In today's fast-changing environment, enterprises that have transitioned from being focused on applications to becoming data-driven gain a significant competitive edge. This shift of both a technical and an outcome mindset allows them to establish a centralized metadata hub for their data assets and effortlessly access information from diverse systems that previously had limited interaction.

There are four groups of data that are naturally siloed:

- **Structured data** (e.g., names, locations, brands, industry codes, etc.)
- **Knowledge organization** (e.g., internal metadata, industry ontologies, etc.)
- **Transaction and pricing data** (e.g., investments, acquisitions, issued Instruments, etc.)
- **Signals from unstructured content** (e.g., M&A events, role changes, etc.)

Changing the game with knowledge graphs

So how does knowledge graph technology help enterprises in the Financial Services Industry become data-driven?

Let's consider an example of risk and opportunity event detection. In this context, people may be interested to know about:

- some **financial** aspects like portfolio exposure to assets, customers and countries, etc.
- **entity intelligence** like company structures, jurisdictions companies operate in, etc.
- information **about technological risks** like hardware or software changes or failures
- **human factors** like key people leaving the company (good vs. bad leavers)
- **regulatory and political changes** like a new bank holiday, civil unrest, or new sanctions
- **crisis and disaster events**

In our relatively simple example below, the knowledge graph stores assets of all these types. These include information about companies, industries (from business classifications such as NAICS, GICS), assets, people, and locations.

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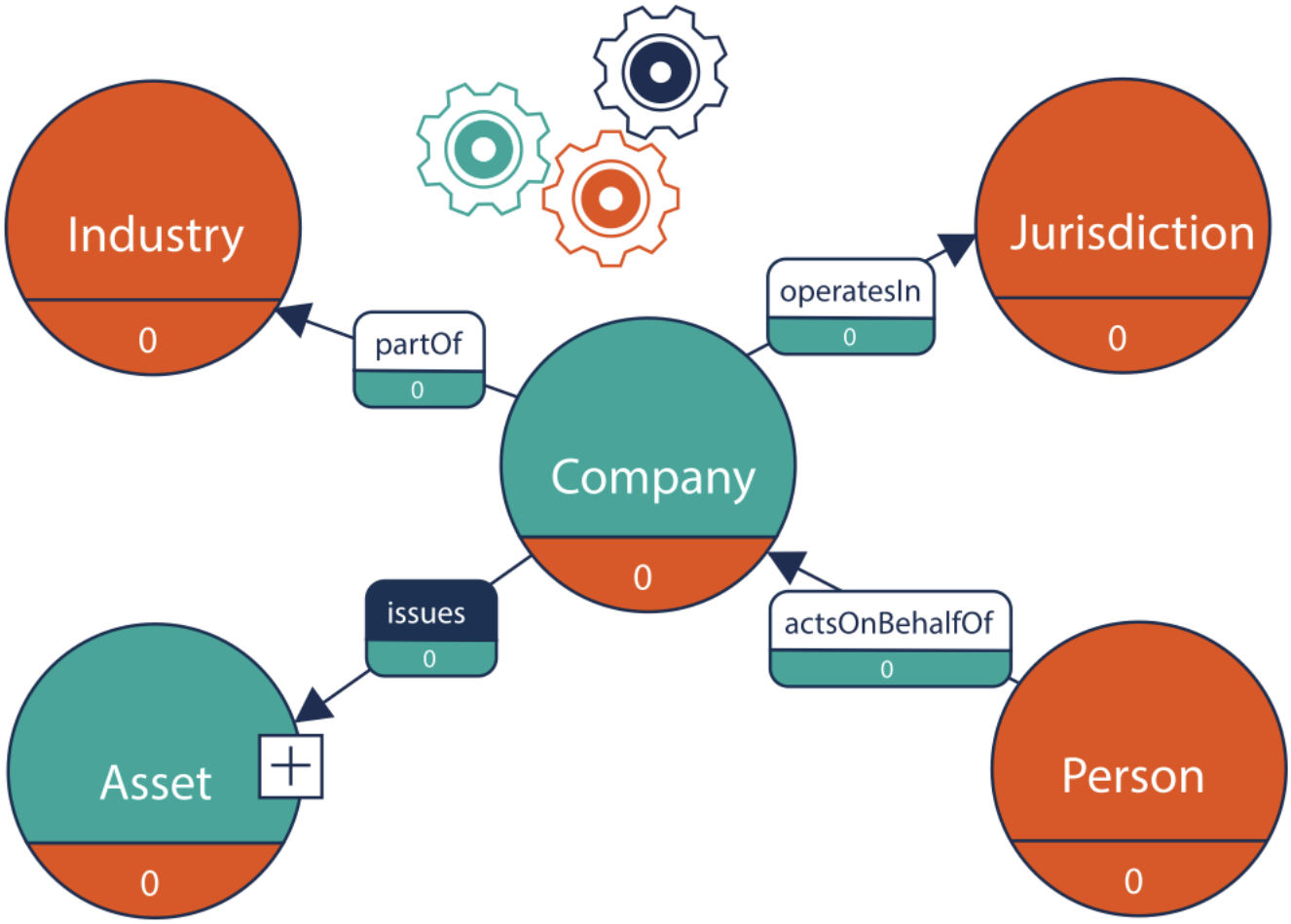

