dataSense

Unleashing the Potential of Your Data: Empowering Data Leaders as Catalysts for Change

Understanding how dataSense can help you to manage and extract value from your data to drive your organisation forward.

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Data - the key to your business success

You cannot avoid reading about data and how it will inevitably be at the centre of every initiative to drive your business forward. The importance of data is ever increasing as organisations invest in their data strategies, but the majority of data projects are still failing[1,2]. According to Nick Heudecker, at Gartner, over 85% of data science projects fail.

If data is the centre of every initiative, then why are projects failing to deliver their promise. A common thread emerges from researching the failures, the data foundation is not always in place, there is a lack of - data governance, data literacy and data awareness. The approach and thinking has to change if we want to be more successful.

You must become data literate to enable a data strategy which will enable successful data driven projects.

The approach needs to change

Many projects are using the same approach by just changing the technology, and this is not working; technology is an enabler but if the approach is flawed then the likelihood of failure is high. In a McKinsey and company survey – 86 percent of respondents said they could do better with data. 86 percent! an overwhelming recognition that data is underutilised and thus what is in place is not working.

The narrative surrounding data must (undergo a transformation). Organisations need to shift their focus from constantly searching for data and questioning its trustworthiness to establishing a foundation of trust in the data itself. By embracing data as a reliable source of information, organisations can confidently answer questions and derive valuable insights from their data.

To drive meaningful change in our approach and narrative, we must address fundamental questions about our data: what it is, where it resides, and who utilises along who sent and received it. By leveraging dataSense, we gain the ability to answer these critical inquiries and infuse our data with context. With dataSense, we can unlock valuable insights and empower a shift in our approach, enabling us to harness the full potential of our data assets.

How dataSense improves data literacy and awareness

Data is growing exponentially, data lives in silos, connecting the data is becoming more complex and solutions are becoming more costly.

To extract value, make data meaningful information and to analyse the data that drives your business, target smaller sets of high value critical data assets. This will deliver the most value quickly and effectively. dataSense supports this approach, a focused view on your data landscape – content with context.

dataSense empowers organisations to define data content catalogs (ie business views) which in turn indexes your data across your organisational. Treating data as a living thing, capturing the content of data events (without the need to create data warehouses/lakes). dataSense will present a digital map, building a greater understanding of your data, increasing trust in your data, awareness and literacy.

Main functionality dataSense supports - data observability, data content lineage flows, data anomalies (when data changes), digital map, data patterns and creating a common data language. These are explored in the use cases to demonstrate how dataSense has enabled data awareness and literacy.

1   Forbes Finding the Data - Ajith Sankaran 2021
2   Tech Target Success of Data Science Projects - Eric Avidon 2021
3   The Data Gambit - McKinsey and Company 2021

Data Protection & Transparency

Data transparency remains a critical concern for data projects and regulatory compliance, especially considering evolving data protection and privacy regulations. Organisations face the dual challenge of ensuring compliance while managing distributed data and expanding customer bases.

An essential aspect of addressing these challenges lies in achieving data transparency. Merely knowing where data resides within the organisation is no longer sufficient; we must also understand its content. Traditional attributes and structures alone do not provide the necessary insights to make informed decisions about data management. To effectively navigate this landscape, we require a deeper understanding of the data content itself – what specific data values are present and how they are distributed across different environments, be it on-premises, cloud, or hybrid setups.

Transparency, in this context, enables comprehensive data understanding, empowering organisations to make informed decisions on data protection, damage prevention, loss mitigation, and corruption avoidance. By fostering transparency, organisations can establish the necessary foundation for robust data protection measures and ensure compliance with regulatory requirements. Transparency and protection are interdependent, with transparency serving as the critical prerequisite for effective data safeguarding.

The Ask

A global tier one bank had launched a digital banking platform, where data was both on premises and in the private cloud. The manual and labour-intensive process faced by the bank searching for personal identifiable information (PII) data on their platforms and across multiple systems, a common challenge in data management. It is a time-consuming and resource-intensive task that can lead to delays in retrieving the required information and impact operational efficiency.

Due to the lack of data transparency, any data search request could take 2-4 weeks to return the results with a dedicated team of four people; a manual search across multiple platforms for the data. Data was hopping & copied between many systems to get to its destination with the added problem that the data could be stored in multiple locations; local support teams would need to confirm if the data existed in their system or not.

dataSense Approach

By implementing dataSense, using data asset search together with content data flow and lineage capabilities, the organisation benefited from a non-invasive deployment approach that required no changes to the current code, systems or data feeds. dataSense seamlessly integrated with the organisation's data interfaces, whether the data was in motion or at rest, enabling comprehensive analysis.

