

How to Futureproof Data Management Strategy to Prioritize Change Data

Today's business environment places a premium on change data. Change data informs direction, velocity, and momentum to help enterprises adapt, respond, and ultimately, thrive. Enterprises are trending towards self-defining messages and data repositories because they can support massive analysis, and by extension, insights. With the help of artificial intelligence (AI) and machine learning (ML), change data allows companies to identify meaningful patterns of use that translate to proactive, strategic business decisions.

Ultimately, self-defining messages break down dependency on databases because they don't rely on SQL to structure information. While databases and database vendors still play an important role, the increasing value of change data reveals the shortcomings of a stagnant data management strategy.

Here, we'll cover the importance of futureproofing your data ecosystem and illustrate data management and data messaging structure options that accommodate new tools and technologies.

FUTUREPROOFING DATA MANAGEMENT STRATEGY

With outdated systems, companies reach the limits of data analysis, and it's much harder to proactively respond to dynamic market conditions, deliver innovative products and services, and maintain customer satisfaction. In data management, futureproofing calls for agile architecture with loosely coupled software components. In short, futureproofing means anticipating change. For some enterprises, the idea of change evokes pain—high costs, long timelines, potential data loss, and upskilling.

Here are a few key opportunities to build reliability and versatility into your data management strategy while avoiding these pains:

Avoid Vendor Lock-In

Vendor lock-in occurs when an enterprise sticks with a product or service designed by one vendor, regardless of quality, because it's difficult or not financially viable to change partners. By minimizing competition, vendors can increase costs and de-prioritize innovation. In this case, the organization must wait for their vendor to implement emerging technologies. When innovation is not incentivized, it's more common for vendors to avoid costly technology updates. The consequences fall on the enterprise; when they can't move fast enough, nimble competitors pull ahead.

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The goal of moving data into storage repositories like delta lakes is to be able to leverage AI/ML to uncover more meaningful insights. If an enterprise is locked into a legacy database solution that cannot accommodate AI/ML applications, there's a strong chance of losing market share to a nimble competitor. Across industries, there are countless examples of companies that have revolutionized the status quo by moving a process or action online. Others have watched a competitor beat them with a better platform.

Implementing a data replication solution that is vendor-agnostic breaks down data management dependency and ensures that data can be used anywhere, regardless of where it originated. When a database vendor provides pipeline infrastructure, there is less room for innovative use.

Embrace Open-Standards Technology

By nature, open standards are additive. For example, networking is based on Transmission Control Protocol/Internet Protocol (TCP/IP). Three decades ago, TCP/IP was an emerging technology, and there were many other protocols for data communications, but TCP/IP became the foundation for web-based applications that use the Hypertext Transfer Protocol (HTTP). TCP/IP, an open standards protocol, replaced proprietary technologies like IBM SNA that were more hierarchical and rigid.

Today, [Hadoop](#) and [MongoDB](#) are displacing proprietary storage systems from IBM, Microsoft, and Oracle. Similarly, delta lakes are a product of earlier innovations in file systems. Open standards encourage this kind of innovation. These frameworks are the foundation for new, evolving standards and even some vendor-specific solutions. Vendor lock-in is still possible with an open-standards foundation, but these technologies promote longevity by accommodating vendor agnostic approaches and adapting to meet emerging requirements as technologies mature.

Seek Vendor-Supported Compatibility

A collaborative data replication partner accommodates the evolution of data management strategy by connecting open-standard and proprietary technologies. Adopting a multi-cloud or multi-platform approach is yet another futureproofing method. However, for effective implementation, that strategy requires a data replication partner that can execute around proprietary technologies too. For example, Stelo can extend limited-use licenses that leverage Oracle's proprietary technology, [XStream](#), to efficiently connect a client's database and avoid costly, time-intensive reverse engineering.

Consider Elastic Storage Repositories Like Delta Lakes

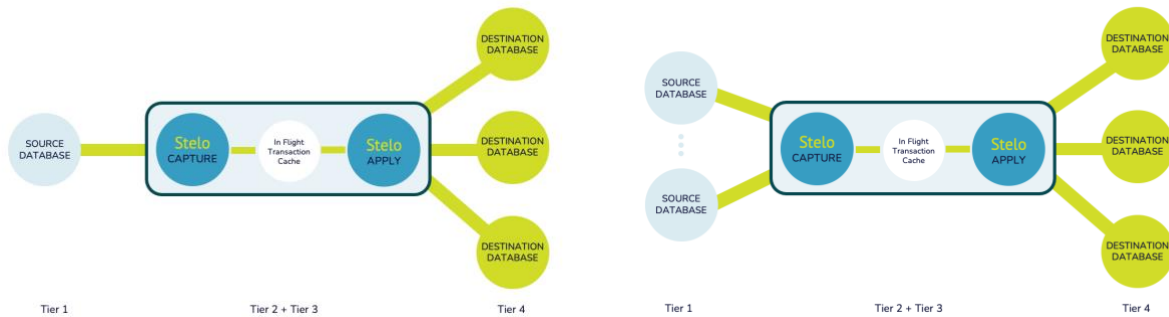
For greater efficiency, enterprises are moving away from databases and adopting data repositories that are inherently self-defining. For non-SQL destinations, switching from a language-oriented interface (i.e., ODBC) to a message-oriented mechanism (i.e., Kafka) and changing the underlying transport methodology results in an order of magnitude improvement in message delivery time. Software solutions that enable data

denormalization are a key component of a delta lakes strategy. Elastic storage repositories are a flexible option that allows change data to reach its destination faster, so it can become meaningful faster.

