Promoting the Use of Generative AI and OKI's Innovation Support System

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1. Introduction

Generative AI, exemplified by large language models (LLMs), has the potential to drive revolutionary changes in business processes and product development due to its powerful knowledge-generation capabilities and wide range of applications. It is drawing significant attention as a technology that can enhance operational efficiency and create new value.

This article outlines the foundational infrastructure and usage guidelines OKI has established for leveraging generative AI across the Group. It then provides an overview of OKI's internal initiatives to promote AI adoption, highlighting specific examples, particularly efforts around idea generation and innovation, which are key areas of focus for the OKI Group. Finally, it introduces the "Da Vinci Graph™" (trademark pending), a proprietary innovation support system, along with case studies demonstrating its use.

2. OKI's common platform for generative AI use

2.1. Background

The OKI Group aims to make generative AI accessible for use by all employees, leveraging its innovative capabilities to enhance operational efficiency and strengthen competitiveness. Promoting the adoption of generative AI requires the establishment of a secure environment where employees can confidently apply it in their daily work.

In November 2022, OpenAI released ChatGPT®*1, which gained over 100 million users within just two months, drawing widespread public attention. Responding to this momentum, the OKI Group recognized the transformative potential of generative AI and began exploring its use for improving work processes and fostering innovation. While the need for active utilization became increasingly clear, concerns also emerged regarding the use of public generative AI services. In particular, two risks were identified: the risk of data leakage, due to input data being used for further model training, and the risk of hallucinations, where the AI outputs incorrect or misleading information. Recognizing these risks, OKI determined that building a secure AI infrastructure is an urgent priority to ensure the safe and effective use of generative AI in business operations.

To address this issue, the OKI Group launched the "OKI AI Chat System", an internal platform that enables secure use of generative AI while maintaining data security and information quality (see Figure 1). To further promote adoption, OKI has also

Figure 1: Interface of the OKI AI Chat System

*1 ChatGPT is a registered trademark of OpenAI.
*2 GPT is a registered trademark of OpenAI.
*3 Azure is a registered trademark of the Microsoft group of companies.

actively developed usage guidelines and implemented internal utilization and support measures, creating an environment where all employees can harness the full value of generative AI.

2.2 Building a secure AI platform

Four key considerations were taken into account in constructing the platform. Leveraging this infrastructure ensures the safe use of generative AI in business operations while also keeping pace with subsequent GPT*2 model updates.

1. Use of Microsoft Azure*3, a cloud platform with a proven track record within the company
2. Restricted access to internal networks only, blocking all external connections
3. Protection of internal data by opting out of model training to ensure that input data (i.e., internal company data) is not used for learning purposes
4. No storage of chat history with the generative AI system, thereby avoiding unintended information leaks

2.3 Establishing usage guidelines

While generative AI offers innovative capabilities and can be applied to a wide range of use cases, it also brings ethical and societal risks. Therefore, alongside technological development, it is crucial to establish clear rules and guidelines. To ensure safe and secure usage, OKI has developed the "OKI AI Chat System Usage Guidelines." These guidelines outline the rules for using generative AI in general and aim to enable employees to apply the technology appropriately in their work.

Key points of the guidelines

1. Standardized system usage

For business purposes, employees are encouraged to use the secure "OKI AI Chat System." As a general rule, the use of public generative AI services is discouraged unless there is a specific reason.

2. Input data rules

General business information may be entered into the system; however, the input of highly confidential information, personal data, or content that could infringe on rights is strictly prohibited. The handling of confidential information must follow the internal rules of the relevant department and be strictly managed.

3. Output usage rules

Given the risks of misinformation (hallucinations) and potential rights infringement, the direct use of generative AI outputs in external documents or deliverables is prohibited. All content must be reviewed and revised as necessary by a responsible party. Additionally, using the system for the purpose of collecting personal information is not allowed.

3. Promoting internal use of generative AI

The OKI Group is advancing internal generative AI initiatives along two main axes:

1. Education and awareness-raising on generative AI
2. Promotion of proof-of-concept (PoC) activities using generative AI

3.1 Education and awareness-raising on generative AI

In addition to building the generative AI infrastructure and establishing usage guidelines, OKI is working to enhance overall employee understanding and skill levels through internal education and awareness activities. For beginners, the company provides seminars and e-learning sessions aimed at improving AI literacy and promoting adoption of the OKI AI Chat System, while also organizing roundtable discussions with internal experts to facilitate information sharing. Moreover, a mandatory training program titled "Generative AI User Education" is being implemented starting August 2024 to ensure employees understand the appropriate norms and methods for using generative AI.

