Enterprise Intelligence Hub: Unlocking Trusted, Actionable and Prescriptive Business Insights

— Tera Chung, VP - Technical Sales, Mastech InfoTrellis

Recently, many enterprises have adapted Data Management platforms and processes to integrate and curate data across the organization to support business intelligence. However, enterprises often struggle to create and maintain adaptive business intelligence scaled on time to generate actionable insights. The current enterprise platforms lack the flexibility to acquire, engineer, and analyze data and derive meaningful insights to drive customized and distinctive digital data transformation objectives.

To emerge as leaders and outpace their competition, enterprises need to 'fail fast' and calibrate their business strategies with new learnings. Most enterprises lack the ability to learn at velocity and scale.

An Enterprise Intelligence Hub provides an intelligent platform to consolidate enterprise data into a self-organized data hub, so enterprises can acquire insights and intelligence to learn and make an informed decision at velocity and scale.

The need for an Enterprise Intelligence Hub

80-90% of the available data in an organization is unstructured, while only 10-20% of enterprise data is structured. Studies across industries show that less than half of structured data in an organization is used for decision making. Less than 1% of unstructured data is analysed or used in any form. Not only that, but knowledge workers spend 80-90% of their time looking for, preparing, and protecting data, while only 10% of their time is spent on data analysis.

In short, enterprises miss out on the opportunity to derive value from their data corpus, while wasting precious time finding and preparing the data. This brings us to a dilemma that enterprises are currently facing: "how can we smartly consume the enterprise data to draw real-time insights and adapt to fast-changing clients, markets and differentiate ourselves in the market?"

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According to a recent report by a leading IT industry analyst firm, **enterprises investing in the future of intelligence capabilities effectively will see a 100% increase in knowledge worker productivity** leading to sustainable market share leadership in their industry.

This paper outlines the Enterprise Intelligence Hub framework that forms a solution for enterprises to derive trusted insights. The MIT Enterprise Intelligence Hub (EIH) delivers a 'smart' process to ingest and self-organize data in an enterprise-wide data hub. Moreover, the platform is centralized so that ingested data is readily available for advanced analytics to derive business intelligence at scale. In addition to the self-organization and centralization, the Enterprise Intelligence Hub EIH provides artificial intelligence and machine learning capabilities for advanced analytics.

The EIH includes a Master Data Management layer to supply trusted operational data, and a cloud platform

to leverage parallel and scalable solution architecture. With unmatched deployment experience, MIT provides an end-to-end managed enterprise intelligence hub service so that enterprises can focus on business transformation and achieve their business goals.

Enterprise-wide knowledge creation through Enterprise Data Bus and Smart Ingestion Engine

Enterprise Data Bus

The Enterprise Data Bus (EDB) is an integration hub of the data fabric in the EIH. The EDB orchestrates data management, governance, and analytic tools to identify, centralize, and expose the entire corpus of enterprise data for ontologies and advanced analytics.

The EDB consolidates all the raw data from the enterprise – internal systems (ERP, CRM, etc.), external systems including structured (lead generators, etc.), and unstructured sources (social media, etc.) – into a single repository, a data ocean. A Data ocean is a high-performing and scalable environment that stores large volumes of raw data.

From the data ocean, the EDB cleanses, transforms, de-duplicates, standardizes the raw data, and then places them into a data lake. A data lake is another high-performing file system that stores the cleansed and organized data ready to be analyzed for further knowledge and insight discovery. Eventually, the EDB builds a self-organized data hub to provide visibility to all enterprise data and enable self-service analytics.

Smart Ingestion Engine

To facilitate the ingestion of vast amounts of data in various forms in an organization, the EIH leverages a Smart Ingestion Engine (SIE). The SIE is an AI-driven smart ingestion capability that automates data ingestion into the self-organized data hub in the EDB. Compared to traditional ETL (Extract, Transform. Load) tools that statically process structured data, the SIE provides dynamic ETL capability to ingest and digest unstructured documents.