Using causal AI* and ML engines, dataSense constructed a digital data map, providing a clear visual representation of the organisation's data landscape. dataSense automatically captured critical data assets the organisation wanted to track, allowing them to focus on relevant data and eliminate unnecessary noise. dataSense enabled the bank to see their data content easily and as it was immutable source value, it could be trusted. The bank was in a position to understand where this data was, they had transparency and clarity of their hey data content.

With the dataSense's data content capture functionality, any changes to the tracked data assets were automatically logged, modelled, alerted and made available for searching. This ensured that the organisation had an up-to-date and accurate understanding of their data environment without the need for manual intervention.

The out-of-the-box functionality of dataSense meant that the implementation process was streamlined, and teams were able to quickly set up their data to be utilised by dataSense. There was no need to develop a custom solution or build additional infrastructure, saving valuable time and resources.

Trusted data, track with Confidence

With dataSense in place, the organisation experienced a significant improvement in their ability to access and search for PII and related data assets. The team no longer had to rely on manual requests to multiple platforms, as dataSense provided simple and intuitive screens that allowed them to directly search for their data.

By integrating dataSense with the organisation's existing metadata governance, it became possible to identify data sources that had not sent their information, thus revealing data blackholes.

"We had a complex data problem to solve, and within an hour, we were able to setup a working proof-of-concept with the dataSense cloud data platform. This allows us to visualise the high value data assets moving around our data estate and build greater trust in our data capabilities."

Head of Digital Bank
Tier 1 Bank

* CausalAI is the technology that can reason and make choices like humans do. It utilises causality to go beyond narrow machine learning predictions and can be directly integrated into human decision-making.

This enhanced visibility enabled data transparency for the organisation to take proactive steps to address gaps in data availability and ensure a more comprehensive and understandable data landscape.

The dramatic reduction in time and resources required to search for PII data was one of the key benefits of dataSense. What previously took a team of 2-4 people up to 4 weeks could now be accomplished in a matter of minutes, if not seconds. This significant time savings allowed the organisation to be more agile and responsive in their data operations.

The visual identification of data blackholes and the substantial reduction in search time empowered the team to efficiently manage and utilise data, ultimately enhancing data operations and accelerating decision-making processes.

Productivity Gains

The automation of data searches had a transformative impact on the organisation's dedicated team. With the simplicity and efficiency of platform, the team members were redirected to more value added activities within the department. The need for a dedicated team to perform manual data searches was eliminated, as dataSense enabled self-service searches for anyone in the organisation.

By empowering individuals across the organisation to search for data on their own, dataSense fostered a culture of self-sufficiency and knowledge sharing. Users no longer had to rely solely on a specialised team, but rather had the ability to access and retrieve data independently. This increased productivity, as employees could quickly find the information they needed, leading to more efficient decision-making and task completion.

Furthermore, the knowledge gained through the self-service capabilities could be shared across teams and departments, promoting collaboration, and enabling a wider understanding of the organisation's data assets. This democratisation of data access and search capabilities contributed to a more agile and informed workforce.

ESG – Climate Risk

Navigating the landscape of environmental, social, and governance (ESG) data can indeed be challenging and costly. With increasing pressure on businesses to assess, adapt, and mitigate risks associated with ESG factors, financial institutions face a similar imperative to understand the risks they may be exposed to, when their clients fail to take appropriate steps to mitigate climate risks.

ESG data encompasses a wide range of factors related to environmental impact, social responsibility, and corporate governance. It includes information about a company's carbon emissions, resource consumption, labour practices, diversity and inclusion efforts, board composition and more. Analysing and interpreting this data can be complex, given the volume, diversity and inconsistency of available information.

For businesses, effectively managing ESG risks is crucial not only for meeting regulatory requirements but also for maintaining stakeholder trust and sustainability. Financial institutions, in particular, need to understand the potential risks and impacts associated with their clients' ESG practices to assess their own exposure and make informed investment decisions.

The Ask

Reporting climate risk assessments to European regulators and understanding the changing risk scores and BRAG status of external business clients is a critical task for organisations. It requires continuous monitoring and analysis of relevant data to effectively assess and manage potential risks associated with climate change. Automate the manual process releasing key resources.

The manual and reactive process of saving data monthly and running comparisons at the end of each month to identify changes is a resource-intensive and inefficient. It results in a delayed response to data changes and limits the organisation's ability to address potential risks in a timely manner. To improve this process, it's essential to adopt a more proactive and automated approach.

dataSense Approach

By capturing and focusing on critical data assets, dataSense eliminates unnecessary noise from the data sets, enabling a more streamlined and efficient data management process. dataSense's content capture feature allows for the selective capture of smaller data sets, specifically targeting the essential assets that the organisation needs to track.

