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Today’s complex enterprise environments need sophisticated solutions and these solutions are not only about technology. They are about strategic partnerships and exploring synergies. There’s a much-needed spirit of collaboration that cannot be bypassed when it comes to creating, maintaining and consuming knowledge graphs.

Complex architectures like knowledge graphs cannot be built as a one-size-fits-all solution. The very nature of the connected business environment calls for modular approaches rather than heavy monolithic hierarchical structures. Share on X

In the two decades of building knowledge graphs with the W3C consortium standards (which are essentially a collaborative effort, fitting the need for interoperable and future-proof data management), we have discovered the power of synergies. Through this power, various players can contribute their essential piece of the puzzle and by connecting these pieces, we can jointly deliver complete, end-to-end, reusable solutions.

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What Money Can't Buy: The Network Has It All

When it comes to solving a business problem with a knowledge graph in any domain, no vendor can have it all. No single vendor can offer the richness of applications that can satisfy the requirements of every specific use case. What can, though, is a network of partners that provides a dynamic combination of technology stack and professional services and that can supply the best technology blend to meet each specific business need.

With more and more organizations turning to knowledge graphs for better enterprise knowledge management, we've been privileged to work with some of the most knowledge-intensive enterprises in Financial Services, Life Sciences and Healthcare, Industry, Media & Publishing and Public Sector & Defense.

Our takeaway from all this is that the best way to build knowledge graphs is the semantic data modeling way, which involves a tailored approach to each specific business case. And we've seen again and again that such knowledge graph driven solutions not only address business needs more efficiently. More often than not they redefine the problem, opening up new opportunities as enterprises change their approach to knowledge and data management.

When Everybody Does What They Are Best At

In a world that needs connectivity at every level across the enterprise structure, unified data management is central to keeping businesses in business. To that end, knowledge graphs provide a single point of access to all enterprise knowledge, which enhances decision-making and fosters innovation.

There are different end-to-end knowledge graph solutions, which address different business needs and each knowledge graph application can be achieved through various means.

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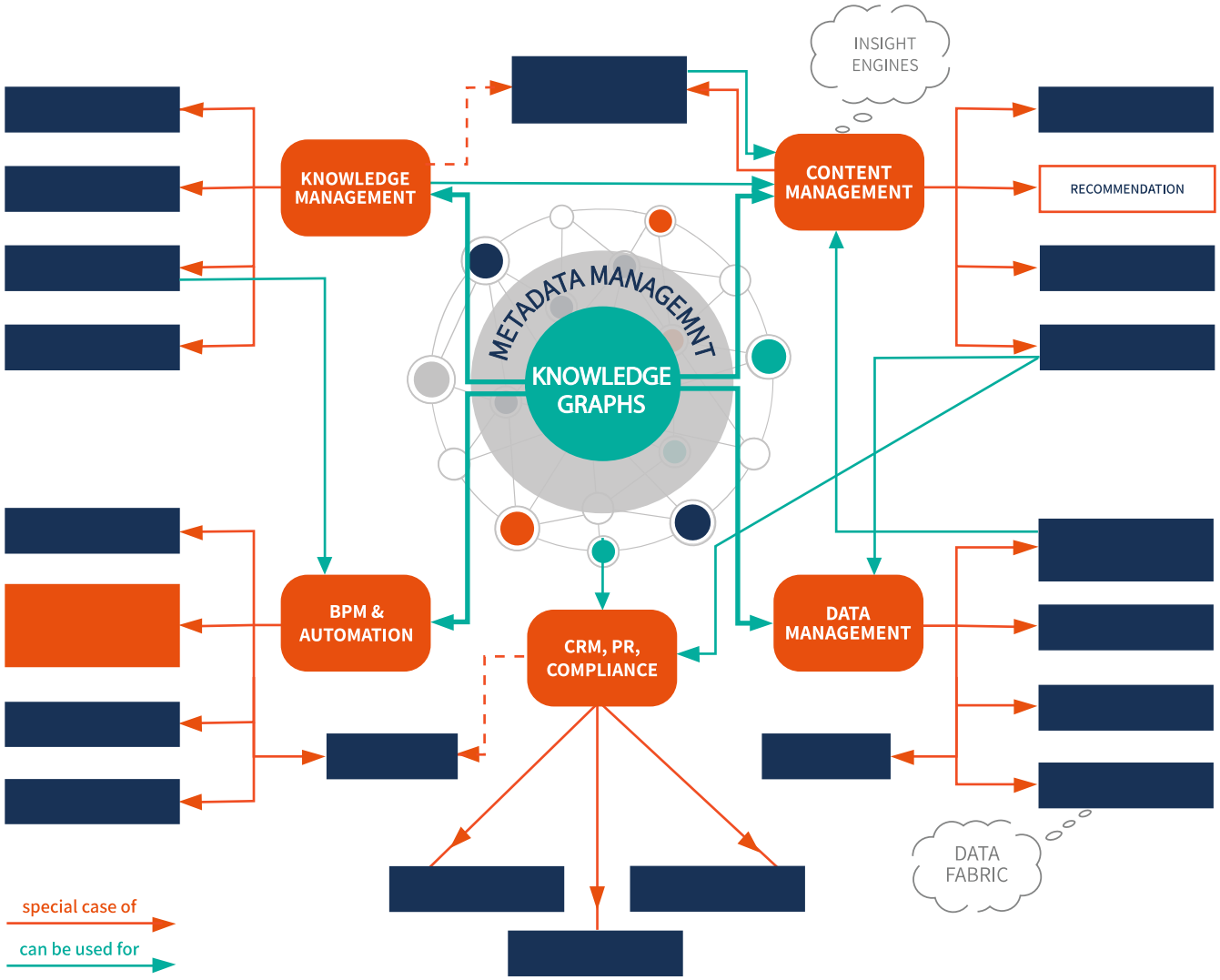
Knowledge Graphs Applications Map