The SIE can process a large volume of documents in different formats (e.g., Excel, PDF, etc.) and extract data on a document based on its respective position. The extracted data is standardized, denormalized, and prepared in a standard format for further analysis. It reduces the tens of thousands of hours of manual work performed by knowledge workers to a few hundreds of hours by automating the ingestion of unstructured documents. It frees the knowledge workers' time and allows them to focus on real work – finding intriguing insights.

The SIE streamlines and automates processes through the data lifecycle.   The SIE adapts and evolves to become smarter as it learns from the series of structured or unstructured files processed, increasing overall efficiency, agility, and productivity.

Prescriptive and Tactical Business Insights through Ontologies and Knowledge Graphs

While the data integrates seamlessly into the EIH using the Smart Ingestion Engine, Ontologies capture, gain, and apply in-depth domain-specific knowledge to the enterprise data for creating 'Knowledge Graphs.' Infused with Ontology-driven machine learning, Knowledge Graphs present knowledge in a graph to connect dots among various data domains to derive insights. Knowledge Graphs help make an observation easily, discover inferences by exploiting relationships, and draw better predictive insights.

Knowledge Graphs continuously evolve based on new evidence from raw data and additional insights discovered by advanced analytics.   The newly discovered insights feedback into the previous Knowledge Graphs and inspire fresh insights are part of an ever-evolving loop. This allows enterprises to make prescriptive decisions rather than reactive decisions for reaching their business goals.

Trusted Operational Data powered by Master Data Management

Undoubtedly, Master Data Management (MDM) is at the core of the Enterprise Intelligence Hub. MDM operationalizes organizational data for real or near real-time transactions and is a reliable and scalable application that has been proven beyond doubt by existing clients.

> Leading global IT research and advisory firms confirm **MDM is now a mainstream solution that every enterprise needs to adapt for their data hub strategy and a 360-degree view.**

MDM provides an accurate, consistent, and complete picture of multiple domains such as clients, employees, patients, products, accounts, vendors, and more. With

comprehensive and robust capabilities, including the industry-proven Probabilistic Matching Engine (PME), the MDM layer provides a single version of the truth for each domain.

MDM also forms a single, central repository that maintains data references from different sources, which helps track data origin. The MDM layer creates reliable reference points by connecting incoming data from various source systems with trusted data already in the MDM.

Data would not be reliable without MDM, and subsequently, the analytics and created business value would also be untrustworthy.

Data Governance of EIH with Veriscope

A large part of enterprise data quality is ensuring a useful data governance framework. As part of MIT's Enterprise Intelligence Hub, Veriscope provides relational and analytical reporting on MDM transactional activities and its master data accuracy and profile visibility. Through Veriscope, enterprises can monitor activities within MDM to understand master data quality and composition. Veriscope generates a rich set of systems and business reports, which helps enterprises take the right data governance initiative at the right time so that security and compliance risks can be lowered.

We Design Proven Enterprise Intelligence Hubs

MIT's EIH is designed to give you the right kind of visibility into your enterprise data and provide analytical capabilities in a single platform to facilitate learning at velocity and scale. MIT's EIH can be delivered on any cloud platform as a managed service with 24*7 support so that enterprises can focus on What matters most - their business!

