

Customer-centric AI in Banking: Using AIGC to Improve Personalized Services

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Abstract: Based on the development status of the banking industry in the United States, this paper discusses the application value of artificial intelligence generation content (AIGC) technology in the personalized banking service. The research adopts the methods of literature review and case analysis to analyze the technical characteristics of AIGC and its application potential in the fields of content generation and intelligent interaction, and focuses on the path of AIGC to realize personalized service scenarios such as intelligent customer service, intelligent investment, precision marketing, risk control and compliance. By sorting out the best practices of AIGC application in the US banking industry, the research believes that AIGC is the key grasp and enabling technology of the banking industry to provide personalized services centered on customers. The US banking industry should accelerate the pace of AIGC and business integration, and deepen the service process and digital transformation with AIGC. Grasping the development opportunities of AIGC requires the coordination of technology, talent, process, risk control and other aspects. AIGC has a promising future in the field of personalized banking services.

1. Introduction

With the rapid development of artificial intelligence technology and the accelerated evolution of the digital wave, AIGC technology represented by ChatGPT and Midjourney has attracted high attention from various industries. Us banks are facing a critical window for their digital transformation. On the one hand, the new generation information technologies such as mobile Internet, big data and cloud computing provide new possibilities for banking business innovation and service optimization; on the other hand, customers have higher expectations for the

convenience, timeliness and personalization of banking services. At the level of personalized service, the traditional "product-centered" service mode is difficult to fully meet customer needs, and banks urgently need to use cutting-edge technology to reshape the service concept and optimize the service path. AIGC technology provides a new idea for solving the problem of personalized service for banks [1].

This study focuses on the application of AIGC technology in the banking personalized service, which has important theoretical and practical significance. At the theoretical level, this study is helpful to expand the application research of artificial intelligence, especially AIGC technology, in the banking industry, and to enrich the theoretical exploration of personalized service optimization. By analyzing the technical characteristics and application potential of AIGC, it provides a new analytical perspective for the future digital transformation and service innovation of the banking industry.

2. Overview of AIGC technology and its application potential in banking

2.1 Advantages of AIGC over traditional AI technology

Compared with the traditional artificial intelligence technology, AIGC has shown unique advantages in the field of content generation, which provides new possibilities for the banking industry to break through the bottleneck of the traditional AI application and innovate the service mode. AIGC is more powerful, which is one of its most remarkable characteristics. Traditional AI technologies mainly focus on the analysis and prediction of structured data, and have limited capabilities in the generation of unstructured content. And AIGC can create high-quality text, images, audio and other forms of content, greatly expanding the boundaries of AI applications. The breadth of application scope is another important advantage of AIGC. Traditional AI technology is mainly used in banking to customer portrait, such as risk identification and other structured data analysis scenarios. In contrast, AIGC shows great potential in unstructured data application scenarios such as marketing content creation, customer consultation and quiz, and product information push. This diversified application capability makes AIGC a powerful tool for the digital transformation of the banking industry. In addition, the AIGC also provides a better interactive experience. Traditional AI models are often solidified and lack of flexible interaction ability. AIGC can generate personalized content in real time according to user input, making the interaction more natural and smooth. This dynamic response capability enables AIGC to better meet the personalized needs of customers and improve the customer experience. In general, AIGC provides a new path for the banking industry to break through the bottleneck of traditional AI application and innovate the service mode.

2.2 The application status of AIGC in content generation, intelligent interaction, personalized recommendation and other fields

In terms of content generation, GPT-3 and ERNIE language models can generate a large number of relevant articles based on a small number of text examples, and significantly improve the content production efficiency in scenarios such as marketing copy writing and news summary generation. DALL-E and Stable Diffusion can generate images according to text description, bringing creative [2] in advertising design, product display and other aspects.

In the field of intelligent interaction, AIGC-driven chatbots have been widely used in customer service dialogue, knowledge answering and other scenarios. AIGC chatbots such as Microsoft Xiaoice and Meta's BlenderBot can conduct multiple rounds of dialogue to provide personalized responses, greatly improving the human-computer interaction experience. In terms of personalized

recommendation, AIGC can automatically generate personalized recommendation content by analyzing user habits. TikTok, TikTok and other SHORT Video platforms use AIGC technology to recommend video content according to users' preferences, and video websites such as Netflix also optimize film and television recommendation through AIGC. AIGC is driving intelligent changes in content production, information circulation, knowledge services and other fields.

