At the cusp of a sea-change in the way enterprise data is thought of and acted upon, the knowledge graph talk becomes more and more relevant and participants from a variety of domains enter it on the lookout for solutions to their problems. More often than not, the common thread running through every use case is the question "How do I find the right information at the right time?"

Answering that deceptively trivial question, especially with an enterprise-grade system, requires a non-trivial way of approaching a complex scenario of systems, people and processes and further building a solution to enable their smooth interaction.

And this is where we inevitably enter the world of graph modeling and networked thinking, or as some call it "the quiet cognitive revolution".

Welcome to the world of knowledge graph applications and considerations!

Ontotext's Knowledge Graph Forum 2022: Not Your Usual Experts Talk

This year's KGF22 showed us that it is high time we ditched the narrative about semantic technologies being hard to use, impossible to implement on a large scale and hard to get buy-in from. It was a feast of use cases – Nokia, Zeiss, JP Morgan, IQVIA to mention just a few and almost a week full of lively discussions, exchanged viewpoints and shared good practices.

We heard world-leading experts across key business verticals sharing expertise and experience about knowledge graph capabilities, applications, project requirements and success stories. Showcasing the value of the graph technology for the enterprise, KGF22 held space for more than a thousand participants from 46 countries and 46 speakers of 20 different organizations. They shared expertise and enjoyed fruitful interactions while seeking to find knowledge graphs' sweet spot.

It all started with that sweet spot. The first day of KGF22 (this year a hybrid event) started with our CEO Atanas Kiryakov's welcome talk *"Knowledge Graph Sweet Spots & What Does It Take to Penetrate the Mainstream*". It raised the bar high for the entire 4 days of the forum and our partners stepped up to the challenge.

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Below are some of the highlights and if you want to watch any of the sessions, you can register to browse all the recorded talks and discussions until the end of October.

Day 1: Big Data is Dead Long Live Smart Data

The opening day of KGF22 was a promenade across disciplines. We looked at data patterns design through the perspective of a book on architecture called “A Pattern Language: Towns, Buildings, Construction”, published back in 1977.

We learn about the different skillsets needed for a knowledge graph project to be successful, where among other data skills, developer empathy and love for words popped up. The topic of low-code knowledge graph development also found its way in the presentations list and finally we enjoyed a rich discussion about the state of knowledge graphs from key experts and long-term graph enthusiasts in the domain.

The Magic of Knowledge Graphs

How do you add semantics, interoperability and standards to enterprise data? How does the knowledge graph magic work? How is RDF better than any other data management paradigm?

With these one-million-dollar questions, Atanas Kiryakov welcomed us to the event. And it took only a slide or two to get the answers.

We got Ontotext’s recipe for knowledge graphs: Link data for context, add a pinch of semantics, insert a semantic data model.

