



Ensuring Data Reliability for AI & Business Decisions: How Automated Knowledge Management Transforms Enterprises



Executive Summary

In today's fast-paced digital landscape, enterprises generate and store vast amounts of data across multiple platforms—SharePoint, Notion, Google Drive, ServiceNow, and more. However, maintaining up-to-date, accurate, and reliable information is a significant challenge.

Outdated, contradictory, or duplicated data leads to inefficiencies, compliance risks, and failed AI initiatives. AI models rely on high-quality data for accurate outputs. Without proper knowledge management, enterprises risk implementing AI solutions that produce unreliable, hallucination-prone results.

This whitepaper explores the importance of **data reliability** and how enterprises can achieve it through **automated knowledge management**. We introduce a cutting-edge AI-driven solution that ensures knowledge accuracy and accessibility while transforming the way companies handle their knowledge bases.

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Introduction

Knowledge management is the **backbone** of modern enterprises, ensuring that critical information remains structured, accessible, and up to date. In an era where **artificial intelligence (AI)** plays a pivotal role in **decision-making**, ensuring **data reliability** has become a critical challenge for enterprises. Poor knowledge management leads to outdated, contradictory, and fragmented information, which in turn weakens AI-driven insights and strategic decision-making. **Automated knowledge management** is emerging as a transformative solution, leveraging advanced AI techniques to audit and optimize enterprise knowledge bases. By maintaining high-quality, accessible, and trustworthy data, organizations can enhance AI performance, streamline decision-making, and gain a competitive edge in an increasingly data-driven world.

The Knowledge Problem in Large Enterprises

Modern enterprises store massive amounts of information, but as databases grow, **challenges** emerge:

- **Contradictory Information:** Employees frequently encounter conflicting versions of policies, product details, or procedures.
- **Obsolete Data:** Without regular audits, outdated information persists, leading to costly mistakes.
- **Duplicate Documents:** Knowledge fragmentation across platforms makes data retrieval inefficient.
- **AI and Search Limitations:** Poor-quality data leads to inaccurate AI-generated insights, damaging trust, and decision-making.
- **Dark Data:** According to a TRUE Global Intelligence research sponsored by Splunk, around 55% of a company's data is considered “dark” – in other words, unknown, undetected, unquantified, under-utilized, or even completely untapped data.
- **Limited Accessibility:** Employees may struggle to locate the right information at the right time.

The Cost of Poor Knowledge Management

Ineffective knowledge management has real-world consequences:

- **Financial Losses:**
 - According to IBM, low-quality data quality costs businesses in the United States an estimated \$3.1 trillion annually.
 - According to IDC, “dark data” is costing companies around the world **€2 billion a month**.

- **Time Wasted:** According to a study conducted by McKinsey in 2012, Knowledge workers spend 19% of their time searching for and gathering information to complete tasks.
- **Security & Compliance Risks:** Outdated policies or contradictory guidelines expose businesses to legal and regulatory penalties.
- **Decreased Employee Productivity:** Employees rely on accurate knowledge to make decisions, collaborate, and execute tasks efficiently. If they don't have access to the information they need at the right time, they won't be able to complete their job efficiently, which will create frustration and decrease their productivity.
- **Environmental Damage:** According to a study by Veritas, "dark data" was responsible for 6.4 million metric tons of CO2 emissions in 2020.

Companies need a **systematic, automated** approach to knowledge management to avoid these costly inefficiencies.

Why Data Reliability is Essential for AI & Business Success

1. AI Success Depends on Data Quality

Large Language Models (LLMs) and enterprise AI systems rely on structured, clean, and reliable data. If the input data is flawed, AI outputs will be inaccurate, misleading, or even dangerous.

2. Regulatory & Compliance Risks

Industries such as healthcare, finance, insurance, and legal services must comply with strict data integrity regulations. A single outdated document can lead to compliance violations, hefty fines, and reputational damage.

