# Artificial Intelligence Applied to Language for the Finance Sector

## Practical applications

Today, the financial sector is facing increasingly complex challenges. Among these challenges are the need to analyze and take advantage of massive volumes of text information, to manage ever-evolving compliance and regulatory requirements, to monitor risks related to financial crimes and ESG, to support internal teams, and finally, the need to interact with an increasingly digital customer base.

The development of large language models (LLMs) and of new applications, such as ChatGPT, have created extraordinary interest in the potential of AI applied to language and to generative AI (GenAI) specifically. This is a significant development and one that deeply impacts the banking sector. According to Juniper Research, banks worldwide will spend more than $6 billion in 2024 to adopt GenAI software, and investment is expected to increase to $85 billion in 2030.

Banks and financial institutions are aware of the great opportunities that AI applied to language offers, especially at the strategic level. However, they must be able to confront the challenges that these technologies present, from the point of introduction to implementation. This requires managing the expectations of users and business stakeholders, setting realistic goals and, critically, managing the costs and risks of evolving software tools.

Here, the approach to AI could not be more important. Organizations must be able to distinguish the practical capabilities from the hype, to carefully identify the areas where AI can bring the most value and avoid overpromising, and to assess the concrete ways that AI can improve processes.

# The intersection of data analytics, hybrid approach and responsible governance

With the ability to understand and analyze natural language (Natural Language Understanding and Natural Language Processing), expert.ai's technology enables banks and financial institutions to optimize all activities and processes related to managing large amounts of internal and external data. It automatically processes any type of text, extracting valuable knowledge from documents, contracts, emails, customer inquiries, regulatory acts, reports, news and other types of documents.

Based on an open and flexible architecture, expert.ai's technology uses a hybrid approach. It combines the best AI tools applied to text analysis (machine learning, deep learning, LLM, knowledge graph, symbolic logic and a knowledge-based approach) to rapidly develop effective solutions, in a single environment.

Complex language problems can rarely be solved with a single approach. Expert.ai's hybrid AI approach allows banks and financial institutions to choose the best combination of AI approaches and techniques to solve their language challenges.

Expert.ai's Responsible AI solutions provide transparency, reliability and sustainability, as well as increased efficiency and easy integration with existing systems and tools to accelerate digital transformation and ensure successful results.

AI is a proven solution partner for:

Anti-Money Laundering / Adverse News Screening

Regulatory Tracking and Change Management

Digital Customer Interaction

Smart Search

ESG Risk Management

# Anti-Money Laundering / Adverse News Screening

*Automate media monitoring and analysis to detect news about investigations and crimes involving customers or counterparties.*

Combating Anti-Money Laundering (AML) and other financial crimes is a growing concern for institutions, regulators and financial industry companies. The prevalence of illegal activities, faster transactions and strict regulatory requirements necessitate more rigorous and precise customer controls through dedicated Know Your Customer (KYC) approaches without overloading daily operations.

Through artificial intelligence applied to language, banks and financial organization can automatically and continuously monitor print and online sources of information to detect news of crimes, investigations or legal news concerning customers and counterparties.

Expert.ai's compliance solutions analyzes massive volumes of news and unstructured data in multiple languages, automatically segmenting them according to specific criteria with speed, granularity and accuracy.

It screens for "negative news" to meet the requirements of current regulations and support:

- New customer onboarding (e.g., when a checking account is opened)
- Verification of transitions (e.g., large financial deposits) or applications (e.g., a new mortgage or loan) from existing customers
- Risk screening for clusters of customers
- Proactive monitoring
- Institutional and third party verification for banking customers