Adding signals from unstructured content

Now we want to enrich this data with signals from unstructured content – in this case, news articles. So we perform large-scale Named Entity Recognition of companies, locations, and people, and we add some topics/events.

The screenshot below shows a piece of news where the annotated concepts are underlined and the annotation types are displayed on the right-hand side (keyphrases, organizations, software, locations, work, people, etc.).

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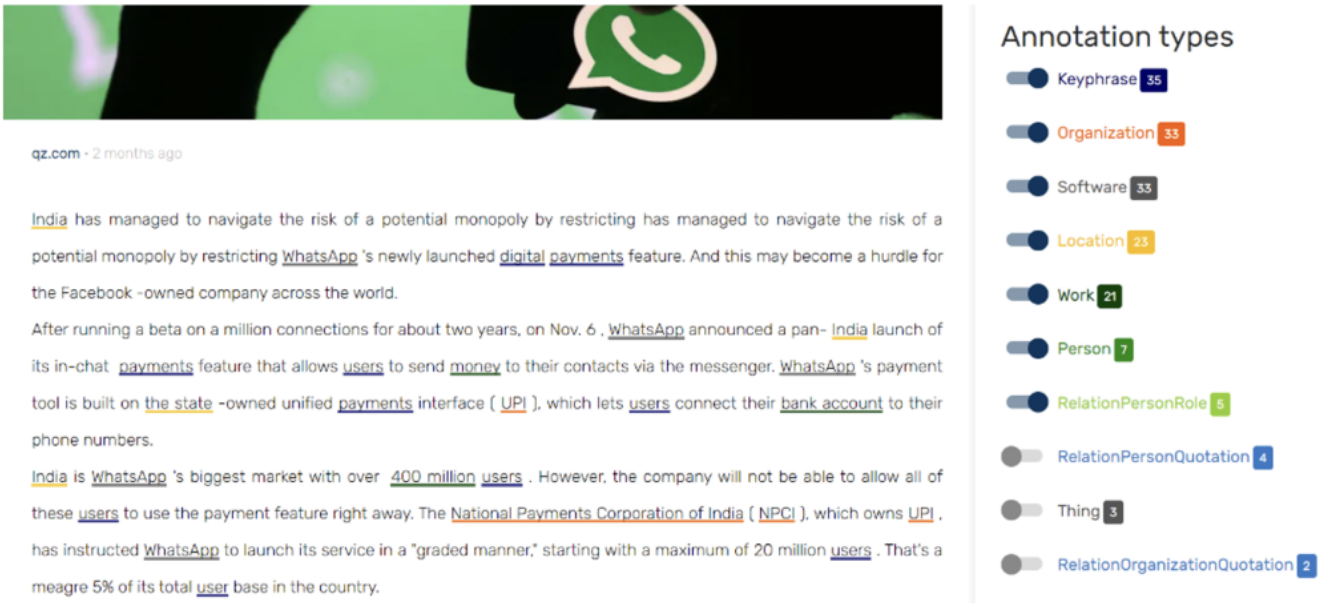

If we only skim over the underlined annotated concepts, we will see what a machine is able to read. But even in this simple example, we are able to ask some important questions as illustrated in the table below.