3. Employee Productivity & Decision-Making

Employees waste significant time searching for accurate information. Poor knowledge management results in duplicated efforts, miscommunication, and slower, uninformed decision-making.

4. Competitive Advantage

Organizations that proactively manage their knowledge bases can leverage AI and automation more effectively, gaining an edge over competitors. AI-driven insights become **trustworthy, context-aware, and actionable**, empowering leadership to make informed and strategic decisions.

Enterprise AI Adoption: Challenges & Limitations

As enterprises increasingly integrate generative AI into their operations – according to a press release by Capgemini in 2024, 80% of organizations have boosted their year-on-year investment in generative AI, with 74% acknowledging its role in driving revenue and innovation – the focus has shifted towards enhancing AI models with domain-specific knowledge to improve accuracy and relevance.

A prevalent approach is Retrieval-Augmented Generation (RAG), which combines pre-trained language models with external data retrieval mechanisms. However, traditional RAG methods often face challenges in handling the complexity and scale of enterprise data, leading to limitations in performance and reliability.

To address these issues, Graph RAG has emerged, integrating knowledge graphs to provide structured context and improve information retrieval. Despite its advantages, implementing Graph RAG presents challenges such as increased complexity, data privacy concerns, and scalability issues when dealing with large datasets.

These limitations highlight **the need for more advanced, automated knowledge management solutions** that can effectively navigate the intricacies of enterprise data landscapes.

The Solution: Automated Knowledge Management

To solve these challenges, enterprises must implement an AI-powered approach to **continuously audit and optimize knowledge bases**. Our solution consists of two key modules:

- **Audit Module: Master Your Knowledge**
 - **Scans company-wide document repositories** (SharePoint, Google Drive, ServiceNow, Notion, etc.).
 - **Identifies outdated, contradictory, and duplicate content.**
 - **Pinpoints exact document locations** that require updates, enabling teams to maintain knowledge integrity.
 - Ensures **AI readiness** by notifying teams about unreliable data sources that need to be updated or deleted.
 - Uses an **AI-powered neural semantic graph and intelligent agents** to analyze documents **like a human would**, in context, rather than relying on basic keyword matching or document chunking.

Subject: Liquid Shipping Regulations

DETECTED

DOC 1: DOC 1 Packaging supplement.docx
 Liquids: Sufficient and careful packaging is essential when shipping any type of liquid, such as beverages. These shipments must meet UPS packaging requirements and must be tested by the manufacturer to meet ISTA3A or UPS Package Design and Testing Laboratory requirements.

DOC 2: PROHIBITED.docx
 Under applicable law, certain goods may only be transported under prescribed conditions, and the air transport of certain goods is prohibited (e.g. liquids in glass containers).

Explanation:
 There is a potential conflict in liquid shipping regulations. Document 1 provides detailed guidelines for shipping liquids, while Document 2 suggests restrictions on liquid transportation, particularly for glass containers. Document 1 focuses on proper packaging and testing requirements for all types of liquids, including beverages, without mentioning specific container restrictions. In contrast, Document 2 introduces regulatory limitations, specifically prohibiting air transport of certain goods, including liquids in glass containers. This discrepancy could lead to confusion for shippers, as they might follow the general guidelines in Document 1 without being aware of the specific restrictions mentioned in Document 2.

Open all these documents

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KAI Solution – Audit Module – for a client in the Retail industry

• Search Module: Leverage Your Knowledge

- Enables employees to **find accurate, reliable answers instantly**.
- Uses proprietary **AI-driven intelligent agents** and neural semantic graph to deliver **logical, hallucination-free responses** in natural language, boosting efficiency and trust.
- **Replaces traditional keyword-based search with semantic understanding**, improving accuracy and relevance.
- Enhances decision-making by ensuring **employees always receive the most reliable, complete information**.
- **Provides necessary information instantly**, when needed, avoiding delays.

Make a search

☐ Need Following Questions
 ☒ Need Multi Documents

Type your question and press enter

Q what's the cost to send a 45 000 cm3 package to the UK ?