This allows you to identify customer, partner and vendor misconduct, take action to prevent it, ensure regulatory compliance and mitigate the risk of penalties.
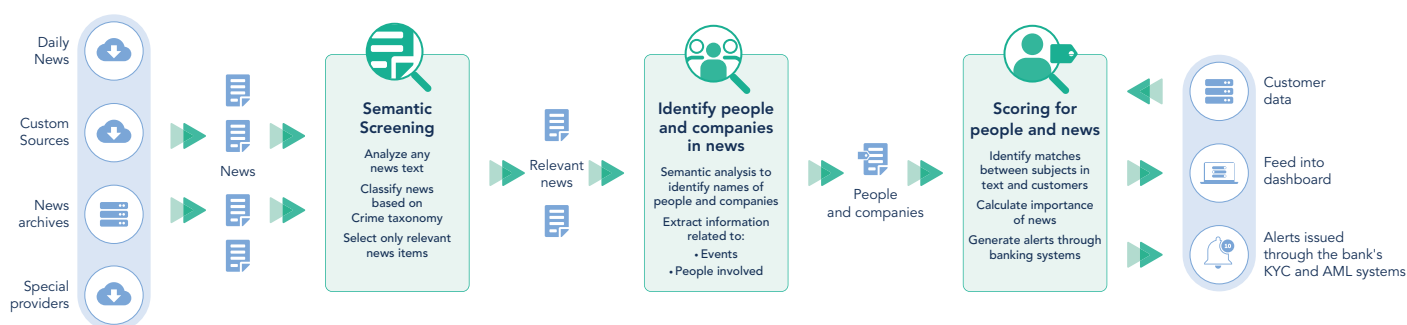
# How it works

### Daily information monitoring
Analyze current news published by local and national newspapers and news outlets, news agencies, websites, and international news outlets, and access years of historical news archives.

### Smart news screening
Leverage trained and tested AI algorithms to identify and classify crimes, recognizing more than 60 criminal offenses.

### Extract and analyze key data
Extract key information in the news: individuals and/or companies, identifying information (age, profession, residence, etc.), and their role (e.g., suspected, arrested, accomplice, etc.) in the context of the events described.

### Calculate news match and severity indicators
Customize scoring algorithms to assess the relevance and severity of a news item by determining if there is a match between a customer and people or companies mentioned in "negative news."

### Automatic alert streams
Automatically notify KYC and AML systems when banking customers are identified in news screening.

## Benefits

**Automate selection** of relevant news items

**Reduce false positives and similar names**

**Improve operational effectiveness** through better controls and more precise checks on various sources and news content

**Increase timeliness in sending alerts** for crimes and suspicious activities through daily, granular news monitoring

**Faster new customer onboarding processes,** improved customer experience, expanded business opportunities

**Expand effective monitoring of news** for the entire customer base or segments of customers, reducing a manual and repetitive workload

**Increase compliance** with current regulations and according to the needs of each customer, significantly reducing the risk of fines and penalties

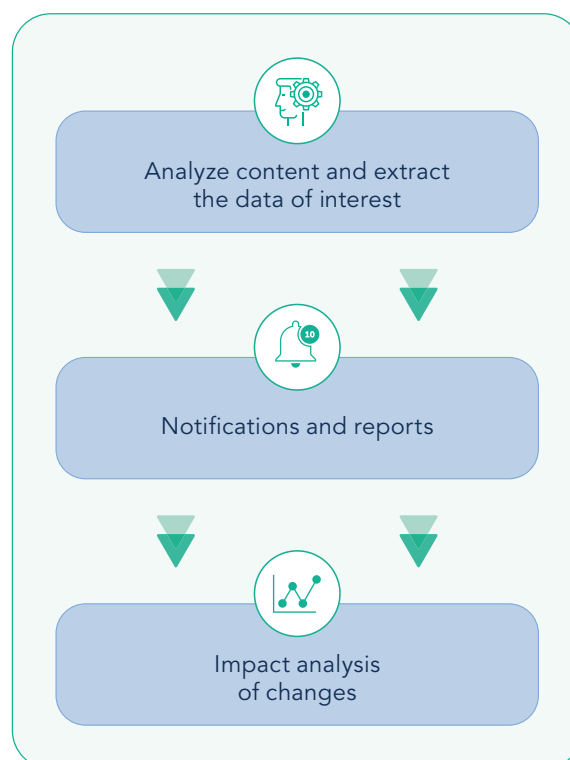# Regulatory Tracking and Change Management

*Monitor regulatory and legal changes and their impact on the business*

The ever-increasing number of rules and regulations and their ability to impact a wide variety of business operations require banks and financial organizations to have an effective strategy for analyzing the latest laws and regulatory developments.

Manual resource management comes with a number of risks: missed regulatory compliance updates, the possibility of reputational harm, lack of early detection of emerging trends and compliance actions, and the failure to intercept strategic information and penalties, to name a few.

By leveraging artificial intelligence to understand and process text, banks and financial institutions can automate activities and support users in the regulatory tracking & management process. This allows regulatory managers to monitor legislative changes in real time, keep track of all news of interest, send automated alerts and notifications, and adapt and modify workflows, documents and processes to ensure they are up-to-date and compliant with regulations.

