Recognition and Multi-Round Interaction Challenges: Isolated product forms, insufficient generalization of intent recognition, and lack of multi-round conversation comprehension still exist, resulting in a poor customer experience. Systems that can understand multi-round conversations and provide accurate responses are urgently needed to enhance the customer experience.Data Security and Compliance Needs: Data security and compliance are critical when dealing with sensitive financial data. Clients need to ensure data security and system compliance, especially in privately deployed environments.	<ul style="list-style-type: none">Intelligent Customer Service and Wealth Management Assistant: Through the application of Zhipuai 's GLM series models, Huatai Securities has constructed a new generation of intelligent customer service and wealth management assistants with powerful intent recognition and multi-round interaction capabilities, which are able to accurately understand customer needs and provide professional financial advice and services.Local Private Deployment and Data Security: The project supports local private deployment, which ensures the safe storage and isolation of sensitive data and provides a highly secure solution.

Effectiveness of Implementation

- Under this program, the Huatai Financial Model 1.0 improves **10% to 20%** in terms of effectiveness compared to the generic model.



Challenges and Developments in The ICT Industry and Best Practices

- Generative AI assists the information and communications industry in breaking through the complexity of traditional manual operation and maintenance management difficulties, driving the industry to intelligent network mode transformation, enabling the multi-dimensional resources for joint optimization scheduling. In addition to promoting the information and communications industry more accurately fit other industry sectors, expanding and updating of the business model.
- Generative AI is mainly applied to the operation and security management in the communications industry at this stage, which enhances the automation of network operation by transforming big data resources into efficient network planning and fault diagnosis capabilities through intelligent algorithms.
- The deployment and optimization of communication networks involves the ecological operation of various industries, so when GAI generates network information architecture optimization proposals, the relevant personnel should take the lead in the network to avoid excessive technological dependence, and at the same time, the monitoring of network security should be strengthened to implement the manual synchronous monitoring.

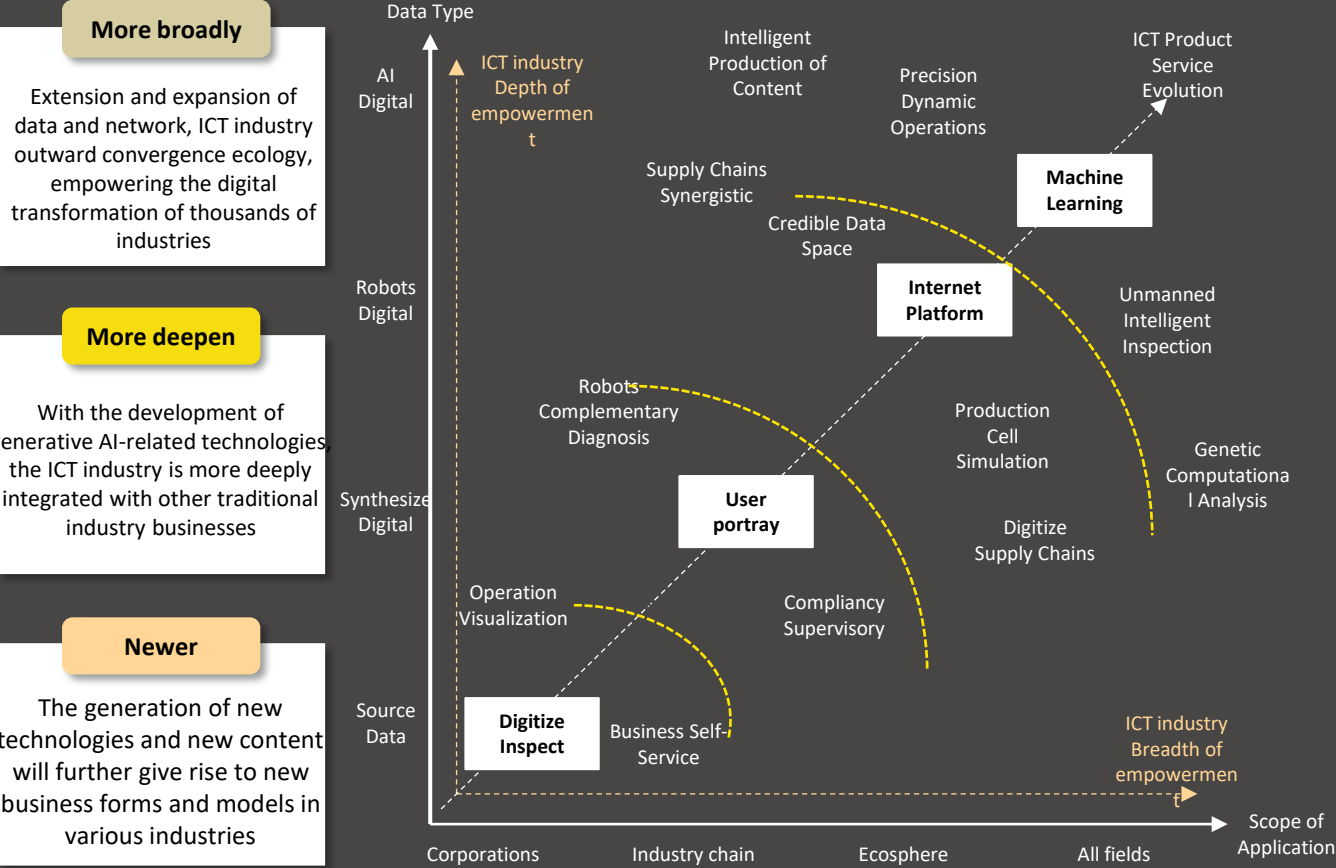


2.8.1 Challenges and Developments in The ICT Industry (1/2)

Key findings

Generative AI assists the information and communications industry in breaking through the complexity of traditional manual operation and maintenance management difficulties, driving the industry to intelligent network mode transformation, enabling the multi-dimensional resources for joint optimization scheduling. In addition to promoting the information and communications industry more accurately fit other industry sectors, expanding and updating of the business model.

Industry's challenges and The New Form of "GenAI+ICT"



Information and communications as a foundation to support the digital development of various industries, generative AI technology, network operation mode to intelligent network conversion, driving the information and communications industry more accurately fit other industry segments and business scenarios, and promoting the industry ecology's new definition.

- Traditional industry challenges:** With the network architecture and business ecosystem becoming increasingly complex environments, the information and communications industry is faced with increased difficulty in manual management and operation and maintenance, new upgrades to network facilities, service capacity transformation and other challenges.
- New form of "Generative AI + information and communication":** With the convergence and development of generative AI technology, on the one hand, traditional information and communication is gradually transformed from the original operation mode relying on experts' experience to the intelligent network mode, and the optimization process is adjusted from the original post-trigger optimization process to the ex-ante prediction and active optimization of performance to achieve timely adjustment and optimal allocation of network resources and performance.

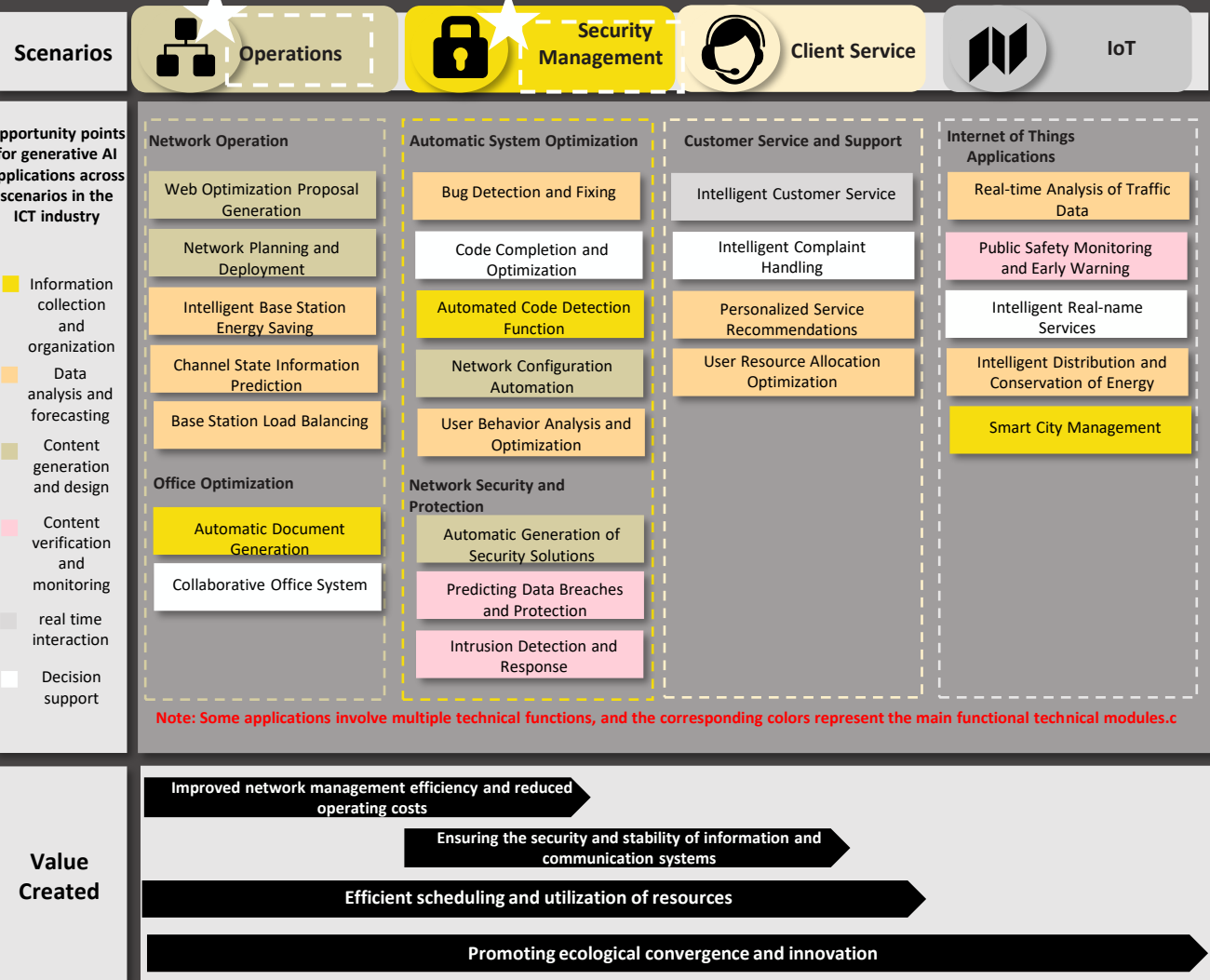
Source: Huawei, Sullivan.

2.8.1 Challenges and Developments in The ICT Industry
(2/2)

Key findings

Generative AI is mainly applied to the operation and security management in the communications industry at this stage, which enhances the automation of network operation by transforming big data resources into efficient network planning and fault diagnosis capabilities through intelligent algorithms.

Generative AI Opportunity Points Graph



As a vast connectivity network, the introduction of generative AI provides intelligent decision-making and optimization capabilities, especially in the communications operation and security management scenarios, significantly improving the industry's resource scheduling efficiency and service stability.

- 1

Communications Operations: GAI can be used to generate planning and deployment of network operations and optimization recommendations to help enterprises improve the efficiency of communications system construction and operation.
- 2

Security Management: GAI monitors network operation status, identifies external anomalies and attacks, and encrypts data to ensure the security of communication networks.
- 3

Customer Service: GAI optimizes the quality of service by analyzing users' communication habits and using reinforcement learning algorithms to optimize the allocation of resources and users.
- 4

IoT application: Promote the comprehensive intelligence of communication networks in public utilities through real-time analysis and monitoring of IoT data information.

Source: AI in Wireless Communication Systems, Sullivan

2.8.2 Potential Application Risks in The ICT Industry

Key findings

The deployment and optimization of communication networks involves the ecological operation of various industries, so when GAI generates network information architecture optimization proposals, the relevant personnel should take the lead in the network to avoid excessive technological dependence, and at the same time, the monitoring of network security should be strengthened to implement the manual synchronous monitoring.

Potential Application Risks

Technology Dependence and Supply Chain Risk

Risk of Technology Dependence: Big language modeling may output factually incorrect information, rendering network troubleshooting ineffective, and complete dependence on technology may bring risks to the operation and security of the entire communication network.

Supply Chain Risk: The generative AI platform system may have some cybersecurity risks, such as algorithmic backdoor embedding and code security vulnerabilities.

Functional Areas

- Network Planning and Deployments
- Error Detection and Fixes
- Code Completion and Optimizing
- Security Solutions

Liability Attribution Risk

Network Dominance: Given the importance of timely resolution of network problems, the relevant technical staff should take ownership of dealing with network problems, supplementing the generative AI's recommendations with autonomous judgment.

Property Ownership: Innovative design of communication infrastructure, such as chips, using generative AI requires consideration of how to obtain copyrights or patents and protect the intellectual property rights of products already in production.

Attribution of Responsibility: The main parties responsible for cybersecurity attacks and major risks such as operational failures due to generative AI miscalculations still need to be further defined.

- Code Completion and Optimizing
- Error Detection and Fixes
- Security Solutions
- Intrusion Detection

Privacy and Data Security Risks

Risk of user Privacy Leakage: The communications industry designs a large amount of user and sensitive data, which, in the event of a cyber-attack or internal leakage, will result in the data being maliciously accessed or transferred to an insecure environment.

Risk of Data Misuse: Communication networks gather critical data from all parties, and if generative AI lacks strict permission settings in data collection and use, there may be data use beyond the scope of authorization and leakage of relevant confidential information.

- Real-time Analysis of Traffic Data
- Real-name Service
- Intellectualize Personalized Service
- Testimonials
- User Behavior Analysis

Technology Risk

Technology Misuse: Generative AI may be used for phishing, large-scale cyber fraud, and other illegal activities, making it more difficult to manage security in the communications industry.

Cyberattacks: Attackers may reverse the use of generative AI to generate attack code or improve the efficiency of cyberattacks, posing cybersecurity threat.

- Code Completion and Make Superior
- User Behavior Analysis

2.8.3 Best Practices in The ICT Industry

- Lenovo Xiaotian

Lenovo Xiaotian



Application scenarios: ICT industry + AI personal assistant + device housekeeper + document processing + intelligent creation, etc.

Core Evaluation Keywords

- Model Lightweighting and Adaptability
- Security Compliance
- Capacity Expansion Flexibility
- Multilingualism and Internalization

Capacity Analysis

Functionality and Adaptability

- Demand Adaptation:** Alibaba Cloud's Xiaotian, built for Lenovo based on its practical needs, helps customers and users handle their work and life needs more conveniently.
- Data supply exclusivity:** The solution provides Lenovo with industry-specific high-quality dataset training and fine-tuning services such as dialog scenarios.
- Scenario function generalization:** Under this solution, Lenovo's PC, cell phone and Pad product ends can realize mutual expansion, and Lenovo can rapidly invoke new functions through personal intelligences and supports multilingual task processing.

Performance and Innovation

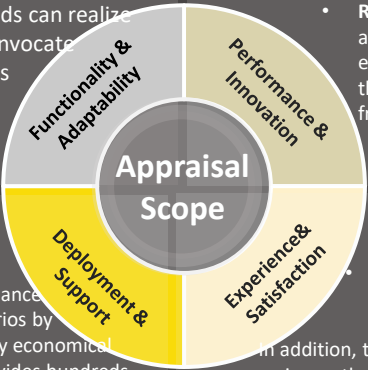
- Controlled quality of generated content:** Improve the quality of generated content by testing model suitability based on a review set and fine-tuning the model and optimizing the RAG.
- Security Compliance:** In addition to the underlying regulatory legal requirements, Alibaba Cloud provides Lenovo with a content security API and an intervention module built into the modeling platform to assist users in filtering inappropriate content from model inputs and outputs by configuring keywords.
- Reasoneng efficiency optimization:** Alibaba Cloud, in addition to the adaptation of terminals and hardware, enhances the inference efficiency of the scheme through continuous optimisation of the inference framework and model pressure testing.

Deployment and Support

- Reasoning and Deployment Cost Optimization:** The solution meets Lenovo's demand for performance and cost optimisation in different business scenarios by providing models of different sizes, which is highly economical and cost-effective. In addition, Alibaba Cloud provides hundreds Refined APIs for Lenovo's capacity expansion. No capacity limit.
- Training and Support Services:** At the solution service support level, Alibaba Cloud arranges regular communication activities for Lenovo, synchronizes model progress with the customer side, and cooperates to optimize the internal model. In addition, it provides SLA 7x24-hour work order support and nail group support with a minute response speed for cloud resources and large models respectively.

Experience and Satisfaction

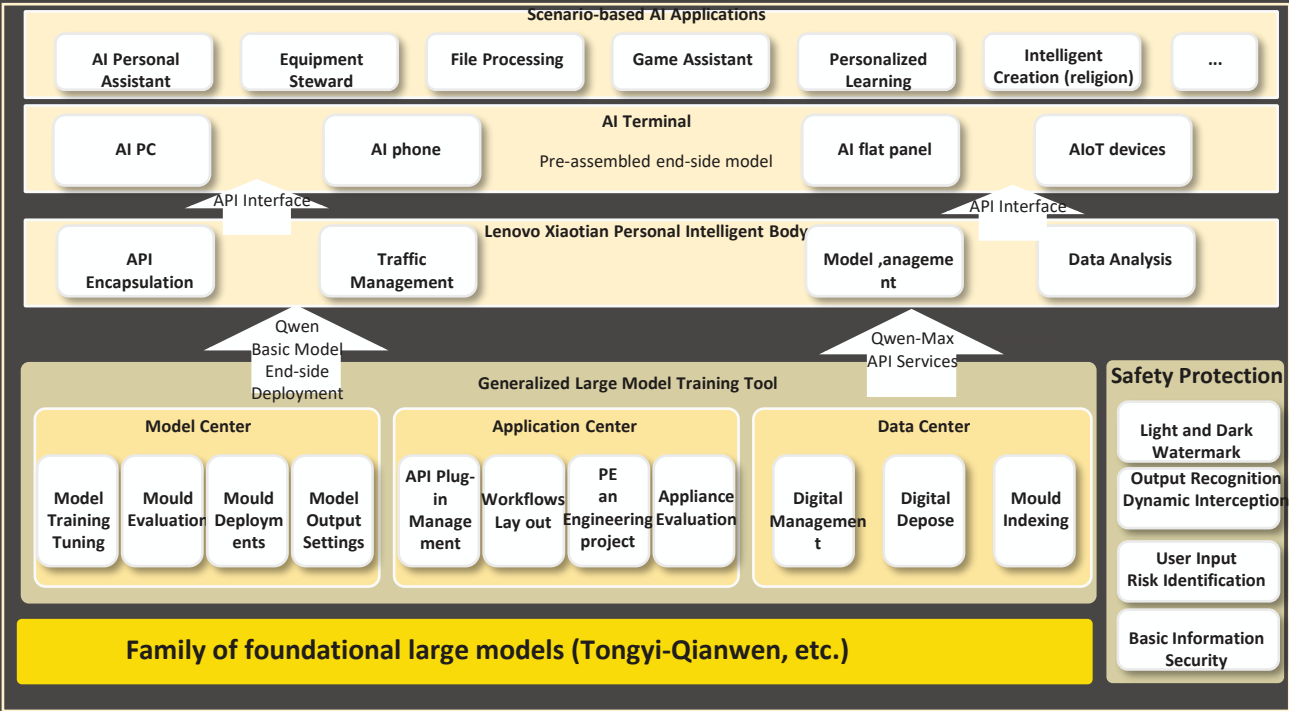
- Scenario Value Satisfaction:** Alibaba Cloud and Lenovo have carried out in-depth cooperation, based on the practical needs of Lenovo. In addition, the company has developed a personal assistant service on the end-side of the company's business, and has jointly developed cooperation on artificial intelligence terminals and enterprise intelligence solutions.
- Experience and customization satisfaction:** Alibaba Cloud for Lenovo targeted to enhance the optimization of generated content, and the solution to achieve different end-side devices to expand each other, so that the Lenovo Group internal sharing without barriers.