As you can see from the map above, knowledge graphs can be applied in several main areas and in each of these areas there are a number of applications. There is a wide (and wild!) variety of technology capabilities required and things that need to be done and for none of them (not even for any of the applications) is there a single best way of doing it.

So, instead of claiming to be able to do everything that is required, we have chosen to serve our customers through providing a rich ecosystem of partners. Over the years, we have

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developed an ecosystem of about 70 companies in the areas of knowledge and content management, data cataloging, data visualization, semantic search, BPM & automation and more. Together, we can cover almost all knowledge graph applications and, for many of them, our clients can even choose what will work best for their needs.

Selected Stories About Raising A Knowledge Graph From Our Partners

Let's go through several success stories that our partners have shared with us. They illustrate how strong and powerful the synergistic approach towards building an enterprise knowledge graph is.

While the rest of the post is organized by partner, here we provide references to the presented stories grouped by application areas.

Content and Knowledge Management:

- Course Recommendation to Improve Learning Outcomes in Healthcare
- Semantic Search over Technical Documents for Engineering Research
- Multi-Facet Skills Taxonomy for Matching Applicant Profiles to Jobs in a Career Portal
- Dynamic Taxonomy Updates for Semantic Search in Market Intelligence
- Metadata Generation for Better Monetization Content Assets of a Football Franchise

Data Management:

- Data Integration for Better Data Discovery and Exploration in Healthcare

Business Process Management and Automation:

- Collaborative Project Management and Decision Support in Manufacturing
- Supply-Chain Management, Process Automation and Digital Twins in Manufacturing
- Product Information management and supply chain management

CRM, Public Relationships, Compliance:

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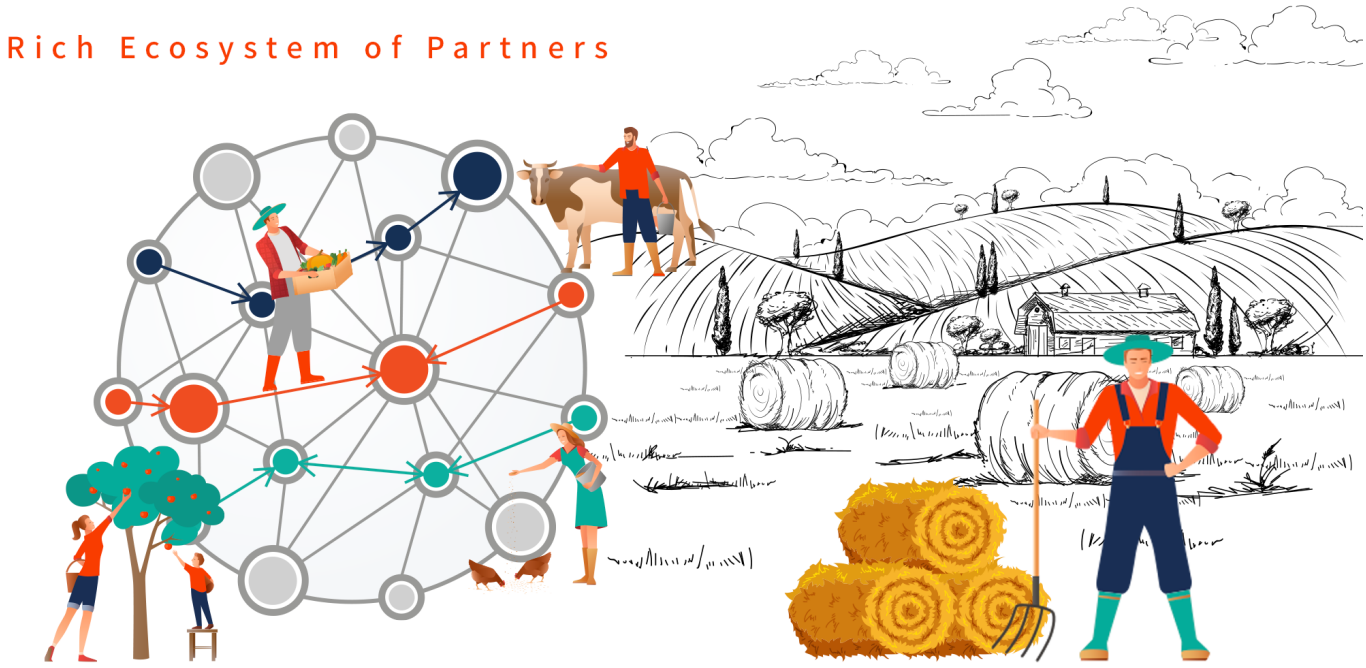
- CRM and Correspondence Automation
- Chatbots in Tourism, Public Services and Manufacturing