2.3 Analysis of the application potential of AIGC technology in personalized services in the banking industry

Personalized services in the banking industry put forward higher requirements for content generation and intelligent interaction, and AIGC can just help banks break through the traditional service bottleneck and provide more intelligent and personalized service experience.

In general, AIGC mainly has the following application potential in personalized banking services: First, people use AIGC to build intelligent customer service. The traditional customer service mode is difficult to respond to massive customer consultation 7x24 hours, while AIGC driven intelligent customer service can quickly and accurately provide customers with various consultation and answer services through knowledge base learning, and optimize service quality according to customer feedback, greatly improve customer experience and reduce labor costs. The second is to use AIGC to provide personalized product recommendations. Banks can use AIGC to analyze customer attributes, transaction history, behavioral preferences and other data to automatically generate personalized product recommendation content and improve the product conversion rate. AIGC can also monitor market dynamics, adjust recommendation strategies in real time according to changes in customer needs, and enhance service adaptability. Third, people use AIGC to optimize business processes. Banking business processing involves a large number of document processing, and the traditional manual operation mode is inefficient. AIGC can be applied to the automatic generation of document content, data extraction, information comparison and other links to realize business process automation and improve operation efficiency and accuracy. In addition, AIGC can also be applied to customer information collection, post-loan management and other business links, to obtain structured information through dialogue and interaction, and reduce manual intervention.

3. The development status of American banking industry and the challenges of personalized service

3.1 The current situation and existing problems of personalized services in the American banking industry

Personalized service is the focus of the digital transformation of the US banking industry. With the increasingly diversified customer needs, providing differentiated and customized services has become the key for banks to grasp the market and win customers. The American banking industry has carried out a lot of beneficial exploration in the field of personalized service and achieved some results. For example, Wells Fargo launched the "Control Tower" personal financial management platform to provide personalized services according to customers' financial status, and jpmorgan Chase launched the "My Chase Plan" personalized consumer financial service, with the tailored installment payment plan for customers[3].

[4]However, US banking banking still faces many challenges [4]. First, the problem of data island within banks is prominent, customer information is scattered in various business lines, data integration and sharing is difficult, it is difficult to form a unified customer view, and the foundation of personalized service is weak. Second, the product design of banks is still mainly "product-centered", lack of exclusive products for subdivided customer groups, and the

personalized product research and development ability needs to be strengthened. Third, the channel construction of banks is relatively lagging behind, the online and offline channel coordination is insufficient, and the all-channel personalized service has not yet been realized. These problems restrict the further improvement of the personalized service level in the US banking industry [5].

3.2 Analysis of the necessity of applying AIGC to improve personalized services

In the face of rapid market changes and customer needs, the traditional personalized service mode is difficult to continue, and it is urgent to introduce intelligent means to reshape the service concept and optimize the service process [6]. AIGC has provided a new idea for the personalized service of the American banking industry, and become a new track for the banking industry to layout.

On the one hand, AIGC helps to achieve precision marketing and intelligent recommendation. On the basis of accurate insight into customer needs, banks can use AIGC technology for personalized product design and intelligent recommendation. AIGC can analyze customers' financial attributes and transaction behaviors, automatically generate personalized product portfolio and marketing content, and realize precision marketing of thousands of people through intelligent algorithms. At the same time, AIGC can also capture changes in customer behavior in real time, dynamically adjust marketing strategies and recommended content, and maximize marketing effectiveness. AIGC on the other hand helps optimize the customer service process. At present, the American banking industry is generally faced with the problem of large demand for customer service and insufficient human response. AIGC can empower the bank intelligent customer service system, provide 7x24 hours and multi-channel intelligent customer service through natural language understanding, knowledge base questions and other technologies, and significantly improve the efficiency of customer service. AIGC can also be applied to intelligent investment consulting, intelligent assistant and other scenarios, to provide customers with personalized and professional consulting services.