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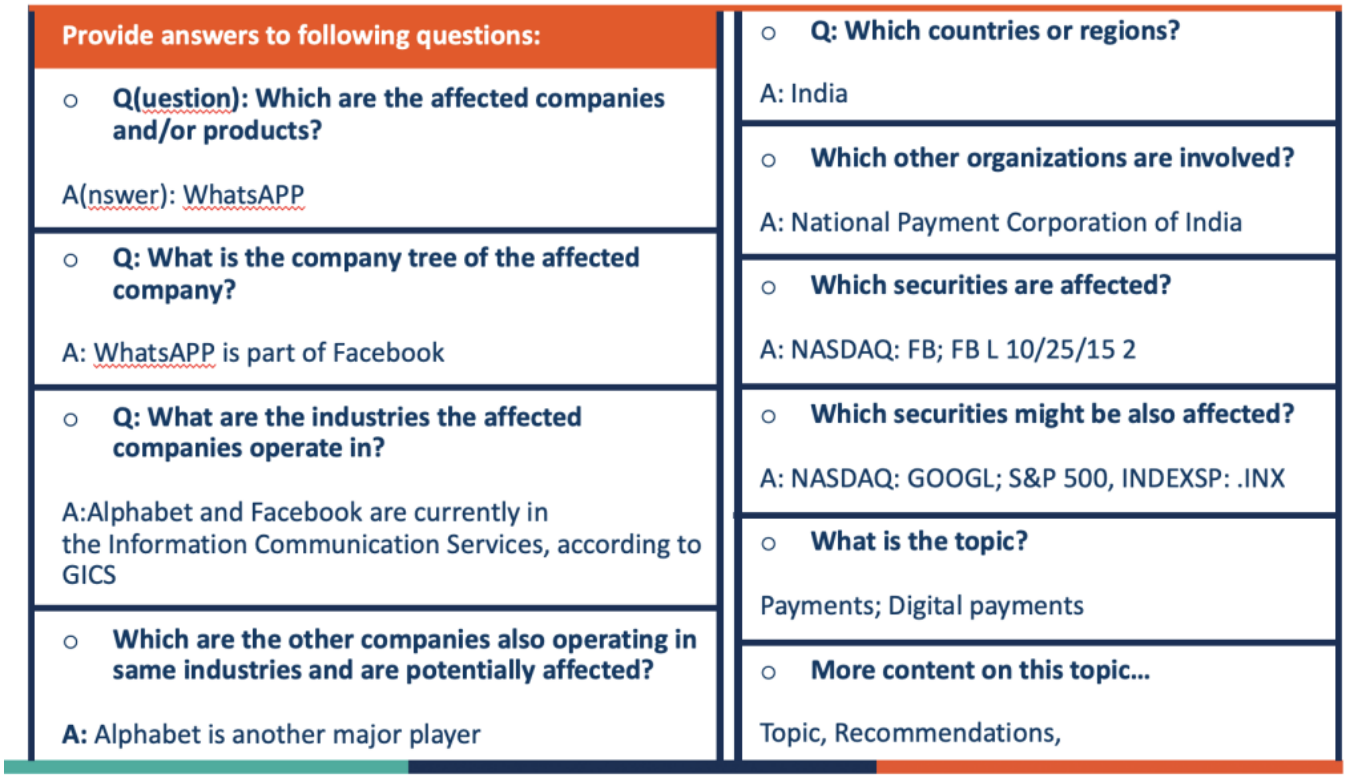

Case studies

The risk and opportunity event detection use case discussed above combines all of Ontotext's capabilities:

- storing and managing large amounts of data
- adding meaning to it (e.g.,, via an ontology)
- extracting signals from unstructured content

Now, let's consider some other use cases in Finance where knowledge graph technology makes a difference.