For intermediate users, OKI offers group training, hands-on workshops, and AI community-of-practice (CoP)–style applied learning sessions to help strengthen practical skills. A community site has also been launched to encourage knowledge sharing, with over 1,000 active users participating. In addition, the company hosts AI "ideathons" to gather employee ideas and further broaden AI usage across the organization.

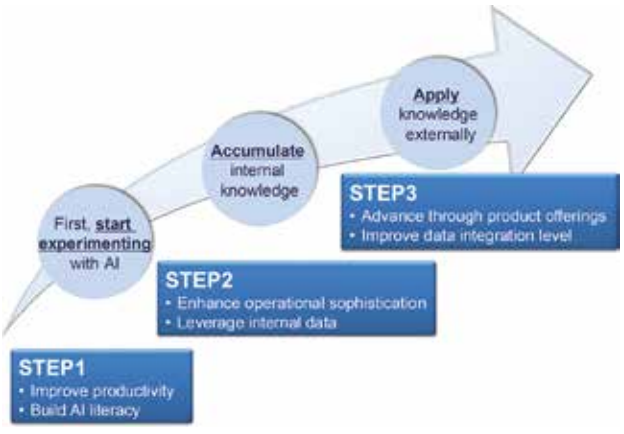
3.2 Promoting PoC activities using generative AI

This section outlines specific initiatives within the OKI Group to apply generative AI in practice. These efforts are being carried out as part of a broader internal promotion strategy and are implemented in three main phases (see Figure 2).

● Step 1: Getting started with AI utilization

In Step 1, the primary goals are to enhance productivity through the actual use of generative AI and to improve user

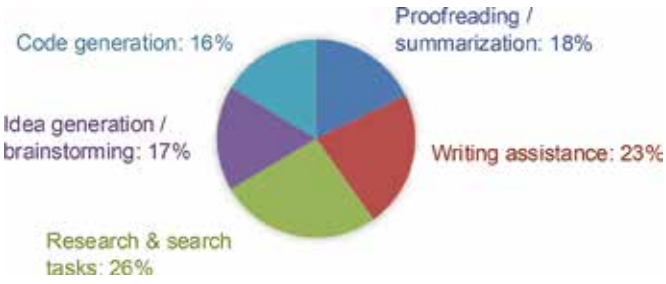
Figure 2: Steps for AI utilization



literacy and familiarity with basic usage methods.

A user survey conducted at this stage revealed that generative AI was being used in a wide range of scenarios without being limited to any specific use case (see Figure 3). Among the most impactful applications were automatic proofreading, summarization, and assistance with document creation. Use at the individual level has expanded to include summarizing meeting minutes, drafting emails, translation, and document review. One concrete example involved automatically summarizing system error messages and drafting related emails to relevant departments—a task that previously took several tens of minutes but was completed in just a few minutes using AI, demonstrating significant productivity enhancement. In another case, AI was used to generate code for simple RPA tools, resulting in a reported 90% reduction in workload. These examples highlight how generative AI can drive automation even in areas traditionally dominated by manual tasks. They underscore the versatility of generative AI and substantiate the importance of introducing it across a wide variety of use cases from the outset.

Figure 3: Distribution of use cases



● Step 2: Accumulating internal knowledge

In Step 2, the goal is to enhance and streamline operations by developing individual PoC systems tailored to specific business challenges and organizational needs. By leveraging Retrieval-Augmented Generation (RAG) technology, generative AI can be integrated with internal data to produce more accurate responses and insights.

Approximately two to three months after the internal release of the OKI AI Chat system, there was a noticeable increase in requests from various departments to explore generative AI use. For use cases deemed sufficiently impactful and feasible, the AI utilization promotion team began working collaboratively with the relevant departments to implement AI-PoC initiatives aimed at solving their specific challenges.

One concrete example involves improving efficiency in customer inquiry operations. By using RAG to allow generative AI to search past inquiry data, departments were able to generate responses that reflected their internal know-how. This enabled fast and accurate handling of frequently asked questions. A similar approach was applied in manufacturing sites, where generative AI used historical equipment-related inquiry data to automatically answer common field questions, thereby improving operational efficiency. By automating the entire inquiry-handling process, the system reduces the workload on employees while enabling faster response times for those making inquiries.

Another example of advanced use involves applying generative AI to well-known business frameworks such as 3C analysis and PEST analysis, commonly used for business strategy planning. Incorporating AI into these frameworks supports more sophisticated root cause analysis and issue identification, enabling greater value creation through improved efficiency.