Monitoring regulatory and legislative changes

Analyze content and extract the data of interest

Notifications and reports

Impact analysis of changes

Legal & Compliance

Operations

Human Resources

IT

# How it works

### Monitor regulatory sources

Monitor news information across different sources (regulatory databases, laws, legislative rulings, regulations, standards, etc.) via a single dashboard.

### Customized content analysis

Customize filters and settings for search criteria to identify the latest regulatory changes relevant for your organization.

### Automatically extract data of interest

Find and extract the most relevant data without reading entire documents or manually searching for information.

### Notifications and reports

Alert users about new laws or major regulatory changes and automatically generate customized reports to share news with various stakeholders.

### Assess change requirements

Identify required changes and assess whether they can be concretely applied to make processes, documents and workflows compliant.

## Benefits

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| Increase operational efficiency through automated alerts that provide information of interest in real time | Analyze regulations that impact the business faster and more flexibly using custom criteria | Expand coverage of regulatory news analysis using an automated approach with a high degree of accuracy |
| Support change management decision-making processes by providing guidance on actions necessary to ensure compliance | Mitigate sanctions risk by constantly and automatically monitoring the evolution of relevant laws and regulations | |

# Digital Customer Interaction

*Optimize support for customers and staff using organizational knowledge*

Banks and financial operators today are facing customer interactions that are increasingly digital and multichannel. They need to be able to manage the relationship with customers—from acquiring new customers, retaining existing ones and supporting internal staff—regardless of the channel used (website, mobile app, chatbot, phone conversations, social media, intranet, etc.).

Expert.ai solutions automatically understand meaning, context and sentiment similar to how people do, but faster and with greater accuracy and consistency. Expert.ai offers advanced AI capabilities that are ready to use and create customer service applications for even the most complex multichannel requirements.

Expert.ai's artificial intelligence-based solutions help banks and financial services organizations analyze and organize massive amounts of communications from email, chat, social media, quickly and effectively so that they can optimize customer communication and back office processes across digital channels.
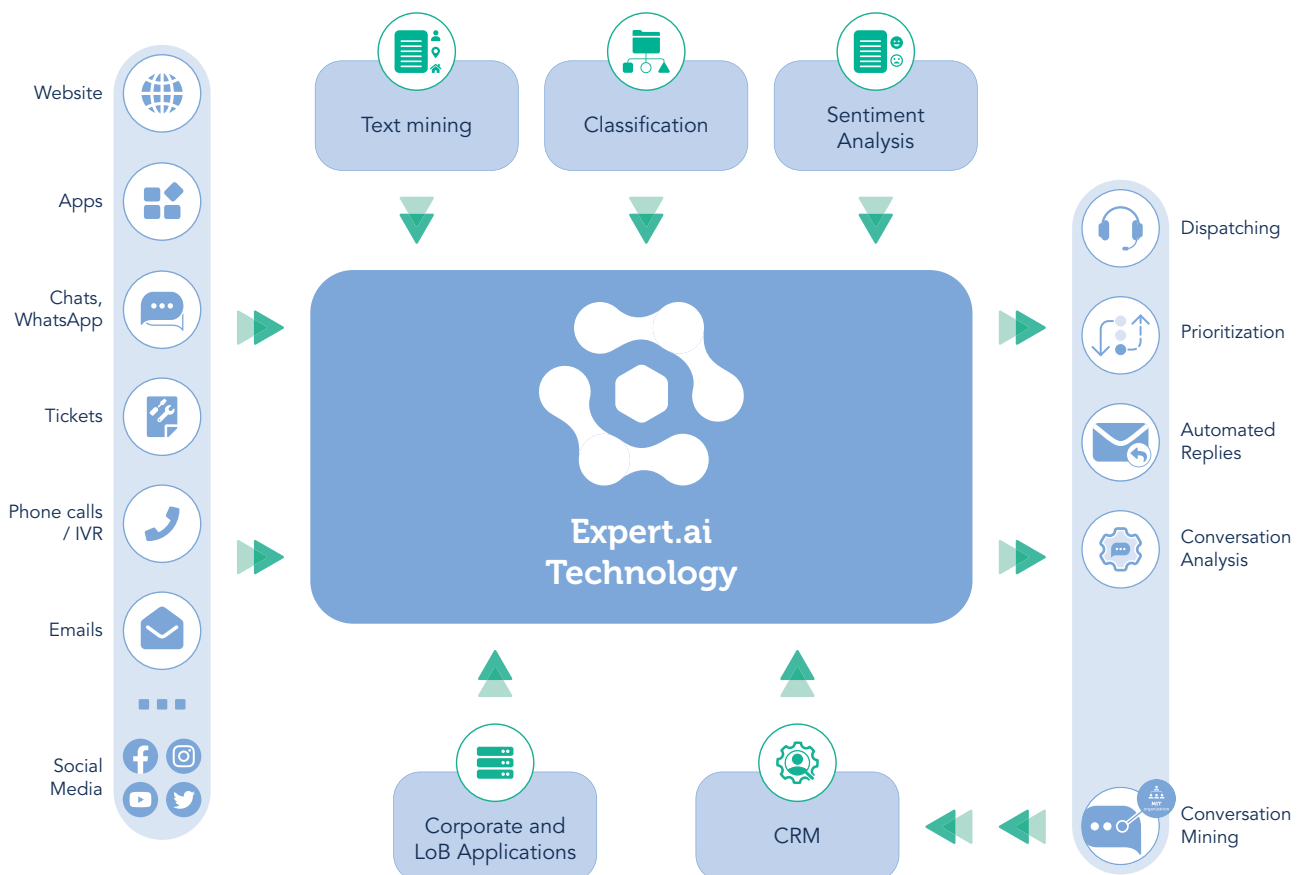
# How it works