Now let us continue with the actual presentation of the stories provided by our partners.



Enterprise Knowledge

Enterprise Knowledge (EK) is one of our many partners who have implemented Ontotext's RDF database for knowledge graphs GraphDB in their innovative solutions. Dedicated to providing consulting services in knowledge, information and data management, the company leverages semantic tools and data models to deliver scalable data management capabilities. Among the many success stories, they've chosen two to share with us.

Course Recommendation to Improve Learning Outcomes in Healthcare

One of EK's clients, a healthcare workforce solutions provider, was looking to increase engagement and improve learning outcomes across their learning platform by developing personalized content offerings. To that end, EK built a cloud-hosted semantic course

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recommendation microservice on top of GraphDB. The microservice was integrated with the client's learning platform and successfully suggested courses and learning paths relevant to each user's exam performance. EK's solution not only increased engagement but also provided more sophisticated methods for governance and scale by ensuring the courses covered available topics.

Semantic Search over Technical Documents for Engineering Research

Another client was a federally funded engineering research center who wanted to better organize their extensive "project library" of technical documents, certifications and reports related to various engineering projects. Many documents were in the format of scanned handwritten notes with little metadata and it was difficult to find all relevant projects or experts. To help connect the dots between people, projects, engineering components and engineering topics, EK developed a PoC enterprise knowledge graph and incorporated it into a semantic search platform. This allowed users to browse documents by person, project and topic and keep up to date with project staff changes and evolving requirements.

Semantic Web Company

Yet another inspiring example of a good synergy is the one Ontotext created with Semantic Web Company (SWC) – a provider of graph-based metadata, taxonomy, search and analytic solutions and the creator of PoolParty Semantic Suite. SWC has employed PoolParty on top of GraphDB in various use cases ranging from knowledge management, business process management and automation, CRM/PR compliance, content management and more. But let's focus on two of their success stories.

Multi-Facet Skills Taxonomy for Matching Applicant Profiles to Jobs in a Career Portal

The first one is about JobTeaser – a company providing a career portal that helps applicants make the best profiles and find jobs that fit their criteria. In order to match users to the most accurate profiles, the JobTeaser platform assesses many aspects ranging from psychology, salary expectations, skill profiles, etc. With such a diverse baseline, JobTeaser required a tailored semantic approach that could integrate multiple facets of data such as the ESCO Skills Taxonomy to create a controlled vocabulary of skills and careers.

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Dynamic Taxonomy Updates for Semantic Search in Market Intelligence

In the second one, Insider Intelligence – a research company providing access to information, data and trends about digital business – wanted to improve their user experience. The company struggled to manually update the research taxonomy with new topics and related items and their website offered limited search experience. By employing GraphDB and PoolParty's easy-to-use taxonomy management tool, the company could seamlessly update the taxonomy. As a result, their website provided fast and powerful semantic search and suggested related results based on the terms in the taxonomy.

metaphacts

Ontotext's productive partnership with metaphacts opens other exciting vistas. The company empowers enterprises to build and manage their own knowledge graphs, and to extract the most value out of their data. Their flagship product is the metaphactory knowledge graph platform.