Alibaba Cloud X Lenovo

Alibaba Cloud and Lenovo Group jointly created the Lenovo Xiaotian and demonstrated considerable user activity in authorized terminal products, achieving product personalized services and strategic alignment and meeting Lenovo's demand for a "small and fine" end-side model.

Product Structure and Core Advantages



Solution Effectiveness

Client’s Demands	Solutions
<ul style="list-style-type: none">End-side Model Requirements: Under the limited arithmetic conditions of end-side devices, relatively small-sized models are required to run efficiently, and customers have high optimization requirements for model execution efficiency.Intelligent Product Solution Requirements: to enhance the user experience of terminal devices and optimize the workflow of enterprises, professional manufacturers need to cooperate to create intelligent terminal devices and enterprise intelligent body solutions.	<ul style="list-style-type: none">Model Lightweighting: AI models are lightweighted through model distillation technology, enabling them to run efficiently on end-side devices.Terminal Adaptation: Lenovo has cooperated with Aliyun for targeted hardware adaptation to improve the execution efficiency of the model on different chip platforms.

Effectiveness of Implementation

- User Experience Optimization:** improving end-side smart interaction experience: the AI interaction experience of end-side devices has been significantly improved through model lightweighting technology. Users are now able to enjoy smooth and efficient intelligent body services such as AI Personal Assistant and Device Manager on their personal devices.
- Terminal Device Application Achievements:** The end-side solution built by AliCloud for customers has successfully authorized **1 million** PC terminals and **350,000** cell phone terminals, and achieved a daily call volume of **100,000 times**.

Source: Alibaba Cloud, Sullivan

2.8.3 Best Practices in The ICT Industry

- Recruitment Efficiency Assistant

Recruitment Efficiency Assistant

 智谱·AI × 

Application Scenario: Information and Communication Technology Industry + Job Matching + Resume Optimization + Interview Assistant

Core evaluation keywords

Recruitment Process Optimization

Accurate Job Matching

Vertical Knowledge System

Interview Efficiency Improvement

Capacity Analysis

Functionality and Adaptability

- Requirement Adaptability:** "Recruitment Efficiency Assistant" provides a variety of intelligent functions for the recruitment process, including resume optimization, resume screening, recruitment assistant, etc., covering the core requirements of the job search and recruitment vertical.
- Scenario Functionality Generalization:**The solution helps enterprises to improve the efficiency of resume screening, enhance the accuracy of job matching, and at the same time, helps job seekers to enhance their competitiveness through intelligent resume optimization services and improving the quality of recruitment and job search.

Performance and Innovation

- Generate Content Accuracy:**With the support of the ZhipuAI GLM series models, digital product innovation has been carried out to create a data labeling system with extremely small granularity, coupled with machine algorithms, deep learning and other technologies, which effectively improves the accuracy of person-post matching.
- In the AI mock interview scenario, the large model is required to have strong information retrieval and information matching capabilities to understand job information and vertical domain knowledge. The recruitment efficiency assistant makes the recruitment process more efficient and accurate, significantly improving the technical advantages of the platform.

Deployment and Support

- Deployment and Support Services:** ZhiPuai's large model provides strong basic model technical support for the innovation of the Zhilian Hiring AI application, and its powerful language ability, multimodal knowledge comprehension ability, and fast response speed, etc., all enable the product to quickly and accurately understand the user's information, so as to bring high-quality services. Through continuous optimization and iteration, recruitment efficiency assistant has gradually improved its functional stability and user experience.

Experience and Satisfaction

- Highly Rated and Feedback from Customers:**The large model of Zhipuai significantly improves the efficiency of job matching and the accuracy of information collection, helping Zhilian Hiring to maintain its leading position in the fierce market competition. Both enterprises and job seekers commented positively on "Recruitment Efficiency Assistant", saying that the tool effectively simplifies the recruitment process and improves the recruitment efficiency and job search experience.

Appraisal Scope

Functionality & Adaptability

Performance & Innovation

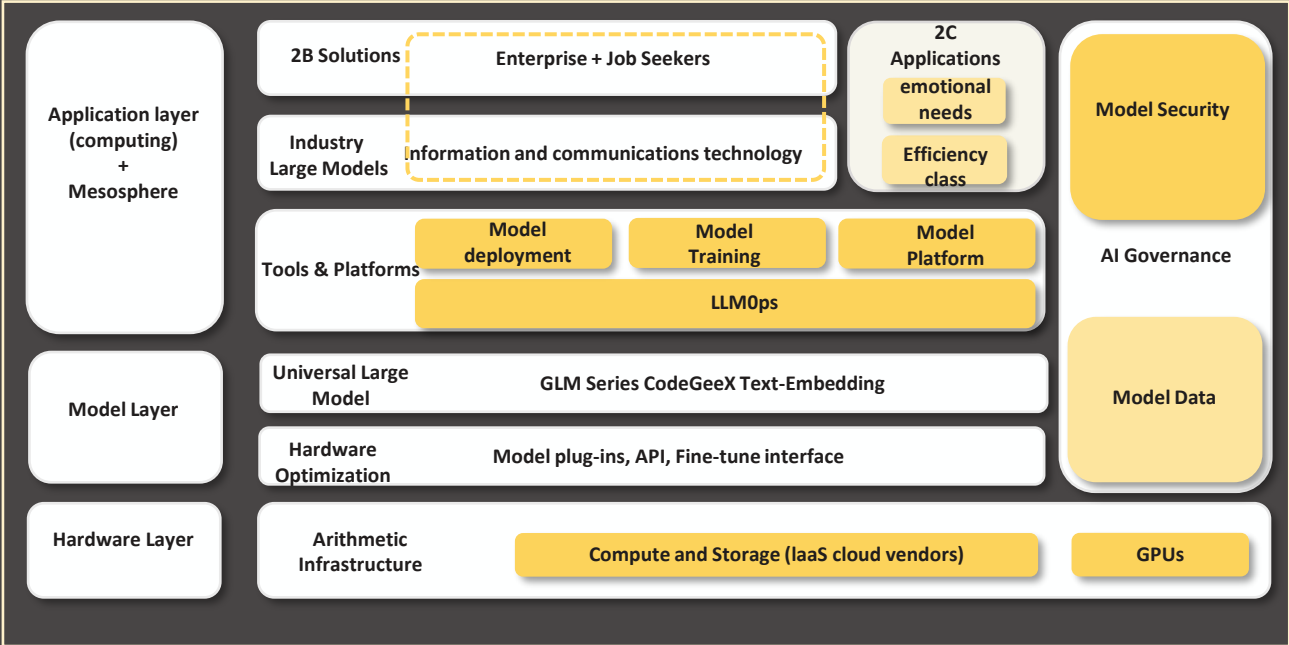
Experience & Satisfaction

Deployment & Support

ZhipuAI X Zhilian Hiring

Using its powerful GLM series, Zhilian Hiring has developed the “Recruitment Improvement Assistant” in cooperation with Zhipuai, aiming to optimize the recruitment process, improve the experience of job seekers, and continue to develop the application of new artificial intelligence technology in human resources services, leading the industry into a new era of digital intelligence.

Product Structure and Core Advantages



Solution Effectiveness

Client’s Demands	Solutions
<ul style="list-style-type: none">Inefficient Information Screening: ZhilianHiring Platform has huge amount of job information and resumes, but the efficiency of enterprises in screening resumes is low, and the recruitment process is lengthy, which affects the recruitment effect. Enterprises urgently need more accurate job matching tools to improve screening efficiency.Insufficient Competitiveness of Job Seekers: Job seekers' resumes lack competitiveness, making it difficult for them to stand out. Zhilian Hirng needs to provide value-added services for job seekers, such as resume optimization and career planning, so that resumes are more in line with HR's viewing needs.	<ul style="list-style-type: none">Enterprise: The Recruiting Assistant understands the needs of recruiters through dialog, screens resumes for recruiters and makes targeted recommendations. It also helps recruiters to analyze candidates' abilities during the interview and gives comprehensive evaluation after the interview.Candidates: Job seekers enter their personal strengths and other information, and recruitment efficiency assistant automatically generate a complete resume, which can be optimized according to the needs of job seekers resume.

Effectiveness of Implementation
<ul style="list-style-type: none">Zhilian Hiring's digital tools increase the efficiency of matching people and jobs by 50%, and the efficiency of companies harvesting resumes within 15 minutes of posting a job is increased by 25%.The AI resume change product has already helped job seekers write resumes with 100% higher efficiency, saving platform job seekers more than 20,000 hours of resume writing time every day.The AI processing delivery assistant, on the other hand, utilizes the large model to generate dialogue capabilities and analysis capabilities, and the AI assistant communicates with the candidates quickly and generates scores, cracking the problems of ineffective communication and limitations of professional knowledge of HR in dealing with job submissions, and increasing the efficiency of processing submissions by 300%.



Challenges and Developments in The Public Service Industry and Best Practices

- Under the background of social structure imbalance such as demographic structure and resource distribution, the public service industry is facing challenges such as slow response to public information delivery, uneven allocation of public resources, and lack of precision in service provision, etc. The introduction of generative AI assists the industry in improving governance effectiveness and service quality, balancing the scheduling and allocation of public resources, and promoting the development of the smart city model.
- At present, urban planning and management for generative AI in the public service in the key areas of layout, generative AI for the public channels to establish data and information interaction platform, through the public service object of the suggestion of the information feedback reverse to improve the quality of service, optimize the allocation of resources and planning decision-making, and promote the process of the smart city in a comprehensive manner.
- When generative AI is applied to public service industries, potential risks such as public data security, public acceptance, and administrative ethics need to be carefully managed to ensure that references to new technologies are consistent with social values and ethical standards.

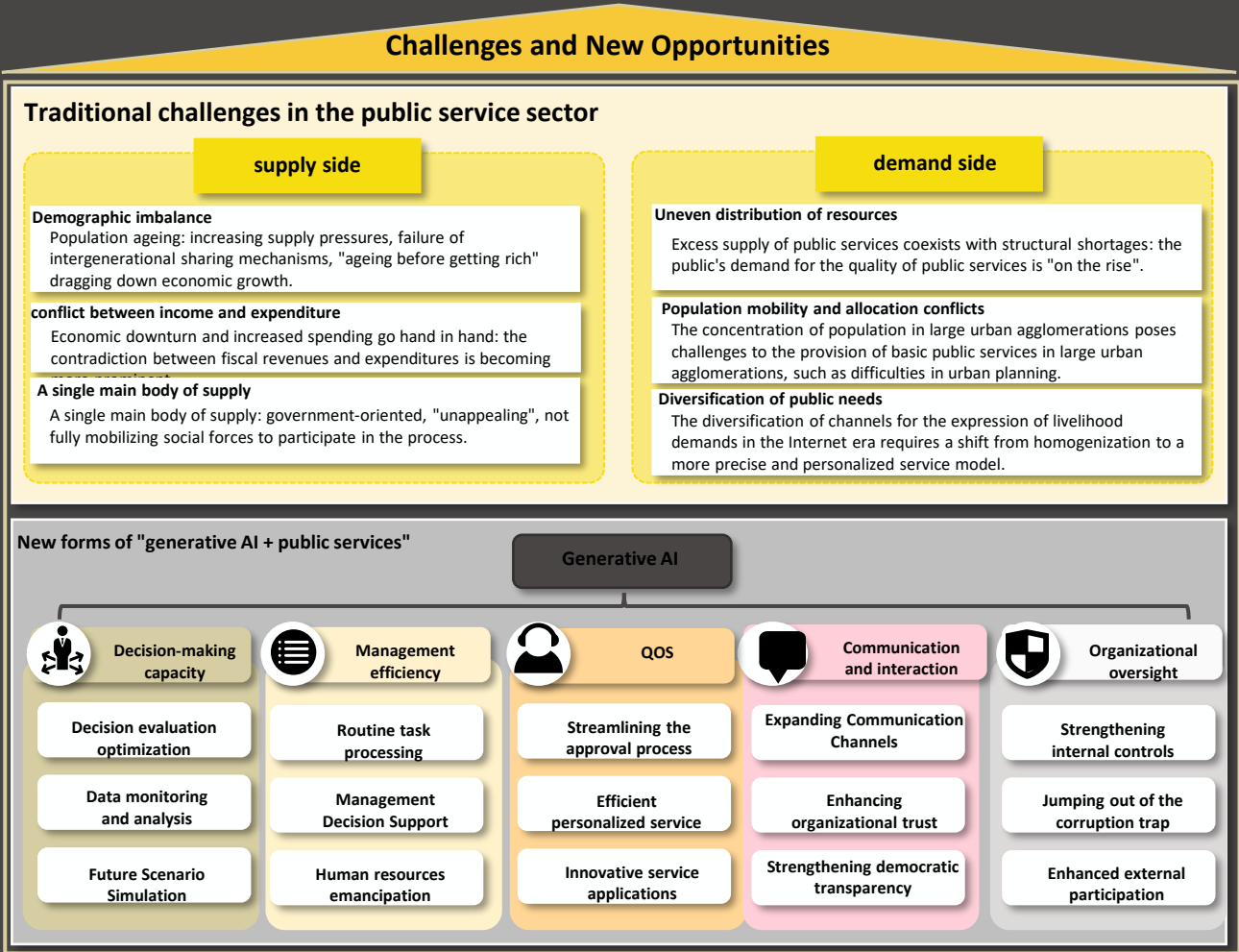


2.9.1 Challenges and Developments in The Public Service Industry (1/2)

Key findings

Under the background of social structure imbalance such as demographic structure and resource distribution, the public service industry is facing challenges such as slow response to public information delivery, uneven allocation of public resources, and lack of precision in service provision, etc. The introduction of generative AI assists the industry in improving governance effectiveness and service quality, balancing the scheduling and allocation of public resources, and promoting the development of the smart city model.

Industry's challenges and The New Form of "GenAI+Public Service"

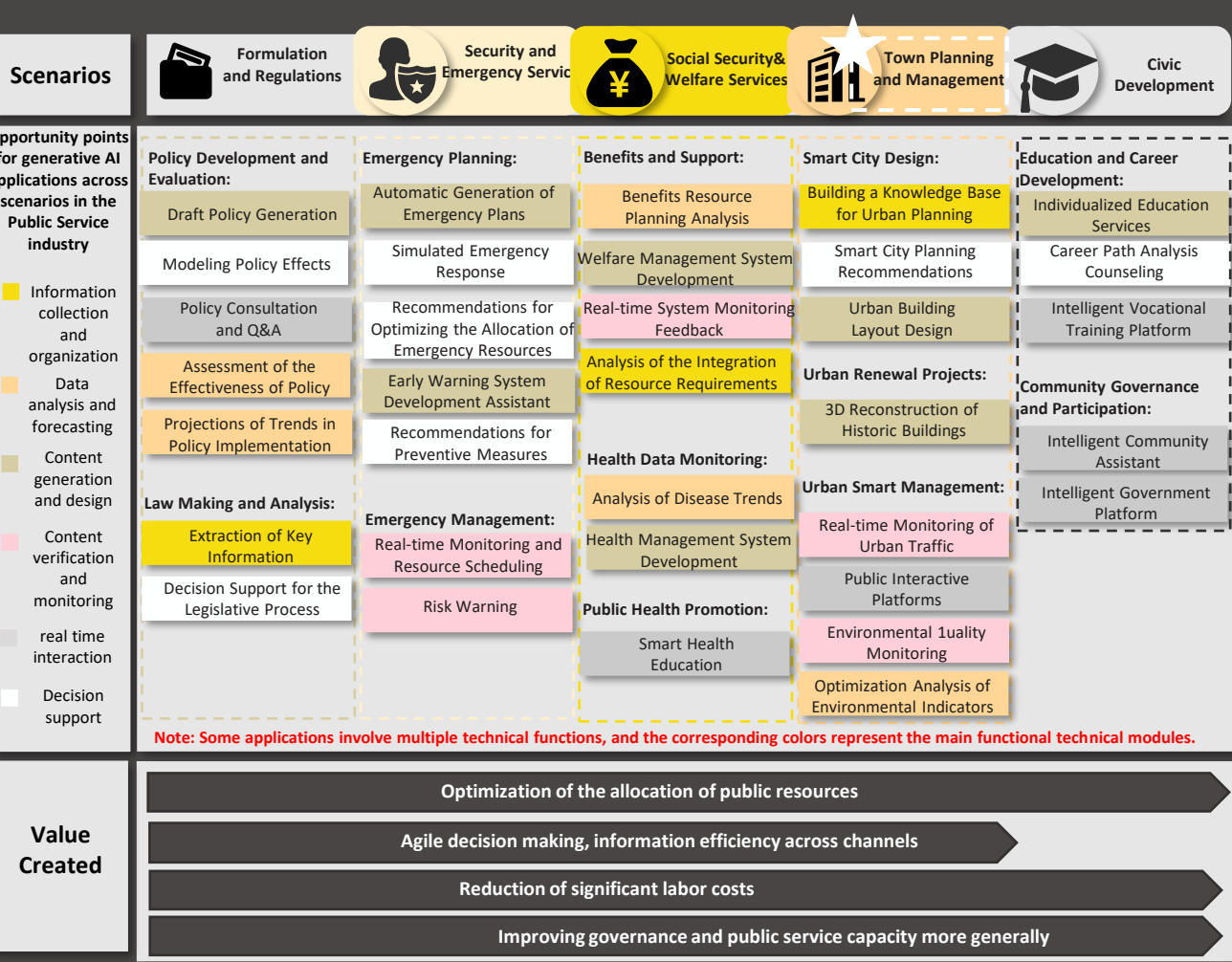


2.9.1 Challenges and Developments in The Public Service Industry (2/2)

Key findings

At present, urban planning and management for generative AI in the public service in the key areas of layout, generative AI for the public channels to establish data and information interaction platform, through the public service object of the suggestion of the information feedback reverse to improve the quality of service, optimize the allocation of resources and planning decision-making, and promote the process of the smart city in a comprehensive manner.

Generative AI Opportunity Points Graph



- Generative AI is gradually integrated into various operational aspects of the public service industry, of which urban planning and management is the focus of the current social situation.
- 1 Data management and analysis:** generative AI can efficiently integrate and analyze data in the public service industry, helping the government to more accurately understand social needs and problems, and formulate more scientific and effective policies based on data analysis results.
 - 2 Decision support and optimization:** Generative AI assists the government in monitoring potential risks in real time and providing solutions through the aggregation of data from various links. In addition, generative AI can assist government staff with repetitive tasks, such as information queries, to improve efficiency and reduce labor costs.
 - 3 Public service and governance:** Generative AI can link citizen needs with government service information to quickly create personalized public service content and enhance citizen satisfaction. For example, the government can provide more personalized medical and health services, education services, etc. to meet the diversified needs of citizens.