### Categorize requests automatically
Analyze each message based on a customized intent, type and department. Extract relevant entities and information (name, address, product or service names, account number, etc.) mentioned in the text or in attached files.

### Analyze inquiries and messages
Identify content, entities and topics mentioned in email, chats, support tickets, etc. and identifying the communications that are most urgent or may trigger critical issues.

### Respond and route automatically
Send automatic responses to the most frequent standard requests, forward messages to the most appropriate support teams and enable complex RPA and CRM rules based on intent.

### Understand sentiment
Identify sender intent and sentiment to expedite response for frustrated customers to reduce churn.

## Benefits

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| Reduce customer care costs – automate the handling of the simplest and most frequent requests so that customer care staff can focus on the most complex and detailed requests | Faster and more effective handling of requests – with 95% accuracy in message categorization, sorting and processing responses – assigning higher priority to those with critical issues | Increase accuracy by classifying messages the first time improving the efficiency of support and increasing customer satisfaction and engagement |
| Quickly identify trends and issues that emerge from the semantic analysis of content in email, chat, social media, complaints, etc. | Reduce ESG Risk and penalties by protecting customer privacy and keeping track of all customer communications | |

# Smart Search

*Intelligent search tools provide faster, immediate access to available knowledge for customers and internal support staff*

Bank reports, contracts, regulatory documentation, email, customer interactions and document management systems contain information valuable for support and business intelligence. Available in digital or print formats and located in separate silos, organized according to various criteria, being able to manage this unstructured information and provide access to it is a critical challenge for banks and financial operators.

In the financial sector, AI is frequently applied in intelligent search systems to assist internal staff and customers in finding the information they need. Expert.ai's technology leverages AI based on natural language understanding to support internal help desks, corporate intranets, web portals and customer-accessible knowledge bases to retrieve information.

