

# Enhancing PEGA Knowledge Management with AI: Transforming Customer Service

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**Abstract:** *The integration of artificial intelligence (AI) into knowledge management (KM) systems has revolutionized how organizations handle, process, and utilize information. PEGA, a leader in business process management and customer relationship management solutions, has incorporated AI to enhance its Knowledge Management capabilities. This paper explores how PEGA AI can be utilized to improve the efficiency and effectiveness of knowledge management within organizations, discussing the benefits, implementation strategies, and potential future developments.*

**Keywords:** PEGA, Knowledge Management (KM), Natural Processing Language (NLP), Artificial Intelligence (AI), Voice AI, Customer Service, Increased Efficiency, Cost Saving

## 1. Introduction

Knowledge management (KM) is critical for organizations to leverage their collective expertise and information. Effective KM systems enhance decision-making, streamline operations, and foster innovation. PEGA, a prominent software company, provides robust KM solutions integrated with AI to automate and optimize various aspects of knowledge handling.

### a) PEGA Knowledge Management Overview

PEGA Knowledge Management (KM) provides a structured approach to capturing, managing, and disseminating knowledge within an organization. It includes features such as knowledge repositories, content management, and collaboration tools. By integrating AI, specifically Voice AI, PEGA enhances these capabilities, making KM more dynamic, responsive, and user-centric. PEGA KM is part of Pega's Customer Relationship Management (CRM) product family and can be used as a standalone application or integrated with Pega Customer Service or Pega Sales Automation

### b) Research Objective/Scope

The research objective of this article is to explore how integrating artificial intelligence (AI) into PEGA Knowledge Management systems can revolutionize customer service operations. This study aims to identify the specific AI technologies and methodologies that can enhance the efficiency, accuracy, and responsiveness of knowledge management within customer service contexts. The scope of this research includes a detailed analysis of AI-driven features such as natural language processing (NLP), machine learning (ML) algorithms, and intelligent content recommendations. It also investigates the implementation strategies, benefits, and potential challenges associated with AI-enhanced PEGA KM systems.

## 2. Role of AI in Knowledge Management

### Intelligent Content Categorization and Tagging

PEGA AI leverages natural language processing (NLP) and machine learning (ML) to automatically categorize and tag

content. This ensures that information is easily searchable and retrievable, reducing the time customer representatives spend searching for relevant documents. AI-driven categorization also improves the accuracy of metadata, ensuring that content is appropriately classified and accessible.

### Enhanced Search and Retrieval

AI-powered search algorithms in PEGA KM systems understand context and intent, providing more relevant search results. These advanced search capabilities enable healthcare customer representatives to find the information they need quickly, improving productivity and reducing frustration associated with traditional keyword-based searches.

### Predictive Content Recommendations

PEGA AI can analyze user behavior and preferences to offer predictive content recommendations. By understanding what information representatives frequently access and how they interact with the KM system, AI can suggest relevant articles, documents, and resources, enhancing the user experience and promoting knowledge discovery.

### Automated Knowledge Capture

PEGA AI can automatically capture knowledge from various sources, including emails, chat logs, and documents. This automated capture ensures that valuable information is not lost and is continuously added to the KM repository. It also reduces the burden on healthcare customer representatives to manually input knowledge, allowing them to focus on more critical tasks.

## 3. PEGA KM powered by Voice AI

### Pega Knowledge Management (KM) powered by Voice AI

transforms the role of customer service agents by acting as an intelligent co-pilot, enhancing efficiency in knowledge search and providing intelligent guided prompts. With Voice AI integration, agents can interact with the KM system through natural language, allowing for seamless and intuitive access to information. The advanced capabilities of Voice AI enable the system to understand and process verbal queries, delivering accurate and contextually relevant search results rapidly. Additionally, the intelligent guided prompt feature

leverages AI to offer real-time suggestions and step-by-step guidance based on the ongoing conversation or task. This functionality not only streamlines complex processes but also ensures that agents adhere to best practices and provide consistent, high-quality service. By reducing the time spent searching for information and improving the accuracy of responses, Pega KM with Voice AI significantly enhances agent productivity and customer satisfaction.

