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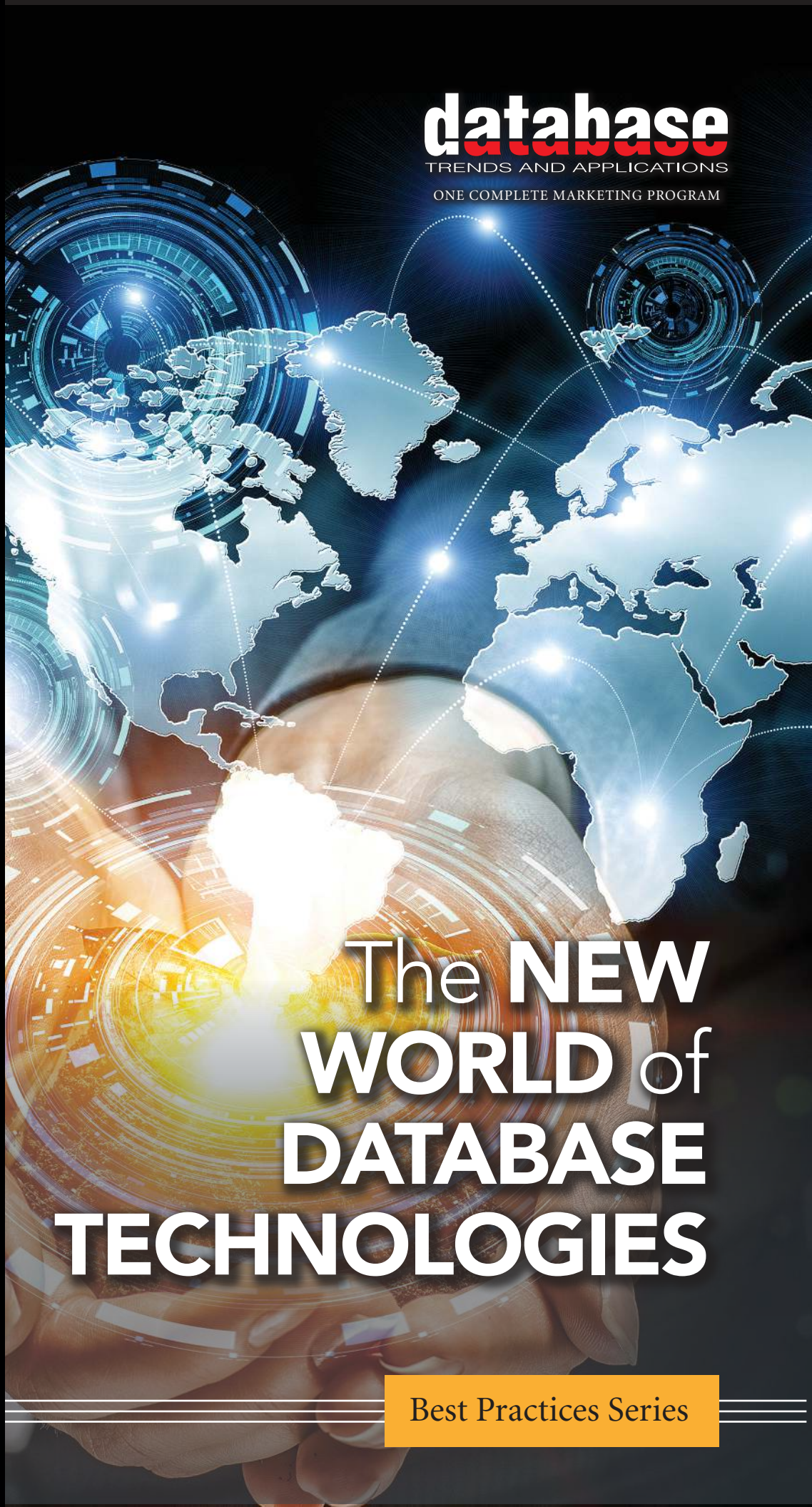
AI KNOWLEDGE GRAPH SOLUTIONS: FRANZ INC.



database

TRENDS AND APPLICATIONS

ONE COMPLETE MARKETING PROGRAM

The NEW WORLD of DATABASE TECHNOLOGIES

Best Practices Series

Entering the NEW WORLD of DATABASE TECHNOLOGIES

Best Practices Series

IT'S NATURAL THAT database technologies go through changes from year to year, reflecting the capabilities of more robust server processers, faster and more efficient storage, and more intelligent applications. In recent times, however, the pace of progress has accelerated—opening up an impressive array of options for enterprises. These improvements are springing from technologies themselves and are also affecting the way enterprises manage and leverage their data assets.