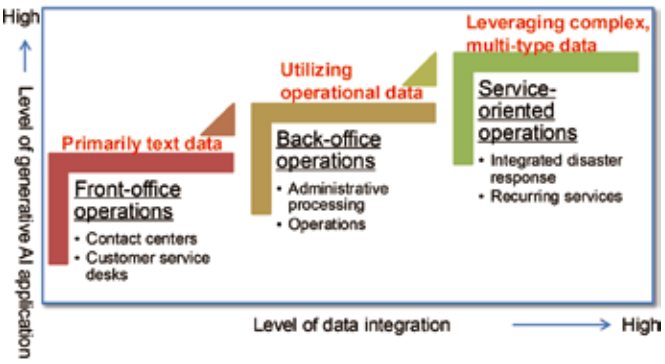
● Step 3: Applying internal knowledge externally

In Step 3, the OKI Group is working to implement generative AI within its business domains to enhance products and services aimed at external clients.

OKI has significantly expanded its business areas around front-office operations, particularly in contact centers and customer service functions. These areas align well with the strong suits of generative AI. Therefore, OKI has been proactively exploring the early adoption and implementation of generative AI internally to leverage its strengths as a company. A wide range of benefits are expected, including quicker solution proposals by operators, automatic generation of reports and FAQs based on conversation logs, and improved operator quality through feedback.

Furthermore, solving more advanced business and service challenges requires not only generative AI technologies, but also robust data integration. It is essential to leverage various types of operational data, integrate them, and input them appropriately into the AI system. By placing generative AI at the core and enhancing the level of data integration, OKI aims to drive greater value creation across its business operations (see Figure 4).

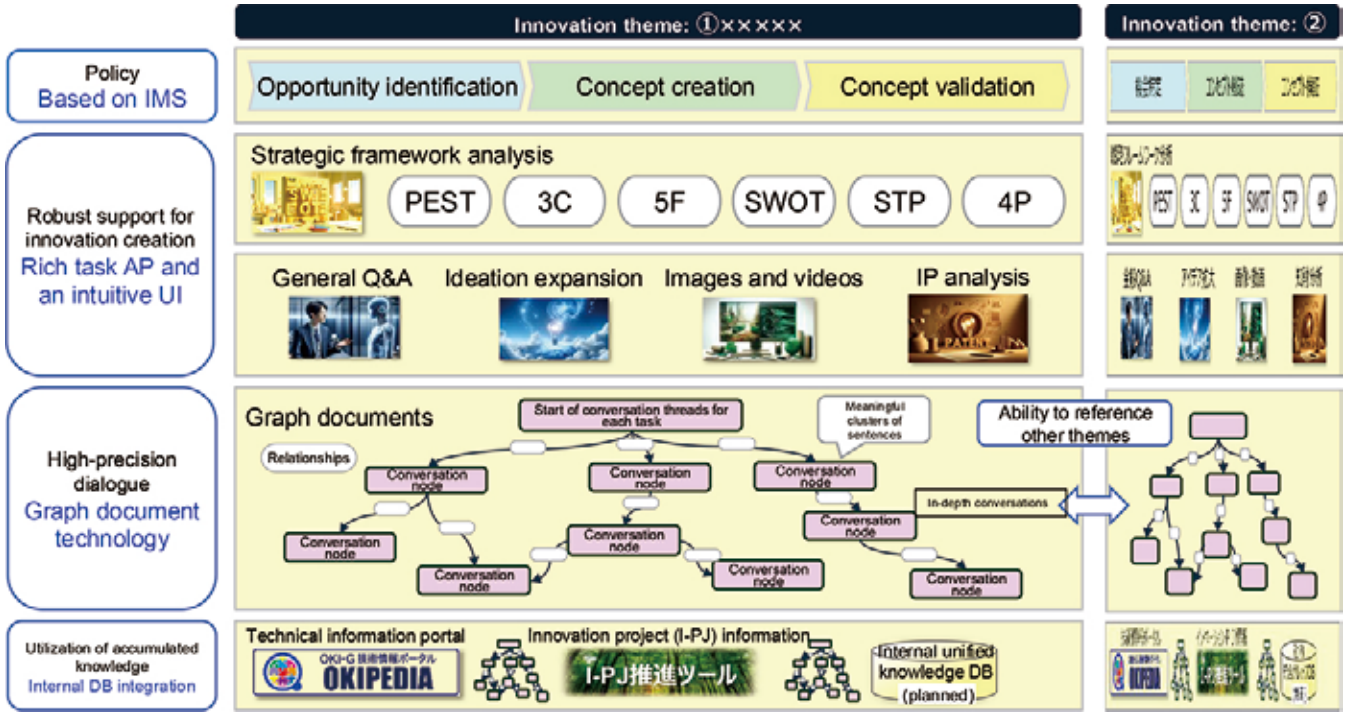
Figure 4: Long-term roadmap for external application



