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TRANSFORMATIVE AI & DATA SOLUTION

TRAIDA FRAMEWORK

TRAIDA
CARDS OVERVIEW

VERSION: SEPTEMBER 12, 2024

TRAIDA

Knowledge repository with an educational purpose on AI and data solutions

Operational tool to assist the transformation of IS/IT

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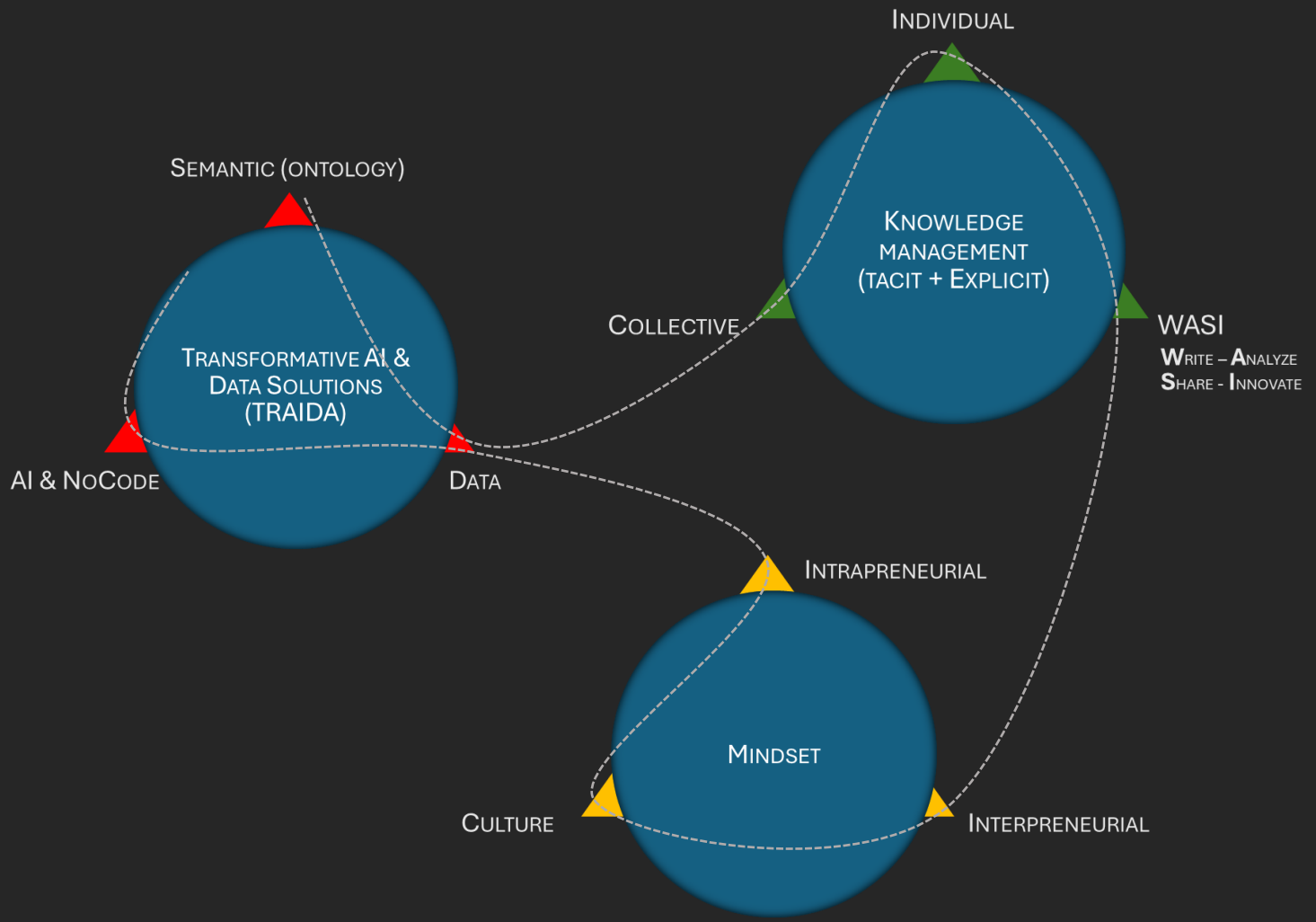
AI STRATEGY



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TRAIDA FRAMEWORK

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TRAIDA | AI Knowledge | Mindset | Resources

ENGAGE-META COMMUNITY

Accumulating knowledge to achieve sustainable success with AI

Open-source think tank focused on AI at scale

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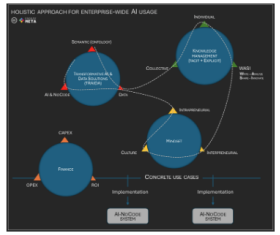

The Engage-Meta approach to organizing practices for the successful deployment of AI and data solutions at scale within an enterprise revolves around three strategic spheres:

- **TRAIDA** — IT architecture for the implementation of AI systems, NoCode, and data solutions based on the TRAIDA framework (Transformative AI and Data Solutions).
- **AI KNOWLEDGE** — Knowledge management for training AI systems.
- **MINDSET** — Promote the positive use of AI systems.

A fourth sphere complements the system to address financial aspects.

The practices of these spheres are universal and adapt according to the company's context.

Subscribe to our social medias

Pierre Bonnet, the founder of the community

With over 30 years of experience in the computer industry as an expert in Enterprise Architecture and data governance, Pierre Bonnet is the founder of Engage-Meta.

Since 2022, he has been working with AI experts based in Vietnam (PDF). He is the originator and principal author of the TRAIDA framework for Transformative AI and Data Solutions. He is also an experienced entrepreneur in the tech and beverage industries. He has formalized an innovative approach to accumulating knowledge through a framework called META, which stands for Motion, Engagement, Treasury, and Assurance. This framework includes an additional process named WASI, which stands for Write, Analyze, Share, and Innovate. This process is important for formalizing the knowledge needed to train AI systems.

To contact me: pierre.bonnet@hlff-consulting.com — My PROFESSIONAL PROFILE (PDF).

If you want to PARTNER WITH US

TRAIDA

Using the TRAIDA framework (Transformative AI and Data Solutions) to build your minimum viable technical architecture for scaling AI systems, NoCode, and data management. More information HERE.

AI KNOWLEDGE

Using the WASI process (Write, Analyze, Share, Innovate) to transform tacit knowledge (both individual and collective) into explicit knowledge across the organization and to better train AIs. More information HERE.

MINDSET

Using the META framework (Motion, Engagement, Treasury, Assurance) in conjunction with the WASI process to cultivate a positive mindset at work and increase value creation with AI. More information HERE.

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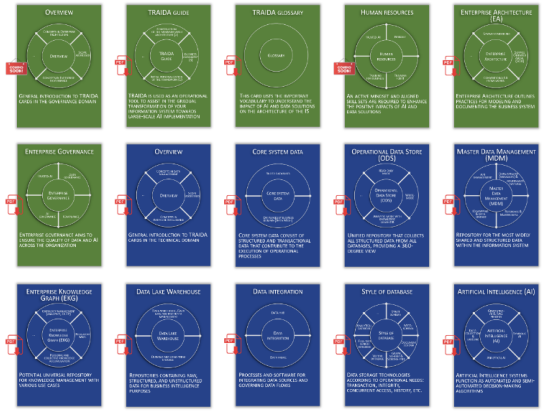
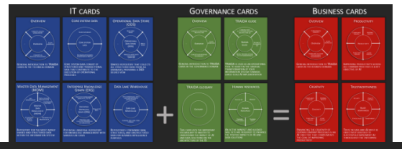
TRAIDA | AI Knowledge | Mindset | Resources

TRAIDA
AI & Data Solutions

In this sphere, you will find best practices for building your minimum viable technical architecture to scale AI. You will need to clarify your data management systems, likely using knowledge graph technology, and possibly a NoCode database depending on the complexity of your business. To analyze needs and conduct a phased transformation, we have defined the TRAIDA framework (Transformative AI and Data Solutions) which contains essential knowledge both technically and in terms of governance. Download the PDF for each TRAIDA card below. The content is free to use (open source, creative commons). You are free to utilize it for your needs, including in commercial activities, provided that you please cite the original source engage-meta.com.



Click here or on the image to download the PDF of the global map. The TRAIDA framework consists of 20 cards and 65 topics to address AI and the associated data solutions. Here you will find 9 technical cards (30 topics), 6 governance cards (17 topics) and 5+ business cards (18 topics). Each TRAIDA card is accompanied by a concise documentation that explains its importance in improving data quality and the use of AI on a large scale within the company. With its 20 cards and 65 topics, it offers a comprehensive view of enterprise architecture approached through the lens of data management and AI.