Source: Sullivan


2.9.2 Potential Application Risks in The Public Service Industry

Key findings

When generative AI is applied to public service industries, potential risks such as public data security, public acceptance, and administrative ethics need to be carefully managed to ensure that references to new technologies are consistent with social values and ethical standards.

Potential Application Risks

Regulatory and Ethical Risks




Policy Lag: Existing regulations are lagging behind the rapid development of generative AI technologies, leading to regulatory gaps.

Ethical and Moral Challenges: There is a need to form and update ethical standards to address ethical and moral judgment in decision-making by AIGC.

Regulatory Harmonization: Addressing cross-sectoral and international policy and regulatory harmonization to ensure global compatibility of technologies and policies.

Attribution of Moral Responsibility: when decisions or behaviors of generative AI are controversial, the attribution of moral responsibility may be unclear.

Data Security and Privacy Protection Risks




Data Security Vulnerability: sensitive data processed by generative AI may become a target of cyber-attacks, leading to data leakage and privacy invasion issues, and the need to strengthen the protection of sensitive data.

Privacy Violation Issues: Individuals' privacy may be inadvertently violated when analyzing and generating content.

Problems of Data Misuse: Unauthorized data collection and use may lead to a decline in public trust in government and public services.

Technology Misuse and Decision Dependency Risks




Misuse of Technology: Monitor and prevent inappropriate use of AIGC technology, such as disinformation dissemination or manipulation of public opinion.

Decision-Making Dependency: Governments and public service organizations may become overly reliant on AIGC's analysis and recommendations, reducing their own decision-making capacity and innovation.

Difficulty in Technology Regulation: As AIGC technology evolves, regulators may face challenges in technology regulation to effectively monitor and control technology adoption.

Issues of Public Trust and Technological Autonomy




Lack of Trust: The public may be skeptical of AIGC-generated content, fearing its accuracy and fairness. The public may lack an understanding of AIGC technology, leading to information asymmetry and misunderstanding.


Differences in Acceptance: Differences in the acceptance of AIGC technologies by different cultural or social groups may lead to uneven application.

Risk of loss of Autonomy: Over-reliance on the AIGC may lead to a loss of autonomy in decision-making by government and public service organizations in certain circumstances.


Functional Areas



Policy Development



Legal Advice



Ethical Review



Data Analysis



Personal Privacy Protection



Network Security



Risk Assessment



Decision Support Systems



Public Opinion Monitoring



Disclosure of Information





Public Relations Management

2.9.3 Best Practices in The Public Service Industry

- Conchbots, trading robots, photonic engines and Jarvis Vision Large Model Platform

Conchrobot, Trading Robots, Photon Engine, Jarvis Vision Big Model Platform

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Application Scenario: Public Service Industry + Local Travel and Life Service + Code Assistant

Core Evaluation Keywords

Innovative Solutions for Smart Mobility

Optimization of The Allocation of Human Resources

Security Compliance

Highly Customized Program Services

Capacity Analysis

Functionality and Adaptability

- Demand Suitability:** Hello-Inc realizes the overall AI layout of smart mobility through GenAI solutions, including Conch Robot, Transaction Robot and Jarvis Vision Large Model Platform, etc., which meets the internal demand of improving internal efficiency and customer experience and is in line with Hello-Inc's long-term strategic goal of building smart mobility.
- Data Proprietary:** The solution provides internal and external industry pendant data to Hello-Inc for training, and makes use of new industry data through RAG and SFT fine-tuning processing.
- Scenario Functionality Generalisation:** Customers can integrate RAG, plug-ins, etc. to build new applications to meet different business scenarios based on the orchestration capabilities of AliCloud's model platform.

Performance and Innovation

- Generated Content Accuracy:** Conchbot has demonstrated high accuracy and user adoption in roles such as office assistant and code assistant, significantly improving business efficiency. In addition, Alibaba Cloud continuously improves the quality of content generation through SFT fine-tuning and RAG knowledge base.
- Reasoning Efficiency Optimization:** AliCloud designs optimized reasoning solutions for Hello, including but not limited to reasoning framework performance optimization, API and terminal network optimization, etc.
- Security Compliance:** Enabling Minword Filtering with AliCloud Content Security API to achieve legal compliance filing.

Deployment and Support

- Deployment Cost and Time Efficiency:** Based on the Alibaba Cloud Bailian Refinement Platform, it builds a full-link model training tool to empower the programme to achieve cost-effective optimisation, in addition, the programme assists enterprises to optimise resource allocation through load balancing and elastic capacity expansion.
- Training and Support Services:** In addition to basic document support, Alibaba Cloud provides customers with comprehensive training tutorials covering solution training, large model technology training, and other comprehensive training tutorials, and realizes minute-level response in technical support.

Experience and Satisfaction

- Scenario value Satisfaction:** : Based on the in-depth discussion and communication with Hellobike, Alibaba Cloud designed a solution that fully meets the expectations and significantly improves the operational efficiency and user experience of the customer's enterprise.
- Experience and Customized Satisfaction:** The solution is designed to cover two rounds: quality assurance and ancillary functions such as digital pilots according to customer-specific usage scenarios, continuously optimizing reasoning efficiency and internal system integration articulation, and providing customer companies with a full range of training tutorials and round-the-clock and timely technical service support.
- Performance and Innovation Satisfaction:** this cooperation program is an innovative practice in the field of smart mobility.

Appraisal Scope

Functionality & Adaptability

Performance & Innovation

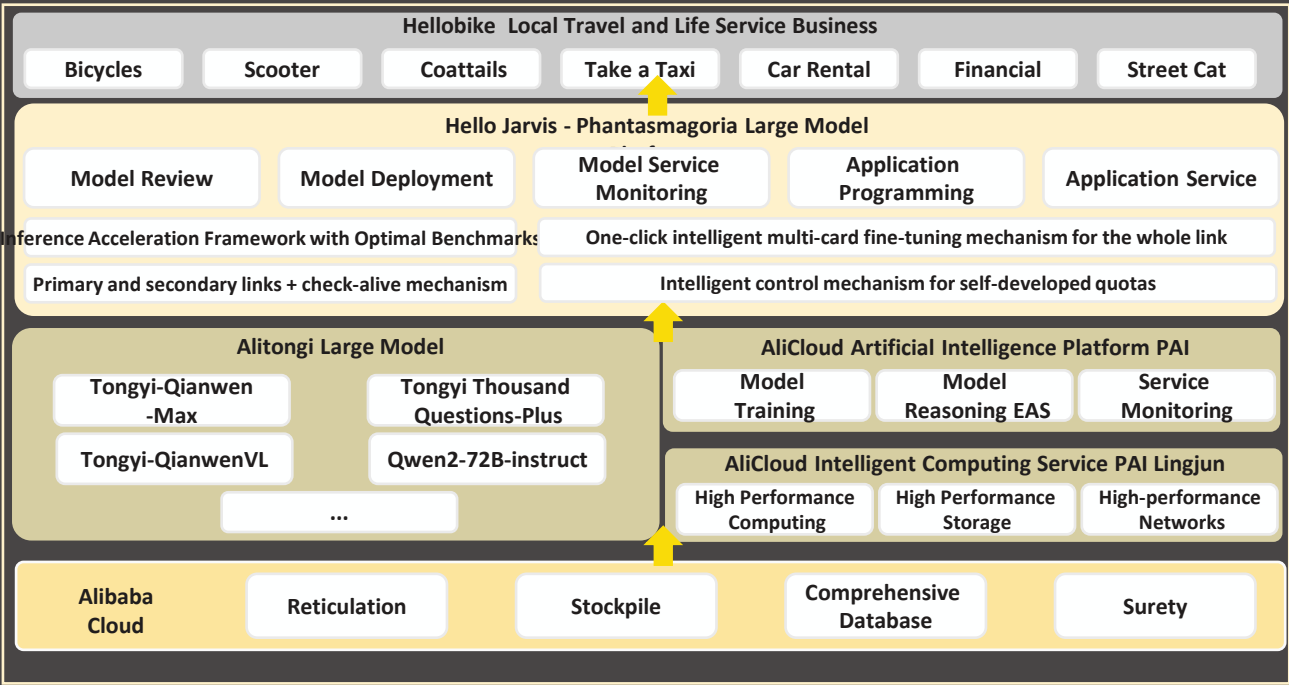
Experience & Satisfaction

Deployment & Support

Alibaba Cloud X Hello-Inc

Alibaba Cloud has joined hands with Hello-Inc to build an innovative program for intelligent travel based on the Jarvis Phantom large model platform, assisting Hello-Inc to internally build the AI layout of each link, which has significant benefits in improving the efficiency of the business process as well as the user experience level.

Product Structure and Core Advantages - Jarvis Vision Large Model Platform



Solution Effectiveness

Client’s Demands

- Intelligent Travel Layout:** Hello-Inc aims to integrate new technologies into local travel and life services to create innovative "intelligent travel", and internally, it needs to build an overall layout of AI for intelligent travel to empower the whole chain of office, programming and operation with AI.
- Optimize User Experience:** We need to respond faster to market demand and iterate product functions to bring users a new experience that is more intimate and smarter, and continue to drive intelligent travel with technology.

Solutions

- Conch Robot:** With multiple devices, multiple entrances, and full compatibility with all types of document formats, it improves internal efficiency and empowers the operation of the whole scene.
- Transaction Robot:** directly empowering the business with Agent, providing customer-oriented services, enhancing GMV and realizing full process coverage.
- Photon Engine:** Optimize marketing with AIGC technology and improve efficiency of advertisement operation.
- Jarvis Phantom Vision Large Model Platform:** rapidly incubate large model applications to serve all of Hello Group's local mobility businesses and accelerate the innovation process of smart mobility.


Effectiveness of Implementation


- Internal Efficiency:** On the internal development side, the code assistant assists enterprises in improving the efficiency of code research and development **by 12%+**, and the accuracy rate of code completions reaches **80%**; on the operation side, the ability to exist operation and maintenance personnel and the efficiency of newcomer training are improved effectively through the frequent push of the Copilot mode of the large model, and the core business is covered by **93.1%**, and the accuracy rate reaches **88%**. On the product design side, Photon Engine assisted the enterprise in shortening the cycle of marketing graphics and short video design and creation, in which the video production efficiency was improved by **10 times**.
- User Experience Optimization:** The empowerment of customer service assistants and transaction robots has significantly improved the user experience, as evidenced by a **4.10%** drop in the rate of customer complaints from hitchhiking vehicle owners and **a 4.39%** drop in the rate of customer complaints from passengers, and for the adjudication of responsibility, the accuracy of hitchhiking vehicle adjudication of responsibility is as high as **87%+**.


2.9.3 Best Practices in The Public Service Industry

- High-Speed Industry Large Model

High-Speed Industry Large Model







Application Scenario: Public Service Industry + High-speed Intelligent Operation and Management

Core evaluation keywords

Scene Customization

Operational Intelligence

Efficient Synergy of Information from Multiple Sources

Risk Prevention and Control

Capacity Analysis

Functionality and Adaptability

- Scenario Model Specially Designed for Highways:** The AI model adopted by Jingxiong Expressway is the first one customized for highway operation and management in the industry, which not only reflects the high adaptability of the technology, but also highlights the leading position of Jingxiong Expressway in the industry in terms of innovation.
- Multi-dimensional Data Specialization:** The program collects data related to the operation of the highway industry on the basis of Baidu's general large model capabilities conduct training.

Performance and Innovation

- Industry-leading Technological Breakthroughs:** The Jingxiong Expressway project realizes technological innovations in the industry and provides a brand-new solution for highway management.
- Improved Business Processing Capability:** After the project implementation, Jingxiong Expressway has realized high efficiency and accuracy in business processing, reflecting the strong performance of the technology
- Cross-business Instructions Directly:** The solution opens up the whole process link in the system for enterprises, realizing that business instructions are directly delivered to each link.

Deployment and Support

- One-stop Intelligent Management Platform:** The Jingxiong Expressway project provides an all-round intelligent solution covering all aspects from data mining to business process management, reflecting the vision of Jingxiong Expressway in pursuing comprehensive intelligent management.
- Continuous Support from Baidu Intelligent Cloud:** Baidu Intelligent Cloud provided continuous technical support and optimization services for the Jingxiong Expressway, ensuring the long-term stable operation and continuous progress of the project.

Experience and Satisfaction

- Efficiency Improvements in the User Centre:** the programme coordinates Help Jingxiong high-speed project through intelligent technology show It has improved operational efficiency and user experience.
- Customer Recognized Intelligent Achievements:** After the project implementation, Jingxiong Expressway received positive feedback from customers, who were highly satisfied with the intelligent transformation results, which improved the overall command and dispatching efficiency at the high-speed management and operation levels.

Appraisal Scope

Functionality & Adaptability

Performance & Innovation

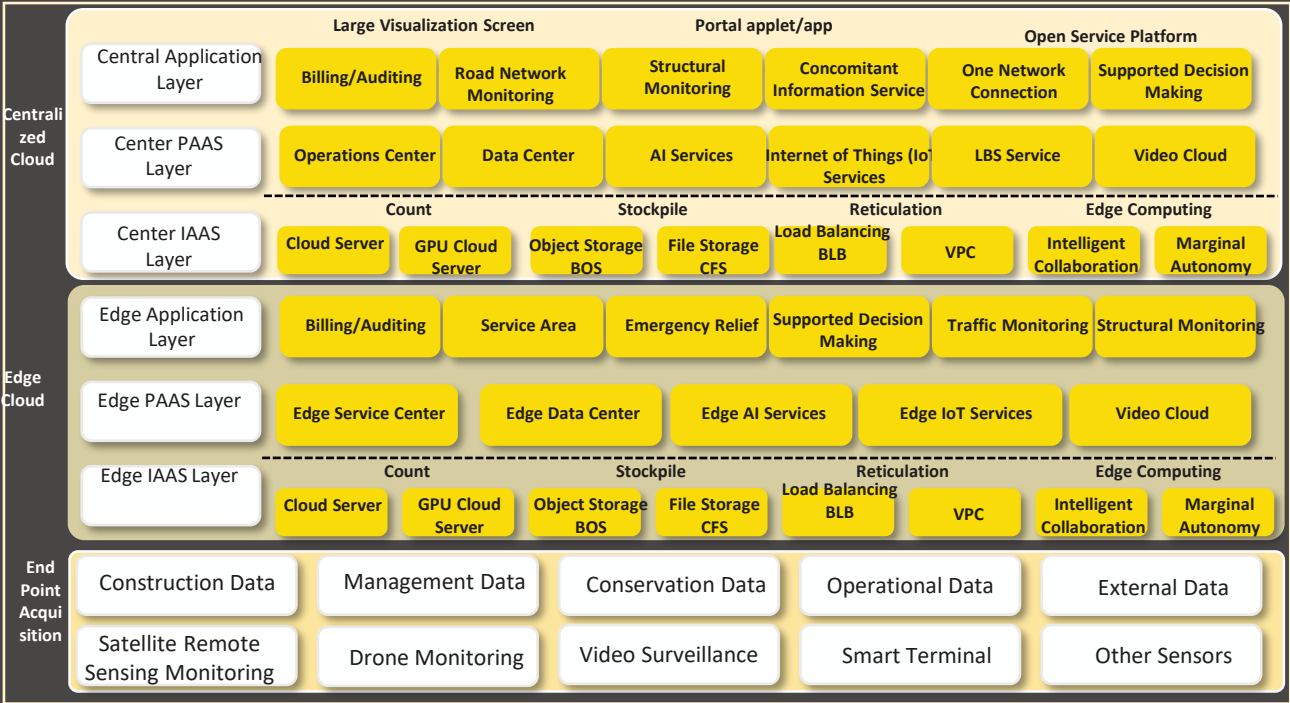
Experience & Satisfaction

Deployment & Support

Baidu Cloud X Jingxiong Expressway

The highway industry big model solution targets the main difficulty of managing industry business systems. It integrates four exclusive models including event detection, emergency response, information processing and business interaction, and seven innovative applications, comprehensively improving the operational efficiency of the Beijing-Xiongan Expressway and achieving efficient collaboration among multiple parties along the way.

Product Structure and Core Advantages



Solution Effectiveness

Client's Demands	Solutions
<ul style="list-style-type: none">Business System is Difficult to Manage Flexibly: The customer's current business system exists in the content and form of a single, solidified processes, information fragmentation and other aspects of the difficulties resulting in the lack of precision and flexibility of the enterprise digital management and service decision-making, departments and related personnel can not efficiently use the data, collaborative work.	<ul style="list-style-type: none">High-speed Industry Large Model Program: Based on the highway operation data for pre-training, it creates a high-speed industry large model, with functions of intelligent monitoring, decision-making and production, etc. It assists the operation business of the Jingxiong Expressway in realizing the transformation from reactive response to proactive discovery of problems, and comprehensively improves the operation monitoring and accuracy rate of the Beijing-Hsiungary Expressway network and the efficiency of emergency disposal and the use of the business system.

Effectiveness of Implementation

- Personalized Demand Understanding:** all the way to multi-party autonomous collaboration to achieve multi-system intelligent linkage, to meet the different needs of the multi-end, for multi-party collaboration to reduce costs and increase efficiency, for high-speed management to bring a more mature and more intelligent cooperative solutions, enhance the command and scheduling benefits, enhance user satisfaction with travel.
- Improvement of Operation and Management Energy Efficiency:** With the realization of high-speed operation and management intelligence and automation in the whole process, the efficiency of enterprise business system will be improved **by more than 80%**, the accuracy of event detection will be improved to **more than 95%**, and the efficiency of emergency response and information dissemination will be improved **by more than 80%** according to the preliminary estimation.

