

## Case Study

# Trusted Medical Answers in Seconds with Context-Aware AI

How a **leading pharmaceutical company** transformed fragmented knowledge into a trusted, AI-ready foundation for healthcare professionals

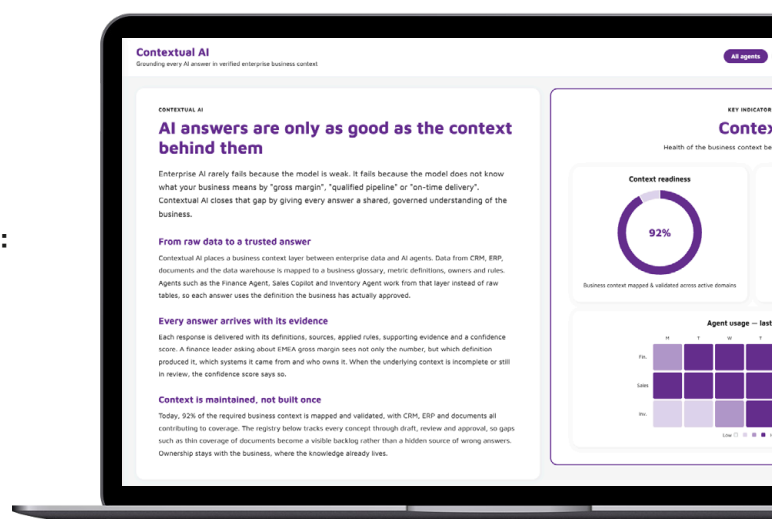


# The Client Profile

A leading pharmaceutical company in Central and Eastern Europe wanted to improve access to medical information for healthcare professionals.

## Physicians regularly needed answers about:

- Products and indications
- Contraindications and adverse effects
- Drug interactions
- Reimbursement status



**The information already existed. However, it was spread across multiple systems, databases, and medical resources.**

The company saw an opportunity to use AI to improve access to knowledge. To deliver trusted answers, AI needed more than a language model. It needed context.



# Challenge

Healthcare professionals needed fast, reliable answers at the point of care. Instead, information was spread across disconnected sources, including:

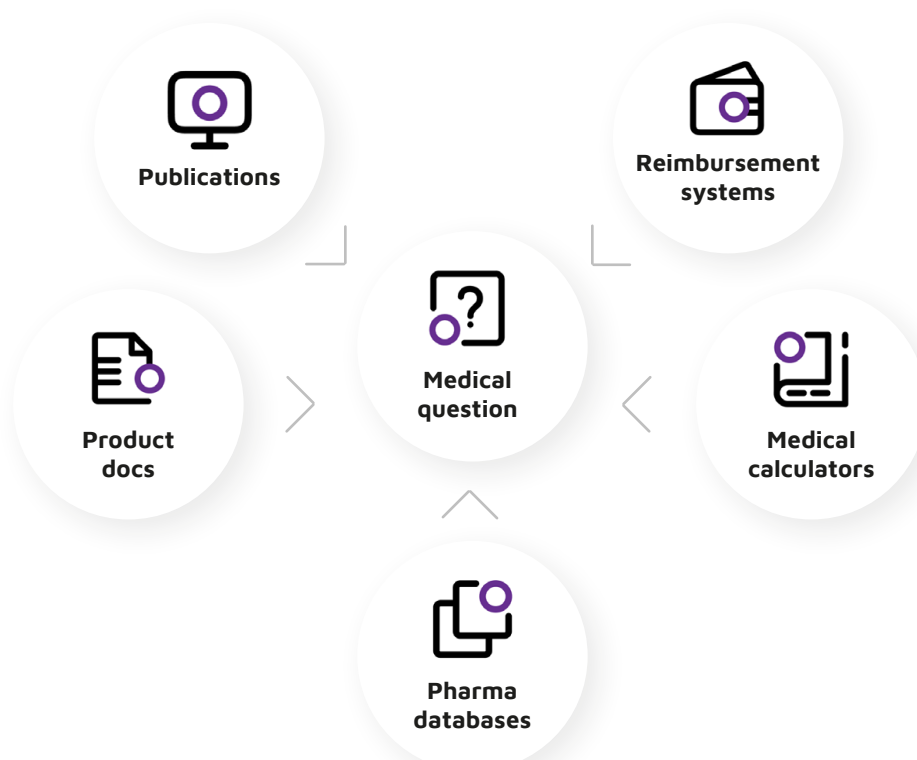
- **Product documentation**
- **Pharmaceutical databases**
- **Reimbursement systems**
- **Medical publications**
- **Medical calculators**

The challenge stemmed from a disconnected business context, making it difficult to turn information into actionable insights.