DATA MANAGEMENT AND DATA MESSAGING PROTOCOLS

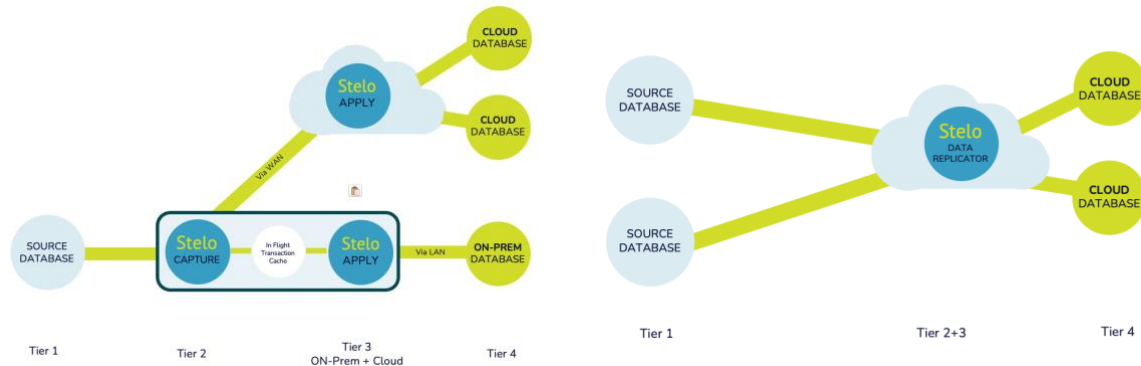
The Stelo team has more than 30 years of experience in creating, deploying, and supporting near real-time data syncing and replication. With the use of open standards, a wide breadth of supported sources and targets, and scalable deployment, we've found ourselves to be an agile partner in futureproofing efforts.

With Stelo, enterprises are encouraged to add new replication endpoints or reroute data wherever it makes sense. If there's no increase in the amount of data, there shouldn't be additional investments. Costs are based on usage, not technology pairs, so a single instance supports unlimited source and destination connections for flexible deployment. To scale or meet the ebb and flow of demand, enterprises have access to rapid, flexible deployment models.



One-to-many (left) and many-to-many (right) Stelo deployment models

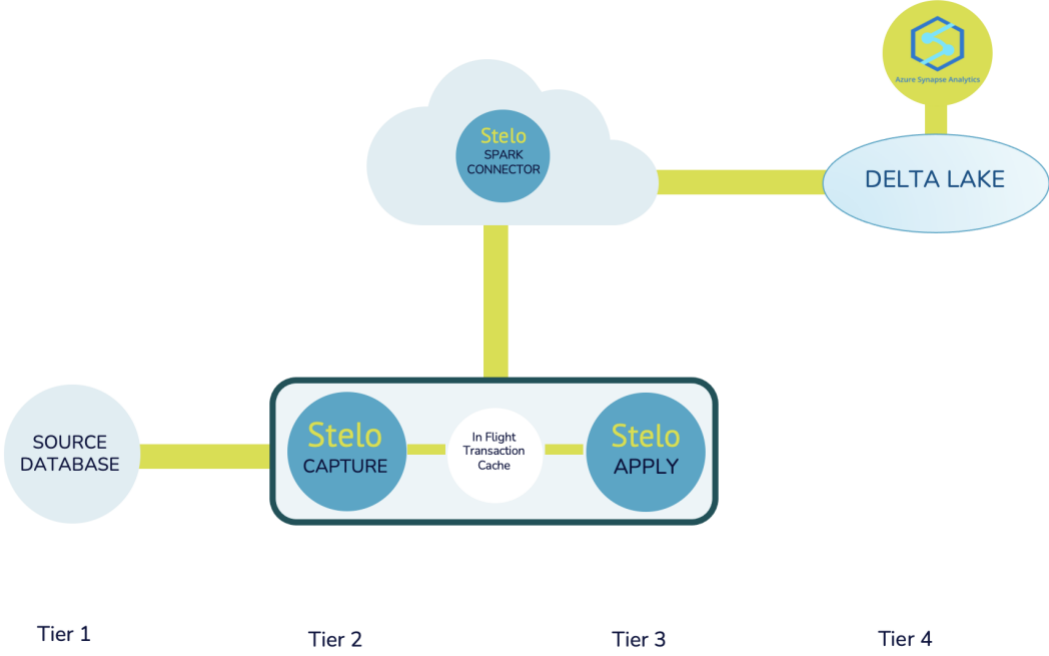
Stelo also supports enterprises looking to evolve their data management strategies by supporting heterogeneous replication using relational, cloud, and non-relational databases.



Cloud + On-Prem (left) and Stelo Cloud (right) deployment models

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Support for heterogeneous replication also means that Stelo can pull data from any open database connectivity (ODBC) source for use in delta lake tools. Stelo recently released V6.1 of our data replication technology. As part of this release, we added support for many non-SQL, non-relational repositories using Kafka, and we expect V6.2 to support even more.



Stelo's delta lakes deployment model

With V6.1, Stelo continues to support SQL-92-based relational destinations because we've honed the use of ODBC, the most widely implemented technology for RDBMS, to access and maintain existing data warehouses. While we acknowledge the immense value that new technologies offer, our goal is to preserve current technology investments while providing the flexibility to evolve. Online transaction processing is done using relational databases, but once those transactions have occurred, change data helps data scientists analyze them in a meaningful way. In this case, it's not a matter of replacing technologies, it's a matter of adding.

Data only holds weight when it's accurate and actionable—always. Stelo V6.1 was designed to help enterprises future-proof their systems with open-source infrastructure and flexible deployment to meet data analysis needs today and farther down the road. For more information on Stelo V6.1, visit our website or schedule a demo.