Connected Inventory

Ontotext's Connected Inventory integrates data from various sources, which enables efficient

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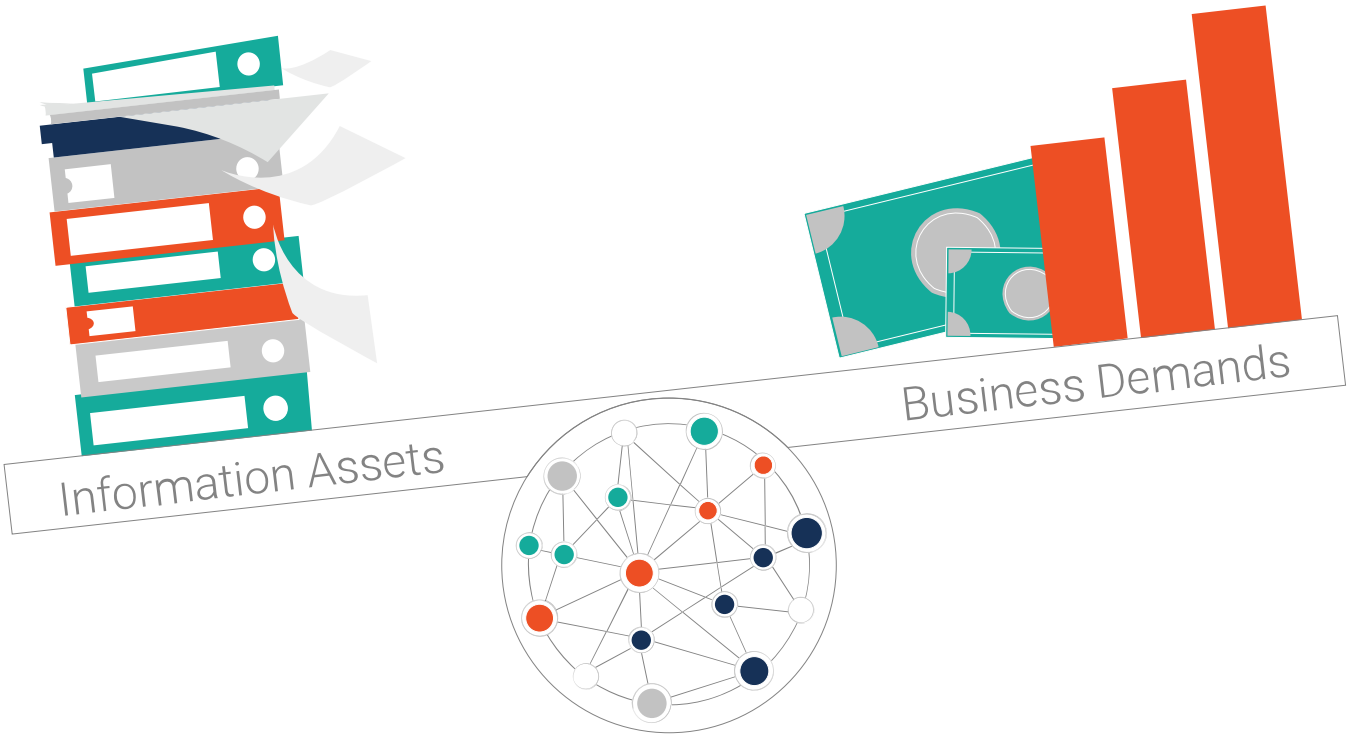
reporting. The visualization and analytical interfaces help enterprises derive valuable business intelligence by connecting business abstractions like products, services, and processes to the technical infrastructure that enables them. It also ensures operational continuity and promotes collaboration through a common dictionary and machine-readable metadata.

The solution brings many business benefits. First of all, it helps bridge the gap between business abstracts and technical realities. By promptly identifying and addressing risks, it enhances operational resiliency and enables proactive risk management. The solution also reduces incident response times, optimizes processes, and streamlines asset management. It provides easy data access for AI applications and fosters the development of new applications within the enterprise.



Market Sentiment Index

The Market Sentiment Index use case is relatively new. The crypto world, for example, is looking for this type of service. All sources of information, all opinions, and volatility in the

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crypto market are simply overwhelming, so these signals have to be reduced to a discreet index.