Medical questions rarely have answers in a single document. To respond accurately, AI must understand how products, indications, contraindications, interactions, adverse effects, and supporting evidence relate to one another.

**The company needed a solution that could:**

- **Connect** fragmented medical knowledge
- **Deliver** trusted, source-grounded answers
- **Meet** strict governance and regulatory requirements
- **Reduce** the risk of unsupported AI responses
- **Scale** across future healthcare use cases



# The Solution

## Giving AI the context it needs

Lingaro designed and implemented an Enterprise Context Layer on Microsoft Azure through our Contextual AI Factory, enabling pharmaceutical organizations to turn disconnected knowledge into a unified, AI-ready foundation.

The solution combines trusted medical sources, business rules, and pharmaceutical relationships into a graph database that AI can understand and navigate.

This enables healthcare professionals to access accurate, source-grounded answers through a single AI-powered pharma assistant.

The assistant also serves as a contextual engagement channel, enabling compliant product education and promotional content to be surfaced when relevant to a healthcare professional's query.

## Key capabilities include:

- A pharmaceutical knowledge graph built from verified medical sources
- Graph-enhanced retrieval combined with Azure AI Search
- Source-grounded answer generation with citations and traceability
- Drug interaction validation through a single API exposed as a tool on MCP server
- Reimbursement lookups
- Medical article and healthcare professional content integration
- Integration with more than 30 medical calculators
- Built-in governance, observability, security, and compliance controls
- Context-aware delivery of compliant product education and promotional materials linked to conversation topic



### Fragmented knowledge

- Medical sources
- Business rules
- Drug data
- APIs
- Articles
- Calculators



### Enterprise Context Layer

- Knowledge graph
- Graph retrieval
- Validation
- Governance



### AI pharma assistant

- Answers
- Citations
- Traceability

# Why it performs well

Lingaro partners with clients to turn data into business impact. We do it by uniquely combining business and technical DOMAIN knowledge, human-centered DESIGN, and industry-leading ADOPTION capabilities, all augmented by AI.

## Design

- **Built** around healthcare professionals' information needs
- **Delivers** source-cited answers with full traceability
- **Unifies** trusted medical resources in one experience
- **Captures** feedback and usage insights for ongoing improvement
- **Supports** responsible AI, governance, and compliance by design

## Domain

- **Created** an enterprise context layer connecting products, treatments, interactions, reimbursement rules, and medical evidence
- **Developed** a pharmaceutical knowledge graph from verified medical sources
- **Unified** structured and unstructured data into an AI-ready foundation
- **Enabled** graph-enhanced retrieval across complex medical relationships
- **Added** Polish medical NLP for drug names, diseases, ICD-10, and ATC codes
- **Provides** explainable responses with citations and provenance

## Adoption

- **Delivered** across development, test, and production environments
- **Integrated** directly into the healthcare professional portal
- **Validated** through a moderated usability study and diary study with primary-care physicians
- **Supported** by automated evaluation, quality gates, and regression testing
- **Established** a scalable foundation for future AI healthcare solutions

## Impact

The solution transformed fragmented medical knowledge into a governed Enterprise Context Layer that supports reliable, transparent AI interactions.

### Key results:

**90%+** benchmark success rate, **with 300+ representative medical questions evaluated**

**~25** second **response time**

**24/7** access to **trusted medical information**

### Business impact:

- **Trusted, source-grounded, and auditable responses:** Every answer is generated from verified medical content, backed by citations, and supported by a complete audit trail showing the sources and context used to generate the response.
- **Strong governance and explainability:** Built-in safeguards reduce hallucination risk and provide full traceability.
- **Continuous quality improvement:** Automated evaluation, monitoring, observability, and regression testing help maintain reliability over time.
- **Built for scale:** The architecture is designed to support interactions at approximately \$0.10 per query while maintaining quality standards.
- **Expanded HCP engagement:** The assistant creates contextual opportunities to connect healthcare professionals with relevant educational and product content while maintaining regulatory compliance.

Together, these capabilities give healthcare professionals **faster access to trusted medical information and create a scalable foundation for future AI-driven innovation.**



"In pharma, trust is not a feature. It is the product. We built an AI assistant that physicians can rely on, regulators can audit, and pharmaceutical companies can use to turn every clinical conversation into a compliant, relevant brand touchpoint."