With dataSense, any changes or modifications to these critical data assets are automatically logged and recorded. The alerts API provided by dataSense allows for seamless integration with existing systems and applications, enabling teams to receive real-time notifications and alerts about data changes.

The out-of-the-box functionality of dataSense means that there is no need to build a custom solution. The teams can simply define and set up their data, leveraging the APIs or utilities provided. This eliminates the need for additional data feeds or extensive integration efforts.

Track data changes with Confidence

The implementation of dataSense alongside the existing systems, without the need to modify any current processes, allowed the client to effectively track their critical data assets on a daily basis. With dataSense in place, any new data or changes to high-value critical data assets were automatically detected and alerted in real-time.

The client could receive alerts not only for individual data changes but also for combinations of data, changes that might be significant or impactful.

The seamless integration of dataSense with the client's systems ensured that there was no need for additional configuration or changes to be made within the dataSense platform. This streamlined approach allowed the client to quickly leverage the monitoring and alerting capabilities of dataSense without disrupting their existing processes.

By receiving automatic alerts on critical data asset changes, the client gained valuable insights and could take immediate action when necessary. This proactive approach enabled them to respond swiftly to data anomalies, mitigate potential risks, and ensure the integrity and accuracy of their high-value data assets.
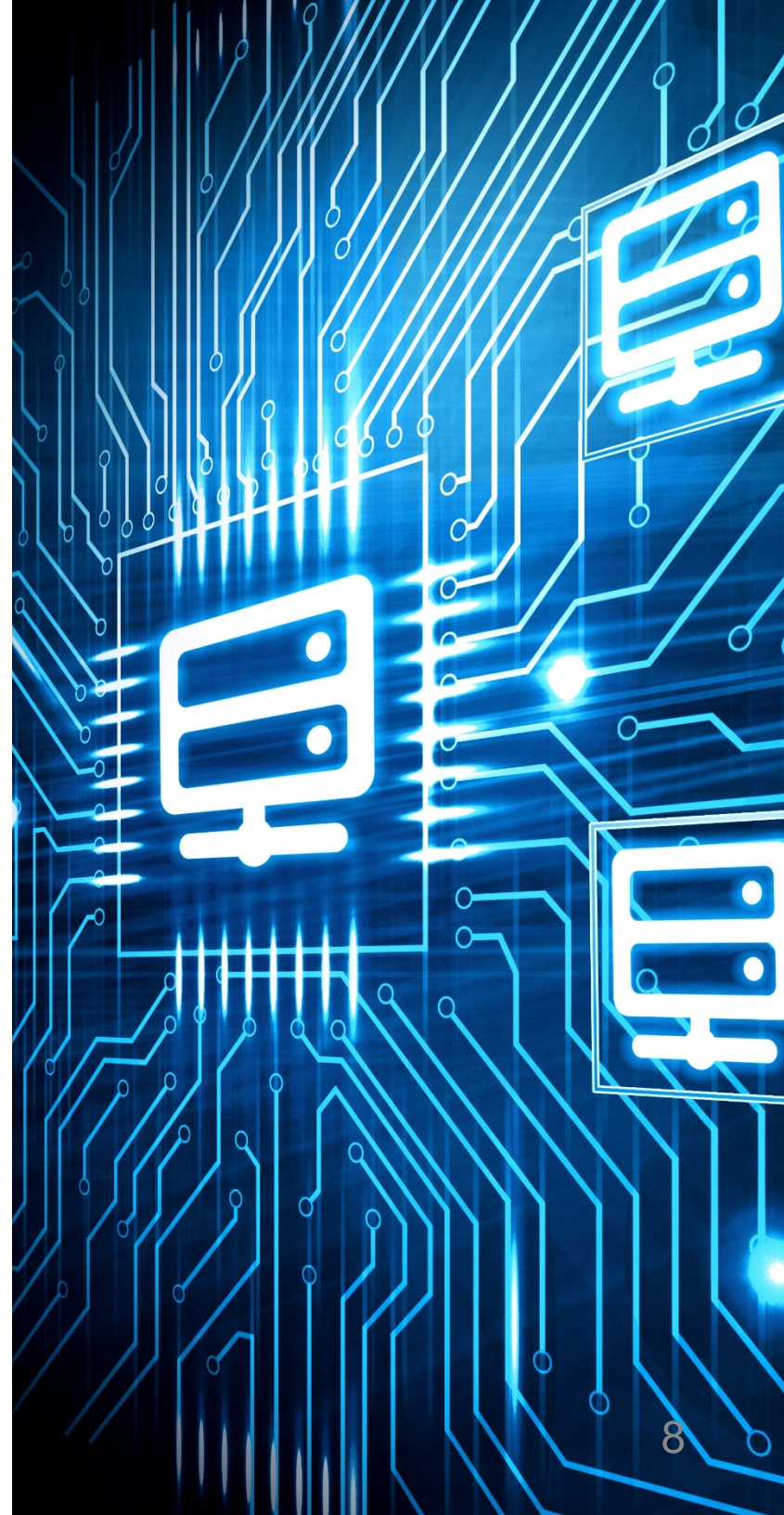
Not only Alerts….