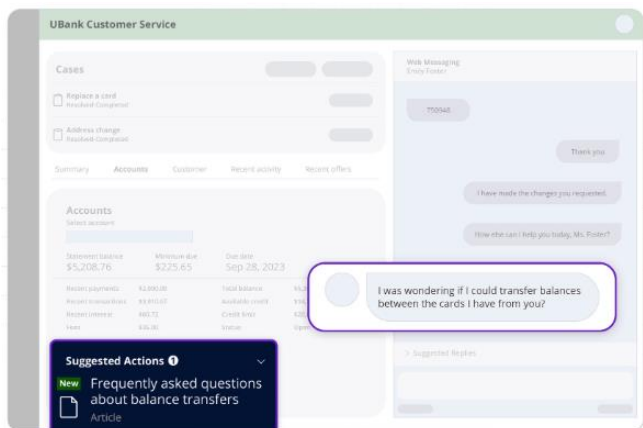


Figure 1: AI find the right article at the right time [1]

Key Features of PEGA KM powered by Voice AI

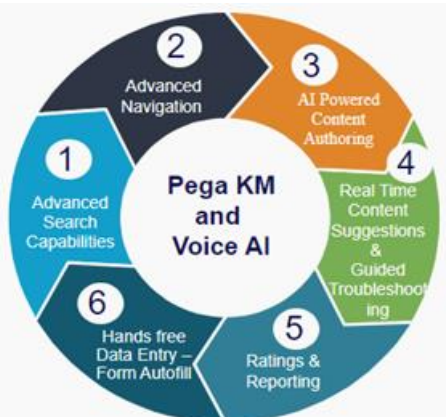


Figure 2: Key features of PEGA Km powered by Voice AI

- **Advanced Search Capabilities** - Results in efficient filtering and the ability to boost the most relevant articles.
- **Advanced Navigation** – Provides flexible taxonomy categories and tags to logically classify and group content use tags and manage legacy content.
- **AI powered Content Authoring** - Gives authors, publishers and reviewers the tools to create rich content and manage control visibility and access through flexible security features.
- **Real Time Content Suggestion** - Suggest the right content, at the right time, on the right channel. Also provide guided troubleshooting for self-service or assisted diagnostics.
- **Rating & Reporting** - Instant visibility into how often your content is viewed and rated. Proactively find gaps in content.
- **Hands-free Data Entry (Form Autofill)** - Eliminate repetitive, manual form filling with the power of real-time speech-to-text analytics, natural language processing, and intelligent automation.

4. Technical Overview

In Pega Customer Service, natural language processing (NLP) plays a critical role in enhancing customer interactions by analyzing conversations and suggesting relevant knowledge articles based on identified topics. For instance, when a customer contacts a Bank support and states, *"I want to add my newborn as a dependent"* the NLP engine detects keywords such as "newborn" and "dependent," and promptly suggests the knowledge article titled "Adding child dependents to plans." This suggested article appears in the Customer Service Representative's (CSR) Interaction Portal. [2]

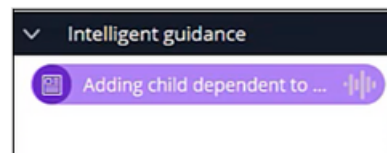


Figure 3: Intelligence Guidance to a CSR [2]

The CSR can then view the article within the Knowledge Management pane of the Interaction Portal, which significantly aids in addressing customer inquiries swiftly and efficiently. Suggested articles are accessible at various stages of case processing, eliminating the need for CSRs to manually search for information and thereby improving response times and service quality.

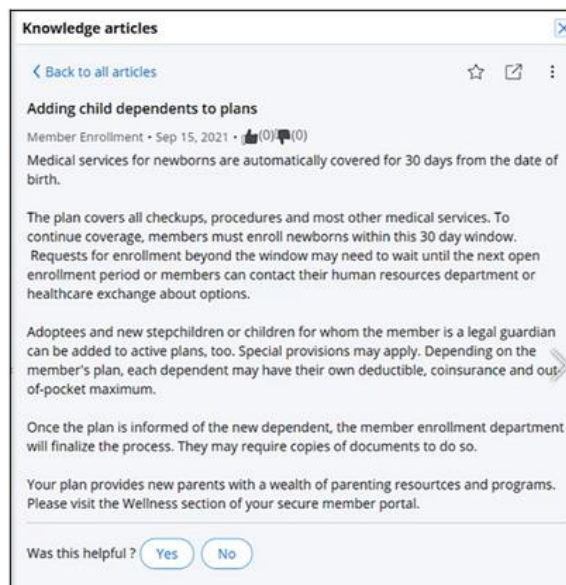


Figure 4: Knowledge Article Example [2]