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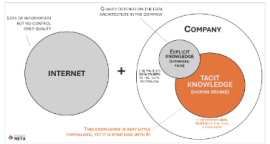
TRAIDA | AI Knowledge | Mindset | Resources

AI KNOWLEDGE
Accumulation

In this sphere, you will find practices that promote the transformation of tacit knowledge into explicit knowledge. This transformation is strategic for being able to train your AI systems with maximum value. It essentially involves documenting the know-how of your operators. This work represents a significant investment, but the return on investment, thanks to AI, is immediate. The more you formalize and accumulate knowledge over time, the more you can create AI assistants that are available on demand, as well as integrate them into your operational processes to enhance the overall performance of the company.

Knowledge management to power AI



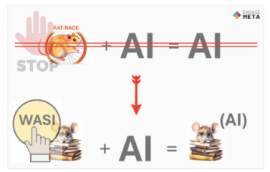
In the company, only about 20% to 40% of knowledge is formalized in the form of databases and documents. The remaining 60% to 80% of knowledge remains trapped in the minds of employees. However, all this knowledge is necessary to train AI. Therefore, programs must be initiated to transform tacit knowledge into explicit knowledge and to improve the quality of these information reserves. They are strategic for the success of AI and for achieving the expected productivity gains.

Most of the time, the company lacks precise self-awareness. Documentation is scattered across different departments, databases contain only a small portion of the manipulated information, team turnover leads to losses in certain practices, and overall quality is unsatisfactory. However, in the realm of AI, all this knowledge is essential for training. Therefore, it is crucial to not only improve the quality of existing data management but also to extend this management to encompass all tacit knowledge.

Personal Knowledge: To level up AI, enhancing knowledge management systems to capture and organize explicit knowledge is crucial. This ensures that information is accessible and up-to-date. Simultaneously, tapping into the rich reservoir of individual tacit know-how can unlock innovative solutions and creative strategies. The motivation to convert personal tacit knowledge into explicit form is twofold: firstly, to assert human expertise in an era increasingly dominated by artificial intelligence, and secondly, to facilitate the systematic accumulation of knowledge. By articulating and sharing personal insights, individuals not only contribute to the collective intelligence but also provide valuable data and knowledge that can be used to train AI systems. This symbiotic relationship between personal knowledge and AI can lead to more sophisticated and intuitive technology that complements human capabilities, fostering a collaborative environment where both can thrive.

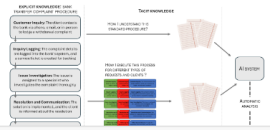
Collective Knowledge: Collective knowledge within an organization is a powerful asset, formed by aggregating the explicit and tacit knowledge of individuals within departments and across interdepartmental boundaries. The amalgamation of this knowledge is essential for enterprises, as it fosters innovation, efficiency, and competitive advantage. It is estimated that a significant percentage of an organization's knowledge is tacit, residing in the minds of its employees, and remains unexploited. Accumulating this vast reservoir of implicit understanding is vital for organizational growth and adaptability. Artificial intelligence stands as both the conduit and the repository for this knowledge, capable of capturing, analyzing, and disseminating insights throughout the organization. AI systems help transform tacit knowledge into explicit knowledge, making it accessible and actionable, thereby solidifying the foundation of collective intelligence within an enterprise.

Enterprise Architecture: At the organizational level, cultivating a mindset that values and facilitates knowledge accumulation is paramount. Enterprise Architecture (EA) serves as the technical scaffold, enabling the scaling of knowledge from individual contributors to the organizational tapestry. Together, these elements not only empower AI integration within enterprises but also amplify its application and adoption, ensuring that AI solutions are both innovative and in sync with human expertise.



Soft skills are the bedrock of professional development, with critical thinking at the forefront. To bolster critical thinking, one must focus on enhancing writing skills for clear communication, honing analytical abilities to decipher complex issues, fostering innovation to navigate and create change, and promoting a culture of sharing to disseminate knowledge. In an AI-enabled enterprise, where human and AI co-work, critical thinking and writing skills are even more essential as they help achieve the best combination of human and machine intelligence. AI needs clear guidance and instruction from human co-workers to produce its best results, which are subsequently validated by humans (human-AI feedback loop).

In conclusion, mastering the art of writing, analyzing, sharing, and innovating is critical to harness the full potential of AI. Effective knowledge management, particularly the transformation of tacit knowledge into explicit knowledge, is essential for training AI and advancing organizational intelligence. This is the WASI effect. You can read more about the WASI effect HERE.



In this figure, you have an example of transforming tacit knowledge into explicit knowledge to enhance AI training. Here, the user is asked to formalize their knowledge on the critical use of a standard process described by the company, as well as to explain the use cases of this process in order to adapt it to real-world situations. All this written knowledge is then given to the AI to obtain a critical analysis of the standard process, thereby identifying areas for improvement. This principle of formalizing tacit knowledge can be repeated regularly (weekly, monthly, biannually, annually) to establish a continuous process improvement loop. Without AI, formalizing all this knowledge would be pointless as manual exploitation would be too costly. AI removes the barriers to

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TRAIDA | AI Knowledge | Mindset | Resources

MINDSET
Critical Thinking

In this sphere, you will find key principles to help raise awareness that AI necessitates a profound change in the relationship between humans and work. With the increasing intelligence of systems, it is no longer sufficient to simply execute standard and repetitive processes at work. Such processes will simply be automated by AI. Everyone must then formalize their knowledge clearly and precisely. Humans, therefore, need to enhance their work capabilities through innovation, creativity, critical thinking, and sharing. It is essential to break out of the rat race and cultivate a culture of intrapreneurship and interpreneurship. Without the right mindset at work, AI will replace positions where the added value becomes low.

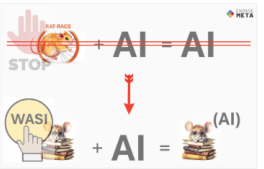
The WASI process

WASI stands for: Write, Analyze, Share and Innovate.

How to escape the intellectual rat race that hinders your progress in projects and may become fatal with the rise of AI? Being in the rat race is like going around in circles in your work and life without seeing how to improve your future. When you let time pass without taking control, you end up no longer fighting for a better future and merely hanging on day by day. You work somewhat like a robot and distract yourself with social media and easily accessible leisure activities.

This procrastination is a poison that prevents us from building beautiful things and progressing harmoniously. To overcome it, you need to find reasons to act and even an obligation to take action. I try to provide some guidance on how to achieve this in my book "The META-Entrepreneur," but here I want to emphasize the opportunity AI offers to help you escape the rat race.

But be careful, to fully utilize your AI assistants, you will need to learn to write with high precision. This is the only way for the AI to truly understand you and respond with relevance and high quality. You will also need to develop a critical mind to analyze the AI's responses and ask it to redo, adjust, correct, clarify, rephrase, complete, and justify the results. This cycle of writing and critical analysis will significantly increase your intellectual capacity. It's the opposite effect of TikTok, which tends to dull the mind.



It's quite simple to understand, and it boils down to two principles:

- Firstly, to use AI effectively, you will need to completely take control of your way of thinking and working. You can no longer be passive and perform tasks like a robot. This applies to all professions, even if you are a software developer. You will need to think more before acting to better understand what you are doing so you can formalize it in writing and then use it to train your personal AI assistants. You will then do this collectively, following your managers' guidelines.
- Secondly, you are no longer alone in facing your anxieties and blockages when moving forward and taking action. The more you enrich your AI assistants, the more they will help you find positive solutions to create your projects and improve your working conditions. As your AI practice improves, you will also be able to find AI assistants on the market that suit you best. No discipline or field of knowledge is inaccessible to you thanks to AI. You have access to a powerful intellectual force for just a few dollars a month with ChatGPT 4o. There's no need to wait for your company to provide you with this tool; you can use it at home with your own data.

That's not all! Writing and analysis will also allow you to discover new things and therefore innovate. Your creative intelligence will unlock, and you will then leave the rat race to become an augmented person thanks to AI. Finally, if you work in a team, you can share your knowledge with others to further increase your capacity to innovate.

Ultimately, the Write, Analyze, Share, and Innovate (WASI) cycle is the key to unlocking the infernal cage of the rat race.