The implementation of dataSense brought additional benefits beyond its initial objectives. One of the many benefits was the ability for data owners and consumers to leverage the intuitive user interface (UI).

With the UI, users could easily access and analyse critical information about their data assets. They could determine when a specific data asset was first received, examine its relationship to current and historical scores, and gain an operational view of the data. This operational view allowed for better understanding and management of data assets in real-time.

It's important to note that dataSense does not replace the existing reporting solution. Instead, it complements and enhances the operational management of data. While reporting solutions focus on generating comprehensive reports and analytics, dataSense empowers users to have a more granular and immediate understanding of their data assets' characteristics and behaviours.

By providing a user-friendly interface and operational insights, dataSense enables data owners and consumers to make informed decisions and take proactive actions based on the real-time understanding of their data. This improves data management practices, enhances operational efficiency, and helps drive better outcomes.

dataSense not only fulfils its role as a data management platform but also delivers additional benefits by offering an intuitive UI that enables users to gain operational insights into their data assets. It enhances the organisation's data management capabilities without replacing the existing reporting solution, ultimately leading to improved operational management of data and better decision-making processes.

dataSense Anomaly Detection

Client   ESG   KYC

dataSense – Data Content Catalog

dataSense –
Data Alerts

dataSense – Lineage and
Traceability

Data Alerts Integrated with
workflow application

Data changes, new, missing and
data combinations alerts published
as they occur

Data Observability in the data mesh

The organisation has made the strategic decision to establish a centralised data mesh, offering capabilities and domain-specific data as a product. In order to effectively manage this data mesh, they recognise the need to go beyond the capabilities of current data governance tools, which primarily provide attribute and structural information.

To avoid data platforms becoming "swamps" with little visibility or control, it is crucial to have a comprehensive understanding of the data itself, including its content and ownership. By knowing the nature of the data and its origin, the organisation can increase data awareness and strengthen data governance practices.

The Ask

When implementing a new data mesh, the client faced challenges with limited visibility on the arrival and consumption of data within the mesh. As a result, answering even simple queries, such as determining when certain legal entities were received, could take up to four days. Recognising the need for improved data observability and understanding, as well as rapid query response times, the client sought a solution.

Despite utilising metadata tools to understand attribute definitions and descriptions, the client encountered limitations in gaining insights into the actual content and nature of the data within their data mesh. The metadata tools only provided indications of where the data could potentially be found, without offering any visibility into the data itself. As a result, a manual search for the data values became necessary, leaving the client effectively unware to the data present in the mesh.

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dataSense Approach

Enable data observability and asset search

dataSense is a comprehensive solution that enables capturing and management of data in motion, data at rest, and data in use. By leveraging dataSense, organisations can effectively handle data events as they occur, ensuring data governance and providing valuable insights into the data content across multiple catalogs serving different data domains.

With dataSense, data owners have the ability to gain visibility on the data within the mesh, including its origin, arrival and departure timestamps. This visibility empowers data owners to track the data's journey, understand its lineage, and ensure data provenance. They can easily search for specific data content using familiar language and explore the relationships between different data assets, all without the need to build an additional reporting platform.

By leveraging dataSense's capabilities, organisations can observe operational data with trust. They can access a unified view of data assets, enabling them to make informed decisions based on reliable and up-to-date information. This eliminates the need for manual processes or complex reporting structures, streamlining data exploration and analysis.

Make data accessible

By enabling data owners, support teams, and business processes access to relevant and critical operational data, dataSense strengthens their trust in the data. It ensures that the data is presented as-is, without any processing, mappings or modifications applied. This transparency builds confidence in the data quality and reliability.

A key aspect of dataSense is increasing data literacy and awareness within the organisation. By removing complexity and providing a user-friendly interface, dataSense helps users understand the data. Greater understanding allows for extraction of greater value, leverage the assets and not spending time just processing.