Source: Baidu Cloud, Sullivan



Challenges and Developments in The Automotive Industry and Best Practices

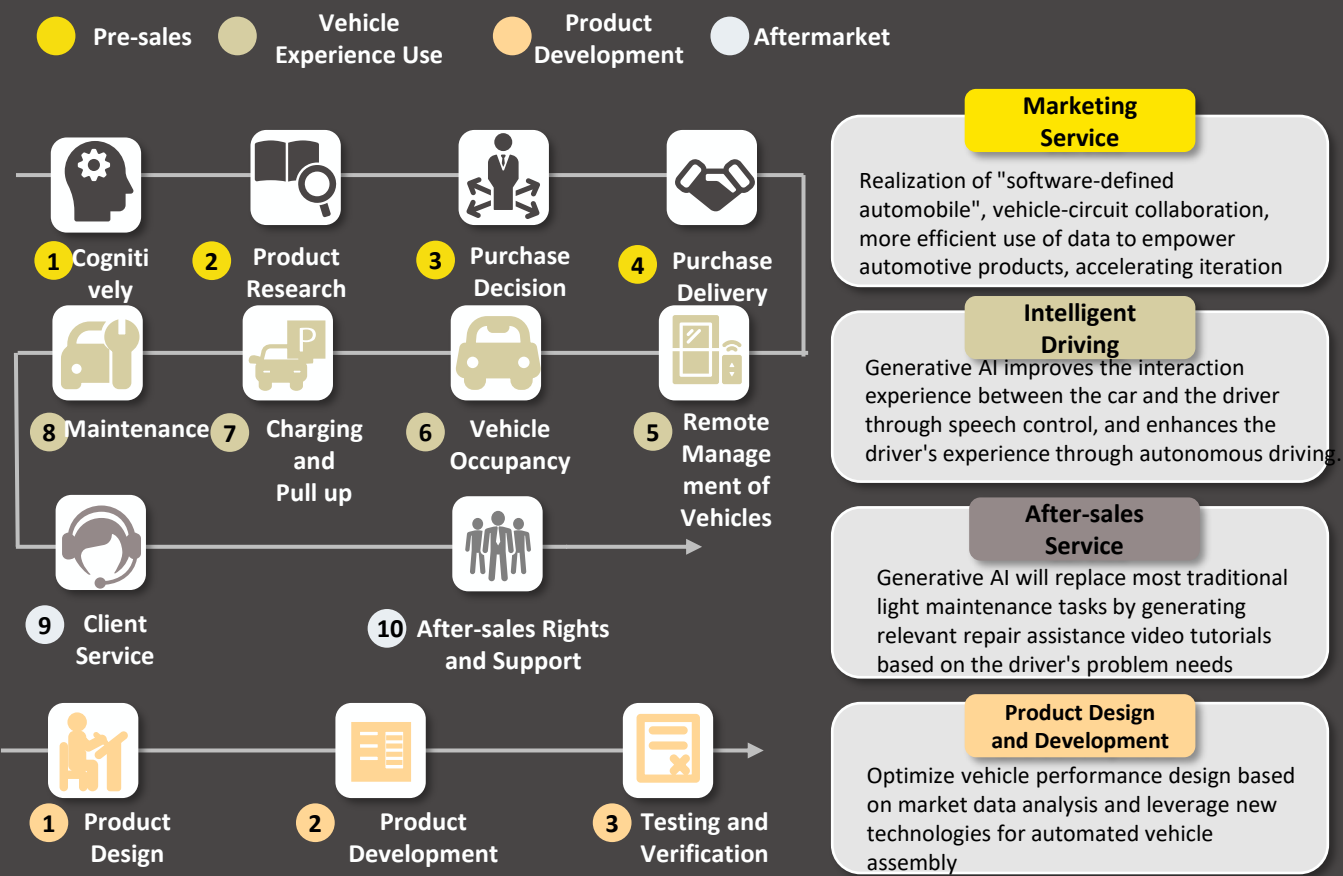
- The reference of generative AI redefines the form of human-computer interaction, driving the transformation of the traditional command interaction to active service mode, and optimizing the driving experience. In addition, the integration of new technologies opens up the data of the complete automotive chain, assisting automotive enterprises in perfecting the business ecology, and creating the integration of "end-to-end" sensing and decision-making.
- Generative AI is reshaping the innovation landscape of the automotive industry, bringing unprecedented efficiency gains and user experience optimization to automakers through intelligent design, precision marketing and personalized services. In this transformation, applications such as smart cockpits, road condition detection and safety monitoring have become the frontiers of AI technology application.
- While the application of generative AI in the automotive industry shows great potential, it is also has potential risks that cannot be ignored. Although enterprises are generally capable of coping with the strategic and technological foundations of generative AI, they are less confident in technology ethics, data governance and risk issues, which have become significant barriers to AI adoption.

2.10.1 Challenges and Developments in The Automotive Industry (1/2)

Key findings

The reference of generative AI redefines the form of human-computer interaction, driving the transformation of the traditional command interaction to active service mode, and optimizing the driving experience. In addition, the integration of new technologies opens up the data of the complete automotive chain, assisting automotive enterprises in perfecting the business ecology, and creating the integration of "end-to-end" sensing and decision-making.

Industry's challenges and The New Form of "GenAI+Automotive"

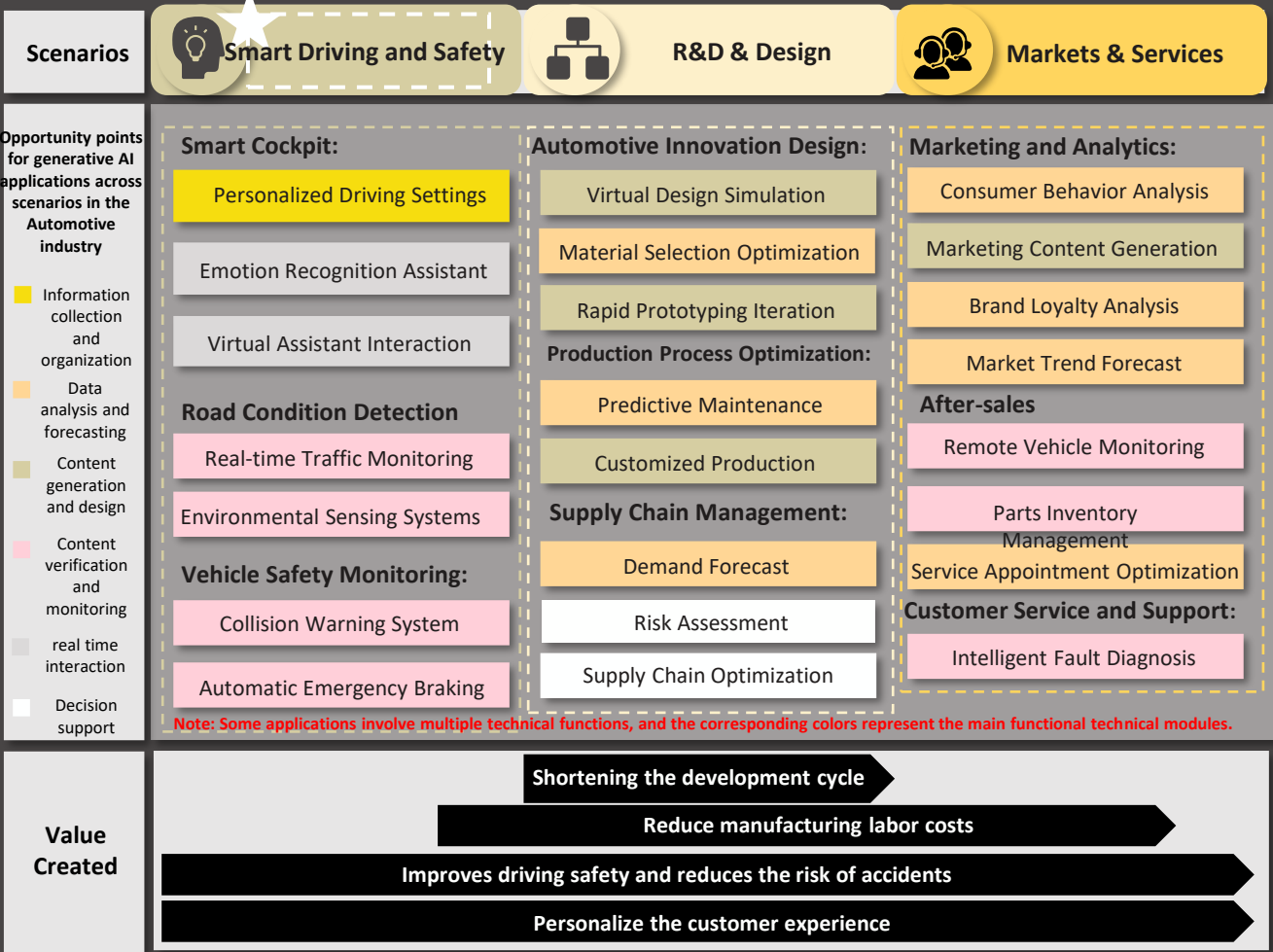


2.10.1 Challenges and Developments in The Automotive Industry (2/2)

Key findings

Generative AI is reshaping the innovation landscape of the automotive industry, bringing unprecedented efficiency gains and user experience optimization to automakers through intelligent design, precision marketing and personalized services. In this transformation, applications such as smart cockpits, road condition detection and safety monitoring have become the frontiers of AI technology application.

Generative AI Opportunity Points Graph



2.10.2 Potential Application Risks in The Automotive Industry

Key findings

While the application of generative AI in the automotive industry shows great potential, it is also has potential risks that cannot be ignored. Although enterprises are generally capable of coping with the strategic and technological foundations of generative AI, they are less confident in technology ethics, data governance and risk issues, which have become significant barriers to AI adoption.

Potential Application Risks

Data Security and Regulation

Data “on board” Complexity: For large model data and algorithms, China has put forward classification and grading regulatory requirements. AI large model ‘on the car’, brought the application of innovation, along with the diversity of enterprise data collection and the exponential growth in the number of data collection, making the collection of data and analysis of the use of more complex.

Driving Data Confidentiality: Intelligent cockpit, personalized marketing and other parts involve a large number of users' driving data and personal information, generative AI should encrypt the storage of this part of the data, to prevent the leakage of personal data.

Technology Maturity

Technical limitations: generative AI may have limitations in areas such as mathematical processing, and requires continuous technical iteration and optimization to meet the high demands of the automotive industry.

Over-reliance on Technology: Generative AI models cannot achieve a complete understanding of real-world situations, and relying entirely on technology to realize the over driving process may generate more serious risks, such as traffic accidents.

Social Ethics and User Acceptance

User Experience: Consider user acceptance and experience when promoting applications, and avoid premature introduction of immature technologies to the market.

Ethical Review of Science and Technology: There is a preliminary framework for ethical review of science and technology, but the question of what standards of review should be followed for the different has yet to be resolved and discussed. One of the central ethical questions in the activity of developing algorithms for autonomous driving, for example, is whether it is permissible to quantitatively compare the value of life. For example, whether the lives of multiple people are more valuable than the life of a single person, or whether the value of life can be measured in terms of factors such as age, gender, and appearance.

Attribution of Responsibility

Liability Determination Standard: Generative AI has the possibility of misjudging the driving environment, which in turn leads to traffic accidents. In this context, the criteria for determining the responsibility of the car, the manufacturer, the driver and the insurance agency, as well as the claims process, need to be further refined and clarified.

Functional Areas



Personalized Driving



Emotion Recognition Assistant



Consumer Behavior Analyze



Automotive Innovation Design



Road Monitoring and Response



Vehicle Safety Monitoring



Intelligent Cabin (electronics)



Automotive Innovation Design



Intelligent Cabin (electronics)



Road Monitoring and Response






Vehicle Safety Monitoring

Source: Sullivan

2.10.3 Best Practices in The Automotive Industry

- GPT-BI, GPT-Sales Assistant, GPT-Code, etc.

GPT-BI, GPT-Sales Assistant, GPT-Code, etc.



Application Scenario: Automotive Intelligent Manufacturing Industry + Sales Assistant + Code Platform, etc.

Core evaluation keywords

GAI Reinvents Business Processes

Business Digital Twin

Engineering Full Link Optimization

Security Compliance

Capacity Analysis

Functionality and Adaptability

- Demand Adaptability:** The solution provided by Alibaba Cloud meets the core demand of FAW to improve efficiency and GAI to reshape its architecture, and products such as GPT-BI and Sales Assistant comprehensively realize efficiency improvement and architecture optimization in enterprise data analysis, consumer reception, code development and other aspects respectively.
- Scenario Function Generalization:** The first "business unit " management concept drives the reshaping of the overall process architecture, making FAW's internal highly synergistic business unit content to realize business digitisation.

Performance and Innovation

- High-accuracy Data Analysis:** The "GPT-BI" model ensures the reliability of data analysis results with its 92.5% accuracy rate, providing enterprises with precise decision support. In addition, Alibaba Cloud continuously optimizes the quality of generated content by actively collecting customer feedback.
- Reasoning Speed and Performance Optimization:** The solution significantly reduces response latency by designing models of varying Q&A complexity for inference, as well as optimising engineering links.

Deployment and Support

- Deployment Efficiency and Cost Control:** The solution has a clear cost structure and provides a flexible and scalable technology platform for client companies, guaranteeing rapid deployment and efficient operation of applications.
- Training and Support Services:** The technical support team provides rapid response through 7x24-hour work orders and nail groups, ensuring minute-to-minute service support. In addition, the user documentation system has been completely revamped to cover all functions and operating steps, providing users with comprehensive learning and usage resources.

Experience and Satisfaction

- Scenario Value Satisfaction:** Alibaba Cloud continuously iterates and optimizes product content based on FAW's needs and feedback, specifically meeting customer needs.
- Experience and Customization Satisfaction:** The solution has a high degree of internal integration within FAW and provides comprehensive, efficient and timely 24/7 technical support and regular training communication within the customer.
- Satisfaction with Performance and Innovation:** The accuracy of the model-generated content fully met the client's expectations, and FAW was provided with relevant considerations in terms of data security compliance and inference latency optimization.

Appraisal Scope

Functionality & Adaptability

Performance & Innovation

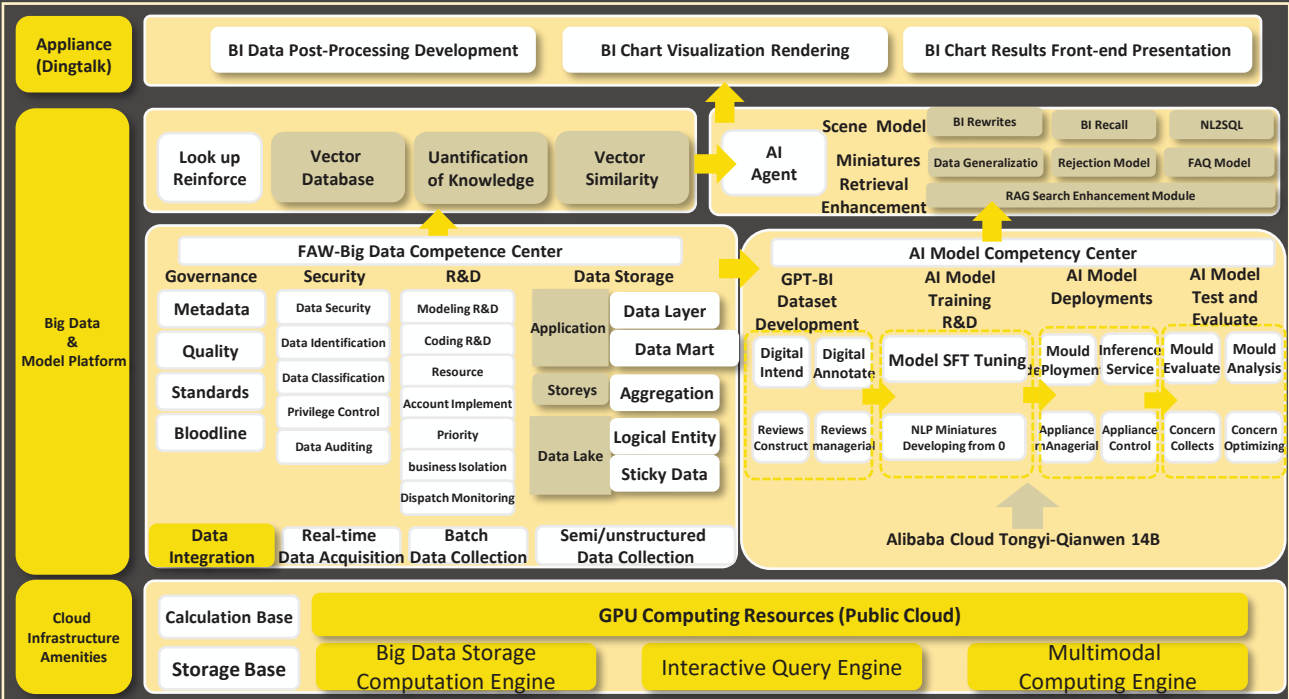
Experience & Satisfaction

Deployment & Support

Alibaba Cloud X China FAW

Alibaba cloud and FAW have cooperated to create a series of solutions such as GPT-BI and GPT-Sales Assistant based on cloud-native architecture, assisting the customer companies to realize the improvement of quality and efficiency of various internal business processes, as well as architectural remodeling under the convergence of GAI.

Product Structure and Core Advantages - China FAW GPT-BI



Solution Effectiveness

Client's Demands

- **Improve Decision-Making Efficiency:** The client requires a system that provides real-time data insights and rapid decision-making support, as well as improved efficiency in all aspects of business processes.
- **GAI Reconstruction of Business Processes:** FAW has always insisted on technological innovation, and the introduction of GAI has driven the demand for restructuring and integration of new technologies into various business processes within the enterprise.

Solutions

- **GPT-BI:** Finding data results in numerous BI reports and data reports, searching by charts, and improving the efficiency of data analysis and decision-making within the enterprise.
- **GPT-Sales Assistant:** subvert the traditional consultant reception mode, optimize the consumer communication experience through human-computer interaction.
- **GPT-Code:** Assist development technicians to improve work efficiency and reduce related labor costs.

Effectiveness of Implementation

- **Business Process Efficiency Improvement:** The products effectively help client companies improve quality and efficiency in data query analysis, sales conversion, code development, product design and legal compliance review. Among them, GBT-BI model accuracy rate reached **92.5%**, and GPT-Code assisted FAW R&D to improve efficiency **by 15%**, of which AI code generation accounted for **20%**.
- **User Experience Optimization:** The solution realizes multi-party user experience optimization. Within the enterprise, management shifts from decision-making to selection with the assistance of GPT-BI, reducing a large number of man-hours at the level of information analysis and insight; sales, designers and IT developers reduce repetitive work and stimulate creative inspiration with the support of GAI-enabled solutions. Outside the enterprise, with the support of GPT-Sales Assistant, consumer reception and communication are more timely and efficient, and the store experience is greatly improved.

2.10.3 Best Practices in The Automotive Industry

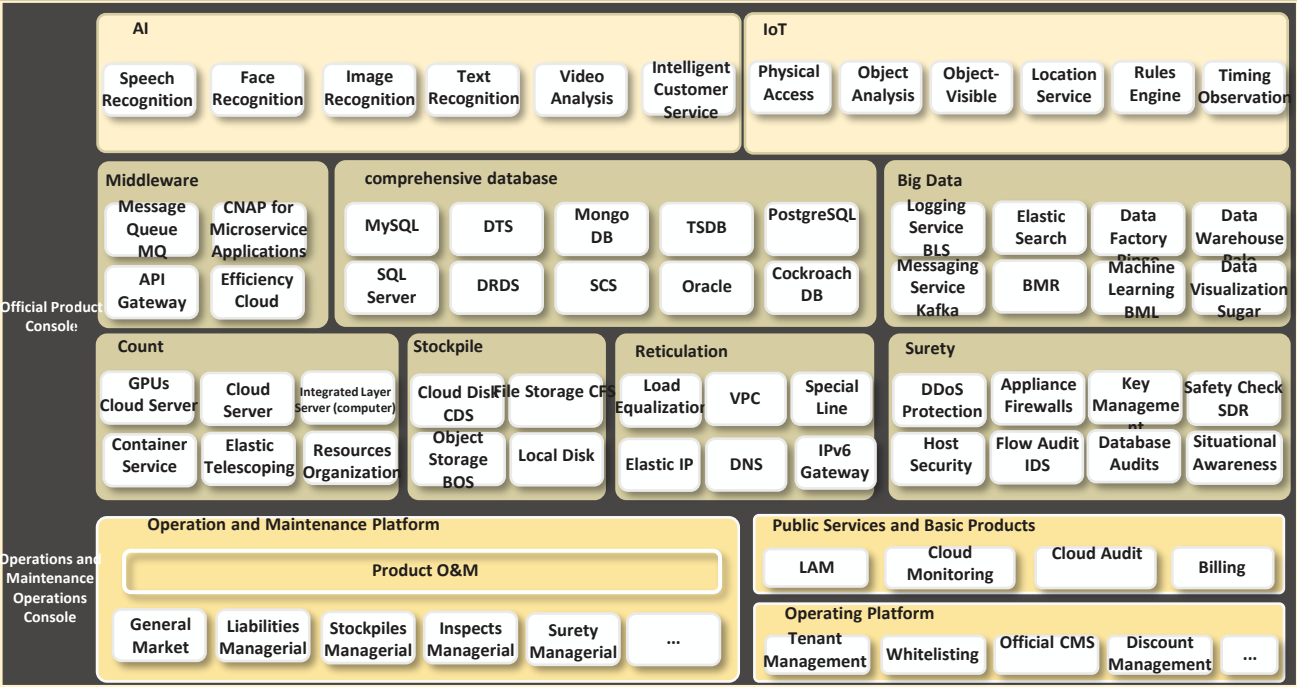
- "1+6+N" Geely Hybrid Cloud Platform



Baidu Cloud X GEELY

Baidu AI Cloud and Geely jointly created the "1+6+N" Geely Hybrid Cloud Platform, which not only helps Geely achieve internal business process cost reduction and efficiency and global staff efficient collaboration, but also opens up a brand new path for the digitalization of automobile enterprises, i.e., to promote the digital transformation of the core business scenarios based on the information pedestal to achieve the digital and intelligent business model.