To make the most of this new world of database technologies, enterprise and database managers need to be open to the array of possibilities and be prepared to take advantage of the opportunities that are presented. Here are the key best practices emerging within this new world:

1. EMBRACE AUTOMATION

Automation has always been part and parcel of the enterprise data environment, assisting DBAs with routine tasks such as managing backup windows. Now, we're reaching a stage in which databases may be self-sustaining, and even self-healing, in the manner of an embedded database. Vendors recognize this, making autonomous databases a staple in today's market. Today's database systems now deliver bots that identify and remediate security issues, for example. Vendors are building AI and machine learning into databases, intending to make them simple enough for a non-technical business user. As a result, the jobs of DBAs and IT professionals will be elevated as enterprises move to more autonomous, cloud-based environments.

2. LEARN WHAT AI AND MACHINE LEARNING CAN DELIVER

AI—often referred to as AIOps—is taking on the daily tasks for provisioning databases. Among data managers in a recent Unisphere Research survey, there is quite a bit of enthusiasm for this higher level of automation. Currently, 48% are using the technology—up from 25% in a similar survey conducted a year ago. Machine learning has become valuable as companies are dealing with vast and rapidly growing volumes of data and the associated challenges of finding value and drawing insights from that data. The appeal with machine learning is that the algorithms do the heavy lifting of figuring out what data matters ("Profiling the Data-Driven Business, 2019," Unisphere Research, a division of Information Today, Inc.).

3. LOOK TO THE CLOUD

The deployment of cloud-based data—and entire databases—continues on the upswing. The use of public cloud services is growing. There has been a noticeable rise in cloud computing adoption among database teams, a recent survey by Unisphere Research

finds. Forty-one percent report having cloud in production at scale or in limited use, up from 33% in a similar survey conducted in 2016. One-third report their use of cloud is growing, with 20% reporting their cloud growth as "significant"—again, a rise over the previous survey. Cloud services offer a range of capabilities, from backup and recovery to managing large datasets. Importantly, as well, cloud provides the adaptability that enables the business to quickly shift to new products and markets ("2018 IOUG Data Environment Expansion Survey," Unisphere Research).

4. GET REAL WITH REAL TIME

AI, in its many forms, delivers subsecond responses to production workflows, customer inquiries, and machine-to-machine messaging. In addition, the Internet of Things is becoming an essential network to tracking and servicing products and installations—remediating issues and streaming data as it's generated. Increasingly, enterprises are demanding real-time capabilities from their database teams, and the teams are responding. Close to half of the enterprises in the Unisphere survey on the data-driven business indicate they are aggressively planning for real-time data capabilities to further enhance their data platforms. Forty-nine percent see real-time (subsecond) analytics, not just real-time ingestion, as a vital piece of their data platform planning The biggest use cases for real-time data requirements include the more timely delivery of reports or dashboards, as well as ensuring real-time data feeds to decision engines.

5. EXTEND SELF-SERVICE

There is a strong emphasis today on enabling end users to avoid requesting reports and functions from their IT departments. In a survey of enterprises conducted by Unisphere Research in 2017, it was found at least 76% of executives indicate that at least some portion of their applications were developed outside of their traditional IT department or IT service. A majority, 54%, turn to open source software as their first choice in building and supporting their self-built applications. AI and cloud are increasingly abstracting away the complexity of underlying infrastructures and data schemas, enabling users with less training or expertise to take advantage of database-driven services, from forming queries to integrating back-end sources on demand. A new generation of low-code platforms is allowing non-IT staff to take greater advantage of the data and IT resources that have been previously locked away within their enterprises ("The Rise of the Empowered Citizen Developer: 2017 Low-Code Adoption Survey," Unisphere Research).

This new world of technologies—combined with new ways of looking at the vast resource data offers—means a wealth of opportunities for not only growth in database environments, but also the growth of career for data managers. ■

—Joe McKendrick

AI Knowledge Graph Solutions: Franz Inc.