The cost to send a 45,000 cm3 package to the UK is €26.9. This price applies to a medium-sized package, with a maximum volume of 50,000 cm3.

Reason (Why KAI answer you like that)

This answer is based on the information provided in the document, which specifically indicates the price for a medium-sized package sent to the United Kingdom. The maximum volume of 50,000 cm3 for this package category corresponds to the requested size of 45,000 cm3.

Documents

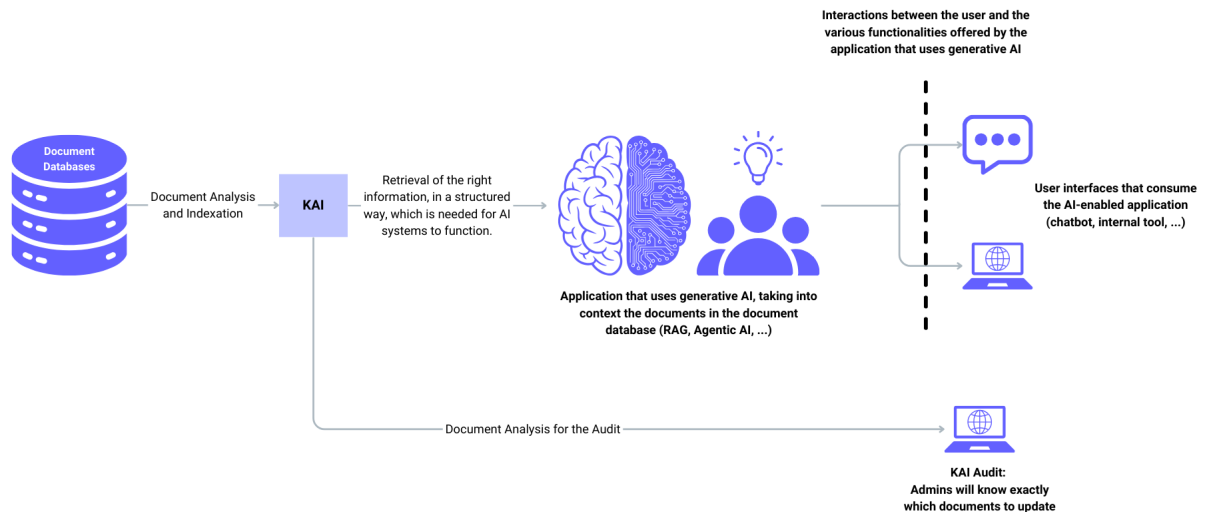
TARIFS.xlsx

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KAI Solution – Search Module – from a database containing shipping documents

Technology

How it works

KAI is a middleware. We provide an API to which enterprises connect various document repositories. KAI processes queries through the enterprise's APIs and delivers optimized responses to the user's front interface through the applications with which the user works.



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Illustration of how KAI works

Neural Semantic Graph

The core of our technology is our Neural Semantic Graph. The KAI Audit and Search modules both rely on the KAI Neural Semantic Graph.

When the KAI solution is deployed and connected to a knowledge base, a neural semantic graph is automatically built, based on all the documents in the knowledge base.

KAI's Neural Semantic Graph is built automatically while indexing all documents. Each document is converted to a sub semantic graph and is merged with the global semantic graph attached to the deployed KAI Instance.

Companies can create applications that directly use our neural semantic graph to be able to exploit knowledge from their databases.