4. AIGC helps the American banking industry to explore the path of realizing personalized services

4.1 Build a digital and personalized service platform

Digital platform is an important carrier to realize personalized service. The US banking industry should take AIGC as the core to build a personalized service platform integrating data collection, algorithm training, content generation, service touch and other functions, so as to realize the end-to-end closed-loop [7] from data to insight and from insight to service.

Under this framework, banks need to focus on building a data middle platform to realize data convergence and sharing. This involves the establishment of unified data standards and caliber for the whole bank, and the centralized integration of customer data of various channels and systems through data interfaces, ETL and other tools to form a complete and consistent view of customer information. This not only eliminates the data islands, but also provides a solid data support for the AIGC algorithm training.

At the same time, the construction of the algorithm middle platform is crucial to precipitate the industry knowledge and experience. Banks can use transfer learning and less sample learning technologies to embed explicit knowledge and implicit knowledge such as banking business rules, product logic and service processes into the AIGC algorithm model. In this process, refining the standardized and reusable AIGC components can help to improve the efficiency and iteration speed of AIGC application development.

At the business level, building the business center can realize the agile service production. By integrating AIGC into various business scenarios and service links, and building a standardized and configurable library of personalized service components, banks can realize the flexible arrangement of AIGC capabilities and services. This not only supports the rapid production and diversified reuse of personalized services, but also can meet the agile development needs of business innovation.

Finally, building a customer interaction center is crucial to optimizing the omnichannel customer experience. Following the principle of "online and offline integration, and consistent front and background offices", banks should open up various service channels such as online mobile App, telephone banking and offline outlets to form a unified AIGC interactive entrance. In this way, customers can provide all-weather, all-channel seamless personalized service experience, greatly improve customer satisfaction.

4.2 Promote the personalization of products and marketing content

Guided by customer demand and using AIGC technology to promote personalized innovation of product design and marketing content is a key move to enhance the competitiveness of banks' personalized services [8]. Banks can promote this process in many aspects.

In terms of product innovation, banks can use AIGC to analyze the financial needs and behavioral characteristics of segmented customer groups, and automatically generate personalized product element combinations, such as quota, interest rate, integral rights, etc. This approach helps to form a differentiated personalized product system, enhance the product adaptability, and meet customers' expectations of "private customization".

Personalization of marketing content is equally important. By using AIGC technologies such as natural language generation and multi-modal content generation, banks can automatically generate personalized copywriting, posters, short videos and other marketing content according to customers' attribute labels and interest preferences. This can not only improve the marketing conversion rate, AIGC can also monitor customer feedback data from different channels and continuously optimize personalized marketing strategies.

In terms of personalized recommendation, the application prospect of AIGC is broad. Banks can analyze customers' historical transactions and browsing behaviors, and use AIGC algorithms such as collaborative filtering and deep learning to build the correlation matrix between customers and products, and form targeted product recommendation solutions. Further, combined with external market data, AIGC can expand personalized recommendation from single products to combination, and greatly improve the success rate of product cross-marketing.

Finally, we can pay attention to the role of AIGC in the whole life cycle operation of customers. According to the different characteristics of the customer life cycle, AIGC technology can automatically plan personalized marketing solutions. For example, in the account opening stage, AIGC chatbots are used to guide customer interaction and transformation; in the cultivation period, it is used to improve customer activity through AIGC personalized recommendation; AIGC is used to identify cross-category and cross-channel needs; in the stickiness period, AIGC is used to maintain customer relationship. This comprehensive application enables banks to vary with customers, take targeted personalized marketing measures for customers with different life cycles, to achieve precise service and efficient marketing.

4.3 Build an intelligent and personalized customer service system

The foothold of personalized service is to meet the differentiated needs of customers in a humanized way. AIGC can enable banks to transform from passive service to active service, build a closed loop of intelligent personalized service covering pre-sale, sale and after-sales, and maximize

customer experience [9].