With dataSense, critical data searches that took days are now delivered within minutes. Users can quickly retrieve the information they need, saving time, enabling rapid and quality decision-making. Understanding how the data flows and data domains are sourced becomes second nature within the data mesh. This familiarity with data flows facilitates data-driven investigations and eliminates the need for manual mappings between attributes to comprehend data movements.

The seamless integration of dataSense within the organisation's data ecosystem enables users to navigate and explore data flows effortlessly. It provides a clear visualisation of data domains, their relationships, and the overall data landscape. This visibility promotes efficient data analysis, troubleshooting, data duplications and optimisation of business processes.

Data becomes the common language

In the data mesh, the focus is on the data itself, rather than passive metadata, structures, or models. With dataSense, references to data contributors or consumers are expressed in the same data language, providing a deeper level of understanding and context. It goes beyond traditional metadata management by being proactive and offering data with context and data lineage.

The shift towards data-centric approaches has led to changes in industry perspectives. Gartner, for example, removed their magic quadrant for metadata management, acknowledging the importance of embracing data with context rather than solely descriptive changes to metadata.

dataSense represents the future of data management by taking a leap forward from active metadata to active data content. It goes beyond simply capturing and managing metadata to provide insights and context about the actual data itself. This includes its content, relationships, transformations, and lineage.

By incorporating dataSense into the data mesh, organisations can unlock the full potential of their data. They can understand not only the attributes and structure of the data but also its content and context. This enables more informed decision-making, improved data governance, and the ability to derive meaningful insights from the data.

dataSense represents a progressive approach to data management within the data mesh. It goes beyond passive metadata management, providing data with context, lineage, and a deeper understanding of its content. By embracing active data content, organisations can leverage the full potential of their data assets and drive innovation in their data-driven initiatives. The future is data with context not descriptive changes of metadata[4,5]. **dataSense takes the leap forward from** active metadata **to active data content**.
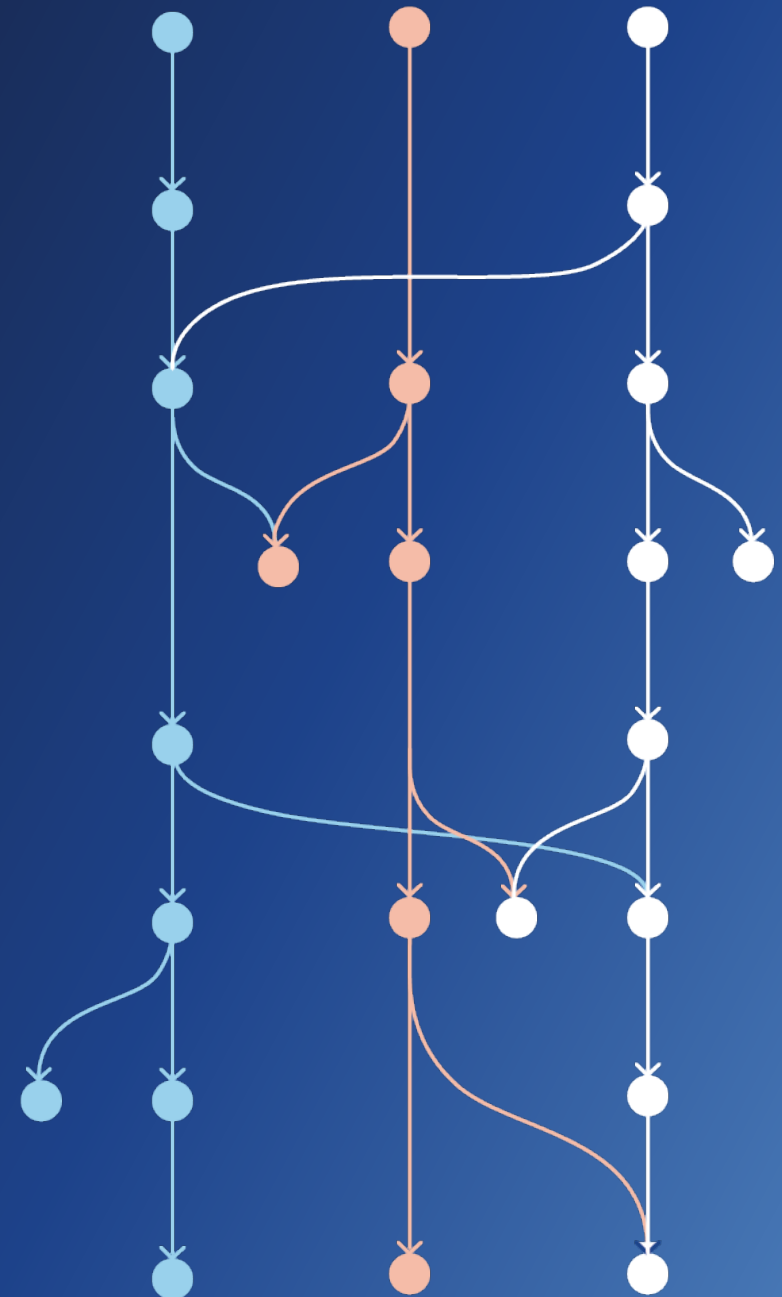
4   Active Metadata - Forbes 2022