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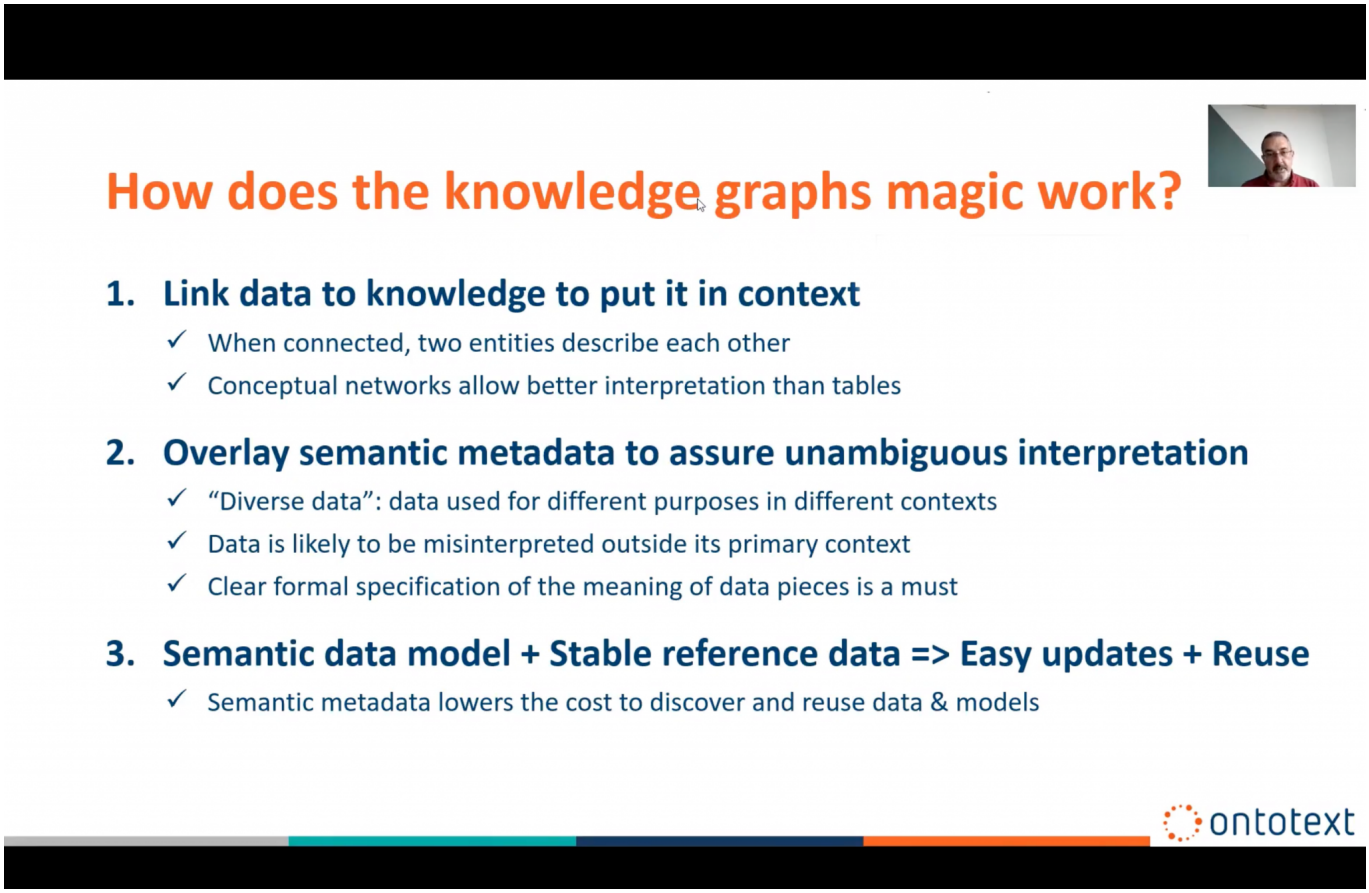

Atanas Kiryakov's take on how the knowledge graph magic works

We then got to navigate the knowledge graph capabilities and applications**,** together with the partner's network, without which none of this wouldn't work.