With the ability to understand the meaning of text contained in documents, expert.ai solutions transforms traditional content and databases into useful and accessible resources. Users can rapidly identify the information they are looking for through everyday natural language queries and using highly sophisticated, intuitive search and navigation tools.
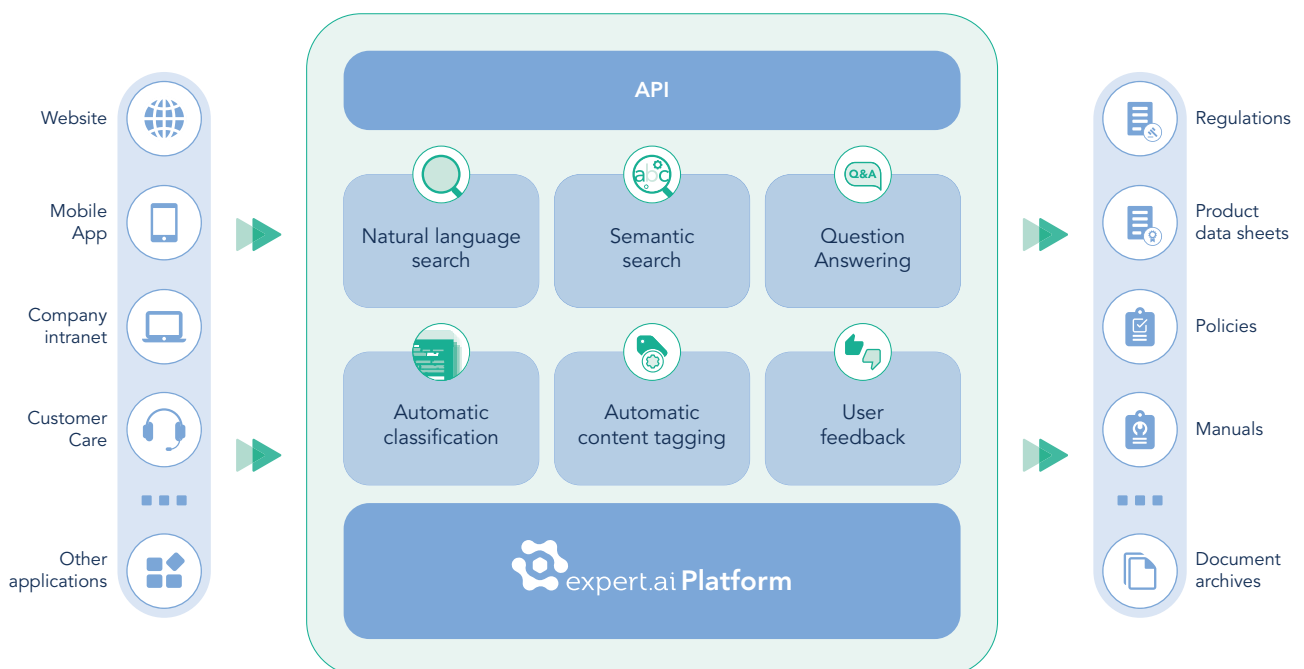
## How it works

### Content acquisition and indexing

Acquire and index content, documents and text in various formats and from different types of sources while ensuring the full understanding of concepts present.

### Categorization content

Quickly identify topics in the text based on financial sector-specific taxonomies and extract standard and customized entities make it easy for users to navigate content.

### Natural language search

Ensures full understanding of concepts contained in user queries expressed in everyday language ("How can I open an account at your bank?"), thanks to natural language processing (NLP) techniques.

### Research tips and FAQ management

From useful suggestions to auto-complete and "maybe you were looking for" functionality, the features are designed to make it easy to search within knowledge bases that include lists of FAQs.

### Integrated search into user applications

Thanks to an open API-based architecture, intelligent search can be easily integrated into websites, mobile apps, intranets and help desk applications. These AI-based search capabilities will be accessible to users directly from within the applications they routinely use.

### Management tool

Preview documents that result from a search and manage indexed content. The system can be configured and finely tuned to achieve the highest performance in terms of response speed, precision and recall of search results.

| Benefits |
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Rapidly access knowledge to improve operational efficiency expand content coverage to include knowledge bases, training and compliance documents and articles.

Improve accuracy and meaninngful results using semantic understanding, which allows people to use everyday language to go beyond classic keyword search that is limited to exact word matching.

An easy to use, intuitive interface that supports the preferences of today's advanced digital users.

Streamline FAQ management and knowledge base to optimize customer support activities

# ESG Risk Management

*Monitor reputation indicators and ESG info to support investment choices and ensure compliance with European legislation*

For investors and shareholders alike, a company's sustainability, reliability and ethics matter.  These factors—known as ESG—measure a company's commitment and performance in the areas of climate change, corporate governance and human capital. For banks and other financial institutions, a company's reputation and their ESG performance are key factors in the risk management process. However, the information that is relevant for ESG assessment is not easily available, it is often distributed across multiple sources and takes a long time to analyze.

Expert.ai compliance solutions enable companies to conduct a full range of ESG risk management activities, including: automatically analyzing stakeholder opinion, monitoring how indicators evolve in real-time, supplying rating algorithms with up-to-date and normalized data, and scoring different types of ESG indicators. This ensures alignment with factors that investors are increasingly paying attention to: transparency of sources, compliance with performance standards and alignment with the latest EU legislation that makes sustainability reporting mandatory for companies starting in 2024.