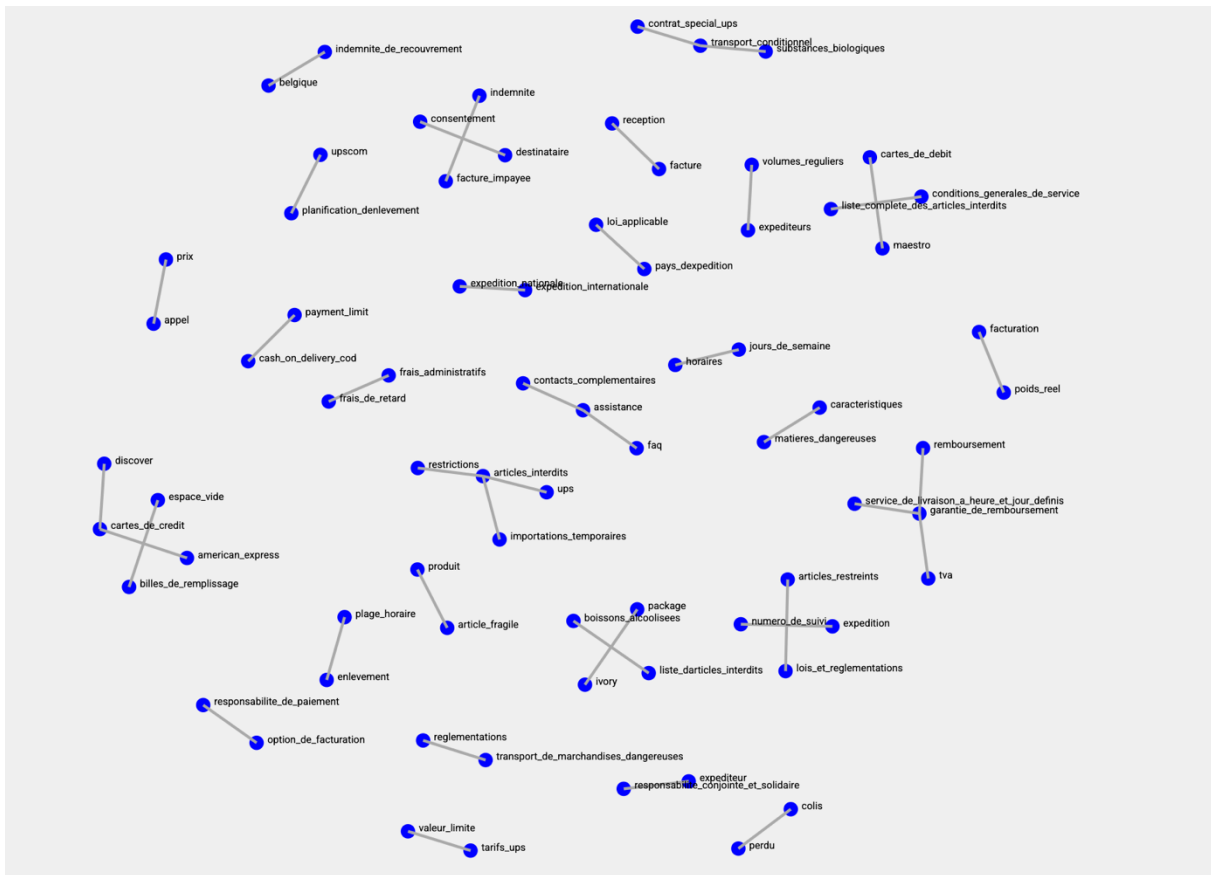


Illustration of the Neural Semantic Graph

KAI's Neural Semantic Graph vs. RAG Based Solutions

KAI's Neural Semantic Graph provides a sophisticated, context-preserving method for document processing compared to RAG. It excels in semantic slicing, content vectorization, and document indexing, ensuring that semantic connections are maintained. Unlike basic vectorization in RAG, KAI offers enhanced search capabilities and document auditing, minimizing errors and providing a more reliable foundation for knowledge mining and retrieval.