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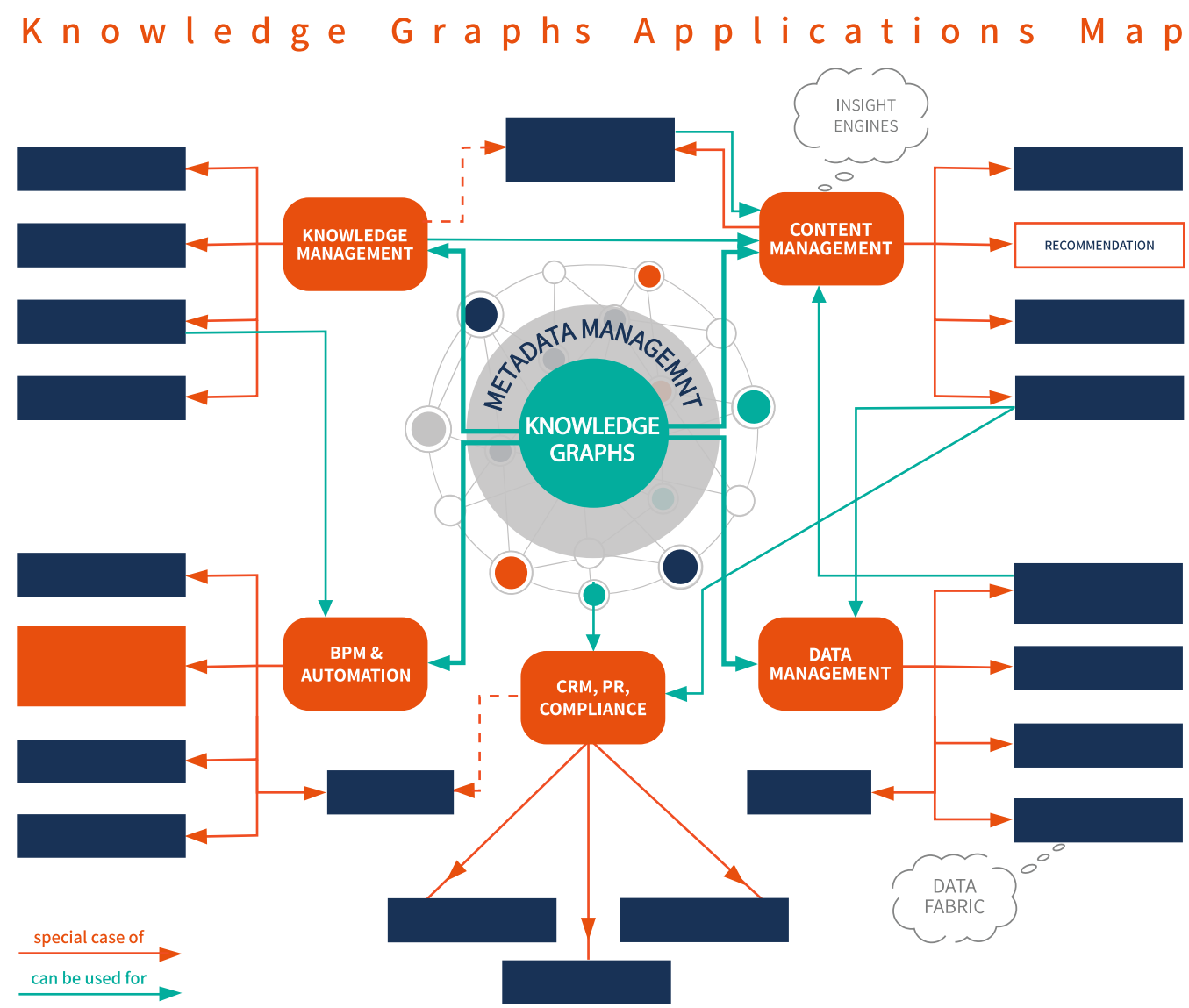

Design Patterns for Smart Data

Atanas then passed the baton to our CTO Vassil Momtchev who talked about Ontotext's portfolio as well as GraphDB's data integration patterns.

Before jumping to the portfolio, we had to do something important – acknowledge the death of the 'Big Data" concept and the misconceptions and missteps in enterprise data