Use the META to evaluate your state of mind

MOTION: clarify your DNA

The Motion element should help you find a deep and lasting reason that compels you to act positively. It is not just about motivation, which can fluctuate depending on circumstances, but an obligation that forces you to act positively even when you are tired or discouraged. Tenacity in overcoming challenges and accepting a time horizon of several years before achieving success are crucial for having a good

LET'S TAKE A CLOSER LOOK AT TRAIDA

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9 IT Cards

To have a unified vision of data and knowledge to run AIs

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6 governance Cards

To manage updates, versions, and security

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6 business Cards

To align technical decisions with business needs

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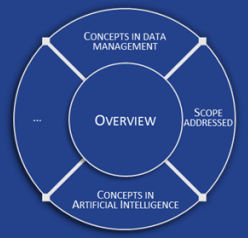
TRAIDA FRAMEWORK

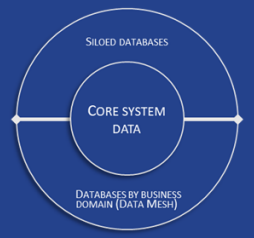
IT cards

Overview



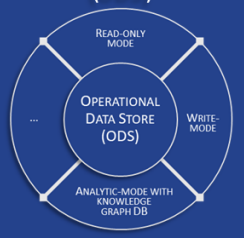
General introduction to TRAIDA cards in the technical domain

Core system data



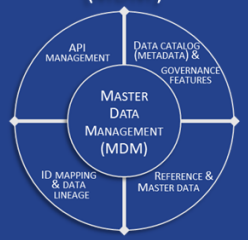
Core system data consist of structured and transactional data that contribute to the execution of operational processes

Operational Data Store (ODS)



Unified repository that collects all structured data from all databases, providing a 360-degree view

Master Data Management (MDM)

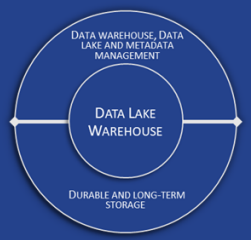


Repository for the most widely shared and structured data within the information system

Enterprise Knowledge Graph (EKG)

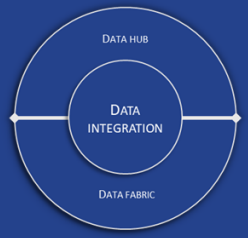
Potential universal repository for knowledge management with various use cases

Data Lake Warehouse



Repositories containing raw, structured, and unstructured data for business intelligence purposes

Data Integration

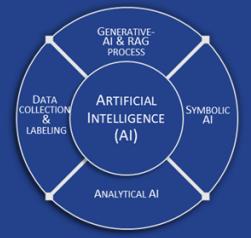


Processes and software for integrating data sources and governing data flows

Style of database

Data storage technologies according to operational needs: transaction, integrity, concurrent access, history, etc.

Artificial Intelligence (AI)



Artificial Intelligence systems function as automated and semi-automated decision-making algorithms

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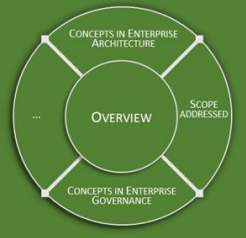
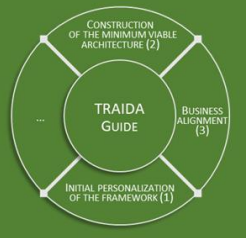
Governance cards

Overview



General introduction to TRAIDA cards in the governance domain

TRAIDA guide



TRAIDA is used as an operational tool to assist in the gradual transformation of your information system towards large-scale AI implementation

TRAIDA glossary

This card lists the important vocabulary to master to understand the impact of AI and data solutions on the architecture of the IS

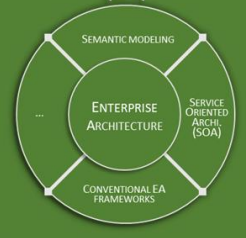
Human resources

An active mindset and aligned skill sets are required to enhance the positive impacts of AI and data solutions

Enterprise Governance

Enterprise governance aims to ensure the quality of data and AI across the organization

Enterprise Architecture (EA)



Enterprise Architecture outlines practices for modeling and documenting the business system

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Business cards

Overview

General introduction to TRAIDA cards in the business domain

Productivity

Improving productivity across all company processes is a key objective of AI

Creativity

Enhancing the creativity of certain company processes is an AI objective that complements the goal of improving productivity

Trustworthiness

Trust in data and AI must be objectively assessed to successfully implement AI throughout the enterprise

Treasury & Assurance

Properly managing budgets and mastering value analysis are essential for successfully scaling AI

Your card

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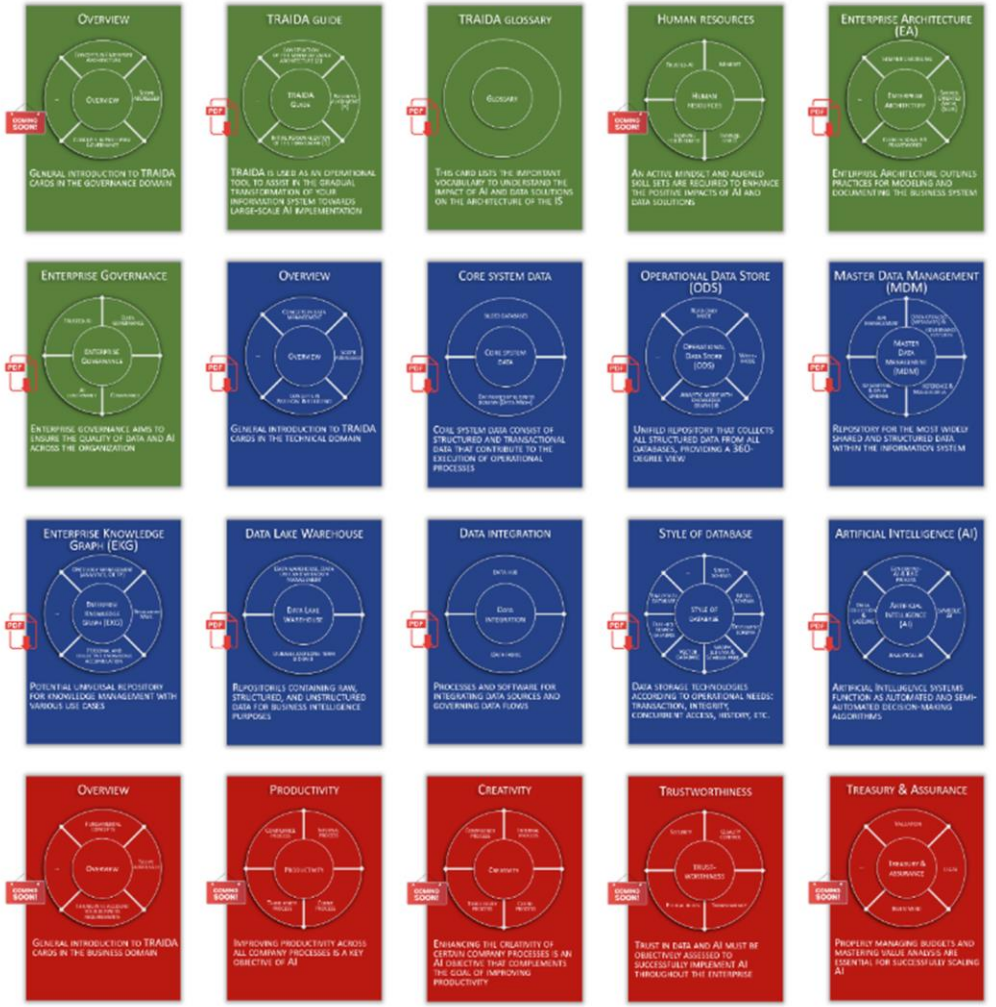
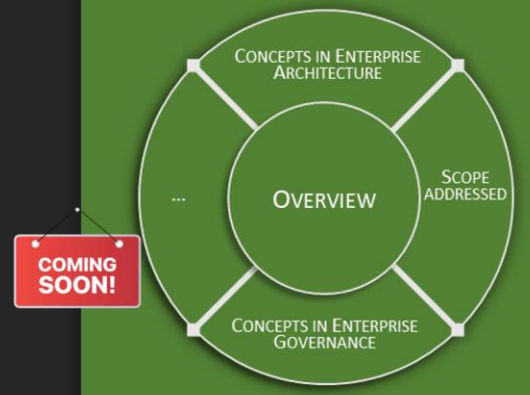
TRAIDA
AI & Data Solutions