Product Structure and Core Advantages



Solution Effectiveness

Client's Demands

- Demand for Intelligent Cockpit :** With the rapid development of AI, consumers have higher expectations for interaction experience of intelligent cockpit, seeking richer ways of human-vehicle interaction.
- Automotive R&D Data Management and Analysis:** In the process of automotive R&D, Geely faces the need to collect, process, annotate and analyze a large amount of data, which needs to be efficiently managed and utilized in order to accelerate the R&D process.

Solutions

- Cockpit Large Model:** Baidu AI Cloud provides Geely with large model technical support, realizing the operation of various functions of the cockpit through the accurate understanding of driver and passenger's intentions.
- "1+6+N" Geely Hybrid Cloud Platform:** Based on the hybrid cloud platform, Geely has constructed cloud facilities, cloud architecture, security operations, development, and other capabilities to satisfy Geely's internal data security protection and external rapid response to user needs.

Effectiveness of Implementation

- Business Process Cost Reduction and Efficiency Improvement:** Based on the "1+6+N" Geely Hybrid Cloud Platform, ZGH has achieved cost reduction and efficiency improvement through unified architecture, centralized control, and reduction of duplicated construction, of which the management and operation and maintenance costs have been reduced **by 30%**, and the efficiency of resource utilization has been increased **by 20%**.
- Efficient Collaboration of Global Staff:** Utilizing the cloud infrastructure provided by Baidu AI Cloud, Geely Automobile has established a global business collaboration platform, which effectively solves the problems of timeliness and consistency of cross-regional collaboration. R&D and design staff and suppliers worldwide are able to share information and work together in real time.



Challenges and Developments in The Consumer and Retail Industry and Best Practices

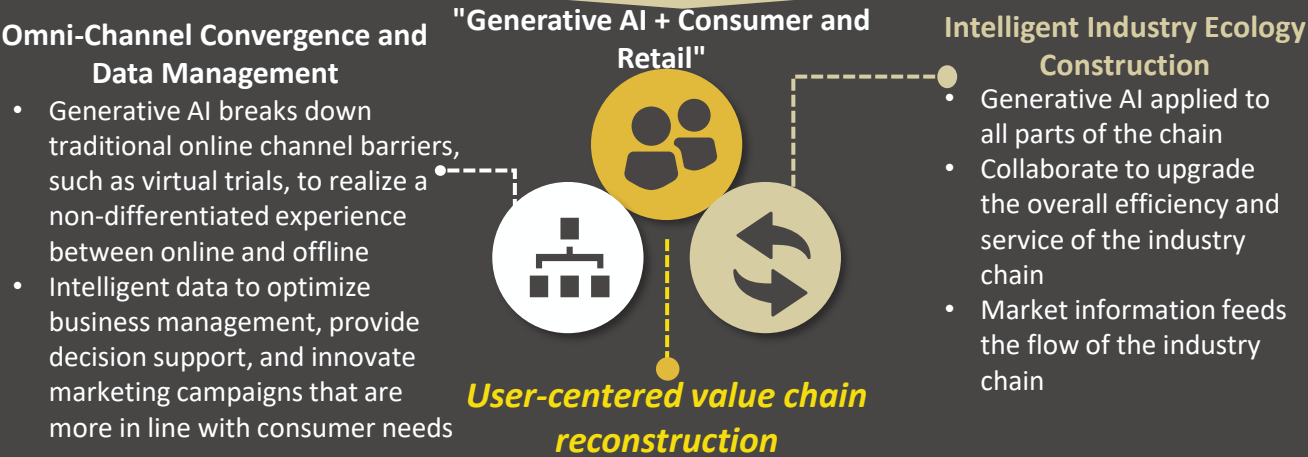
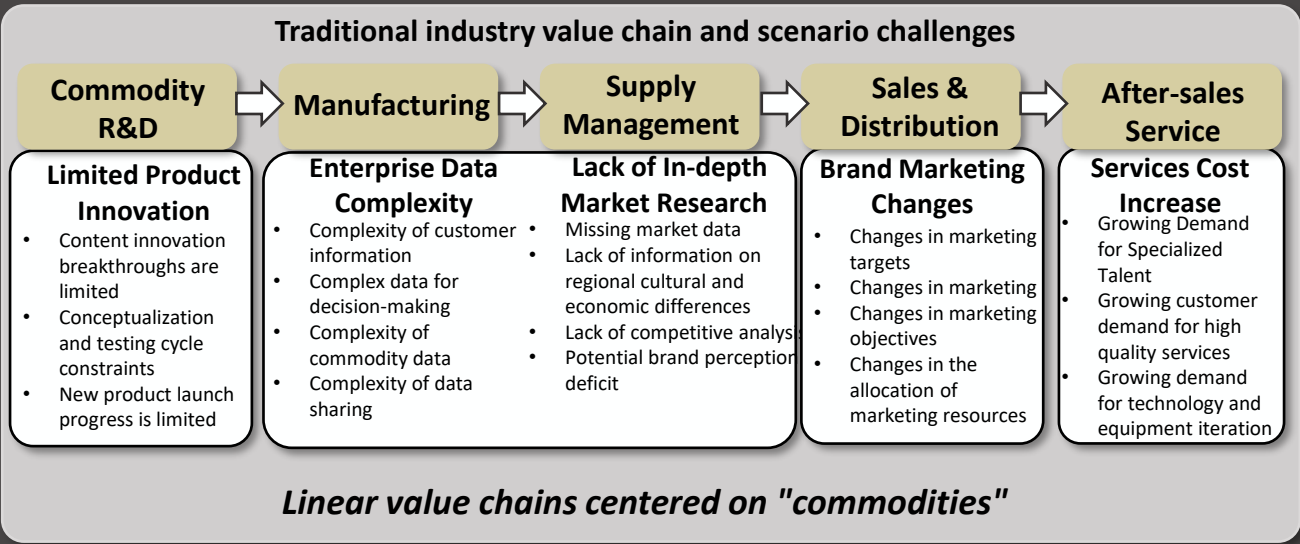
- Generative AI breaks the traditional commodity-oriented value chain, and through the intelligent management and analysis of market data, the industry chain feedback and a series of decision-making support are more in line with the market demand, realizing the reconstruction of the value chain centered on the "user", and assisting enterprises in responding to the market changes in a more rapid and sensitive manner.
- Generative AI is changing and empowering all aspects of the consumer industry, bringing a series of value benefits to the consumer industry, such as product innovation, efficiency improvement, marketing customization, and optimization of the user's consumption experience, among which marketing and services are the key areas of the current generative AI layout.
- Generative AI creates a more diverse connection between consumer and retail industry and individual consumers, but at the same time the complexity and variety of consumer information and the security of proprietary data within the organization become major potential risks to consider.

2.11.1 Challenges and Developments in The Consumer and Retail Industry (1/2)

Key findings

Generative AI breaks the traditional commodity-oriented value chain, and through the intelligent management and analysis of market data, the industry chain feedback and a series of decision-making support are more in line with the market demand, realizing the reconstruction of the value chain centered on the "user", and assisting enterprises in responding to the market changes in a more rapid and sensitive manner.

Industry's challenges and The New Form of "GenAI+Consumer&Retail"



With the gradual integration of generative AI into all aspects of the consumer and retail industry, the traditional linear value chain is being reconfigured to a new user-centric form.

- Accurate mining of market changes:** The traditional linear value chain is commodity-oriented, with pain points such as limited product innovation and complex enterprise data management, and is unable to respond quickly to market demands and changes. The in-depth application of generative AI helps consumer and retail enterprises capture consumption and demand with unprecedented precision, and accurate market analysis and insights feed back to support enterprises in producing and designing products based on market trends and immediate demand, forming a user-centered value chain.

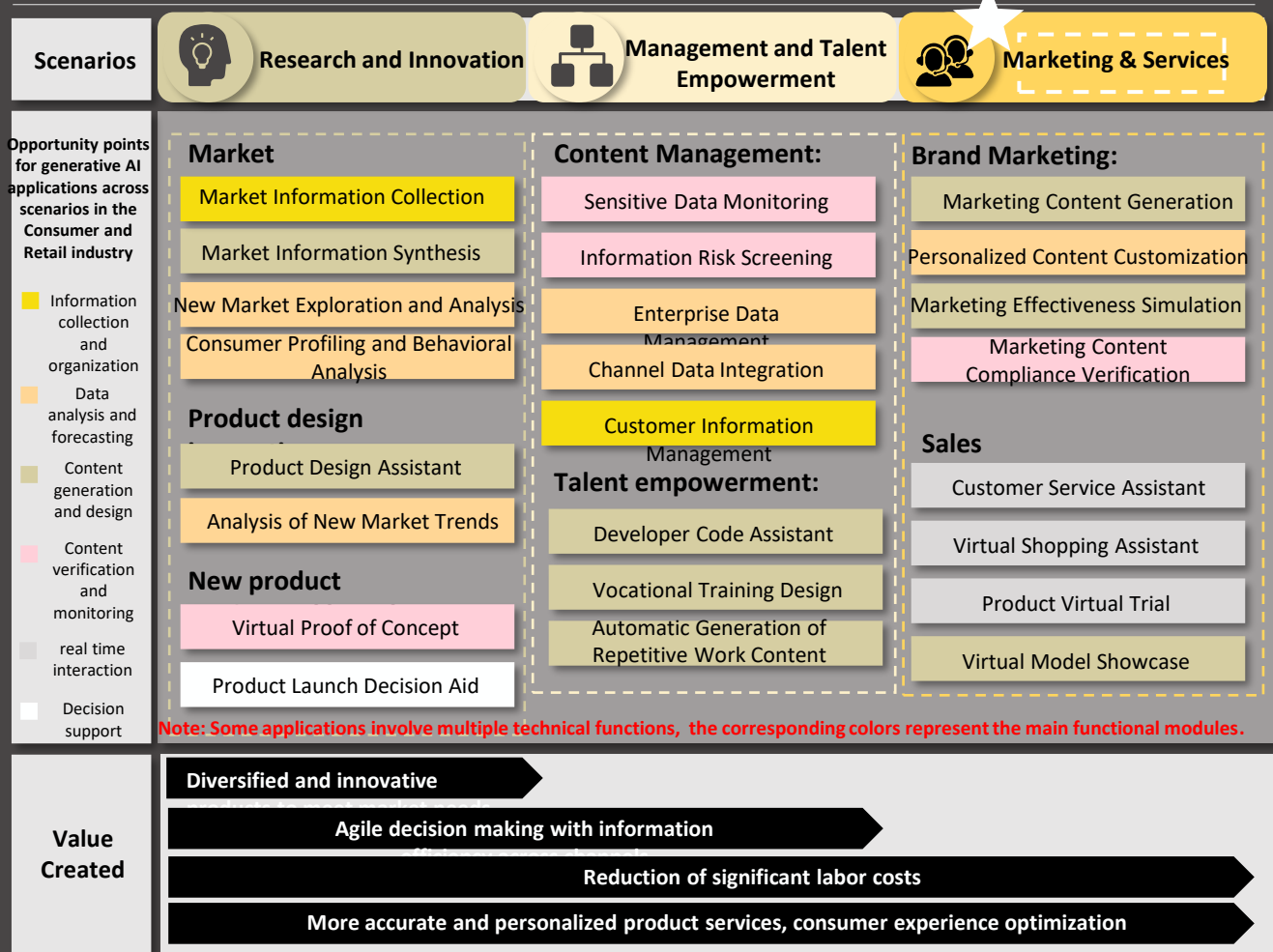
Source: Sullivan

2.11.1 Challenges and Developments in The Consumer and Retail Industry (2/2)

Key findings

Generative AI is changing and empowering all aspects of the consumer industry, bringing a series of value benefits to the consumer industry, such as product innovation, efficiency improvement, marketing customization, and optimization of the user's consumption experience, among which marketing and services are the key areas of the current generative AI layout.

Generative AI Opportunity Points Graph



Generative AI is gradually integrated into the various operational aspects of the consumer industry, in which marketing and consumer services are the key areas for enterprises to use generative AI layout, and is also the area where generative AI is currently more widely used.

- 1 Research and Innovation:** Generative AI can integrate market and consumer information more comprehensively, assisting enterprises to rapidly generate new product design ideas and solutions based on consumer demand and new market trends, and accelerating the process of product innovation and testing.
- 2 Management and talent Empowerment:** Generative AI can summarize data from various links, monitor and identify abnormal data to help enterprises screen potential risks in real time; in addition, generative AI can also assist highly skilled personnel in code writing and maintenance, automatic generation of repetitive tasks, and so on, to help enterprises reduce labor costs.
- 3 Marketing and Services:** Marketing and services are the key consumer areas to integrate with generative AI, which is based on the combination of commodities and consumer information to quickly create "one thousand people, one thousand faces" customized marketing content and a new consumer service experience.

2.11.2 Potential Application Risks in The Consumer and Retail Industry

Key finding

Generative AI creates a more diverse connection between consumer and retail industry and individual consumers, but at the same time the complexity and variety of consumer information and the security of proprietary data within the organization become major potential risks to consider.

Potential Application Risks

Reliability of Generated Content

Mismatch between Virtual Space and Reality: Generative AI's simulation design based on virtual space has the potential to be inconsistent with the real-world environment, resulting in generated content that cannot be used in the real marketplace

Comprehension Bias: Generative AI has the potential for comprehension bias, so some manual validation is required in, for example, program development and coding tasks

Data Information Delay: The output of content generation and design requires input information and data with real-time characteristics, the time lag of input data exists in the output results of low quality and inefficiency.

Functional Areas

Marketing Generation

Code Development

Customer Service Assistant

Product Design

Data Management


Market Research


Liability Attribution Risk


Unclear Attribution of Responsibility: Responsible parties may include AI developers, content providers, platform operators, etc. When a risk event occurs, unclear attribution of responsibility may lead to disputes and losses

Incomplete Laws and Regulations: The laws and regulations on generative AI are not yet perfect, lacking a clear definition of responsibility and a mechanism for pursuing responsibility

Lack of Technical Standards: Due to the lack of harmonized technical standards, the quality and performance of generative AI is difficult to assess, which may lead to risky events

Product Design


AI Model Showcase


Code Development


Privacy and Data Security Risks


Risk of User Privacy Leakage: Generative AI requires a large amount of user data for training and optimization, including sensitive information such as personal identity information, shopping habits, interests and hobbies. Therefore, enterprises need to consider the storage, transmission and isolation of such sensitive information.

Risk of Proprietary Data Leakage: Generative AI models can involve proprietary data and sensitive information such as product prices, profits, consumer information, and negotiation strategies

Data Management

Product Trial


Virtual Product


Code Development


Consumer Trust and Ethical Risks


Algorithmic Bias: Due to the limitations of data training and the inherent bias of algorithms, generative AI may produce unfair or discriminatory recommendations, and users need to understand the research and analytical methods behind the generated content.

Misleading Information: Generative AI may produce misleading information during the content generation process, misleading consumers into making wrong decisions

Customer Service Assistant

Virtual Shopping

Market Research

Decision Support

2.11.3 Best Practices in The Consumer and Retail Industry - Health Guard Nutritionist "AI Mengmeng"

Health Guard Nutritionist "AI Mengmeng"



Application Scenarios: Consumer and Retail Industry + Consumer Health Assessment + Nutrition and Health Content Generation and Q&A. etc.

Core Evaluation Keywords

Precipitation of Specialised Data

Personalized Nutritional Guidance

Interactive Health Advisor

Multimodal Human-Computer Interaction

Capacity Analysis

Functionality and Adaptability

- **Forward-looking Program:** The "AI Mengmeng" built by Zhipu AI for Mengniu is in line with Mengniu's long-term development strategy from the perspective of better serving consumers.
- **Data Exclusivity:** "AI Mengmeng" uses Mengniu's private domain knowledge related to nutrition and health accumulated for more than 20 years, and combines the knowledge data from cooperating nutrition and health authoritative organizations, and has passed more than 10 nutrition and health certification exams at home and abroad.

Performance and Innovation

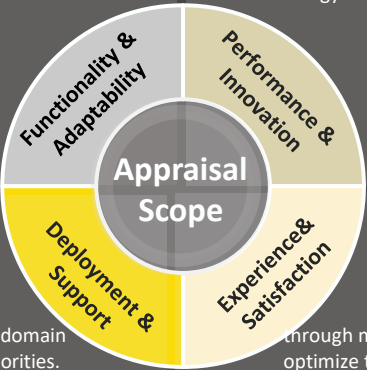
- **High-performance Algorithm Optimization:** "AI Mengmeng" conducts in-depth analysis of user data to ensure its efficiency and responsiveness in nutrition and health consultation.
- **Innovative Multimodal Interaction Design:** "AI Mengmeng" provides an innovative multimodal interaction experience by combining 3D visualization and natural language processing technology.

Deployment and Support

- **Customized Service:** "AI Mengmeng" enables highly specialised and targeted services through close integration with Mengniu's private domain data and the knowledge of nutritional health authorities.
- **Technology Integration and Compatibility:** "AI Mengmeng" can seamlessly interface with Mengniu's existing IT infrastructure and data platforms, reducing technical friction and improving implementation efficiency.