5   Gartner Drops Metadata Management - Towardsdatasceince 2021

Event Streaming

The exponential growth of event streaming and its pivotal role in event- based platforms is undeniable. The sheer volume of data being handled by these platforms is expanding rapidly. Event streams, also known as data streams, often undergo modifications through event stream processing applications. However, as these platforms expand, concerns arise regarding data volume and veracity. There is a lack of certainty regarding the data being distributed or received, and there is also uncertainty about the overall functionality of the environment.

The Ask

Conduct a Proof of Concept (PoC) in collaboration with an industry leading event streaming organisation to demonstrate the capabilities of dataSense. The primary objective of this PoC to showcase that dataSense can verify both the published and subscribed data, as well as determine the frequency at which this data appears across different event topics (describes what is happening with the event) within the streaming platform.

The event streaming platform currently provides meta information such as the timing of events without revealing the content itself, dataSense aims to fill this gap by providing insights into the actual value and specifics of the data being transmitted. By leveraging dataSense, the organisation will gain a comprehensive understanding of the data movement within the event streaming environment.

Furthermore, the platform will enable the organisation to receive alerts whenever new data is detected over the streams. This functionality empowers the organisation to effectively manage their event data landscape by staying informed about the influx of data and taking necessary actions in response.

Through this PoC, we aimed to showcase how dataSense can enhance data verification, provide valuable insights into event data, and offer real-time alerts for new data streams. Ultimately, this collaboration enable the organisation to streamline their event streaming processes and optimise their data management strategies.

dataSense *x* Solace

As systems and applications become increasingly sophisticated and distributed, the real-time transmission of data from one system to another becomes more prevalent. The Solace event mesh serves as the central nervous system for facilitating this data movement as real-time events.

However, in this dynamic landscape, ensuring the integrity and accuracy of the transmitted data becomes a critical concern. It becomes essential to verify if the data has been accurately delivered to the intended systems or users. Additionally, determining the freshness of real-time data feeds becomes crucial to avoid relying on outdated or stale information.

Enter dataSense, a solution designed to address these challenges. By seamlessly integrating with the Solace event mesh, dataSense acts as a consumer of all event streams, providing real-time and retrospective alerts and insights on the data. Its capabilities enable organisations to make sense of the data by ensuring its freshness, secure access and completeness.

With dataSense, organisations can monitor and verify the integrity of the data throughout its journey within the event mesh. It offers a comprehensive understanding of the data flow, enabling the identification of discrepancies, inconsistencies or potential security risks. Real-time monitoring of data feeds ensures that the information received is up-to-date and reliable.

dataSense's integration with the Solace event mesh revolutionises data management by ensuring integrity, security and freshness. It offers real-time alerts, retrospective insights, and the ability to trace data assets, enabling organisations to make informed decisions and fully leverage the potential of their data. It plays a vital role in ensuring that the data remains trustworthy.

dataSense *x* Solace

dataSense empowers data insights

dataSense seamlessly integrates with the Solace event mesh as a consumer of all event streams, allowing it to provide real-time & retrospective alerts and insights on the data. This integration unlocks the true power of the data, enabling organisations to leverage its full potential.

Now, let's envision the distributed data and system landscape empowered by dataSense. With the platform, we gain the ability to determine the location of the data, precisely identifying where it arrived or left a specific system or event stream. Furthermore, dataSense allows us to track when the data underwent changes, providing a comprehensive understanding of data transformations throughout its journey.

dataSense introduces the concept of "dataSense dataMaps™ within the Solace mesh. Similar to Google Maps, it allows users to track the location, arrival, departure, changes, and trace the journey of data assets across the Solace event mesh. This visualisation capability enhances data management, optimisation and compliance, providing organisations with valuable insights into their distributed data and system landscape - touchpoints, and interactions with various systems and event streams.