MOTION M ENGAGEMENT E TREASURY T ASSURANCE

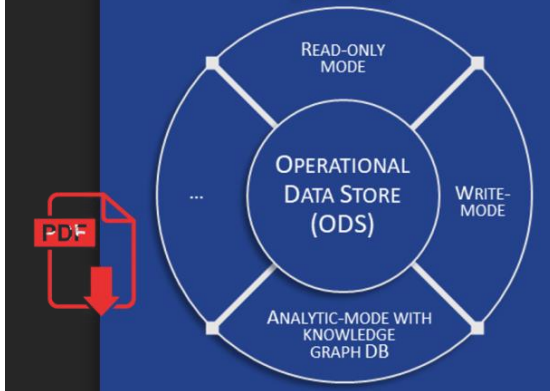


Overview



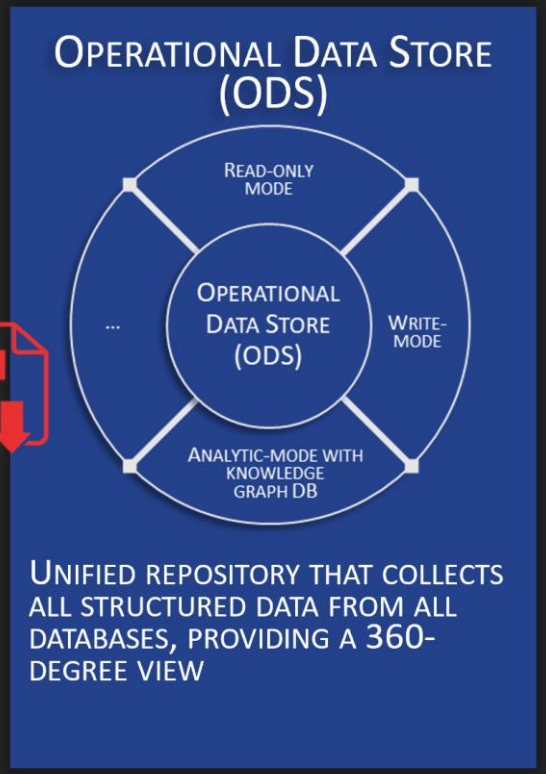
General introduction to TRAIDA cards in the governance domain

Operational Data Store (ODS)



Unified repository that collects all structured data from all databases, providing a 360-degree view

EACH CARD IS DESCRIBED IN FOUR SECTIONS AND A SET OF TOPICS



1. CONDITIONS OF SUCCESS
2. IMPORTANCE OF THIS CARD FOR YOUR TRANSFORMATIVE AI
3. BLUEPRINT
4. YOUR SITUATION & OBJECTIVES

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TRAIDA IS BASED ON AN ARCHITECTURAL VISION

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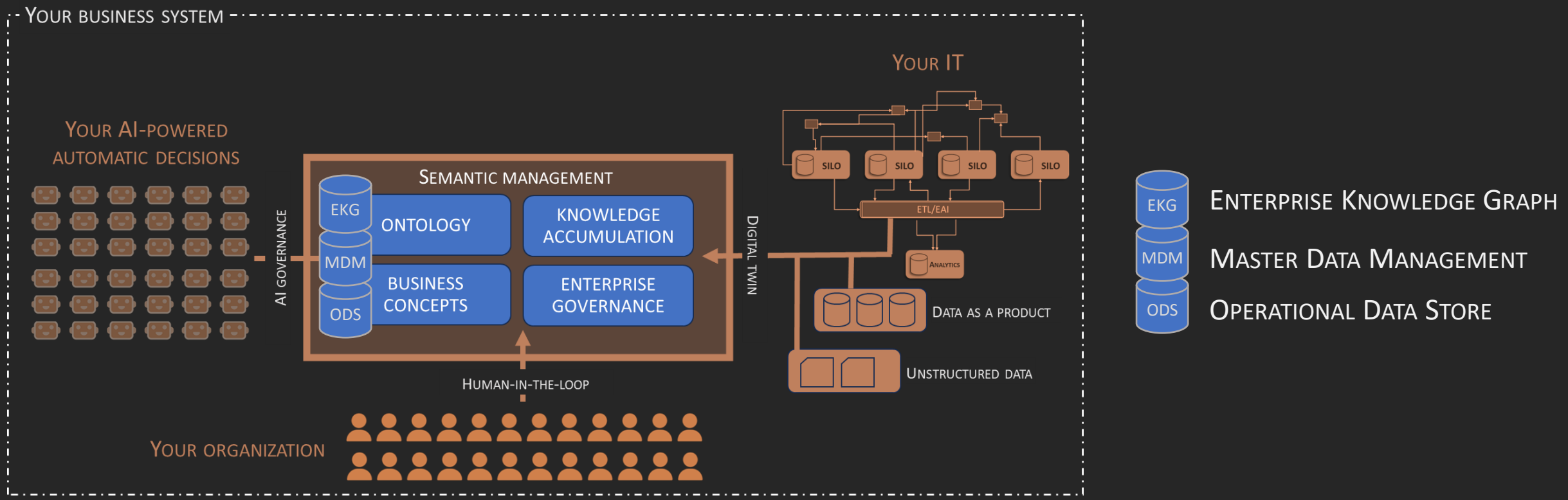
Minimum Viable Scale architecture



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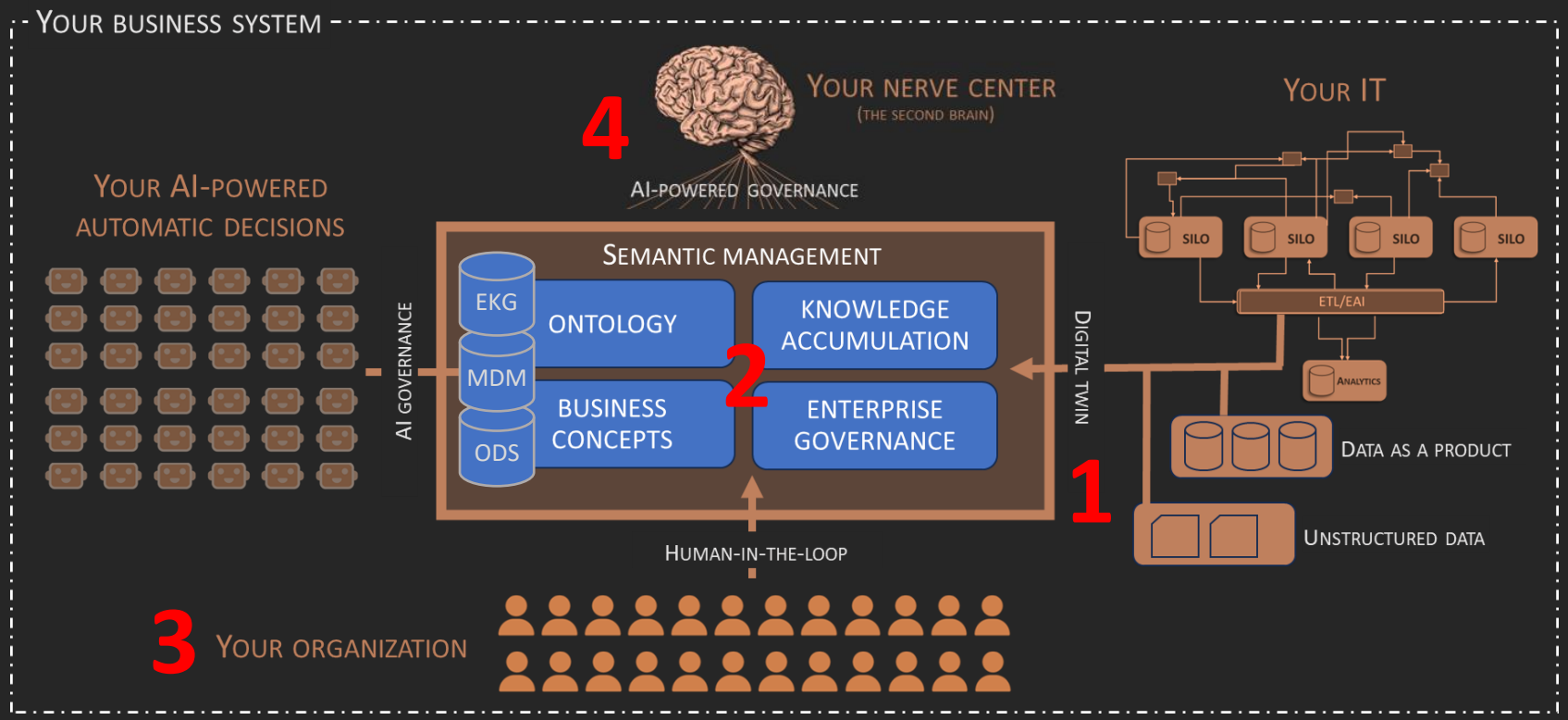
POINTS OF ATTENTION TO STUDY CAREFULLY



1 INTEGRATION

2 GOVERNANCE

3 MINDSET

4 TRUSTED-AI

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EXAMPLE

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Regulatory repository with AI and knowledge graphs