We Architect Enterprise Intelligence

At Mastech InfoTrellis we work to expose the entire corpus of enterprise data and leverage it with state of the art techniques from Decision & Data Science to accelerate enterprise learning. We would love to talk with you about it.
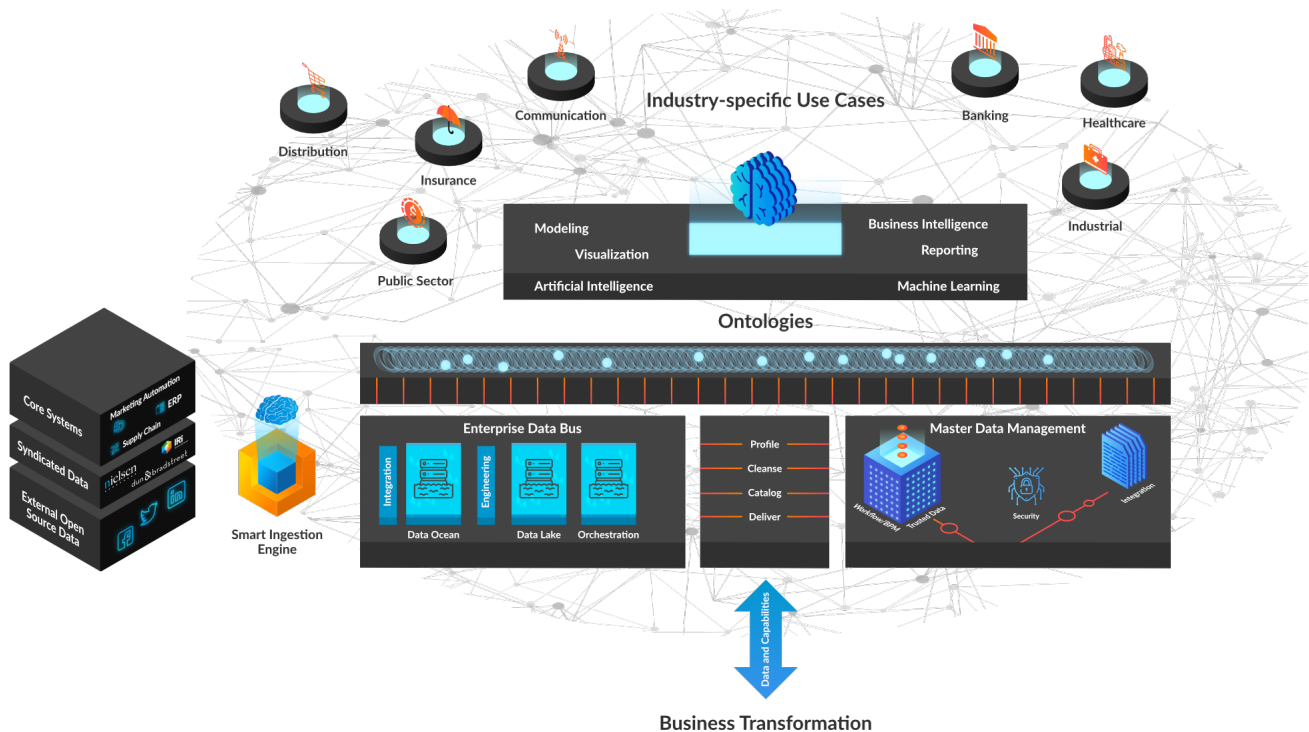
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Tera comes to Mastech InfoTrellis after an illustrious stint at IBM, where she spent more than 12 years as a worldwide technical specialist on IBM's Digital Technical Engagement team. In those 12 years, Tera spent seven years on gaining hands-on experience as the technical sales specialist supporting Master Data Management (MDM) deals globally. Tera is a seasoned specialist in MDM and Data Governance space. Tera holds a Bachelor of Computing degree with a specialization in Biomedical Computing from Queen's University.

About

Mastech InfoTrellis partners with enterprises to help them achieve their business objectives by leveraging the power of data to derive deep, analytical insights about their business and its operations. We accelerate business velocity, minimize costs, and drastically improve corporate resiliency through personalized, process-oriented programs, consisting of strategy, data management (including master data management), business intelligence and reporting, data engineering, predictive analytics, and advanced analytics. Part of the NYSE-listed, $193.6M, digital transformation IT services company, Mastech Digital; we drive businesses forward around the world, with offices spread across the US, Canada, India, Singapore, UK, and Ireland.