	KAI'S NEURAL SEMANTIC GRAPH	RAG
Document Slicing	Semantic slicing - slicing based on document creation logic. => Semantic meaning intact.	Basic, arbitrary chunking. => Loss of meaning.
Document Analysis	Automatic detection of concepts and themes. Content vectorization. Generated meta. => Keeps semantic context.	Basic vectorization. Embedding => Loss of context.
Document Indexing	Creation of the semantic graph, following concepts and themes. => Creation of global semantic context.	Pooling of raw vectors. => No semantic links between documents.
User Search	Analysis of search via semantic graph. Retrieval of the right documents. => Generation of contextualized response.	Retrieval of chunks that are closest to the user's query. => Generation of answers with chunks, possibility of increased hallucinations.
Document Cleansing	Use of semantic graph to detect contradictory documents with respect to themes and concepts.	Not Applicable
Knowledge Mining	Via prompt factory + Semantic graph	Not Applicable

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Illustration of the difference between KAI's Neural Semantic Graph and Rag based solutions

Improve RAG Accuracy

When a user asks a query, usually, developers vectorize the query and find the nearest document's chunks following the query. After that, developers ask the LLM to generate an answer following the user query and retrieved chunks.

The problem at this stage is that documents' contexts will be lost, resulting with hallucinations or uncomplete answers.

With KAI, developers can use our endpoint (</api/semantic-graph/identify-nodes>) to retrieve the semantic context for the user query from the connected databases and use it jointly with the retrieved chunks. The developer passes the user query, the retrieved semantic nodes from our API and the retrieved document's chunks the in the LLM. As a result, the semantic context of the documents from the connected knowledge base is preserved, improving the generated answer's accuracy and reliability.

Case Study: World Leader Fast Food Enhances AI Readiness & Achieves Operational Efficiency

Context:

With the aim of rapidly resolving the numerous technical problems encountered daily in each of its 1,500 restaurants all over France, and which are causing significant loss of sales, a world leader in fast-food restaurants reached out to the KAI team.

- User: World leader in fast food with 1,500 restaurants in France - 150 employees responding to all restaurant requests by telephone.
- System: KAI platform
- Objective: Minimize the business impact of technical problems encountered daily in the 1,500 restaurants in France => loss of up to €15,000 in sales / hour / restaurant
- Duration: 3 months

The Challenge:

- Several databases - SharePoint, ServiceNow, KNOWESIA - representing a volume of 5,000 operating procedures, and the back-office teams performing keyword searches in each tool.
- Knowledge maintenance and exploitation:
 - Manual tagging of procedures
 - Manual updating of knowledge bases

The Solution:

Integration of generative artificial intelligence (AI) into back-office business processes to optimize processing time and incident resolution.

KAI “Search” solution - Provide a chatbot integrating generative AI for back-office teams. This chatbot will enable employees to ask their questions in natural language and find the right answers quickly and easily.

- The **Audit Module** scanned and flagged **27% of documents** as outdated or contradictory.
- The **Search Module** enabled employees to retrieve **precise, context-aware answers**, cutting search time by **40%**.
- The company successfully **integrated AI into operations**, knowing it was powered by clean, reliable data.

Requirements:

- For the “Search” module to work properly, the database has to be clean and up to date. The customer thought this was the case.
- Queries must be written in natural language.

Implementation & Challenges:

Phase 1

- Deployment of the KAI “Search” solution – chatbot set up
- Results: 38% correct answers – unsatisfactory
- Reason: Instead of formulating their query as a question in natural language, employees were using keywords and statements.
- Solution: Implementation of a detection element
 - If a natural language question is detected, KAI should return a correct answer.
 - If keywords or assertions are detected, KAI will reformulate by suggesting a few questions, each with a specific answer, depending on the use case.

This will encourage employees to refine their search in order to get the right answer.

Phase 2

- After setting up the detection element, deployment of the KAI “Search” module.
- Results: 61% correct answers – still unsatisfactory
- Reason: quality of data in database
- Solution: deployment of the KAI “Audit” solution, which will highlight:
 - Knowledge that was clean and up to date.
 - Knowledge that should be updated due to the presence of contradictory, poorly documented, or obsolete information.
 - Documents that contain the problematic information.

This will enable teams to quickly and easily clean and update data, and correct errors.

Phase 3

- Correction and updating of the database by the customer in less than a month, using the KAI “Audit” module.
- Deployment of the KAI “Search” module.