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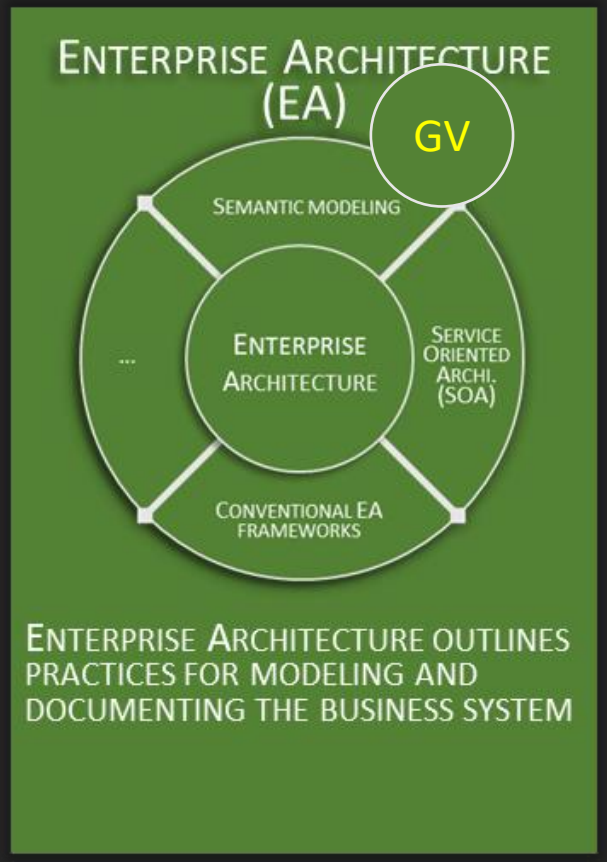

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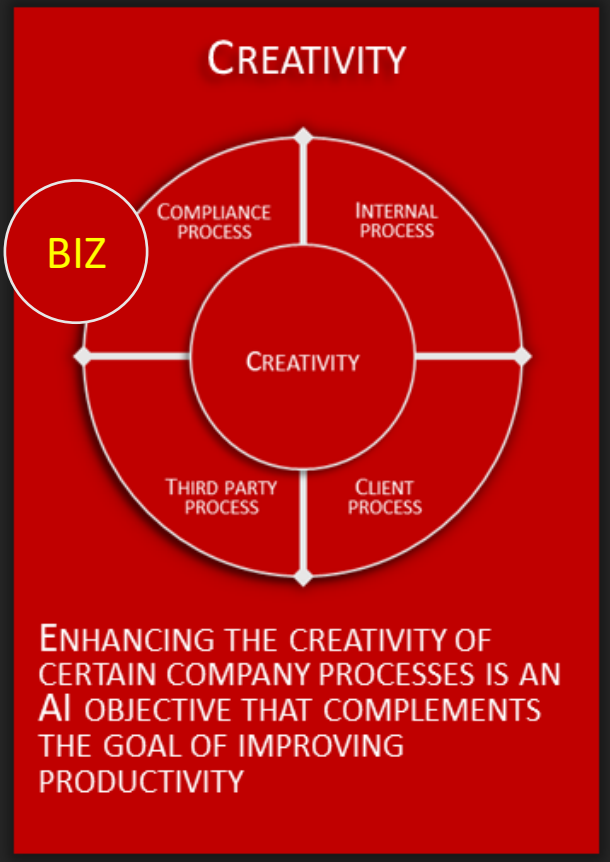

IT

Regulatory management with EKG

GV

Semantic modeling

BIZ

Compliance process

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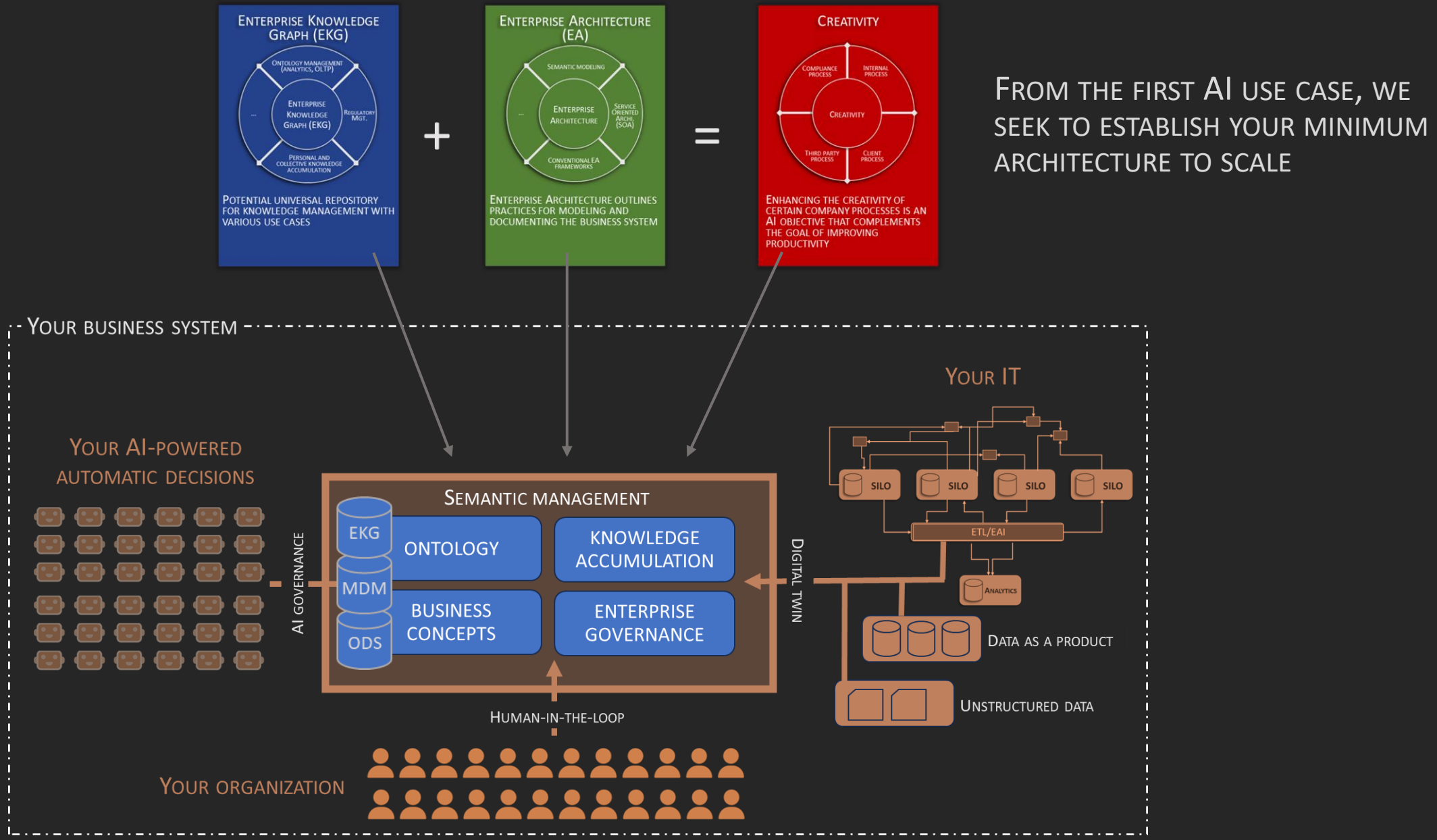

FROM THE FIRST AI USE CASE, WE SEEK TO ESTABLISH YOUR MINIMUM ARCHITECTURE TO SCALE

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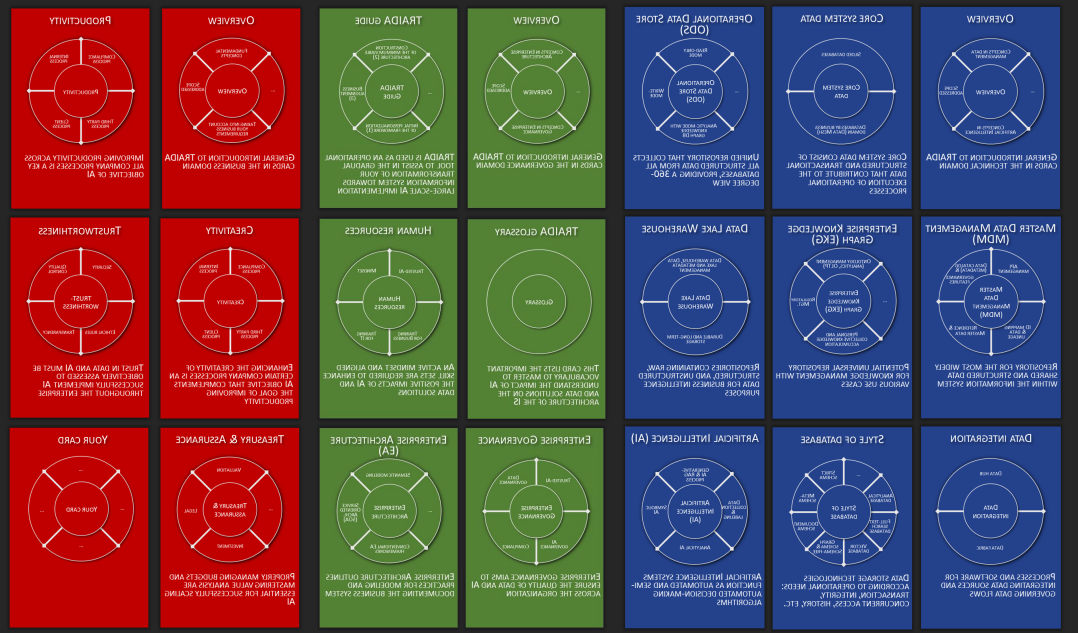
IT – BIZ ALIGNMENT