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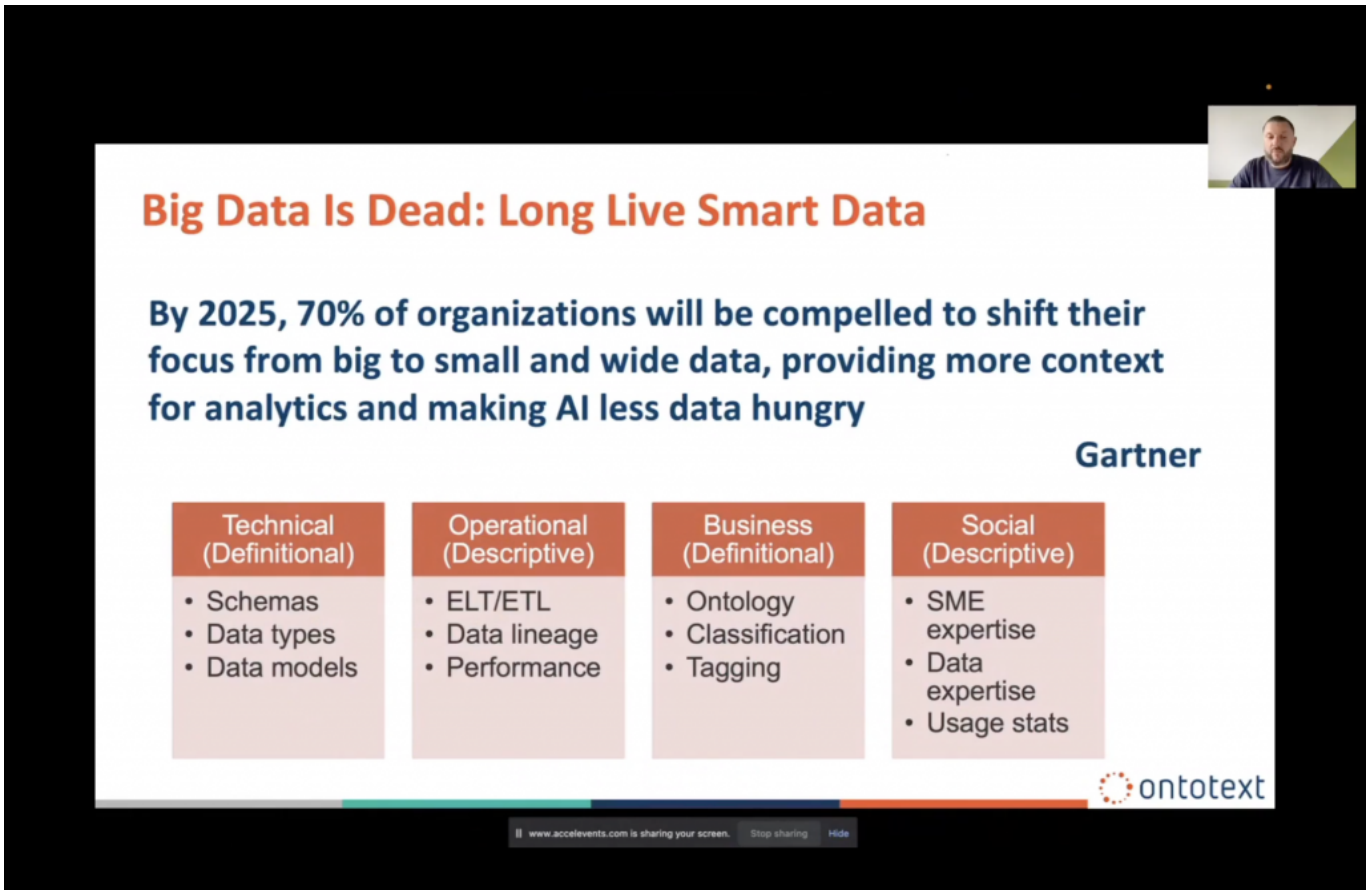
management that have followed from that fuzzy notion.



Vassil Momchev on the notion of Big Data and the need to use Smart Data instead

Having debunked the Big Data myth and unrealistic expectations, Vassil talked about smart data and the smart questions and answers it can power when put in a knowledge graph. He then presented the processes and pipelines related to smart data and knowledge graphs.

In his next presentation “Data Integration Patterns in Knowledge Graph Building with GraphDB”, Vassil talked about the design patterns GraphDB users can follow. Smart data lives in RDF databases like GraphDB and these patterns may be used independently or as a set of patterns by anyone interested in making smart data.

1. Load (L)

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2. Extract Transform Load (ETL)
3. Extract Load Transform (ELT)
4. Extract Transform Load Transform (ETLT)
5. Upstream Replication (UR)
6. Downstream Replication (DR)
7. Data Virtualization (DV)

GraphDB Just Got More Interactive

Along with the ways we can use GraphDB, we got to see a hands-on session of how GraphDB works with Pavel Mihaylov, GraphDB Product Manager at Ontotext.