In terms of customer interaction, AIGC technology can significantly improve service quality. Through AIGC technologies such as intelligent question and answer, emotion analysis and voice recognition, banks can build an anthropomorphic, multi-round dialogue online customer service platform to provide customers with all-weather, self-service personalized consulting services. More importantly, AIGC can identify emotions based on customer portraits and real-time conversations, flexibly adjust its question-and-answer strategies, provide personalized care, and greatly improve customer satisfaction.

Smart investment advisory services is another important area of AIGC applications. Through investment knowledge map and customer investment preference analysis, AIGC technology can provide customers with intelligent investment consulting services such as personalized portfolio optimization and asset allocation plan, to meet customers' differentiated wealth management needs. In addition, AIGC can continuously monitor customers' investment behavior and actively push personalized investment advice to customers, so as to achieve a full range of wealth management services.

AIGC technology also plays an important role in remote banking services. Using AIGC technology to identify customers, banks can provide customers with personalized remote account opening, loan, financial management and other services. For example, use face recognition and voice print recognition; guide customers to fill in business information online through AIGC intelligent dialogue, which greatly optimizes the online processing experience.

Finally, AIGC technology can also help banks to carry out a full range of healthy customer operations. Through continuous monitoring of customers' asset changes and credit status, AIGC can issue early warning to customers with signs of capital loss and credit deterioration, actively trigger personalized prompts, and match corresponding products and services to help customers tide over difficulties. This active customer service mode of "AI + artificial" collaboration not only improves the service efficiency, but also enhances the interaction between banks and customers, providing customers with a more comprehensive and intimate financial service experience.

4.4 Build a closed-loop of end-to-end personalized service process

Personalized services should be embedded in every part of the customer's journey. Bank of America should use AIGC to reshape the personalized service process, get through the whole process from customer identification, product marketing, risk pricing to customer maintenance, and form an end-to-end personalized service value chain.

In the customer acquisition and customer identification stage, AIGC can capture the characteristics of target customer needs from the data inside and outside the bank to achieve accurate customer acquisition. After acquiring customers, AIGC can track and analyze customers' social media, device information and other digital footprints, continuously enrich customer portraits, and lay a solid foundation for subsequent personalized services.

Product pricing and risk management links can also benefit from AIGC technology. By analyzing customer credit, behavior and other data, AIGC can establish personalized pricing models and risk control strategies for segmented customer groups, realize differentiated risk pricing, and effectively control business risks. This personalized pricing approach helps banks maximize profits with controllable risks.

In terms of service contact point optimization, AIGC can significantly improve the personalized experience of various online and offline services. Whether it is online App recommendation, customer service dialogue, or offline network service, device interaction, etc., AIGC can provide immersive, multi-scene personalized services, so as to enhance customer stickiness[9].

Customer relationship management is an important part of personalized service. AIGC can analyze customer value and satisfaction in real time, and tailor personalized service solutions for high-value customers. For customers with negative emotions, AIGC can provide timely emotional comfort; for customers at risk of loss, AIGC can develop targeted retention strategies. This refined and personalized customer relationship management method helps banks to maintain long-term and stable customer relations.

5. Conclusion

Personalized service is the strategic commanding point of the transformation and development of the American banking industry, and AIGC is the key to realize personalized service. At present, the development of personalized services in the American banking industry is still in its initial stage and still faces many constraints. From the perspective of AIGC, this paper deeply analyzes the realistic path of AIGC enabling bank personalized service, and provides a new idea for the American banking industry to solve the dilemma of personalized service.

The American banking industry should take the personalized service as the traction, and systematically plan the AIGC application blueprint around the customer acquisition, marketing, risk control, service and other links. Through digital capacity building such as data, algorithm and platform, using intelligent customer acquisition, personalized product design, intelligent investment consultant and other means, to build an end-to-end AIGC personalized service system.

The US banking industry should be based on its own endowment, identify the breakthrough of the integration of AIGC and personalized services, deepen the digital transformation of banks, and build a "customer-centered" personalized service value chain. Only by taking personalized services as the starting point and deeply integrating digital technologies such as AIGC, can we seize the first opportunity in the new round of competition, realize the overtaking on the curve, and create new advantages for the high-quality development of the American banking industry.

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