By leveraging dataSense's concept of dataSense dataMaps™, organisations can gain valuable insights into the movement and utilisation of their data. They can pinpoint bottlenecks, identify potential areas for optimisation, and ensure data compliance and governance. This comprehensive understanding of data flow empowers organisations to make informed decisions, enhance operational efficiency and unlock the full potential of their data assets.

dataSense's seamless integration with the Solace event mesh, coupled with its dataSense dataMaps™ feature, revolutionises the way organisations navigate and understand their distributed data and system landscape. It provides real-time alerts, retrospective insights, and the ability to trace data assets, enabling organisations to harness the power of their data effectively and make data-driven decisions with confidence.
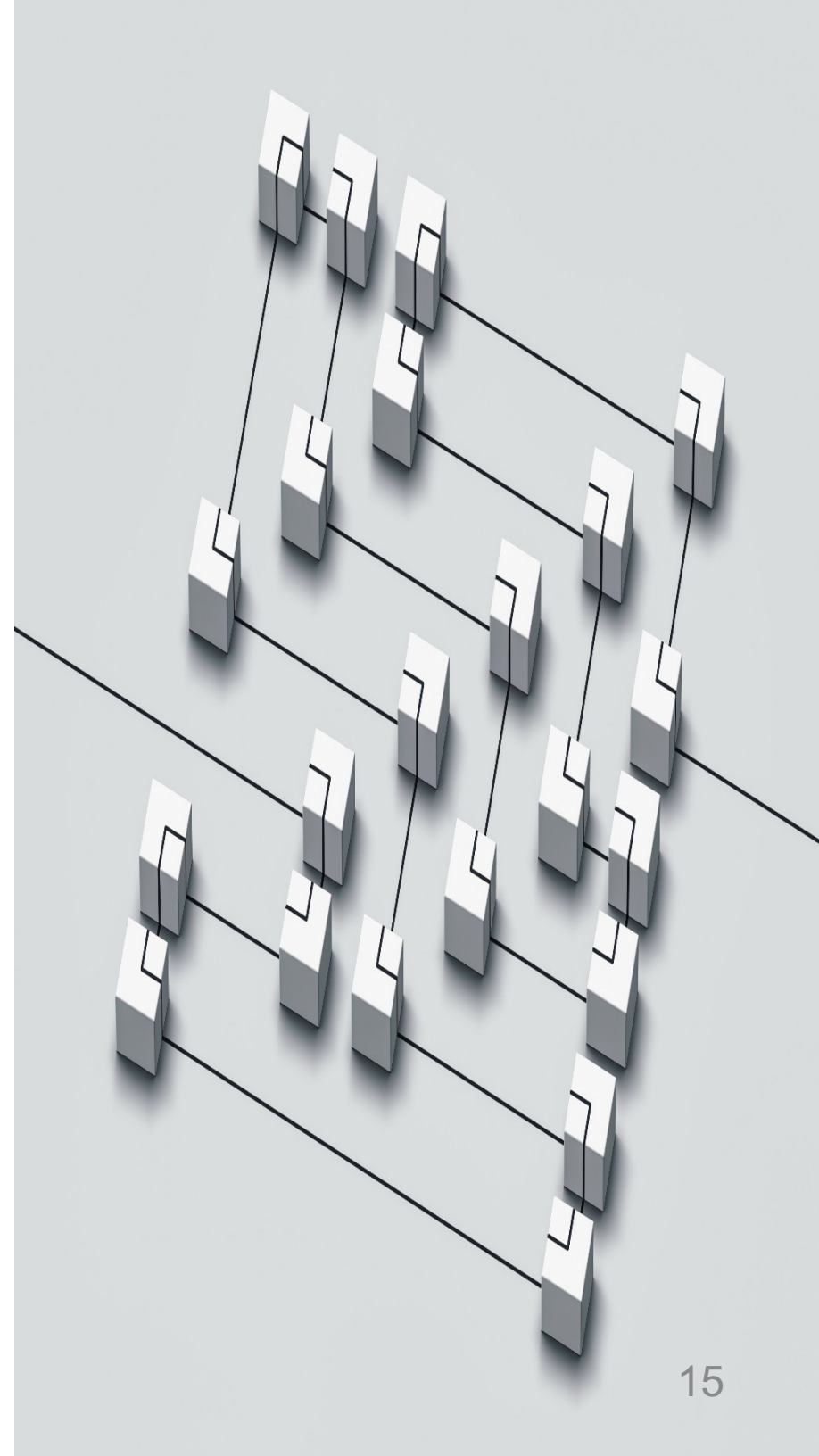
Documenting a KYC Process…

Data Leaders recognise that data is not static but rather a living entity that undergoes constant change. It acknowledges the value of data as your company's intellectual property, capable of providing valuable insights and supporting documentation of your processes and data journeys. By leveraging data to its fullest potential, you can gain a deeper understanding of your business processes and uncover valuable insights.