When powered by a knowledge graph, the solution transforms software tasks into data tasks and enhances the efficiency of data processing and analysis. It incorporates the knowledge of Subject Matter Experts and ensures accurate sentiment measurements. Experimentation with different technical analysis services becomes possible. This ensures optimal decision-making and the ability to adapt to changing market dynamics.

The business benefits here are also significant. Being able to provide a comprehensive understanding of market dynamics through sentiment measurement is crucial. Most importantly, by reducing diverse signals and noise into a discrete value, complex information becomes easier to digest. On top of that, users have an experimentation platform for continuous improvement, offering transparency and explainability when trying to comprehend factors that influence sentiment.

Effective Sanctions

The Sanctions use case is not so exciting, but there has been an increased interest as a result of the Russian invasion in Ukraine. Ontotext's Effective Sanctions solution provides multiple views, reconciliation, and enrichment interfaces, along with data quality checks. It also supports various search paradigms and offers relevancy ranking based on graph centrality.

The solution brings multiple business benefits like enhanced sanctions screening and additional risk signals for associated entities. It makes entity identification easier and enables the creation of data products for publishing and reuse. Users can get detailed views of specific jurisdictions, markets, and risk types and use it as a Rosetta stone-like reference. It also utilizes signals from news and unstructured sources, providing valuable insights for effective compliance.

Actually, as in this case the U.S., the UK, and other countries have imposed their own sanctions, complying with sanctions also depends on the point of view. Consequently, the ability not only to identify unambiguously entities but also any type of relationship between them is essential. One example would be the famous cello player who happened to co-occur in a publication with the President of Russia. This text signal led to the discovery that he was

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a childhood friend of Vladimir Putin, which made him a very risky person for business transactions.

Company Intelligence

In our experience, the Company Intelligence use case has seen substantial interest over the years. It provides the ability to transition from a content to a data vendor.

Ontotext's solution provides valuable insights into South-East Asia and ASEAN. By integrating data from leading company data vendors, we ensure comprehensive and up-to-date information on businesses in the region. Additionally, we gather new information about Asian companies from news sources, allowing users to stay informed about the latest developments. With the unified news and market analysis consumption point it provides, the solution enables easy access to relevant information. Our solution monitors industry trends and offers competitive intelligence signals, empowering businesses to make informed decisions and stay ahead in the market.

From a business perspective, creating a comprehensive database that covers one of the

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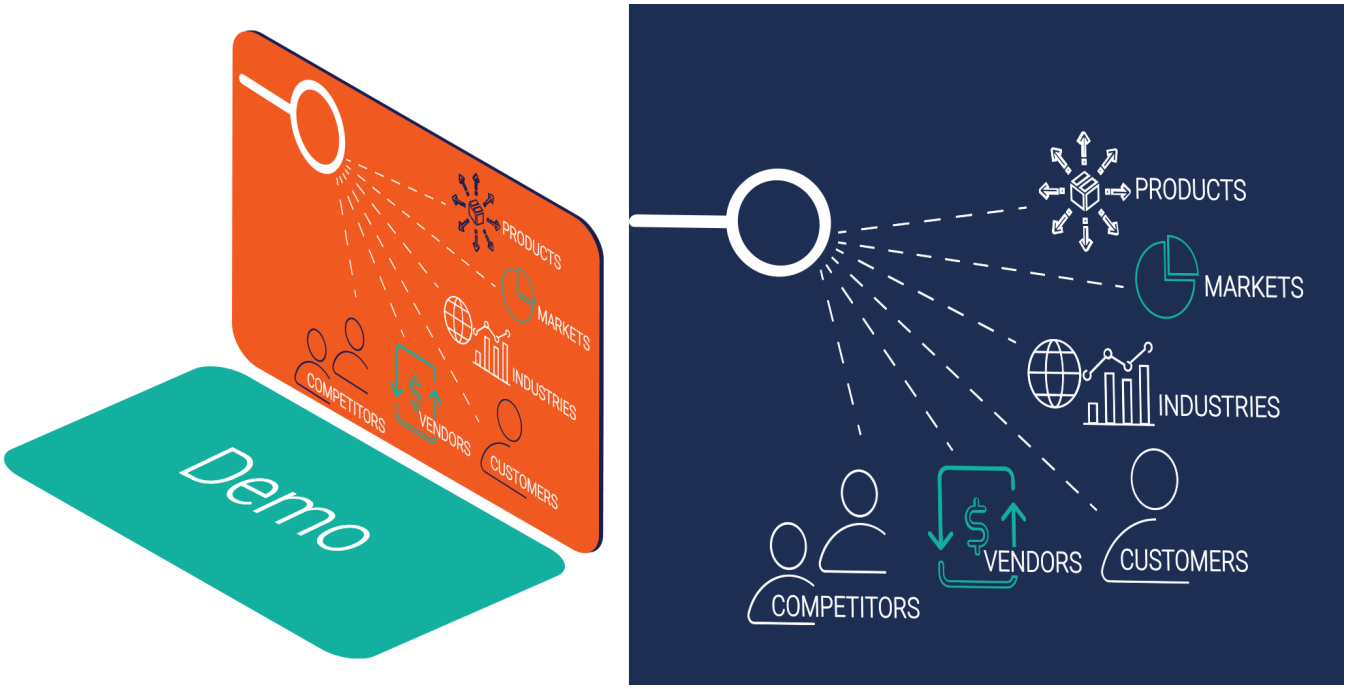
fastest-developing world regions enables enterprises to gain a competitive edge. Ontotext's solution complements known data by providing information about lesser-known private companies, which enhances the depth and breadth of insights. It also increases content monetization opportunities through innovative packaging, reuse, and distribution capabilities. Last but not least, the solution improves personalization, search functionality, and discoverability and allows businesses to efficiently access and leverage the wealth of information at their disposal.