4. Generative AI application specialized in innovation creation

At OKI, we promote the generation of innovation ideas by

■ **Figure 5: Overview of the innovation support system**



each and every employee[1], and to support this, we have developed a generative AI–powered innovation support system called Da Vinci Graph™.

One of the system's key features is the integration of generative AI with graph document technology.

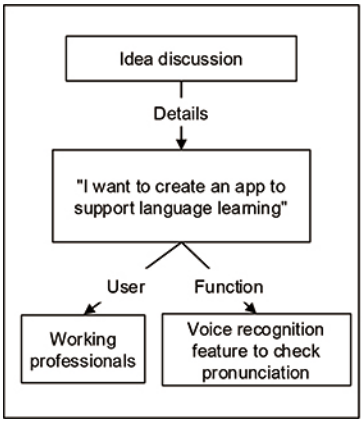
A graph document is a network-structured document in which words or sentences are represented as nodes, and the semantic relationships between them are expressed as edges, as shown in Figure 6.

Because the semantic connections between nodes are explicitly defined, graph documents encourage logical thinking[2]. In this system, the ideation and discussion process conducted via interaction with the generative AI is simultaneously visualized as a graph document, helping users organize and structure their thoughts more effectively.

Furthermore, this system is designed based on the Innovation Management System (IMS), enabling dialogue from various perspectives for each innovation theme. Dedicated prompts are prepared for each task, allowing employees to engage with the system and explore ideas in greater depth from the perspective of each task.

As mentioned earlier, the results of these dialogues are continuously displayed and stored as graph documents. When engaging in a new task, the generative AI receives the current

■ **Figure 6: Example of a graph document and its data structure**




```
{
  "nodes": {
    {"id": "1", "content": "Idea discussion"},
    {"id": "2", "content": "I want to create an app to support language learning"},
    {"id": "3", "content": "Working professionals"},
    {"id": "4", "content": "Voice recognition feature to check pronunciation"}
  },
  "edges": {
    {"source": "1", "target": "2", "label": "Details"},
    {"source": "2", "target": "3", "label": "User"},
    {"source": "2", "target": "4", "label": "Function"}
  }
}
```

Figure 7: Dialogue by task and continuously updated graph documents

graph document for that theme, so it can incorporate the results of previous tasks into the ongoing conversation. Users can also view and edit the resulting graph documents.

In addition, users can reference themes from other projects or from their colleagues, enabling the use of accumulated internal knowledge and supporting further acceleration and expansion of innovation.

Currently, as part of a pilot trial, the system is being tested by selected participants in an internal generative AI contest. In this contest, users are challenged to create a Business Model Canvas (BMC) using the system. The BMC is a framework that visualizes how a product or service delivers value and generates revenue. The system supports cross-functional analysis using frameworks like PEST, 3C, and SWOT, allowing users to construct a BMC based on those insights. Feedback gathered from participants during the contest will be used to further enhance the system's functionality.

5. Conclusion and future outlook

This paper introduced the OKI Group's generative AI utilization framework, internal use cases, and the innovation support system Da Vinci Graph™.

These initiatives have contributed to the widespread adoption of generative AI within the organization. As of March 2025, approximately 5,000 employees are actively using the OKI AI Chat System.

Looking ahead, we believe it will be essential not only to stay abreast of the latest technological developments, but also to continuously monitor and respond swiftly to the evolving landscape of AI regulations and usage guidelines being established around the world.

Building on internal use cases, OKI is also considering proposals for integrated solutions leveraging the OKI AI Chat System, as well as the commercialization of Da Vinci Graph™, which is currently in pilot testing. These efforts aim to expand offerings to external clients and grow OKI's generative AI solutions beyond the organization.

References

[1] OKI. *"What Innovation Means at OKI."* https://www.oki.com/global/yume_pro/about/innovation.html
[2] RIKEN. *"The Potential of Graph Documents to Enhance Logical Thinking."* https://www.riken.jp/pr/closeup/2024/20240301_1/ index.html