In many organisations, processes are often documented in spreadsheets, which can be fragmented, incomplete, and difficult to manage. These processes are typically non-sequential, making it challenging to obtain an accurate and up-to-date status of the end-to-end client journey.

The Ask

The organisation faced challenges with its complex global KYC process, which involved multiple systems for onboarding and reviewing clients. The lack of full integration among these systems required manual updates as client data progressed through the onboarding and reviewing journey. As a result, the organisation struggled to have a clear understanding of each client's position within the overall KYC process.

Could dataSense document the process, provide clarity on where the data was and when the process was not moving or met an obstacle. Also, to alert when a critical data value was newly processed or changed - replace the current manual tracking, automating the process and decrease the time to investigate where a client is in the process.

dataSense Approach

By identifying critical checkpoints within the KYC process, data event points were implemented to capture data movements both within and across disparate systems with different data structures. These data events served to capture the data in motion, allowing the dataSense engine to create a visual representation of the data flow lineage. A comprehensive understanding of the data content.

Furthermore, with the inclusion of anomaly detection, any changes or movements of data within the process triggered immediate alerts that seamlessly integrated into the organisation's workflow. This proactive approach enabled the organisation to address potential issues and deviations in real-time, rather than reacting to them after the fact.

Track data through the process

With dataSense, the organisation gains the ability to track a single data asset value throughout its entire journey within the KYC process. No longer are the systems disparate and the process disjointed; dataSense provides a unified and cohesive view of the data, allowing for clear visibility into when and where the data moves within the process.

By capturing and modelling the data using dataSense's smart system engine, relationships between data assets, data events and systems are established. This holistic view of the data landscape enables the organisation to gain a deep understanding of the data flow, discover valuable insights, and promptly detect any data issues that may arise.

As a result, the need for manual tracking and specialised analysts is significantly reduced, saving time and resources while improving efficiency and accuracy in the KYC process. dataSense empowers the organisation with comprehensive data visibility, proactive issue detection, and the ability to unlock valuable insights from the data.

Summary

dataSense is a powerful data management platform that enables organisations to gain deep insights, control, and governance over their data assets. It provides a range of features and capabilities that enhance data awareness, automate data tracking, and improve data governance processes.

With dataSense, organisations can capture and understand the content and lifecycle of their critical data assets. It allows data owners and consumers to easily search for data, view its lineage, and track changes in real-time. The platform's intuitive user interface and proactive alerts enable rapid responses to data-related queries and issues.

dataSense goes beyond traditional metadata management by focusing on active data content. It captures data in motion, data at rest, and data in use, providing a comprehensive view of the data landscape. By leveraging smart systems AI and ML technologies, dataSense creates digital maps of data flows, identifies anomalies, and helps organisations detect and mitigate risks.

The platform brings efficiency and productivity gains by automating manual tasks, enabling self-service data searches, and empowering users to access and interpret data without relying on specialised analysts. It supports the development of data literacy and fosters a data-driven culture within organisations.

dataSense offers a transformative approach to data management, providing organisations with greater visibility, control, and understanding of their data assets. It empowers organisations to leverage data as a valuable asset, mitigate risks, and extract meaningful insights to drive informed decision-making.

Conclusion

Implementing a successful data strategy and achieving effective data governance can be challenging, and traditional approaches often fail to deliver the desired value and return on investment. Recognizing the changing landscape and increasing complexity of business expectations, it is crucial to adopt a different, more pragmatic approach.

Our proposed approach is based on our collective experience and aims to address these challenges effectively. Instead of extracting and analyzing thousands of attributes, we emphasise understanding the data you have and identifying your critical data assets. By focusing on the relevant data assets for specific use cases, you can avoid unnecessary complexity and narrow down your efforts.

Our solution leverages advanced software capabilities to automatically map and analyze your data based on its behaviour, eliminating the need for subjective opinions or past knowledge. The data-driven approach ensures that the outcome is driven by the actual content of the data, not just metadata or descriptions.

To build confidence and trust in your data, the system automatically alerts you whenever critical data assets change or new ones are received. This eliminates the reliance on manual processes or reconciliations that are designed to handle only known unknowns, not managing the unknown unknowns. By enabling people at all levels of the organisation to access and interpret the data as it flows, visualised through a Digital dataSenseMap, we foster a new level of data literacy. This sets the foundation for a data culture to evolve and supports the development of your data strategy.

With this approach, we believe your organisation will gain a deeper understanding of its data, increase confidence and trust in its quality, and ultimately unlock the true value of your data assets.