Results:

✓ **From 5,000 to 850 procedure**

✓ **92% correct answers – satisfactory**

The remaining 8% do not represent wrong answers, but rather partial, non-exhaustive answers, that require more refined queries from users and constant data cleansing, which can be done faster and more easily with KAI's “Audit”.

✓ **Performance: on-boarding time is divided by 2.**

✓ **Franchising and restaurant Customer Satisfaction: 6-point gain in Net Promoting Score.**

Implementation: How to Get Started with Automated Knowledge Management

1. Assess Your Current Knowledge Landscape

- Identify where your company stores documents and how frequently they are updated.
- Evaluate the risks of outdated or contradictory information.
- Determine how AI and search tools interact with your current knowledge base.

2. Deploy an AI-Powered Audit Solution: KAI Audit

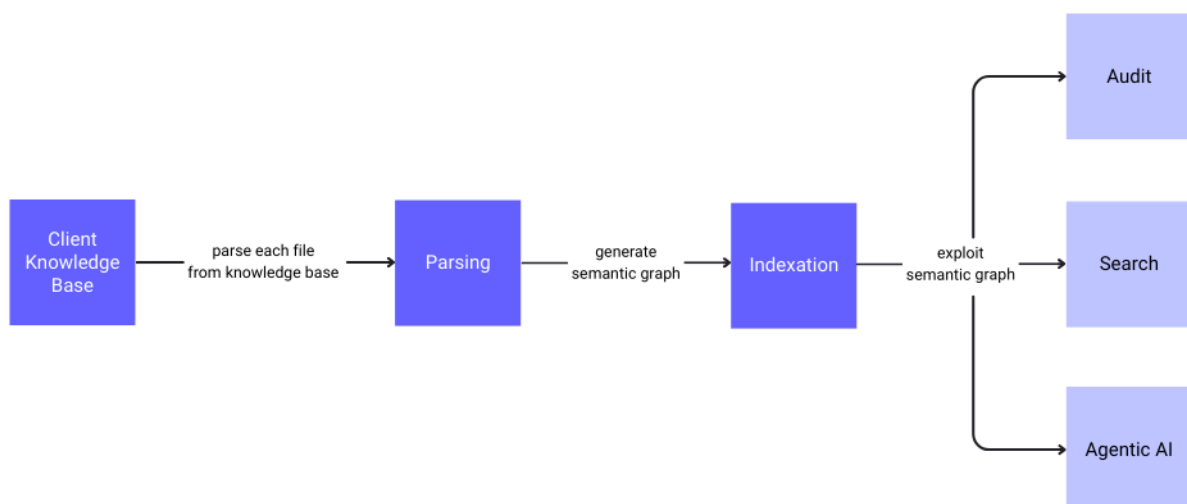
- Implement an automated scanning process to detect obsolete, conflicting, or redundant content.
- Use AI-driven subject categorization to prioritize necessary updates.
- Leverage insights from continuous knowledge audits to validate and refresh information efficiently.

3. Enable an Intelligent Search Solution: KAI Search

- Replace outdated keyword-based search tools with **AI-powered semantic search**.
- Train employees on best practices for retrieving knowledge efficiently.
- Ensure seamless adoption by integrating the search tool into existing workflows.

4. Maintain Ongoing Knowledge Health

- Set up periodic audits with KAI Audit to ensure data quality over time.
- Leverage insights from knowledge analytics to always keep data clean.
- Encourage a culture of proactive knowledge maintenance across departments.



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Process of implementing the KAI solution

Future-Proof Your Knowledge Management

Reliable knowledge is the foundation of successful AI adoption and business operations. Enterprises must proactively manage their information to stay competitive in the age of automation.

◆ **Want to ensure AI-readiness and reliable knowledge management?**

 [Contact KAI Today](#)

Discover how KAI can transform your enterprise's knowledge management and AI performance.

[Contact us](#) to schedule a demo, discuss your specific needs, and learn how KAI can help you achieve informed, strategic decision-making, and operational efficiency, while generating a high ROI.