TRANSFORMATIVE
AI & DATA SOLUTION

TRAIDA
FRAMEWORK

GOVERNANCE CARDS

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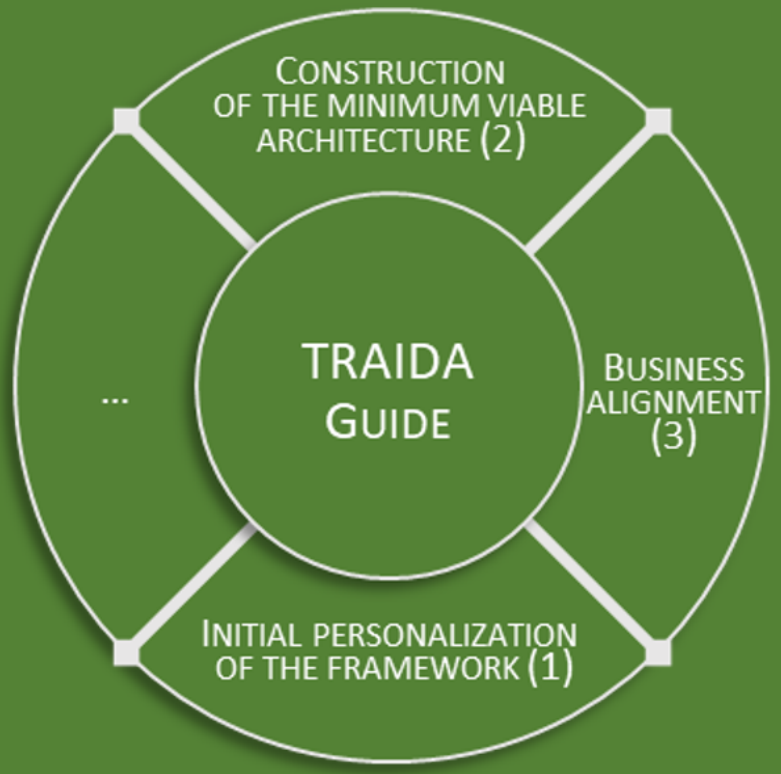
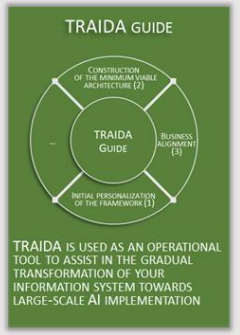
TRAIDA GUIDE



TRAIDA IS USED AS AN OPERATIONAL TOOL TO ASSIST IN THE GRADUAL TRANSFORMATION OF YOUR INFORMATION SYSTEM TOWARDS LARGE-SCALE AI IMPLEMENTATION

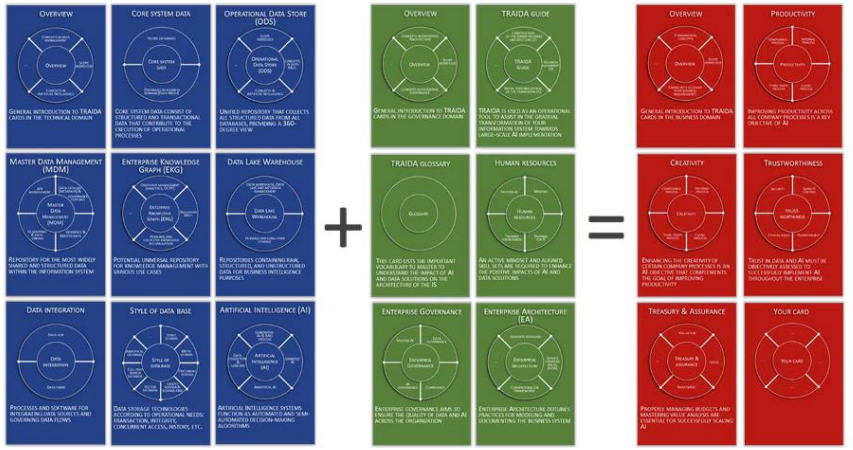
TRAIDA GUIDE

TRAIDA is a knowledge repository with an educational purpose on AI and data solutions. Its primary use is therefore the culture development of your teams on the architectural consequences of AI and data solutions on your information system. Once your teams are sufficiently aware of the architectural impacts of AI and associated data, TRAIDA is used as an operational tool to assist in the gradual transformation of your information system towards large-scale AI implementation. It relies on three stages: Initial personalization of the framework (1); construction of the minimum viable architecture (2); business alignment (3).



1. CONDITIONS OF SUCCESS

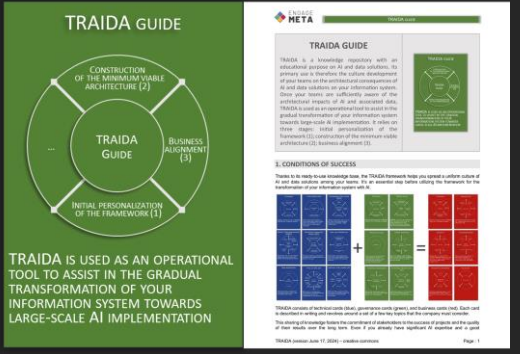
Thanks to its ready-to-use knowledge base, the TRAIDA framework helps you spread a uniform culture of AI and data solutions among your teams. It's an essential step before utilizing the framework for the transformation of your information system with AI.



TRAIDA consists of technical cards (blue), governance cards (green), and business cards (red). Each card is described in writing and revolves around a set of a few key topics that the company must consider.

This sharing of knowledge fosters the commitment of stakeholders to the success of projects and the quality of their results over the long term. Even if you already have significant AI expertise and a good

TRAIDA FRAMEWORK



TRAIDA MASTERCLASS: SPREAD A UNIFORM CULTURE OF AI AND DATA SOLUTIONS

↓

TRAIDA Workshop: INITIAL PERSONALIZATION OF THE FRAMEWORK

↓ Start (i)

CONSTRUCTION OF THE MINIMUM VIABLE ARCHITECTURE

↓

BUSINESS ALIGNMENT

i++

ENGAGE META

TRAIDA Masterclass

This masterclass reviews all the principles of the TRAIDA (Transformative AI and Data Solutions) framework in half a day. It provides you with a comprehensive overview of the impact of AI on organizing the technical architecture of your information system. The inclusion of NoCode opens up additional opportunities for automation and productivity. This masterclass is open to a broad audience, both technical and business-oriented, with no participant limit. The presentation is delivered in a seminar format, meaning it's academic. The time allocated for questions and answers varies depending on the number of participants. Ultimately, this masterclass is an excellent educational tool to provide you and your teams with the general knowledge needed to understand and engage with AI, data management, and NoCode. The slides from this masterclass are freely accessible on the Engage-Meta community website.

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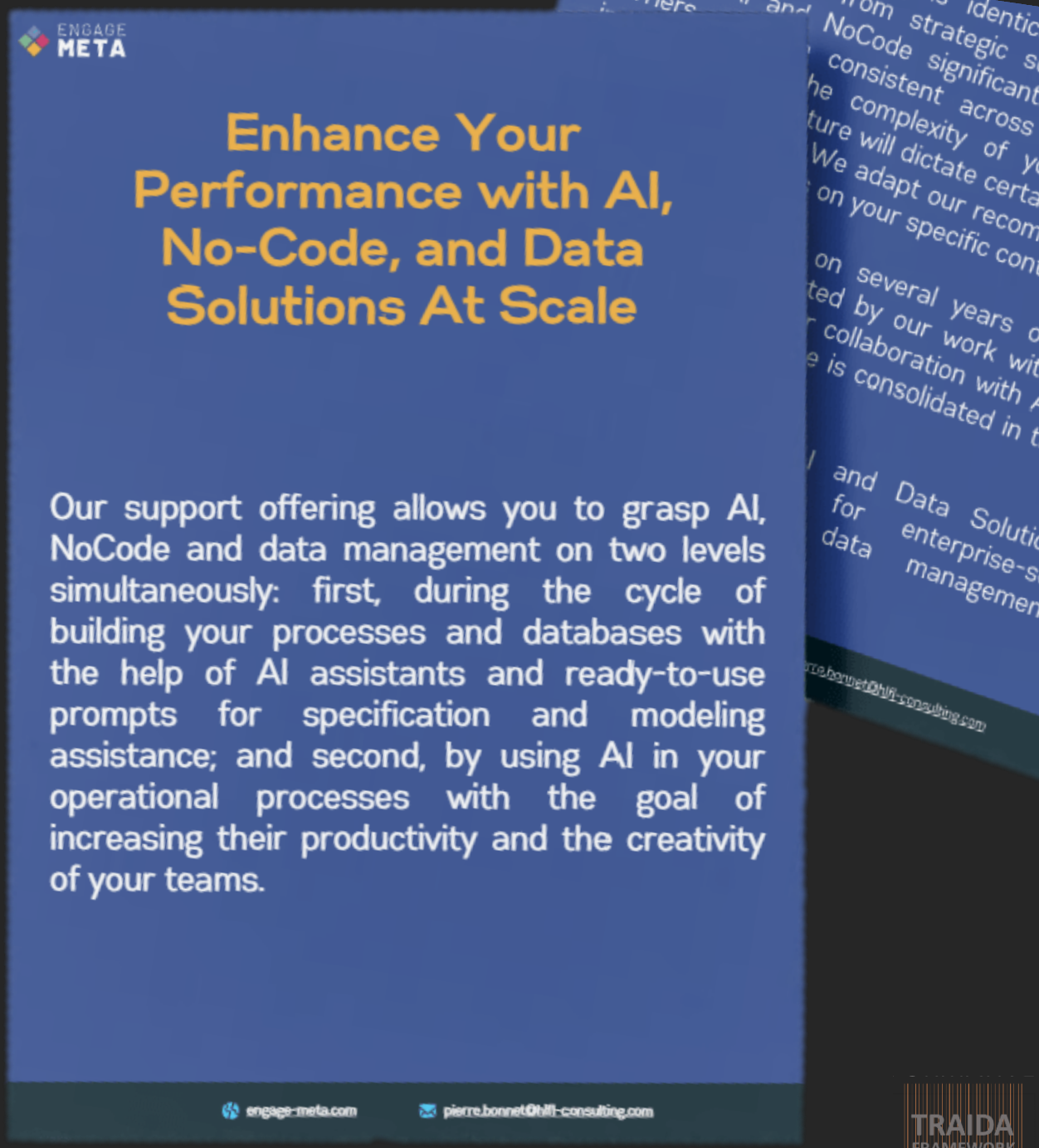