Tagging and Recommendations

The Tagging and Recommendations use case is geared toward traditional content management and enables better asset management, improved user experience, and operational cost reduction. One of our long-time customers has been the Financial Times, but we've also been able to replicate this success story many times.

As a fully managed software service, Ontotext's solution provides seamless and hassle-free implementation and maintenance. It ensures high-quality tagging and utilizes quality-based KPIs to measure the effectiveness and accuracy of the recommendations. By leveraging

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these features, we enable companies to enhance their content discoverability, improve user engagement and deliver personalized recommendations to their audience.

The solution brings many business benefits, including accelerating the transition from a content to a data vendor, increasing user engagement through personalized recommendations, and expanding revenue streams. With optimized operational costs and significant savings in IT and editorial efforts, enterprises can achieve cost efficiency.

Investment Banking Sales and Research Tool

Last in this selection is the Investment Banking Sales and Research use case. Ontotext's tool provides a comprehensive database of companies, acquisitions, investments, partnerships, and alliances. With industry, sector, and hi-tech area classifications, users can easily navigate and analyze specific sectors of interest. The tool also connects internal CRM key account data with public information, which provides a holistic view of client relationships. Incorporating company ecosystems and interfaces for analyzing company structures and capital allocation strategies allows users to get valuable insights for strategic decision-making.

The tool offers various business benefits. It acts as a differentiator from competing M&A advisors and sets the company apart by providing unique capabilities and comprehensive insights. It serves as an accelerator, which enables speed and automation in service delivery and results in faster turnaround times and increased efficiency. By leveraging this tool, enterprises can attract new business, deliver services more rapidly (and at a lower cost) and improve service quality and consistency.