Experience and Satisfaction

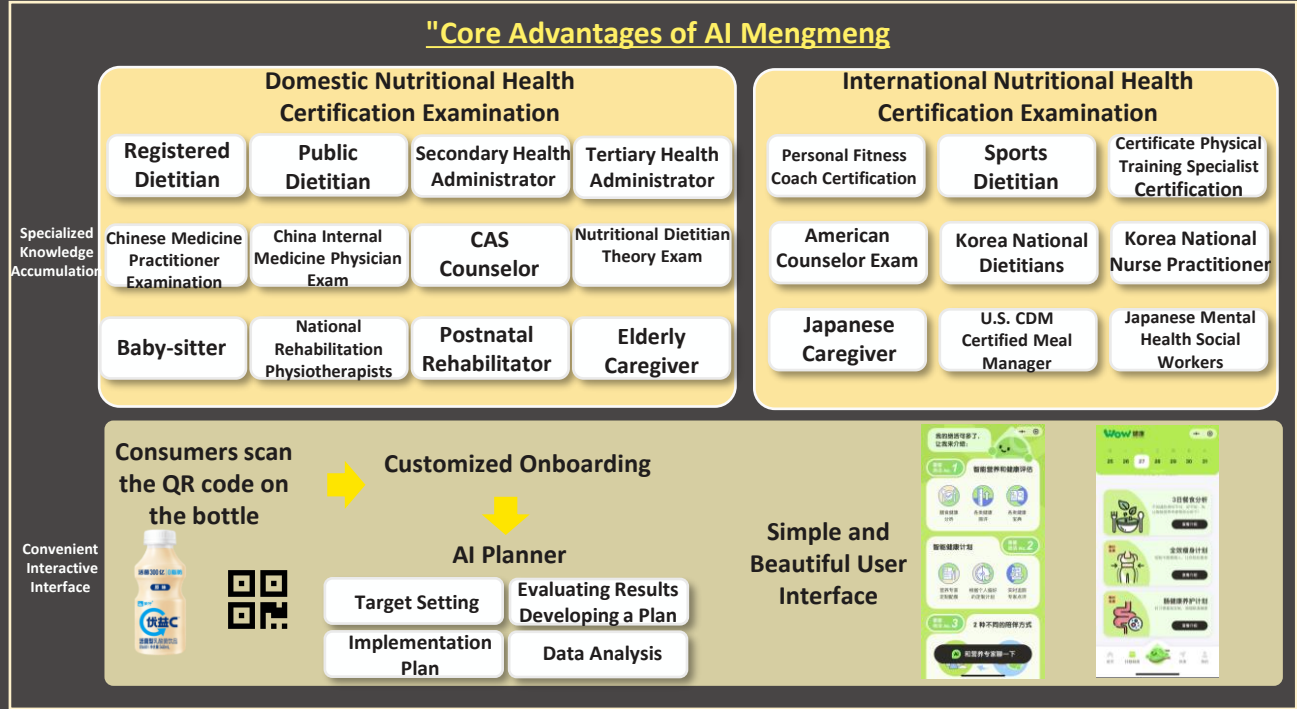
- **Collection and Application of Satisfaction Feedback:** Mengniu gathers user experience through multiple channels and suggestions, which in turn optimize the service, creating a cycle of user-centered continuous improvement.
- **Interactivity and Educational Value:** The 3D image and easy-to-use interactive design of "AI Mengmeng" not only increase the attractiveness of the service, but also provide an educational experience.



ZhipuAI × Mengniu

By integrating Mengniu's profound nutritional and health data with cutting-edge AI technology, "AI Mengmeng" provides users with personalized health advice and plans, and meanwhile realizes the continuous iteration and optimization of services with the help of user feedback, which promotes Mengniu's innovation in the field of digital health services.

Product Structure and Core Advantages



Solution Effectiveness

Client's Demands

- Solve the problem of traditional operation mode:** China's professional nutrition and health service supply is seriously insufficient (China has an average of only 0.3 dietitians per 100,000 people, far lower than the global level of 27 dietitians, and the price is expensive). Demand for relevant professional knowledge is growing, and more and more consumers and families want to have a dietitian assistant who can provide professional answers anytime, anywhere!

Solutions

- AI Nutritionist Meng Meng:** Smart Spectrum AI assisted Mengniu in building an AI nutritionist Meng Meng based on MENGIU.GPT, and consumers can communicate with AI nutritionist Meng Meng through natural language at any time of the day or night in 7*24H to get expert-level personalized nutrition and health services.

Effectiveness of Implementation

- Positive Feedback from Customers:** Consumers enjoy more personalized and companionable professional nutritional health services, and users' willingness to consume in both private and public domains has increased by more than **10%**.
- Provision of Personalized Services:** "AI Mengmeng" can provide hundreds of millions of consumers with personalized nutritional health services, which include professional knowledge answers and personalized nutritional advice.

2.11.3 Best Practices in The Consumer and Retail Industry

- Vipshop's "12.8 Sale" Marketing Case

Vipshop's "12.8 Sale" Marketing Case







Application Scenario: Consumer & Retail Industry + Creative Marketing

Core evaluation keywords

Voice Interactive Marketing

Social Conversation to Build Momentum

Full-scene Traffic Guidance

In-depth Implantation of Brand

Capacity Analysis

Functionality and Adaptability

- Personalized Shopping Experience:** The case enhances the interaction with consumers through AI technology and provides a personalized shopping experience, which is in line with Vipshop's long-term development strategy.
- Market Adaptability:** The marketing strategy successfully attracted the target consumers, showing its high applicability in the e-commerce market and helping the brand to gain a competitive advantage.

Performance and Innovation

- Technology Performance:** The use of AI technology in marketing campaigns, such as speech recognition and speech rate challenges, demonstrates high-performance technology performance.
- Innovative Marketing Model:** Innovative marketing plays, such as voice input activation games and smart cards, reflect Vipshop's innovative power in the application of technology.

Deployment and Support

- The Combination of Technology and Marketing:** The cooperation between Vipshop and Xunfei AI Marketing Cloud ensured the smooth implementation of the marketing campaign and demonstrated the close integration of AI technology and marketing strategy.
- Popularity Guidance Strategy:** The all-round popularity guidance and cross-scene infusion strategy, supported by Xunfei AI technology, maximizes the marketing effect.

Experience and Satisfaction

- Immersive Shopping Experience:** AI-enabled marketing gameplay enhances the customer experience user stickiness and brand loyalty.
- Market Feedback Analysis:** High arrival and replay rates, as well as an increase in brand voice, reflected positive consumer feedback on the campaign and provided the brand with market insights.

Appraisal Scope

Functionality & Adaptability

Performance & Innovation

Experience & Satisfaction

Deployment & Support

iFLYTEK × Vipshop

Vipshop’s “12.8 Sale” marketing case realized efficient interaction and personalized experience with consumers through the application of AI technology, and meanwhile, with the help of innovative marketing means, such as voice input and social fission, it effectively enhanced brand exposure and user participation, showing the practical value and innovative potential of AI in e-commerce marketing.

Product Structure and Core Advantages





Challenges and Developments in The Education Industry and Best Practices

- The development of generative AI comprehensively empowers the optimization of the "five factors" of the education industry, upgrading the quality of education and optimizing the allocation of educational resources by innovative means, and boosting the education industry to transform into three major directions: intelligent course content, innovative teaching methods, and upgrading and optimization of the educational environment.
- Generative AI is changing and empowering all aspects of the education industry, bringing a series of value benefits to the education industry such as industrial upgrading, teaching innovation, organizational improvement, etc. Thereof, teaching content and organizational forms are the key areas of generative AI layout.
- While generative AI has spawned innovative models in the education industry, it has also posed challenges. These include the quality of educational content, the potential risks to the privacy and security of educational subjects, the recognition of educational equity and responsibility, and the need to build public trust and address ethical risks.

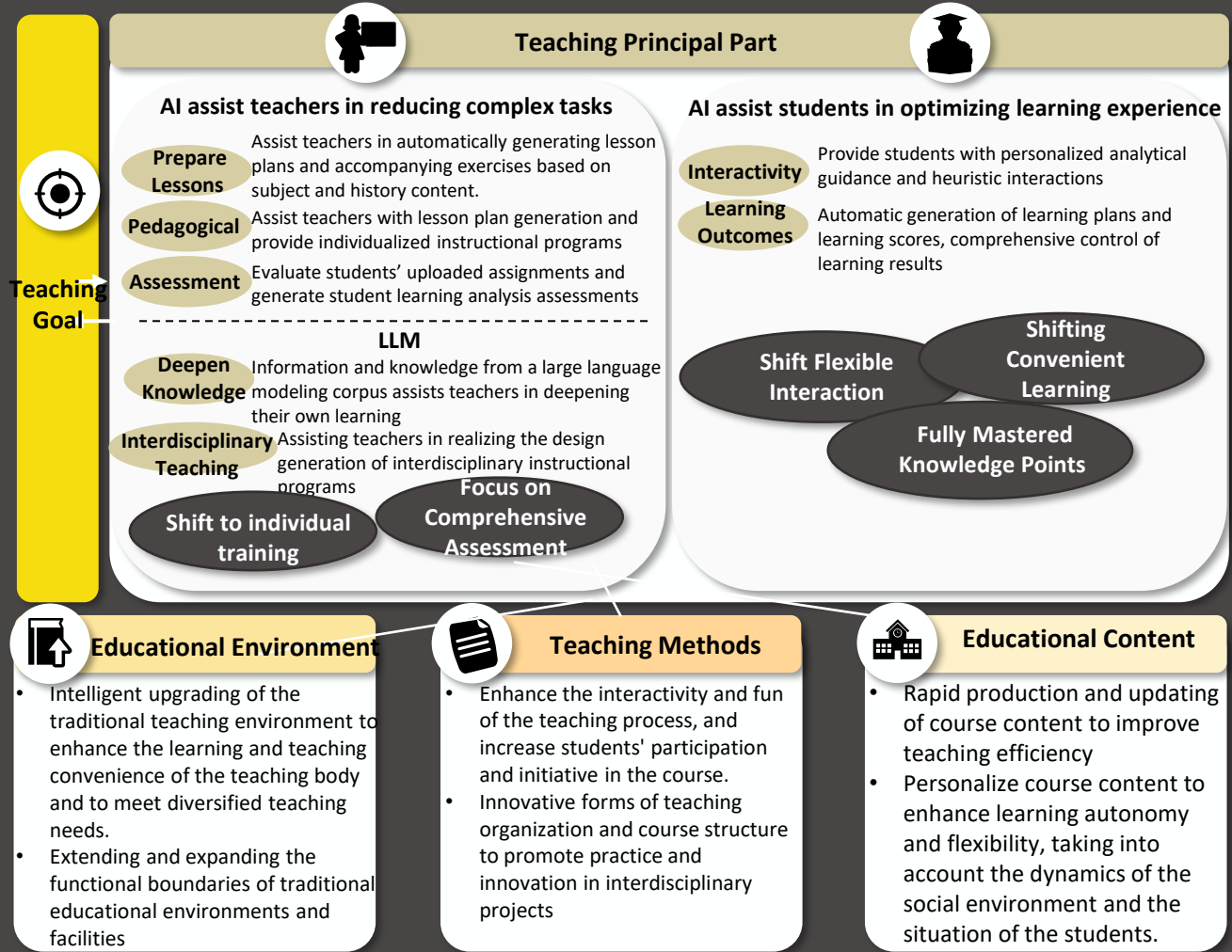
2.12.1 Challenges and Developments in The Education Industry (1/2)

Key Findings

The development of generative AI comprehensively empowers the optimization of the "five factors" of the education industry, upgrading the quality of education and optimizing the allocation of educational resources by innovative means, and boosting the education industry to transform into three major directions: intelligent course content, innovative teaching methods, and upgrading and optimization of the educational environment.

Industry's challenges and The New Form of "GenAI+Education"

The "Five Factors" of Generative AI Enabling the Education Industry



❑ The education industry is facing a series of challenges such as uneven distribution of resources and old-fashioned teaching system in its development, and the integration of generative AI empowers the education industry to transform in three major directions: intelligent course content, innovative teaching methods and upgraded educational environment.

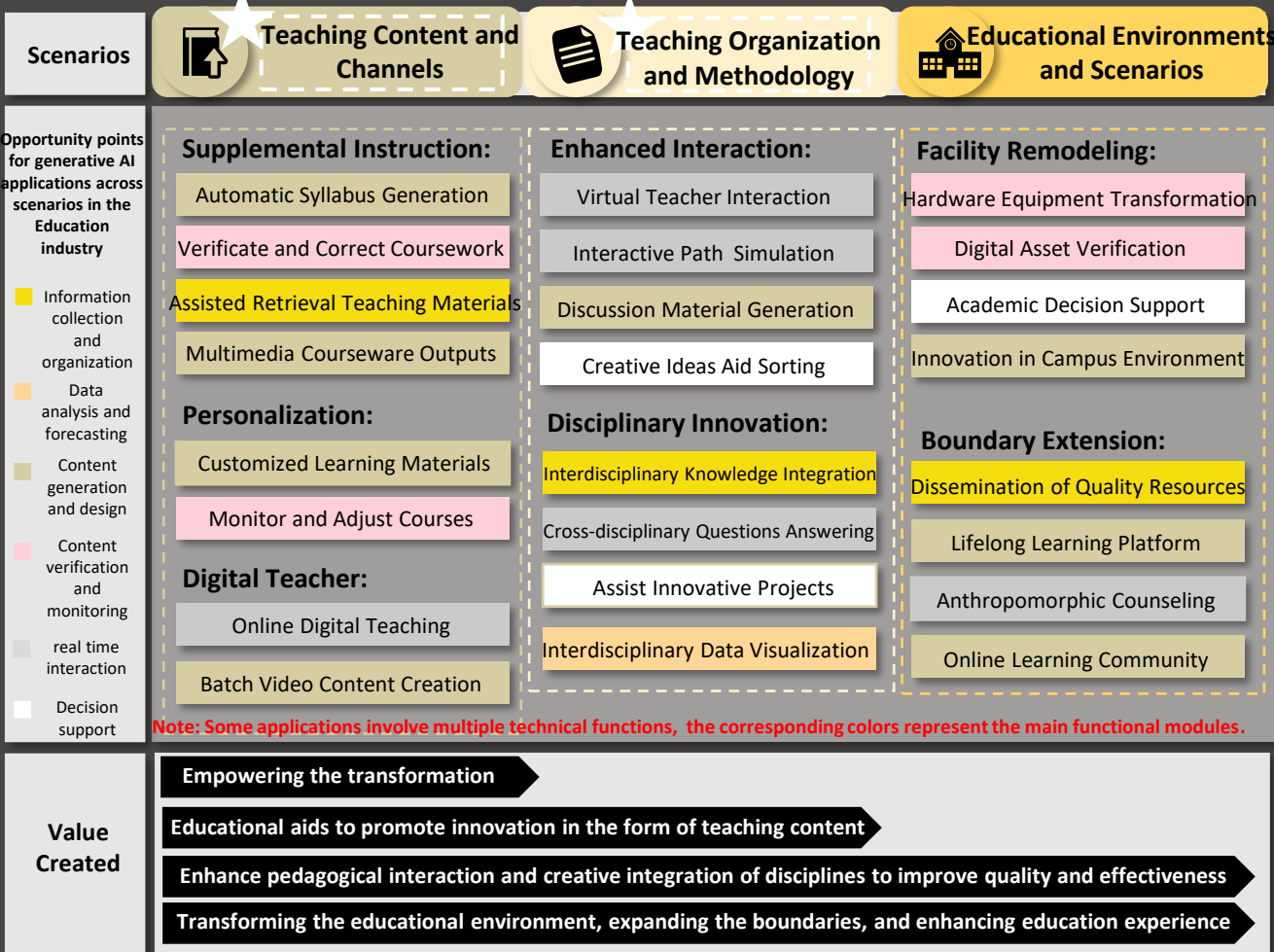
- **Traditional Industry Challenges:** The education industry faces major challenges such as uneven distribution of resources, solidification of the education system, and low teaching efficiency.
- **"Generative AI+Education" New Format:** Generative AI is comprehensively empowered by five factors in the education industry, boosting the transformation of the education industry in the three major directions of intelligent course content, innovative teaching methods and upgraded and optimized education environment.

2.12.1 Challenges and Developments in The Education Industry (2/2)

Key findings

Generative AI is changing and empowering all aspects of the education industry, bringing a series of value benefits to the education industry such as industrial upgrading, teaching innovation, organizational improvement, etc. Thereof, teaching content and organizational forms are the key areas of generative AI layout.

Generative AI Opportunity Points Graph



Note: Some applications involve multiple technical functions, the corresponding colors represent the main functional modules.

Generative AI is gradually integrated into the whole chain of education, providing technical support for the integration of online /offline teaching and the strengthening software and hardware equipment.

- 1 Teaching content and channels: Generative AI automates the process of learning material generation, teaching video creation, coursework correction, and course progress control based on the needs of learning, so as to promote the growth of excellence.
- 2 Teaching organization and methodology: Generative AI enables pedagogical interaction enhancement through interactive path simulation, course material generation, and virtual teacher interaction; and innovation through cross-disciplinary knowledge integration, question answering, and data analysis.
- 3 Educational environment and scenarios: Generative AI rapidly produces an optimised solution for the educational environment, achieving efficient use of existing assets, transforming hardware equipment, and improving the quality and efficiency of the teaching process; it is capable of rapidly integrating high-quality resources, constructing innovative learning platforms, and optimising the experience.

2.12.2 Potential Application Risks in The Education Industry

Key Findings

While generative AI has spawned innovative models in the education industry, it has also posed challenges. These include the quality of educational content, the potential risks to the privacy and security of educational subjects, the recognition of educational equity and responsibility, and the need to build public trust and address ethical risks.

Potential Application Risks

The Reliability of Generated Content

Variable Quality of Educational Data: The unstructured nature of educational data presents that the content generated by generative AI may be incorrect and false, potentially leading to false information overload
Technological Backdoor: The opaque nature of the logic algorithm raise concerns. Additionally, there is a risk of generative AI becoming a tool for different groups to compete for educational resources.
Delayed Data Information: Generative AI input data is delayed, resulting in poor timeliness of output results and reduced educational value



Intelligent
Lessons



Virtual
Teacher



Assisted
Marking



Educational
Materials

Privacy and Data Security

Privacy Infringement in Education: Generative AI creates a comprehensive digital surveillance system that collects a large amount of personal data in interactive education, which may lead to privacy breaches.
Data Security Risks: As generative AI becomes fully integrated into the education system, it may excessively collect and utilise user privacy data, and illegally export privacy data during interactive learning, posing a data security risks.



Virtual
Interaction



Answers
Residency



New
Hardware



Personate
Tutoring

Fairness and Responsibility

Regional Injustice: Generative AI is heavily reliant on the development of science and technology, which may lead to an imbalance in the regional distribution of educational resources.
Differentiation of Outcomes: The degree of mastering generative AI will further differentiate the allocation of educational resources, leading to differentiation in the long-term development of individuals.
Judgment of Responsibility: Generative AI may generate incorrect educational materials, which could lead to serious educational accidents.



Teaching
Assistant



Personate
Tutoring



Educational
Materials

Educating Trust and Ethics

Ideological Hardening: Users may develop an illusion of intellectual authority in the absence of critical thinking, leading to information cocoon.
Social Relationships: Generative AI weakens the teacher-student relationship, leading to emotional indifference; while overemphasising the human-machine relationship can lead to over-reliance and alienation.
Black Box Problem: Generative AI may misrepresent reality during its application, exacerbating the uncertainty and trust crisis in educational governance.