Steps to Associate Topics with a Suggested Article

- Ensure the relevant knowledge article is included in the Voice AI channel to enable its recommendation during customer interactions.
- Link the appropriate knowledge topics with one or more knowledge articles to facilitate accurate suggestions based on the detected conversation context.
- Integrate the NLP model with the specific channel to enable the automatic detection of relevant topics from customer conversations.
- Enhance the NLP model's accuracy by adding specific keywords to the topics. This helps the model detect and

suggest relevant topics more effectively during customer interactions.

### Topic Identification and Knowledge Article Suggestions Using Voice AI

Pega Voice AI utilizes predefined topics to map suggested articles to live customer conversations, with each topic representing specific categories of knowledge articles.

- Incorporate a response topic and link it to a relevant knowledge article. For example, knowledge topics might include categories such as fees, escrow, and bank locations. To link the "fees" topic with a specific knowledge article, search the available articles and select the appropriate one.
- Navigate to the Behavior tab and, within the Text Analyzer section, input relevant keywords that a customer might use when discussing a particular topic. For instance, for the "fees" topic, you might include keywords such as "fee," "fees," and "charge." These keywords form part of the topic model for the respective channel.
- A data scientist is responsible for defining an NLP topic model for each channel. This model analyzes live conversations, identifying relevant knowledge topics such as fees, escrow, or bank locations. Keywords entered in the Edit Topics dialog box serve as initial seeds for the model. The NLP topic model continuously learns new terms from each customer interaction, enhancing its accuracy over time.
- Data scientists can monitor and modify the NLP topic model within Prediction Studio, ensuring the model evolves and maintains high performance. This continuous refinement allows the system to adapt to new vocabulary and conversational patterns, improving the relevance and accuracy of suggested knowledge articles.

By following the above steps Pega Voice AI™ effectively enhances the precision of knowledge article suggestions, leveraging NLP to dynamically interpret and respond to customer inquiries in real-time. [2]

### 5. Benefits of Enhancing PEGA KM with AI

- **Increased Efficiency** - AI automates many routine tasks associated with KM, such as categorizing content, capturing knowledge, and generating recommendations. This automation increases efficiency, allowing employees to focus on more strategic activities.
- **Improved Accuracy and Relevance** - AI-driven KM systems provide more accurate and relevant information, improving decision-making and problem-solving. Enhanced search capabilities and predictive recommendations ensure that users have access to the most pertinent information when they need it.
- **Enhanced User Experience** - The user experience is significantly improved with AI-enhanced KM systems. Users benefit from faster search results, personalized recommendations, and a more intuitive interface, leading to higher satisfaction and engagement.
- **Cost Savings** - Automating KM processes with AI reduces the need for manual intervention, leading to cost savings. Additionally, improved efficiency and

productivity contribute to a better return on investment for KM initiatives.

### 6. Conclusion

Enhancing PEGA Knowledge Management with AI presents a significant opportunity for organizations to improve their handling and utilization of information. By leveraging AI technologies such as NLP and ML, PEGA can automate and optimize various KM processes, leading to increased efficiency, improved accuracy, and a better user experience. As AI technology continues to evolve, the capabilities of PEGA KM systems will expand, offering even more sophisticated and personalized solutions for managing organizational knowledge.

### References

- [1] PegaSystems , "Make everyone an expert with Pega Knowledge," [Online]. Available: <https://www.pega.com/products/knowledge-management>. [Accessed October 2023].
- [2] [2] -PegSystems, "Knowledge articles," [Online]. Available: <https://academy.pega.com/topic/knowledge-articles/v1/in/64166/64961#p-948ac98d-dfe0-4518-98dd-6b3c5bf84d47>. [Accessed October 2023].