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ENGAGE META

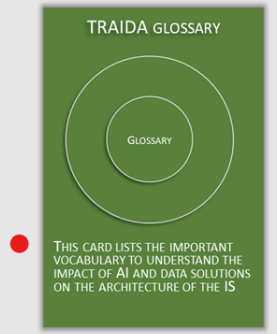
TRAIDA FRAMEWORK

TRAIDA GLOSSARY

THIS CARD LISTS THE IMPORTANT VOCABULARY TO UNDERSTAND THE IMPACT OF AI AND DATA SOLUTIONS ON THE ARCHITECTURE OF THE IS

TRAIDA GLOSSARY

To increase your speed of spreading a culture of AI and data management that is understandable by all of your technical and business teams, it is essential to establish and share a glossary of AI and data solutions terms. Although popular, some of these terms do not always have a definition commonly recognized by the market. You will therefore need to decide on your vocabulary choices. This card gives you the starting point for this semantic work, which is fundamental to building and managing your transformation with AI and data management.



The definitions are customized for the TRAIDA framework. They are not intended to conform to the marketing presentations of software vendors or IT analysis firms. Based on these definitions, you can create your own company glossary and update the various cards of the TRAIDA framework according to your context. **However, the more you maintain definitions that are neutral in relation to marketing trends, the more comprehensible your AI and data solutions strategy will be to your stakeholders, and the more robust it will remain over time**. The worst scenario would be to introduce terms and definitions that change too frequently and are challenged by the marketing and sales rhetoric of solution providers, whether they are technology companies or consultants. By relying on the most neutral definitions possible, TRAIDA helps you build a stable communication strategy for AI and data solutions in your context.

D

Data fabric, data hub and data mesh (overview)

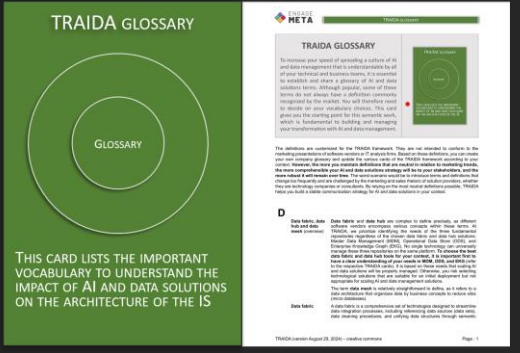
Data fabric and **data hub** are complex to define precisely, as different software vendors encompass various concepts within these terms. At TRAIDA, we prioritize identifying the needs of the three fundamental repositories regardless of the chosen data fabric and data hub solutions: Master Data Management (MDM), Operational Data Store (ODS), and Enterprise Knowledge Graph (EKG). No single technology can universally manage these three repositories on the same platform. **To choose the best data fabric and data hub tools for your context, it is important first to have a clear understanding of your needs in MDM, ODS, and EKG** (refer to the respective TRAIDA cards). It is based on these needs that scaling AI and data solutions will be properly managed. Otherwise, you risk selecting technological solutions that are suitable for an initial deployment but not appropriate for scaling AI and data management solutions.

The term **data mesh** is relatively straightforward to define, as it refers to a data architecture that organizes data by business concepts to reduce silos (micro databases).

Data fabric

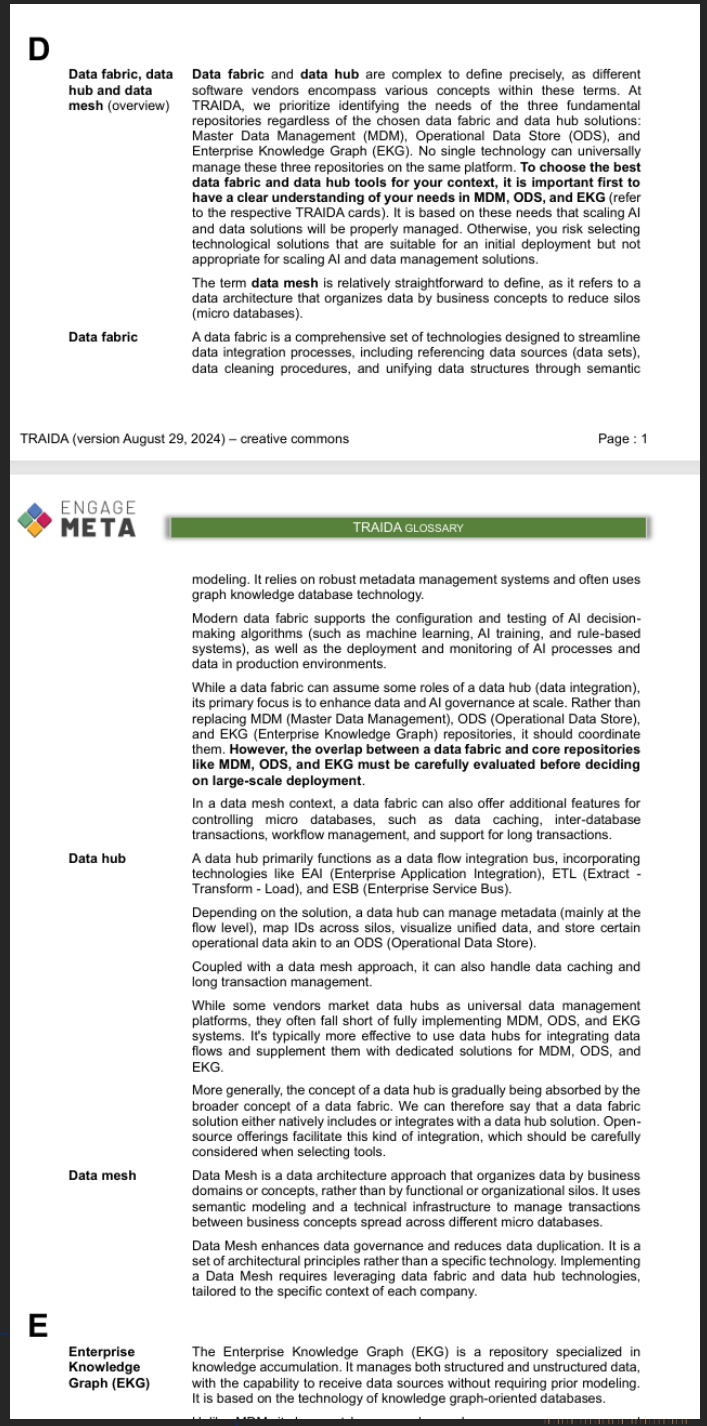
A data fabric is a comprehensive set of technologies designed to streamline data integration processes, including referencing data sources (data sets), data cleaning procedures, and unifying data structures through semantic

TRAIDA FRAMEWORK



THE DEFINITIONS ARE CUSTOMIZED FOR THE TRAIDA FRAMEWORK. THEY ARE NOT INTENDED TO CONFORM TO THE MARKETING PRESENTATIONS OF SOFTWARE VENDORS OR IT ANALYSIS FIRMS

DATA FABRIC, DATA HUB, DATA MESH, ENTERPRISE KNOWLEDGE GRAPH (EKG), MASTER DATA MANAGEMENT (MDM), OPERATION DATA STORE (ODS), ONTOLOGY, SEMANTIC MODELING…



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Page : 1

ENGAGE META

TRAIDA GLOSSARY

modeling. It relies on robust metadata management systems and often uses graph knowledge database technology.