In his mini tutorial “GraphDB 10.2 – an Easy Ride for the Beginner or the Seasoned Veteran”, Pavel presented some of the perks the new version of GraphDB holds for us. He walked us through an interactive guide of the UX and showed some new tools for the veteran users to work smarter and more happily.

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Knowledge Wants To Be Democratized

In line with the narrative of empowering people to work smarter not harder, we also heard how our partner metaphacts works towards making knowledge more accessible. Kai Preuss, Solution & Sales Director at metaphacts, gave a talk “Power to the People: Knowledge Democratization in the Enterprise” where he talked about capturing and formalizing SME expertise over semantic models. He also explained about building an end-to-end knowledge democratization platform that supports customers in semantically modeling and capturing explicit, domain-specific knowledge.

One of the most powerful slides of his presentation was the one with the overarching theme of knowledge as interaction, which is generally a vision for semantic modeling.

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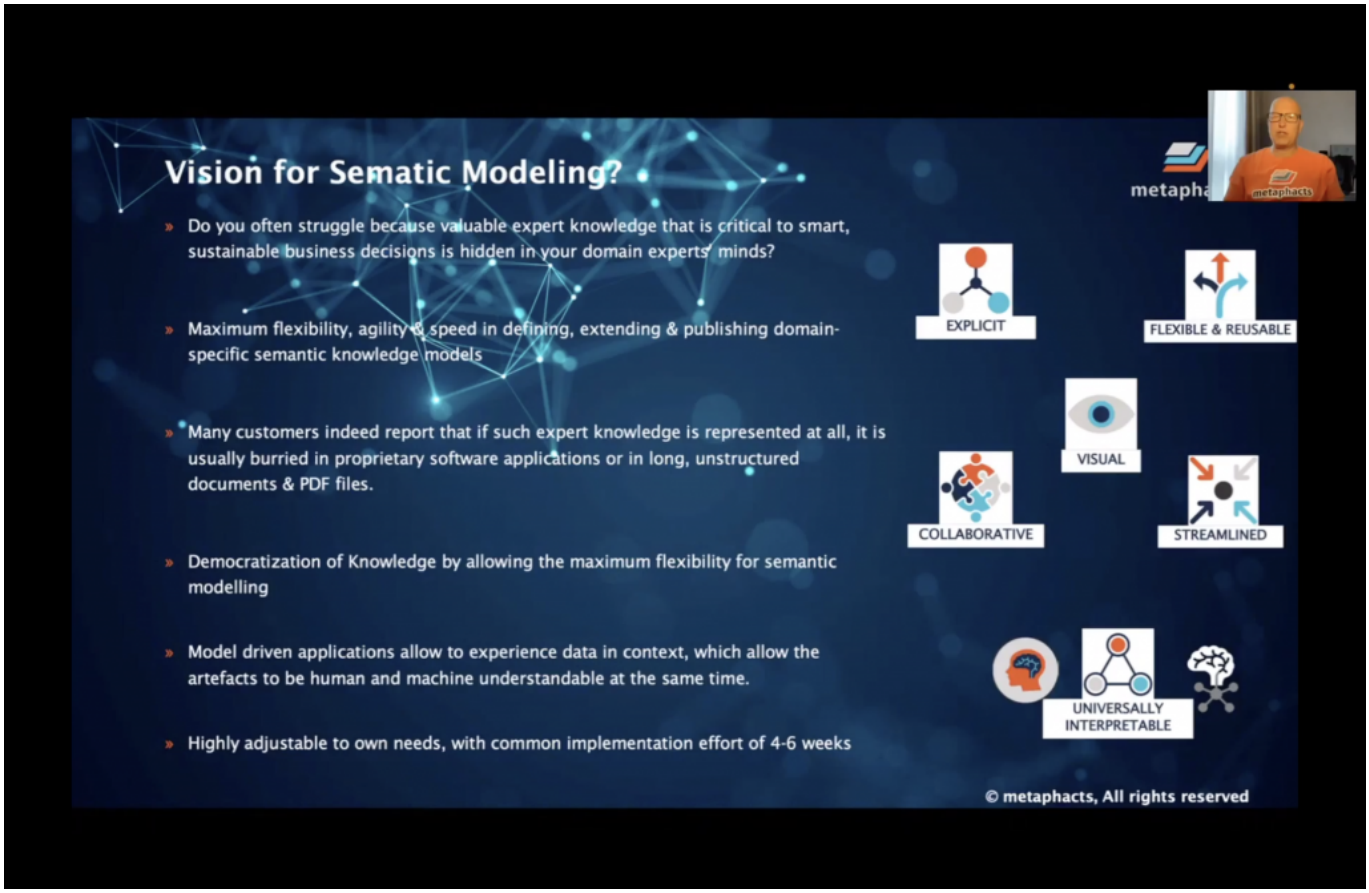