Learning
Platform



Personate
Tutoring



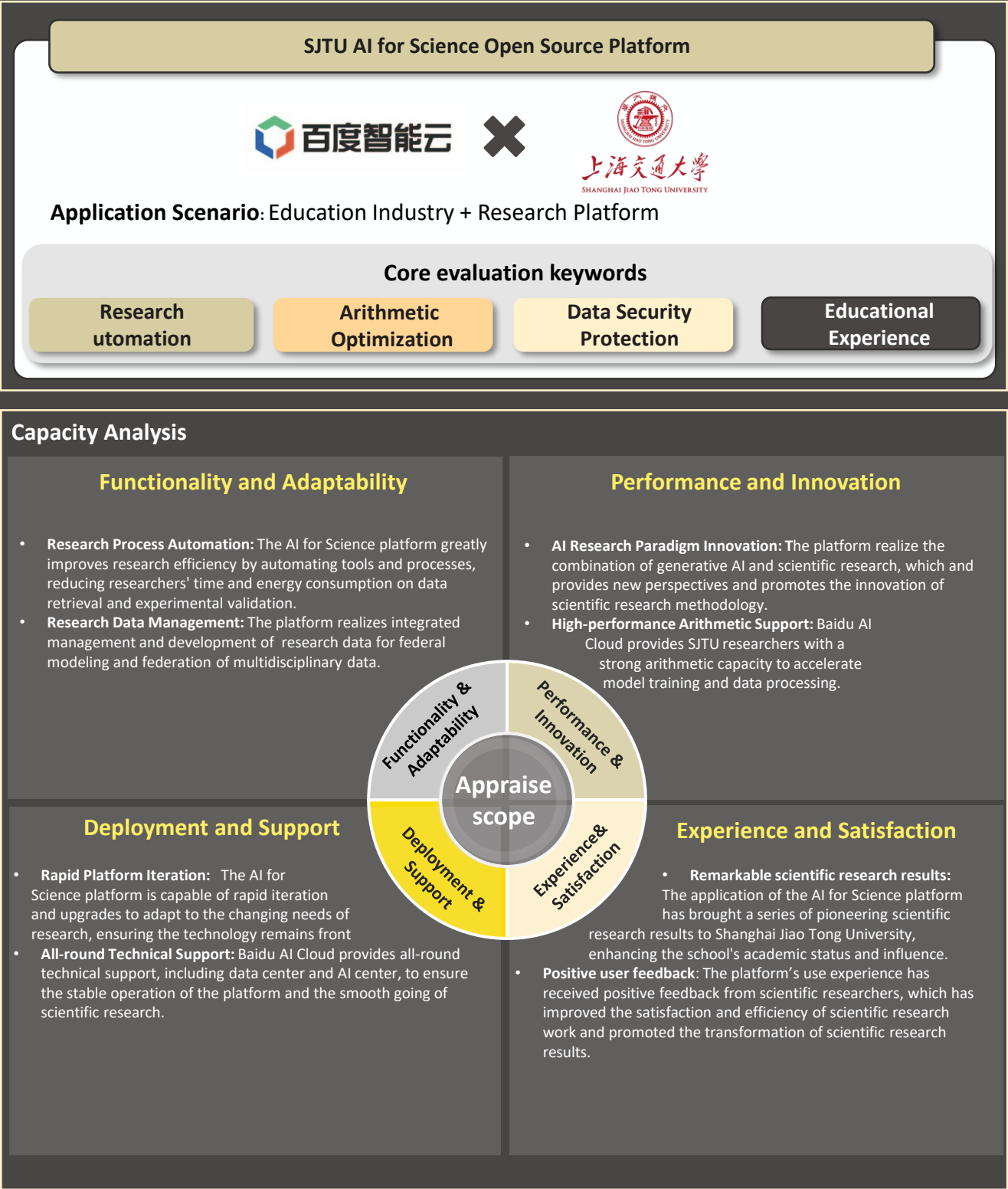
Extended
Classroom



Educational
Materials

2.12.3 Best Practices in The Automotive Industry

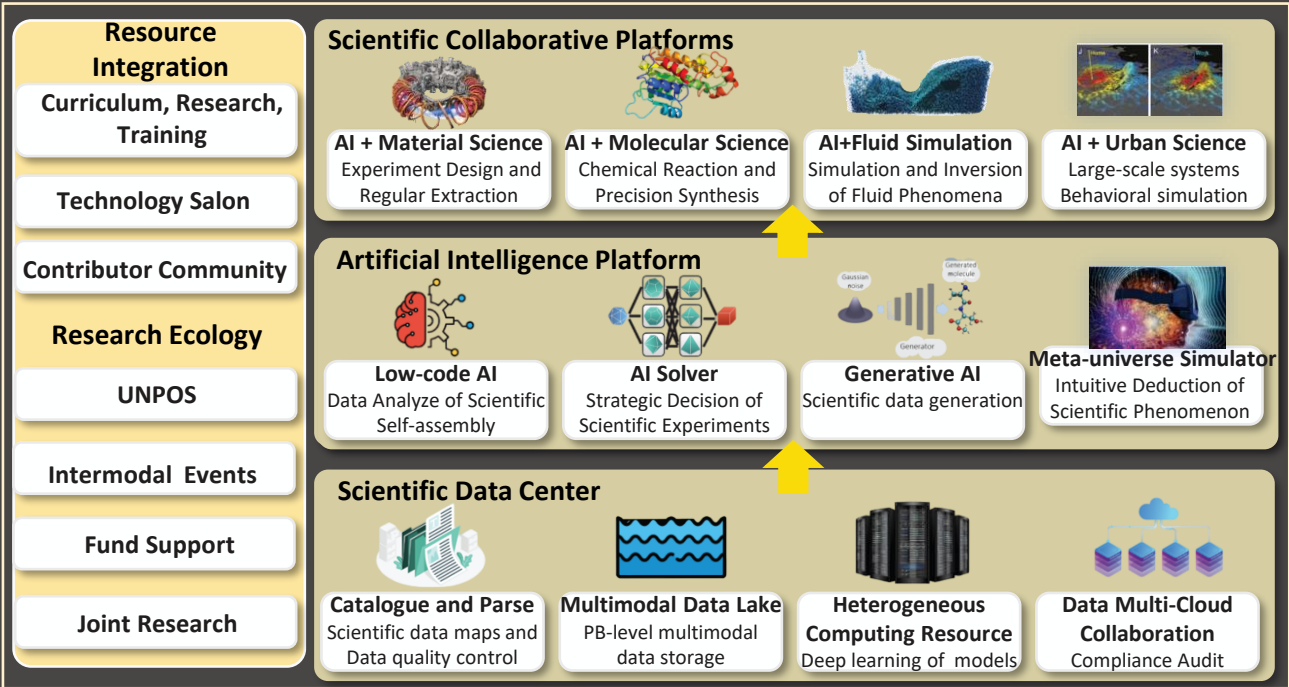
- SJTU AI for Science Open Source Platform



Baidu Cloud X SJTU

The AI4S scientific data open platform is first new paradigm application for reconstructing scientific research based on generative AI Large Model in China.

Product Structure and Core Advantages



Solution Effectiveness

Client’s Demands	Solutions
<ul style="list-style-type: none">In light of the significant advancements and maturity of generative AI, SJTU is pursuing the establishment of an open AI4S R&D platform. This aims to leverage the capabilities of AI to enhance the efficiency and quality of scientific research, while promoting the in-depth application.	<ul style="list-style-type: none">Baidu's self-developed ERNIE Bot serves as the foundation for the SJTU AI for Scientific Data open-source platform. It incorporates a comprehensive range of Baidu Intelligent Cloud capabilities, including a big model, AI center, data center, and other core competencies, to facilitate the integration of generative AI into scientific research scenarios.

Effectiveness of Implementation

- Built the first AI for Science research platform in domestic university, creating an innovative paradigm that combines generative AI technology with research scenarios.
- Improve research efficiency, liberate productivity, and release a series of first-of-its-kind AI4S research results.
- Development of the Baiyulan Science Large Model - Chemical Synthesis (BAI-Chem 2.0) Big Model.
- Upgrade Big Model 2.0 and co-research Law (BAI-Law-13B) Large Model.
- Published the main results of AI+ urban science on the cover of Nature Computational Science.

Source: Baidu Cloud, Sullivan

2.12.3 Best Practices in The Education Industry

- Student Development System, etc.




iFLYTEK× High School Attached to ZJU

The cooperation embodies an innovative practice of smart education, which promotes the intelligent and precise delivery of educational services through the personalized career guidance system. The system not only improves the efficiency of teaching management, but also optimizes the learning experience of students.

Product Structure and Core Advantages


Based on Xunfei Intelligent Education

Serve Different Educational Roles




Educational administrators

- Scientific Management:** Enhancing management efficiency and promoting regional education development




School Administrators

- Lifelong Learning:** Enhancing the quality of school teaching and learning, promoting the All-round Development of Students




Principals

- Reducing workload :** Reducing teachers' repetitive work and improving teaching quality



Head of a Household


- Home-school co-education:** Solve the problem of home tutoring, understand the situation of children in school



Schoolchildren


- Self-directed Learning:** Enhancing academic standards and Promoting all-round quality.

Covering Whole Education Scene




Regional Education Governance

- Teaching individually and integrate planning to promote the digital transformation of education




Campus Position Building

- Reducing burden and increasing efficiency, teaching according to students' abilities, cultivating morality and nurturing people, and promoting the all-round quality.



Independent Study

- Evaluate students' learning situations, boost confidence through results, and cultivate the ability to learn independently.



Smart Exam

- Artificial Intelligence helps make China' s education exams Safe, Efficient, Fair and Equitable.

Solution Effectiveness

Client's Demands

- Personalized Learning Needs:** Students expect to have learning experiences that match their individual interests and abilities.
- Enhance management efficiency:** Educators seek more efficient ways of managing to accommodate complex teaching arrangements.
- Technical support and services:** Schools need to ensure the stable operation of the system while receiving timely technical support.

Solutions

- Personalized Learning Path Planning:** The System customizes learning plans for each student by analyzing their learning habits, performance and interests.
- Integrated Management Platform:**The system provides an integrated management platform which includes class scheduling, electronic class cards etc. to simplify management process and enhance the efficiency. **Ongoing technical service :** iFLYTEK provides system maintenance and rapid response services to ensure smooth operation .

Effectiveness of Implementation

- Personalized Education Results:** The school has successfully achieved personalized education, effectively promoting the development of students' potential.
- Improved Management Efficiency:** The system have greatly improved the efficiency of teaching management, reducing the burden on teachers and making the allocation of teaching resources more efficient.
- Improved Learning Experience:** The system's timely feedback and personalized guidance make students more proactive in their learning, giving them a richer learning experience and improving user satisfaction.



Microsoft Word

Microsoft Excel

Ai



zoom.us

Adobe Illustrator 2020



Challenges and Developments in The Enterprise Application Industry and Best Practices

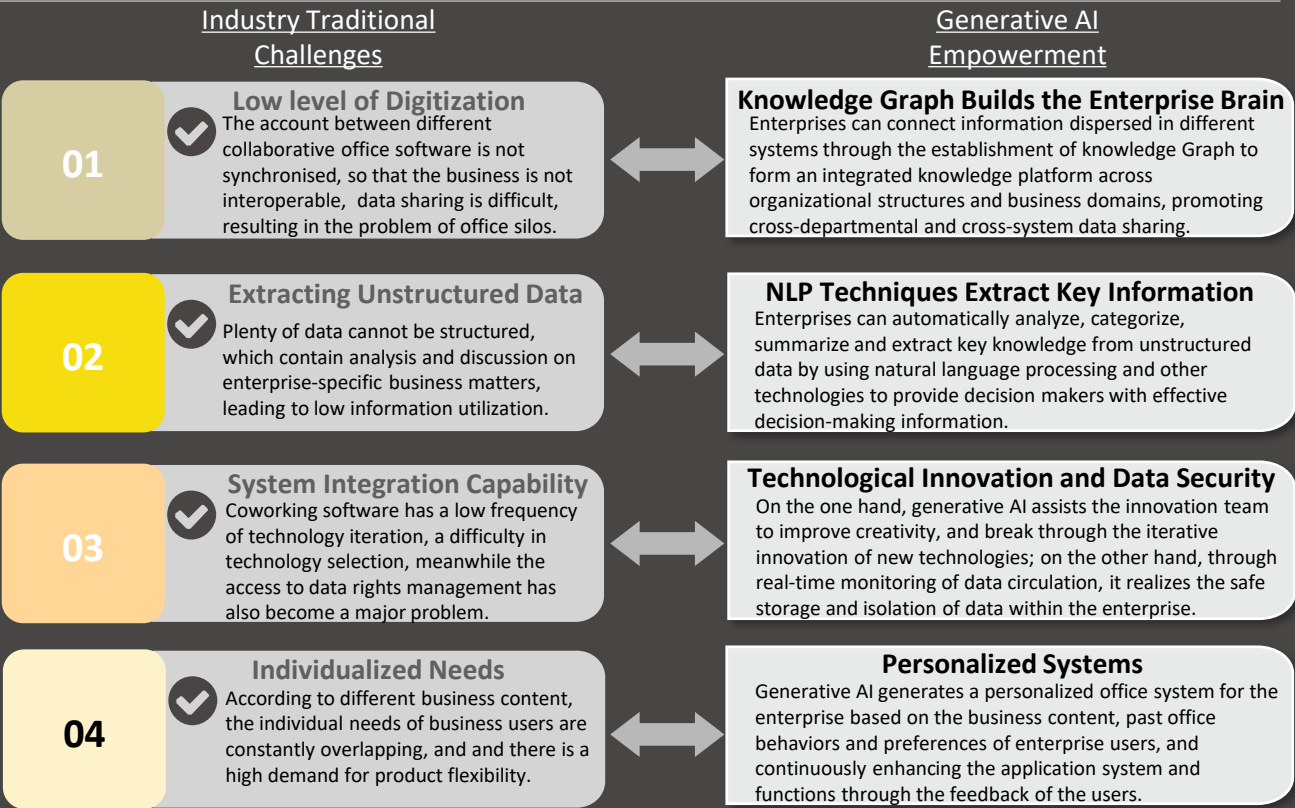
- Since the uneven digitalization of enterprises, the enterprise application industry faces challenges such as difficulty in synchronizing office system software and weak system integration capabilities. The emergence of generative AI can help the industry to connect internal enterprise information data based on advanced technologies such as knowledge graphs and natural language processing, efficiently extract effective decision-making information, and generate personalized office systems.
- Generative AI empowers enterprise users with its data-driven decision-making capabilities, enabling office collaboration, and automation. It integrates the flow of internal information and key decision-making information support, and upgrades and develops personalized products based on the analysis of users' office behaviors, creating a new way of working.
- Generative AI share the risk of enterprise data and information leakage, as well as the key link of the data lag and technical failures leading to system platforms throughout the chain of information flow paralysis. Therefore, enterprise users and application developers need to add supervision and the relevant level of development technology.

2.13.1 Challenges and Developments in The Enterprise Application Industry (1/2)

Key findings

Since the uneven digitalization of enterprises, the enterprise application industry faces challenges such as difficulty in synchronizing office system software and weak system integration capabilities. The emergence of generative AI can help the industry to connect internal enterprise information data based on advanced technologies such as knowledge graphs and natural language processing, efficiently extract effective decision-making information, and generate personalized office systems.

Industry's challenges and The New Form of "GenAI+Enterprise Application"



❑ The emergence of generative AI-related technologies has injected powerful and more direct new functions into the digital transformation of enterprises.

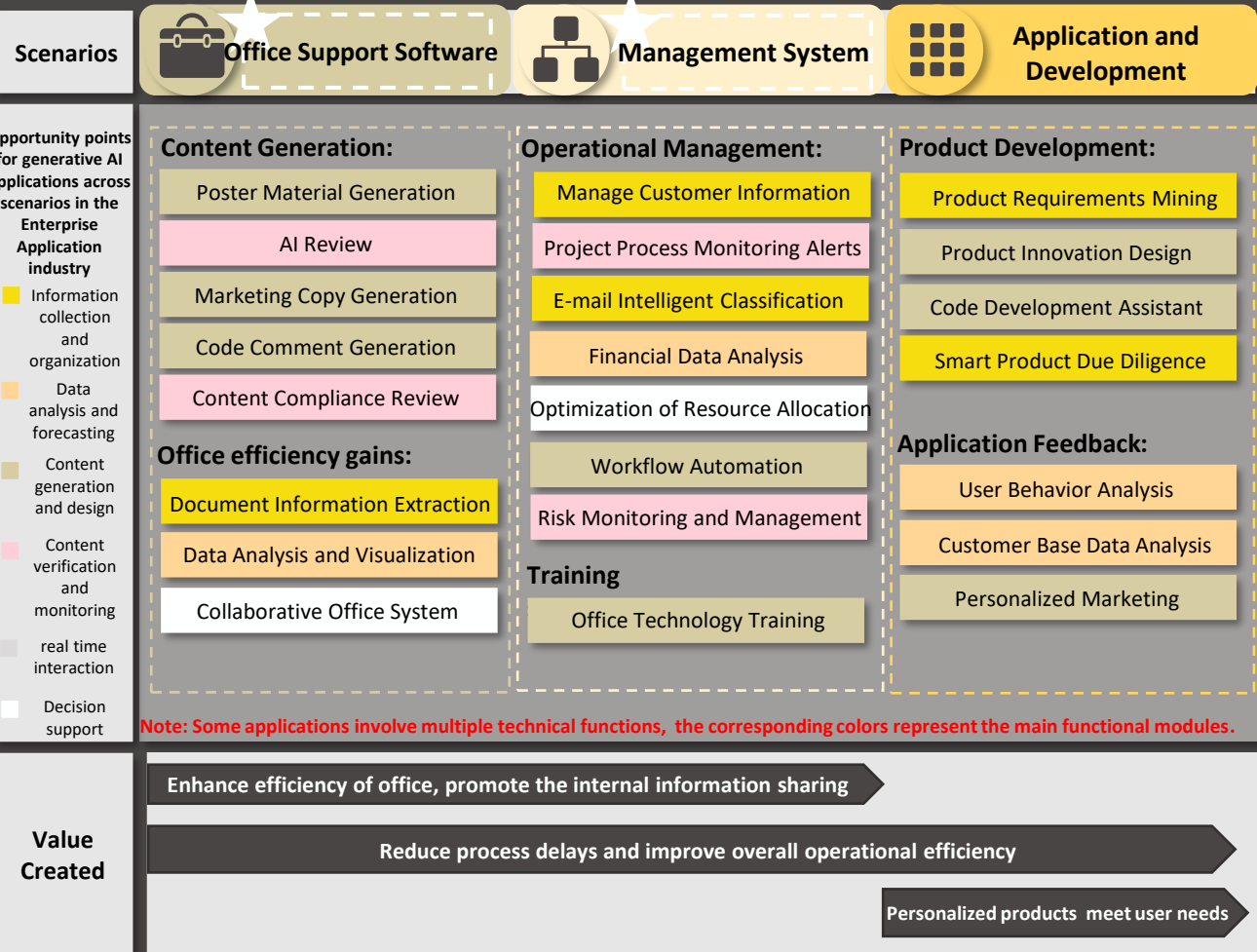
- **Industry Traditional Challenges:** Currently, the digitalization of collaborative office is still insufficient, which leads to the difficulty of connecting different business software and business information within each enterprise; in addition, the extraction of key knowledge of unstructured data, the demand for personalized office systems, and the security of information and data sharing have become the main challenges.
- **New Form of "Generative AI+Enterprise Application":** By leveraging knowledge graph and NLP technologies, generative AI enables enterprises to consolidate disparate document data into a unified cross-business and cross-departmental integration platform. This not only streamlines office operations but also enhances decision-making quality by automatically analyzing, categorizing and extracting the essential insights from unstructured information. Furthermore, the large model creates a personalized office system for the enterprise based on the company's historical office behavior and preferences.