Gartner recently identified Knowledge Graphs as a key new technology in both their Hype Cycle for Artificial Intelligence and Hype Cycle for Emerging Technologies. Gartner's Hype Cycle for Artificial Intelligence (AI) states: "The rising role of content and context for delivering insights with AI technologies, as well as recent knowledge graph offerings for AI applications have pulled knowledge graphs to the surface."

These days, AI is one of the top investment areas for companies looking to improve ROI on operations, products, and create Customer 360 views. Using AI to create "Enterprise Knowledge" and link it across the Enterprise to create a "Knowledge Graph" is a key differentiator for companies in an increasingly competitive landscape. The foundation for Knowledge Graphs and AI lies in the facets of semantic technology provided by Franz's AllegroGraph database. Semantic Graph databases, such as AllegroGraph, provide the core technology environment to enrich and contextualize the understanding of data. The ability to rapidly integrate new knowledge is the crux of the Knowledge Graph and depends entirely on semantic technologies

KNOWLEDGE GRAPHS AND AI

An early innovator in AI, Franz Inc. is a leading supplier of Knowledge Graph solutions. The firm's scalable AI-focused products provide the capabilities for these new Enterprise Knowledge Graph solutions. With the goal of providing infrastructure for a new level of data integration and application interoperability, Franz Inc. is well-positioned to unleash the potential of Knowledge Graphs for a wide range of industries.

ALLEGROGRAPH

AllegroGraph is a multi-model database technology that enables businesses to extract sophisticated decision insights and predictive analytics from highly complex, distributed data that cannot be uncovered with conventional databases. Unlike traditional relational databases or NoSQL document databases, AllegroGraph employs Semantic Graph technologies that process data with contextual and conceptual intelligence. AllegroGraph is able to run queries of unprecedented complexity to support predictive analytics that help organizations make more informed, real-time decisions.

AllegroGraph significantly enhances the document database model with its native support for JSON and JSON-LD. Knowledge Graphs can leverage JSON-LD to swiftly integrate with web-based applications. Organizations can therefore link specific information in their internal Knowledge Graphs (e.g., pertaining to customers or products) to web applications for timely action such as recommendations. JSON-LD provides a way to create a network of standards-based, machine-readable data across web sites.

INDUSTRY-LEADING DATA SECURITY

Semantic Graph databases store their data in the W3C standards-based Resource Description Framework (RDF). These are commonly known as "triples" or "quads." Each node-link-node combination that forms the graph is stored in these standards-compliant "triples." Franz Inc. recently announced an industry-leading security feature, AllegroGraph Triple Attributes. This unique feature provides metadata for each individual triple. Triple Attributes provide the linking and discovery power of Graph Databases with the security of need-to-know access. This approach has the flexibility to implement HIPAA restrictions for the healthcare industry, the privacy rules for the financial industry, and the government models and policies for classified information.

"Triple attributes in AllegroGraph add a significant and complementary dimension to the RDF data model," said Dr. Parsa Mirhaji, Director of Center for Health Data Innovations at the Albert Einstein College of Medicine and Montefiore Medical Center. "It extends property graphs to support an entirely new array of use-cases and functionalities that were not possible before, but most importantly enables implementation of fine grained security built directly into the storage layer."

Originally initiated for government-level data security, the design of the Triple Attributes feature goes well beyond security. Triple Attributes can be implemented for such diverse data analytics domains as AI truth maintenance systems, atmospheric observations to better understand real-world events like crop yields, or storing blockchain hashes and ICO public keys for KYC applications and analytics.

KNOWLEDGE GRAPH CONSULTING

Franz provides a variety of services as part of its Knowledge Graph solution, from architectural consulting and technical seminars to training. The firm's flagship product, AllegroGraph, provides the necessary power and flexibility to address high-security data environments such as HIPAA access controls, privacy rules for banks, and security models for policing, intelligence, and government. If you really want to develop your corporate Knowledge Graph and address complex AI problems, you need a data system that goes beyond just data. You have to create a system that can link to anything outside your own predefined parameters—and that can learn from previous experiences. That is where a Semantic Graph Database, like AllegroGraph, comes into the picture. ■

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