The vision (and benefits) behind SEMANTIC Modelling: Empowering Stakeholders to interact and ACT Upon information!

After the theoretical half, Kai continued with a demo about an automotive ontology – a simple semantic model for describing car models.

Knowledge Graphs, Developers Empathy and the Love for Words

That spectacular Day 1 ended as spectacularly: with fireworks of insight from Kurt Cagle (Managing Editor at DataScienceCentral.com), Ashleigh Faith (Director, Knowledge Graph, Semantic Search, and MLAI at EBSCO Information Services), Joseph Hilger (Chief Operating Officer at Enterprise Knowledge), Juan Sequeda (Principal Scientist at Data.World) and Atanas Kiryakov, CEO at Ontotext.

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Led by Joe Hilger from Enterprise Knowledge, who introduced himself as a “passionate long term graph person”, the panel was not your usual experts discussion. It was a deep talk about the rationale behind knowledge graphs, their flavors and the processes related to implementing them. It also covered the needed skillset and mindset and, most importantly, leadership acumen to conceive, build and sustain them in a data-centric way.

The panel of knowledge graph experts and passionate graph database lovers. This is the moment where Atanas Kiryakov joined to defend the semantic web knowledge graph path and further had a little sparring debate with Juan Sequeda on the need to educate the clients on the differences between an LPG and a knowledge graph done the semantic data modelling way.

One of the questions that the panel touched again and again was asked by Marc Medjad: “Knowledge graphs seem not to be widely used by companies. What are the obstacles?” In

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response, Ashley shared: “I would say the “multiple forever POS” is a big issue now.” To which Juan added that “the reason might be the lack of good balance between efficiency and resilience, meaning there could be more leaders incentivized to be efficient and less leaders, incentivized to be resilient.”

Juan also cited the philosopher Ludwig Wittgenstein and his “The limits of my language are the limits of my world”. A quote that is also used in Juan’s book Designing and Building Enterprise Knowledge Graphs to bring home the point that although graphs are an intuitive and natural way to model the world, graph databases are different from the traditional ways and the language of relational databases is still pervading (and in that sense limiting) the enterprise when it comes to modeling and managing data.

A good knowledge graph is an integration engine - Kurt Cagle Share on X

Another question came from Michael Lane: “What are 3-4 top skills desired, or required for knowledge engineers?” This also bought insightful and useful perspectives. According to Ashley: “Somebody who is really curious. Unleashing the skillset – the data therapy session – understanding how your data speaks to your business problem. This is so important to be able to model well.”

For Juan it was “Curiosity and empathy plus data modeling, knowledge representation, logic, business literacy.” And for Kurt Cagle it was the love for words. “You have to like words”, he said, “as the project will eventually come to a stage where you will need to agree upon what is the language that the enterprise uses to describe itself.”

Epilogue

Day 1 made it particularly evident that an increasing number of big players work towards making their data smart using a variety of data integration approaches and design patterns combined with graph databases. And while challenges to the use of standard, interoperable data and the semantic technologies related to it persist, there are plenty of opportunities laying ahead on the road to smart data.

We also saw that there is a change underway not only in the way data is managed, but also in the way the people and processes related to its management perceive its value in the

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long-term. This change in the perception and the practices related to using knowledge graphs to solve problems across numerous business verticals is what the next three days of the KGF22 were dedicated to.

If you missed the party, it’s not too late.

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