Artificial intelligence simplifies gathering information from multiple sources, organizing and analyzing it to understand how stakeholders assess the ethical sustainability of a company or brand (ESG Reputation), and for structuring and normalizing thousands of data points regarding an organization's behaviors and ethical approach (ESG Performance).
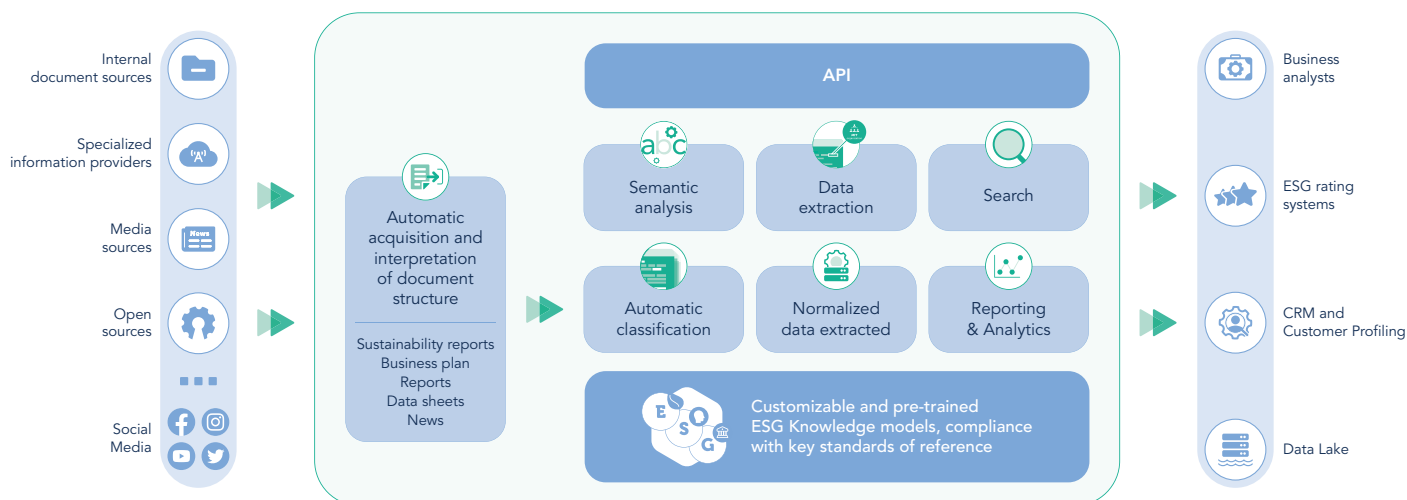


# How it works

### Data acquisition
Acquires and understands all text content: internal and external documents, web sources, sustainability reports, supplementary notes, news, etc.

### Categorization, extraction and normalization
Leverages a pre-trained ESG language model to identify, classify and extract metadata and other key information (certifications, emissions, investments, etc.) from any type of document to support analysis activities.

### Support for ranking indicators
Ranks and score information about investments, initiatives, projects and policies that could have a positive impact on ESG indicators, as well as information related to emissions, sanctions, crimes or practices that could have a negative impact on ESG indicators.

### Semantic search and dashboarding
Provides a platform for semantic search and dashboarding to support analysis of reputation information and a reporting tab for performance information.

## Benefits

**Constant monitoring** of the most up-to-date and relevant ESG indicators to support decision making

**Data transparency, traceability and governance** that is compliant with the latest European regulations and standards

**Deep ESG domain understanding,** with language models developed exclusively for ESG realm ensures accurate data analysis sviluppato per l'ambito ESG

**Fast and accurate analysis** ensures that even the most diverse sources (e.g., PDFs, web pages, etc.) are included

# Conclusion

The AI revolution has come to every industry, and banks and financial institutions who underestimate its impact risk losing competitive advantage.

In addition to the strategic imperative of AI, companies must also be able to address the critical areas where practical AI solutions can deliver tangible results in terms of efficiency, security and cost savings, today.

Expert.ai's solutions are mature, proven and effectively employed by major banking organizations to accelerate the digital transformation process. In expert. ai, the ability to choose the most suitable combination of AI technologies on a case-by-case basis to create value from language through a safe and responsible approach is already a reality.

**Learn more at** www.expert.ai