2.13.1 Scenario Challenges and Developments in the Enterprise Application Industry (2/2)

Key findings

Generative AI empowers enterprise users with its data-driven decision-making capabilities, enabling office collaboration, and automation. It integrates the flow of internal information and key decision-making information support, and upgrades and develops personalized products based on the analysis of users' office behaviors, creating a new way of working.

Generative AI Opportunity Points Graph



With generative AI, enterprises have the opportunity to build new generation of applications and create new AI-driven products and offices mode.

- 1
- Office Support Software: Generative AI helps enterprise employees efficiently complete tasks such as document writing, code annotation, etc. Employees are tuned on the basis of obtaining basic results, thus significantly improving work efficiency.
- 2
- Management System: The Agent capability assists enterprises to in automatically disassembling tasks and auto-generate work objectives, reducing the dependence on manual execution process nodes, and realizing a systematic leap in operation and management efficiency.
- 3
- Product Application and Development: Generative AI analyzes user behavior and preferences, learning from user feedback in real time and continuously improving its own functions and performance. In addition, it provides developers with the tools to develop and innovate designs for product requirements.

2.13.2 Potential Application Risks in The Enterprise Applications Industry

Key findings

Generative AI share the risk of enterprise data and information leakage, as well as the key link of the data lag and technical failures leading to system platforms throughout the chain of information flow paralysis. Therefore, enterprise users and application developers need to add supervision and the relevant level of development technology.

Potential Application Risks

Intellectual Property Protection

Copyright Infringement and Content Licensing: Generative AI generates content through natural language modeling, which is difficult to ensure it does not involve the copyright of existing works. Users who inadvertently use generated content for business copywriting, or even public distribution may be involved in the risk of plagiarism, leading to intellectual property disputes.

Originality Assessment: Generative AI creates new content by integrating existing text, rendering the originality of the generated content controversial. If the generated content is not considered sufficiently original, organizations may face the dilemma of using the content without effective IP protection.

Functional Areas

- 
Copyright
- 
Mandates
- 
Secondary Creative License
- 
Intellectual Achievements Safeguard

Privacy and Data Security

Permission Control: Enterprises have high permission control needs, and data sharing enabled by generative AI may cause ordinary employees to learn about high-level trade secrets, which in turn bring out leakage.

Information Extraction Attack: Generative AI models may leak sensitive information from training data. When employees use generative AI to perform assisted work, the input information may be used as training data for further iterations, and an attacker may infer the training data by analyzing the model's output, leading to the disclosure of sensitive information.

- 
Privilege Control
- 
Disclosure of Information
- 
Privacy
- 
Data Analysis

Data Hegemony and Equity Issues

Data Hegemony: Companies with access to algorithmic models with richer resources and better data quality will gain an advantage in business and development, creating a "technological monopoly".

Unfairness: Inadequate data representation may lead to inaccuracy in enterprise model decision-making, especially in areas involving diversity, where enterprises face a series of challenges ranging from model selection and customization, in-depth mining of scenario value, to cost optimization, arithmetic allocation, etc.

- 
Technology Integration
- 
Cost Optimization
- 
Arithmetic Configuration
- 
User Experience

Interpretability and Uncertainty Risk

Generated Content Reliability Risk: Generative AI can output uncertain results when faced with unseen input data, especially in critical areas such as management and auditing, which can lead to serious losses and consequently reduce user trust in the model.

The Problem of Model Interpretability: The complexity of generative AI makes its decision-making mechanisms difficult to decipher, increasing the difficulty of reviewing and validating it in applications that require compliance with regulations, masking model bias or error.

- 
Business Management
- 
Audits
- 
Laws and Regulations

Source: Sullivan

2.13.3 Best Practices in Enterprise Application Industry

- Overseas version of WPS AI

Overseas version of WPS AI

亚马逊云科技

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Application scenarios: Enterprise Application Industry + Office Scenarios

Core evaluation keywords

Fast and Efficient Model Selection

R&D Efficiency Optimization

Cooperation and Innovation

Overseas Business Development Support

Program capacity analysis

Functional value and applicability

- Functional Value:** Amazon Bedrock helps WPS to safely apply the base model with its rapid deployment call, data security guarantee, and base stability.
- Positive Benefits:** Overseas version of WPS AI achieves an improvement in R&D efficiency of 30%+ and storage cost optimization of 40%+.
- Strategic Fit:** Enhancing User Experience with Generative AI to create a user refined operation path and extend the user scene.

Technical Performance and Innovativeness

- Quality Controlled:** Specialized output using the Big Language Model on Amazon Bedrock for semantic checking and document touch-ups.
- Generate Quickly:** WPS applies Amazon Bedrock to realize PPT one-click generation, document conversion and semantic supply to improve productivity and output quality.
- Content Compliance:** Amazon Cloud Technology holds 140+ compliance tools and certifications to help the industry through a shared responsibility model for security compliance.

Implementation and support

- Economic Cost:** Based on Amazon S3's intelligent tiering feature, WPS achieves 40%+ storage cost optimization; also, daily delayed slow down by 50%+.
- Landing support:** build refined operations based on Amazon SageMaker services, predict user purchases through artificial intelligence, and enhance user conversion rates.

Experience Satisfaction Feedback

- Scenario demand satisfaction:** based on Amazon Bedrock's rich selection of model model , WPS can quickly select and switch according to the needs of the actual application scene. The WPS AI feature push can be greatly accelerated by selecting a suitable base model, which can be completed in two steps from selection to deployment.
- Long-term cooperation and willingness to invest:** The two sides have a long history of cooperation. In the future, WPS will continue to cooperate with Amazon Cloud Technology in exploring the fusion of new technologies and office software.

Appraisal scope

Functionality & Adaptability

Performance & Innovation

Experience & Satisfaction

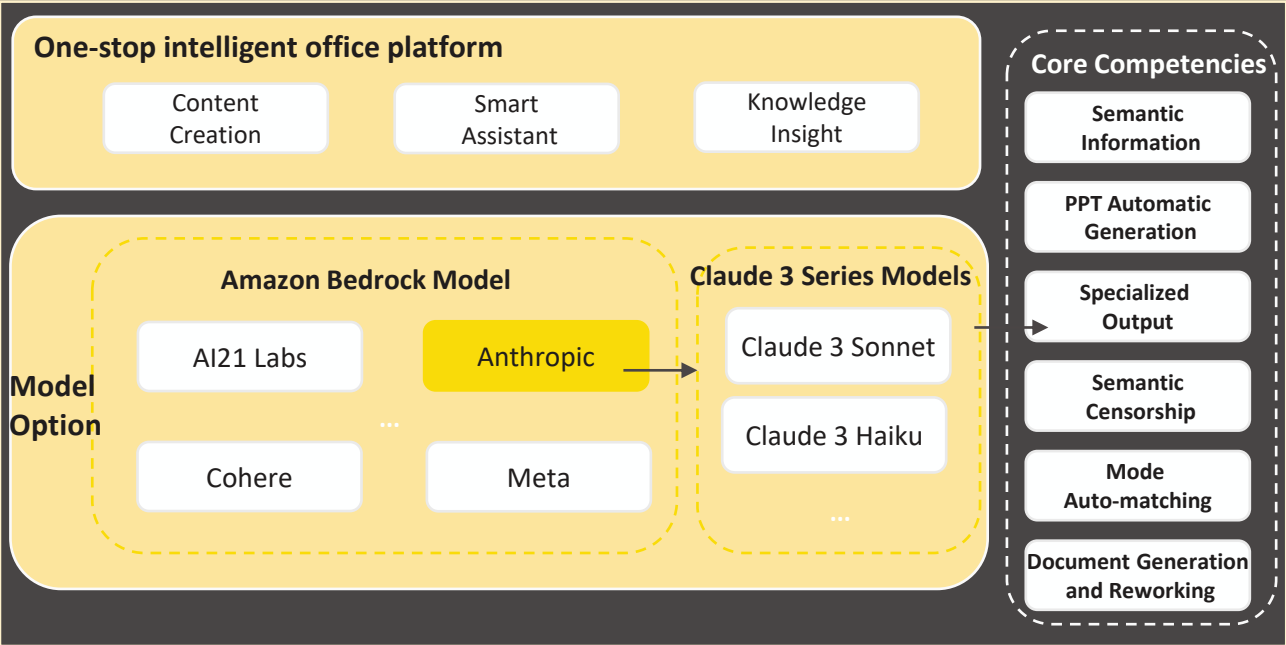
Deployment & Support

SPECIAL DISCLAIMER: The foregoing specific AWS Generative AI related services are only available in Amazon Web Services overseas regions. Specific information is subject to the official website of Amazon Web Services Overseas Region (aws.amazon.com).

AWS X WPS

As the global leader in cloud computing, AWS provides Amazon Bedrock, a fully managed generative AI service for the overseas version of WPS, which enables rapid model selection and deployment, accelerates the landing of generative AI applications, and promotes business innovation.

Product Structure and Core Advantages



Solution Effectiveness

Client's Demands	Solutions
<ul style="list-style-type: none">WPS internally needs to find a basic model that matches its own business scenarios, and realize the advancement of WPS AI's own functions.WPS externally needs to look for office solution which is more intelligent, stable and efficient, as well as a refined and customized operation model that can achieve user growth.	<ul style="list-style-type: none">Arithmetic: Nvidia AI chip combined with AWS's self-developed chip empowers the WPS AI to efficiently and cost-effectively iterate the model, realizing the planning and deployment of applications.Models, Frameworks and Applications: build Amazon Bedrock model hosting services to provide overseas users with consistent experience from text to images, and achieve all-around empowerment.

Effectiveness of Implementation

- Cost Reduction and Efficiency Promotion:** WPS achieves petabyte-scale massive data storage through Amazon S3; realizes 40%+ storage cost reduction and 50%+ daily response enhancement through its intelligent tiering function; and stabilizes its end-user response latency to less than 500 milliseconds in some countries.
- Operation services:** WPS based on Amazon SageMaker services to build a complete user fine-tuned operation path, extending the user scene.
- R&D Efficiency Optimization:** WPS achieves R&D efficiency increase of 30%+ based on Claude 3 series model, and reaches high-speed document modification with 1.3s-1.5s response speed.

SPECIAL DISCLAIMER: The foregoing specific AWS Generative AI related services are only available in Amazon Web Services overseas regions. Specific information is subject to the official website of Amazon Web Services Overseas Region (aws.amazon.com).

Sources: AWS, sullivan

2.13.3 Best Practices in Enterprise Application Industry

- WPS AI Enterprise Edition

WPS AI Enterprise Edition



Application Scenario: Enterprise Application Industry + AI Office Assistant

Core evaluation keywords

- Office Innovation Programme
- Refined RAG Framework
- User Customised Experience
- Full Ecological Cooperation Model

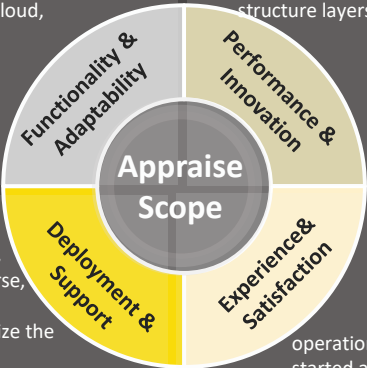
Program capacity analysis

Functional value and Applicability

- **Accurate Demand Adaptability:** WPS AI Enterprise Edition solution demonstrates high adaptability to demand, Alibaba cloud cooperates with its client to develop AI Docs document mind and Copilot Pro, which strongly supports the intelligentization of Kingsoft office software functions, optimizes user experience and improves office efficiency.
- **Long-term Strategic Fit:** the implementation of WPS AI Enterprise Edition is highly aligned with Kingsoft 's long-term strategic direction, including multi-screen, content, and cloud, collaboration, AI, and so on, showing its important values in development.

Technical Performance and Innovativeness

- **Full Ecological Assistance:** Alibaba Cloud combines Bailian, Tongyi and TINGWU to provide multi-scenario functional coverage for WPS.
- **Generated Content Quality:** By applying the RAG framework and Qwen-72B model to improve the accuracy, stability, and relevance of the generated content, and apply customer feedback to product iteration.
- **Reasoning Efficiency:** Alibaba Cloud design a refined solution for Kingsoft from the inference engine, inference platform and model structure layers.



Implementation and Support

- **Deployment Cost and Time Efficiency:** full-size, multimode model provides customers with diverse, optimized selection space. By integrating in the customer's business code WPS eventually optimize the internal system.
- **Training and Support Services:** Alibaba Cloud provides a technical support team with rapid response capabilities, ensuring minute-to-minute service response times and offer multiple technical exchange to share training sessions with customers.

Customer Satisfaction Feedback

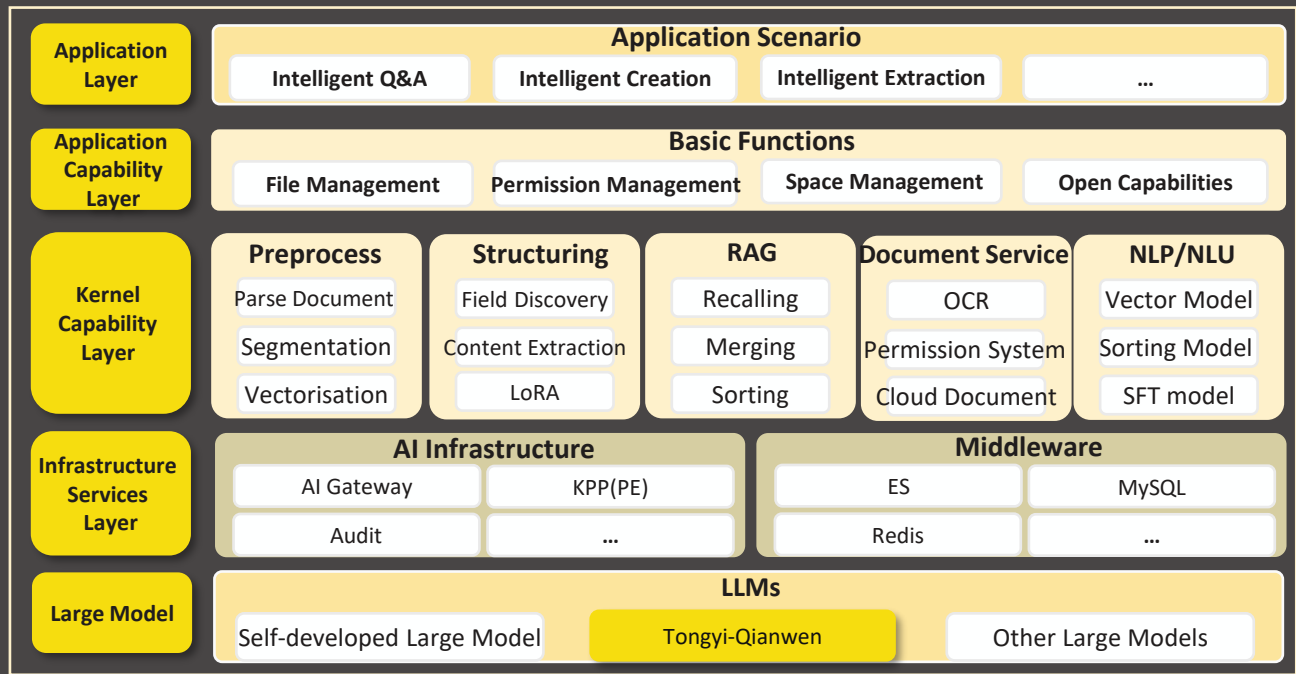
- **Scenario Value Satisfaction:** WPS AI's user interface design is simple and intuitive, and the operation process is smooth, so that users can quickly get started and efficiently complete office tasks.
- **Satisfaction with Experience and Customization:** Alibaba Cloud has jointly optimized and developed a number of AI functions for WPS 's actual needs, including content creation, rewriting and touching up etc., to meet the needs of different users.

Source: Alibaba Cloud, Sullivan

Alibaba Cloud X WPS

In view of the inefficiency of knowledge data capture, along with the complexity surrounding office authority control, the integrated AI office solution jointly constructed by Aibaba cloud and Kingsoft has significantly enhanced the user activicity of Kingsoft users, driven the office model towards a cloud-based and collaborative structure, and established a novel process for intelligent office operations.

Product Structure and Core Advantages - Intelligent Document Library



Solution Effectiveness

Client’s Demands	Solutions
<ul style="list-style-type: none">Variation of Knowledge: Integrate a suitable solution with dynamic change of workflow, ensuring continuous operation feedback throughout process of use.Efficient Use of Data:How to generate higher quality intelligent creations by specifying sources and topics in massive knowledge.Permission Control: Enterprises require robust mechanisms to ensure that information is not accessed by unauthorised individuals.	<ul style="list-style-type: none">Intelligent Assisted Creation System: By integrating intelligent document library and AI writing, reading and analysis assistant, a system capable of intelligent creation has been constructed to support updating and optimization of documents.Refined Permission and Security Control Mechanism: A complete document permission management system has been implemented to achieve data isolation and secure storage.

Effectiveness of Implementation

- Improve enterprise benefits:** The solution helped enterprises achieve a monthly active device count (MAD) of 602 million, a year-on-year increase of **2.21%**, Cloud document services are very popular, and office mode is moving towards cloud and collaboration. and a total number of documents in the cloud hit **217.4 billion**.
- Improve product function:** The solution assisted WPS AI to go online with **20+** AI functions, and the accuracy rate of resume structured extraction was greater than **90%** in the extraction function of the online AI Docs smart document library.

Source: Alibaba Cloud, Sullivan

Methodology

- ◆ Laying out the Chinese market, Leadleo Research Institute has conducted in-depth research on 19 major industries and continuously tracked market changes in 532 vertical industries, deposited more than 1 million industry research value data elements, and completed more than 10,000 independent research and consulting projects.
- ◆ Relying on China's active economic environment, Leadleo covers the entire industry development cycle. From the establishment, development and expansion of enterprises in the industry to the maturity of listed and post-listed enterprises, Leadleo's researchers in various industries actively explore and evaluate the industry's changing industrial models, business models and operation modes of enterprises, and interpret the development of the industry with a professional vision.
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- ◆ Leadleo maintains a close watch on the latest developments in the industry. The report content and data will be updated and optimised in line with developments in the industry, technological innovation, changes in the competitive landscape, the promulgation of policies and regulations, and market research.
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Lead Analysts

Junjie Hu、Linye Jiang

☎ 17721418134

✉ jackey.hu@frostchina.com

chloe.jiang@frostchina.com

Head of in-depth research team

Livia Li

☎ 13149946576

✉ livia.li@frostchina.com

 www.frostchina.com ; www.leadleo.com

 <https://space.bilibili.com/647223552>

 <https://weibo.com/u/7303360042>

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