Data Integration for Better Data Discovery and Exploration in Healthcare

We joined forces to support a Swiss multinational healthcare company in building a knowledge graph based solution that provided highly interlinked information across various data sources and offered a modular approach to R&D data discovery and knowledge consumption. Combining GraphDB, a large inventory of ready-to-use biomedical datasets, and metaphactory's low-code approach to knowledge graph application building made it easy to create a big customized knowledge graph and configure intuitive search and exploration interfaces on top of it. As a result, data scientists, immunologists and systems biologists can explore data and gain meaningful and actionable insights for their daily tasks.

Collaborative Project Management and Decision Support in Manufacturing

In another success story, a global manufacturer of sensors and sensor solutions for industrial applications wanted an efficient collaboration platform for driving new projects. The solution employed metaphactory on top of GraphDB to power the new knowledge graph driven platform. The intuitive model-driven authoring, search and visualization interfaces allowed employees to track new ideas and project proposals, and to contribute to existing projects. Thanks to metaphactory and GraphDB, management teams at the customer site can quickly

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report on proposed projects that can be used to define company-wide goals and drive business decisions.

Perfect Memory

Perfect Memory is another important Ontotext partner that builds innovative solutions to help clients structure, manage and provide access to their company's enterprise knowledge. Their As-a-Brain solutions automate the indexation of content and documents, and maps information to business ontologies.

Metadata Generation for Better Monetization Content Assets of a Football Franchise

One of Perfect Memory's clients – a major European football franchise – needed a solution that would help them better market and monetize their content assets. To meet these business goals, Perfect Memory set up a platform powered by GraphDB. This platform was able to reconcile data and content coming from various sources, in different formats and used by different user profiles.

In order to make all of this content, including videos and images, searchable and monetizable, Perfect Memory did intelligent content extraction to auto-generate metadata from it (such as sponsors, teams, locations, etc.). The solution significantly improved user experience by providing a unique access point to any fragments and facets of the content. It also allowed users to get relevant results by asking complex questions.

eccenca

We have a great synergy with eccenca – an Ontotext partner dedicated to enabling companies to infuse knowledge into their data with the help of their knowledge graph platform eccenca Corporate Memory.

Supply-Chain Management, Process Automation and Digital Twins in Manufacturing

Case in point, GraphDB has powered many of their smart processes automation solutions such as:

- Customer interaction automation, which helps vendors better understand the needs of

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their customers, so it's easier for customers to define configurations in real-time that better meet their requirements.
- Manufacturing automation, where the digital twin of a product provides the context that allows dynamic configuration and optimization of production processes as well as easy monitoring of performance and quality.
- Supply-chain management (SCM) automation, which helps companies build a central hub for SCM signals and SCM knowledge that allow autonomous and instantaneous response to crises.
- Maintenance and repair automation, which allows the building of digital twins of hardware, software and firmware combinations deployed to clients and automats planning, staffing and tooling decisions to maximize update and minimal cost.
- Edge device and configuration automation, which helps organizations keep track of upgrades and other changes and automatically generate and test firmware and software releases before uploading them to a device.

Onlim

And we can't close this blog post without saying a few words about Onlim – a valuable Ontotext partner who offers companies automated solutions via AI-based chatbots and voice assistants. Their multi-channel Conversational AI platform was built to create knowledge and provide access to this knowledge in natural language.

Chatbots in Tourism, Public Services and Manufacturing

Using GraphDB as the underlying graph technology, the Conversational AI platform makes it easy for Onlim's customers to ingest large sources of structured and unstructured data in a knowledge graph and build relationships between this data. The factual information is then used to run automated conversations in chatbots or voice assistants.

Onlim's Conversational AI platform allows users to run dialogues, query the knowledge graph for factual information and build natural language answers upon these facts. Some of the use cases include fast and cost effective access to product information in manufacturing, access to tourist information and services, answering any customer service questions in the agricultural sector, etc.

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Epilogue: Knowledge Graphs Want To Be Collaborative

In a world that is growing more and more complex and interconnected, the challenges today's enterprises face are becoming more and more data and knowledge intensive, software vendors, consultants and integrators innovate constantly to be able to keep up and offer efficient solutions.

Knowledge graphs and their applications are the next generation tool for helping enterprises make critical decisions, based on harmonized knowledge models and data derived from siloed source systems. Their building is deeply rooted in the creation of synergies. It is synergies that make for innovative solutions, which are faster to build and more effectively meet business challenges.

Interested to join the ecosystem of Ontotext's partners/become part of Ontotext's ecosystem of partners?

Let's talk!

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