**Maciej Michałek**, AI Advisor & Data Scientist, Lingaro



By connecting our medical knowledge into a single trusted foundation, we've made it easier for healthcare professionals to access accurate information when they need it most. The result is a faster, more transparent, and more reliable user experience."

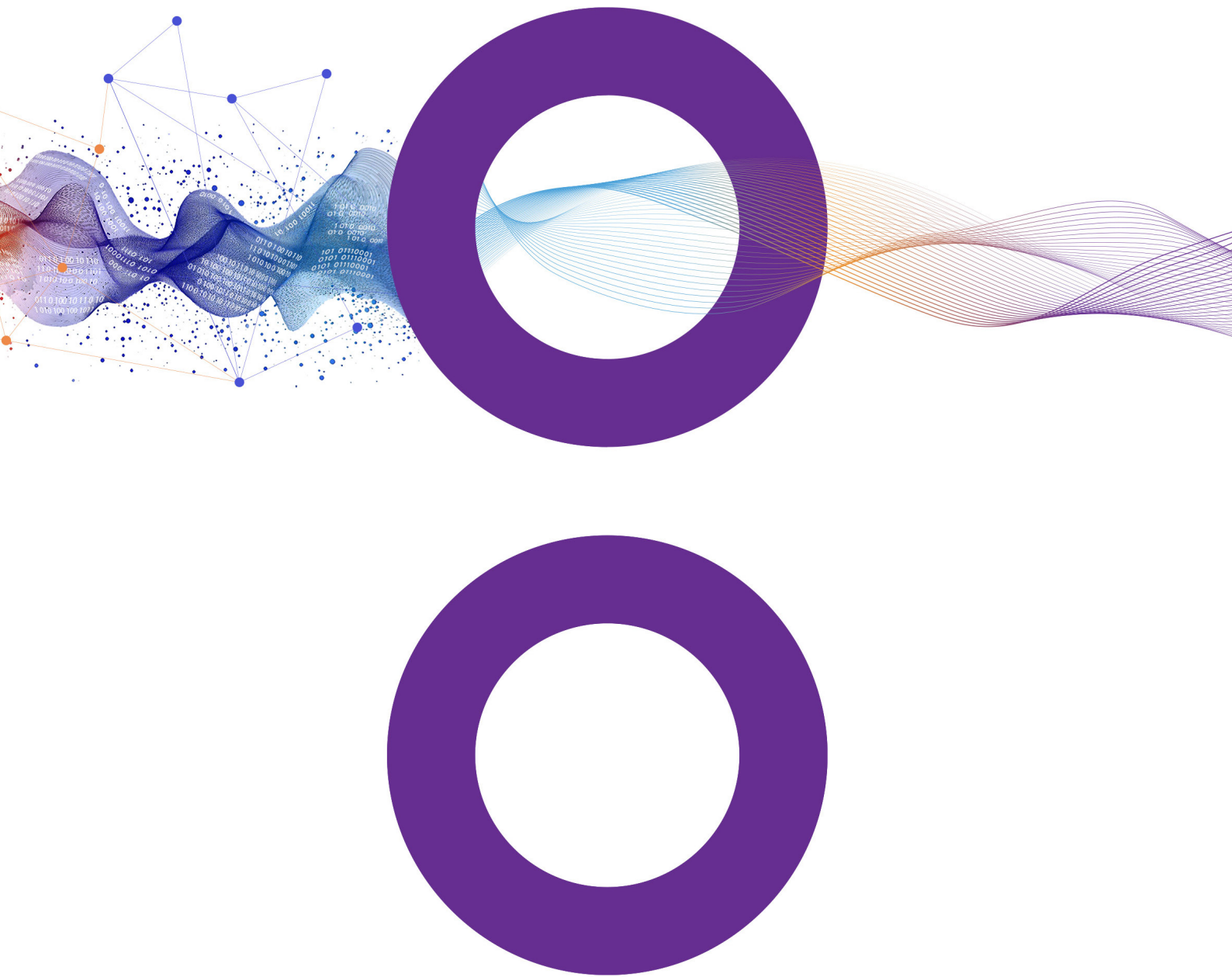
**Medical Affairs Director**, Leading Pharmaceutical Company

## Ready to give AI the context it needs to deliver trusted results?

AI performs best when it understands how your business works. We help organizations connect data, knowledge, and business relationships to build AI solutions that are trusted, explainable, and ready to scale.

**Book AI Context Assessment**





**Achieve More With Data & AI**