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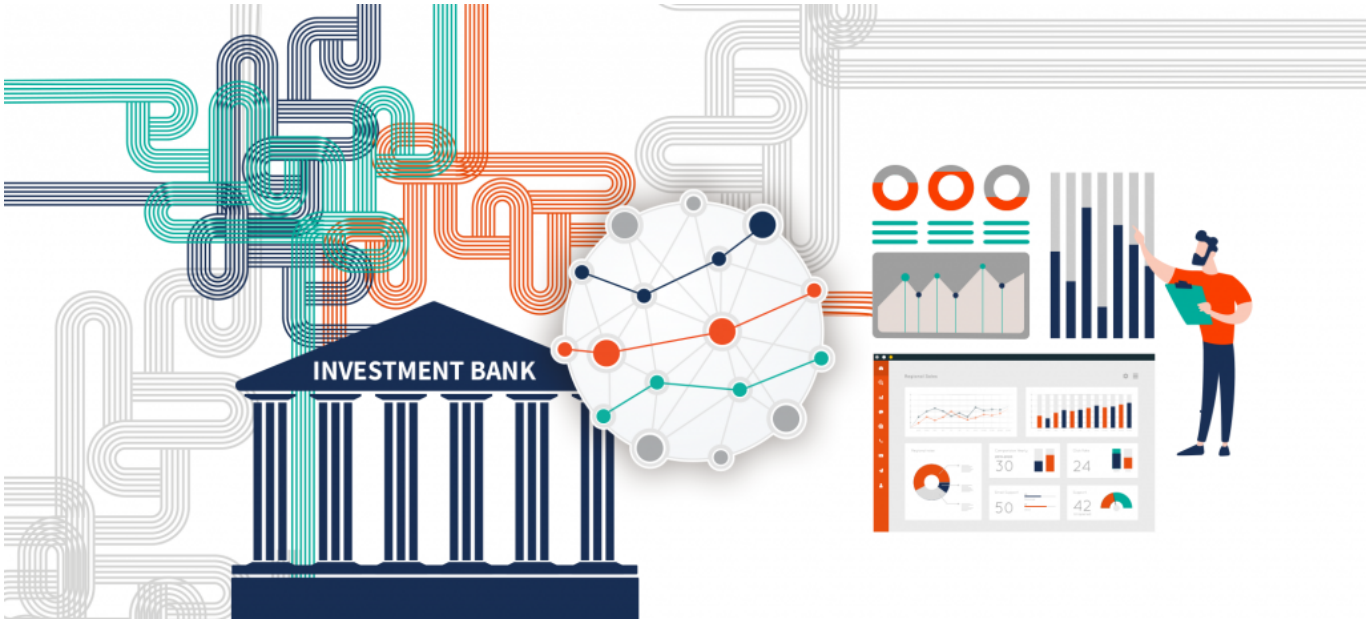

The many-sided benefits of using knowledge graphs

Depending on their role in the company, different people are interested in different types of benefits.

Those who build solutions usually care about capabilities that allow them to design and build robust solutions. Ontotext offers a range of powerful capabilities that cater to these needs. Solution architects can easily discover and identify the key assets of the business. They can structure, unify and standardize meaning and ensure consistency across the enterprise. They can measure both quantitative and qualitative information, analyze insights based on a holistic view of the enterprise and predict risk and opportunity scenarios.

The **people responsible for the operations** are more interested in efficiency. They want to be able to have a consistent view of enterprise assets. For them, standardization is important as it helps ensure compliance with standards and regulations, and minimizes the risk of errors. They want to be able to automate the best practices in the enterprise in order to streamline processes and improve productivity. Scalability allows them to perform on demand at speed and scale. They also need agility and they need compliance in order to avoid vendor lock-in.

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The **finance people** are more focused on the numbers and for them, there are two main categories of interest. The first revolves around cost optimization and includes factors like risk management, time efficiency, reducing repeatable manual efforts, etc. The second pertains to generating new revenue through the addition of fresh and improved monetization strategies for existing information and data assets. This leads to the creation of novel products, services, and innovative ways of conducting business.

Finally, **management** mainly cares about control. Their focus lies in real-time big-picture analysis and drill-down insights. They want to view the key success and failure factors and efficiently analyze performance and return on investment. Management wants to be able to easily audit the company and demonstrate its ongoing compliance with relevant regulations and standards. They prioritize risk identification and the ability to assess the company's capabilities.

To Wrap It Up

In conclusion, knowledge graphs have emerged as a powerful paradigm, revolutionizing the financial industry. They enable analytics of enterprise assets as connected inventory, enhancement of investment decisions as well as market and company intelligence.

These use cases showcase the broad range of applications that knowledge graphs offer to financial institutions. By leveraging the capacity to connect and analyze diverse data, enterprises gain a comprehensive understanding of their operations, market trends, and customer preferences.

Ultimately, the adoption of knowledge graphs enhances the industry's capabilities, allowing financial institutions to make informed decisions, deliver superior analytics and stay ahead in a competitive landscape.

Stay ahead!

Book a Discovery Call

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