Modern data fabric supports the configuration and testing of AI decision-making algorithms (such as machine learning, AI training, and rule-based systems), as well as the deployment and monitoring of AI processes and data in production environments.

While a data fabric can assume some roles of a data hub (data integration), its primary focus is to enhance data and AI governance at scale. Rather than replacing MDM (Master Data Management), ODS (Operational Data Store), and EKG (Enterprise Knowledge Graph) repositories, it should coordinate them. **However, the overlap between a data fabric and core repositories like MDM, ODS, and EKG must be carefully evaluated before deciding on large-scale deployment**.

In a data mesh context, a data fabric can also offer additional features for controlling micro databases, such as data caching, inter-database transactions, workflow management, and support for long transactions.

Data hub

A data hub primarily functions as a data flow integration bus, incorporating technologies like EAI (Enterprise Application Integration), ETL (Extract - Transform - Load), and ESB (Enterprise Service Bus).

Depending on the solution, a data hub can manage metadata (mainly at the flow level), map IDs across silos, visualize unified data, and store certain operational data akin to an ODS (Operational Data Store).

Coupled with a data mesh approach, it can also handle data caching and long transaction management.

While some vendors market data hubs as universal data management platforms, they often fall short of fully implementing MDM, ODS, and EKG systems. It's typically more effective to use data hubs for integrating data flows and supplement them with dedicated solutions for MDM, ODS, and EKG.

More generally, the concept of a data hub is gradually being absorbed by the broader concept of a data fabric. We can therefore say that a data fabric solution either natively includes or integrates with a data hub solution. Open-source offerings facilitate this kind of integration, which should be carefully considered when selecting tools.

Data mesh

Data Mesh is a data architecture approach that organizes data by business domains or concepts, rather than by functional or organizational silos. It uses semantic modeling and a technical infrastructure to manage transactions between business concepts spread across different micro databases.

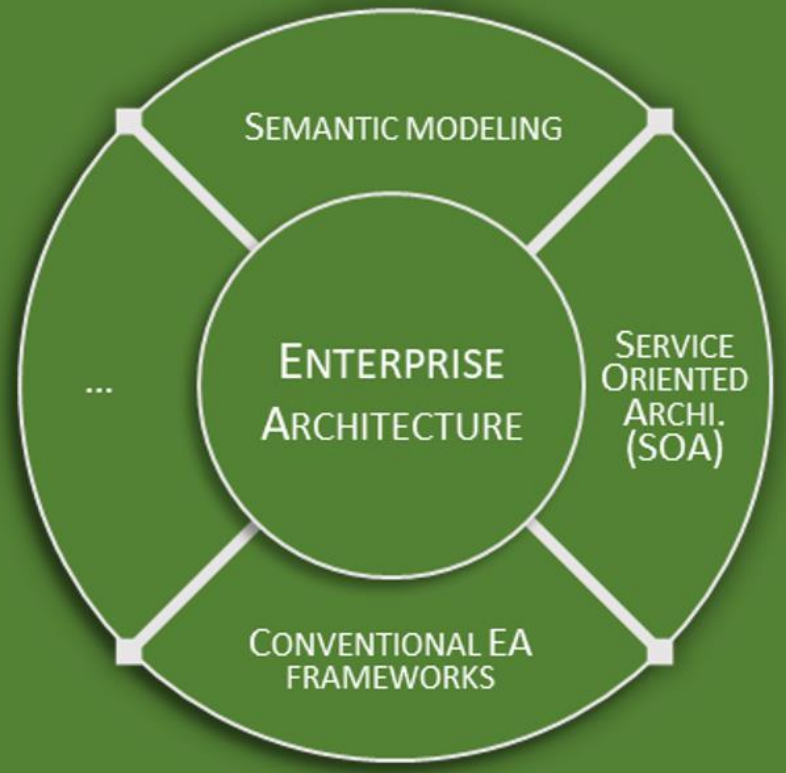
Data Mesh enhances data governance and reduces data duplication. It is a set of architectural principles rather than a specific technology. Implementing a Data Mesh requires leveraging data fabric and data hub technologies, tailored to the specific context of each company.

E

Enterprise Knowledge Graph (EKG)

The Enterprise Knowledge Graph (EKG) is a repository specialized in knowledge accumulation. It manages both structured and unstructured data, with the capability to receive data sources without requiring prior modeling. It is based on the technology of knowledge graph-oriented databases.

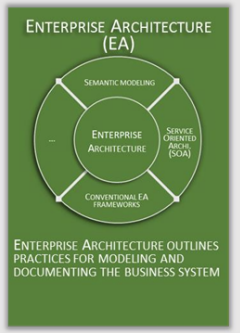
ENTERPRISE ARCHITECTURE (EA)



ENTERPRISE ARCHITECTURE OUTLINES PRACTICES FOR MODELING AND DOCUMENTING THE BUSINESS SYSTEM

ENTERPRISE ARCHITECTURE

Enterprise Architecture (EA) outlines practices for modeling and documenting the business system. It enables the preparation and support for large-scale deployment of AI by promoting the consideration of semantic modeling (ontology) and service-oriented architecture (SOA).



1. CONDITIONS OF SUCCESS

The profitability of AI relies on the use of best practices described in TRAIDA, particularly those concerning data quality, ontology modeling, and knowledge management. Their implementation is closely linked with the company's information system, which includes the processes, rules, and data that support the execution of operations.

With TRAIDA, the goal is not to create a new AI-based system from scratch that would operate parallel to the existing one, but rather to promote a symbiosis between AI and the information system. To extend the metaphor, it's similar to the relationship between a clownfish and an anemone. Both derive benefits: the fish is immune to the stinging tentacles of the anemone, allowing it to hide there, and the anemone feeds on the fish's waste. The coupling is the same for AI and the information system. One cannot survive sustainably without the other, especially when it comes to maintaining the company's competitiveness through new information management technologies.

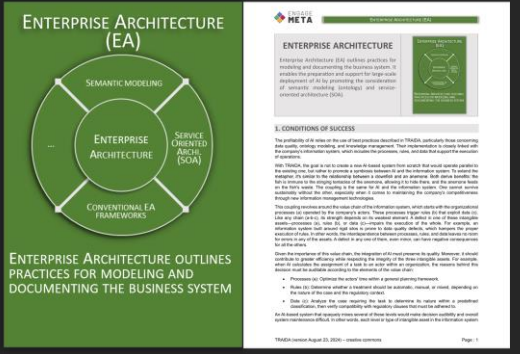
This coupling revolves around the value chain of the information system, which starts with the organizational processes (a) operated by the company's actors. These processes trigger rules (b) that exploit data (c). Like any chain (a-b-c), its strength depends on its weakest element. A defect in one of these intangible assets—processes (a), rules (b), or data (c)—impairs the execution of the whole. For example, an information system built around rigid silos is prone to data quality defects, which hampers the proper execution of rules. In other words, the interdependence between processes, rules, and data leaves no room for errors in any of the assets. A defect in any one of them, even minor, can have negative consequences for all the others.

Given the importance of this value chain, the integration of AI must preserve its quality. Moreover, it should contribute to greater efficiency while respecting the integrity of the three intangible assets. For example, when AI calculates the assignment of a task to an actor within an organization, the reasons behind this decision must be auditable according to the elements of the value chain:

- Processes (a): Optimize the actors' time within a general planning framework.
- Rules (b): Determine whether a treatment should be automatic, manual, or mixed, depending on the nature of the case and the regulatory context.
- Data (c): Analyze the case requiring the task to determine its nature within a predefined classification, then verify compatibility with regulatory clauses that must be adhered to.

An AI-based system that opaquely mixes several of these levels would make decision audibility and overall system maintenance difficult. In other words, each level or type of intangible asset in the information system

TRAIDA FRAMEWORK



KEY STRATEGIC GOALS FOR ENTERPRISE ARCHITECTURE

ENTERPRISE DATA GOVERNANCE (SEMANTIC MODELING, ONTOLOGIES)

SERVICE ORIENTED ARCHITECTURE (SOA)

BUSINESS ARCHITECTURE PROCESSES

DATA ARCHITECTURE LOGICAL, PHYSICAL

APPLICATION ARCHITECTURE SOFTWARE, RULES

TECHNICAL ARCHITECTURE INFRA., SECURITY

ENTERPRISE-SCALE

PERSONAL KNOWLEDGE MGT.

INFORMATION SYSTEM-SCALE

COLLECTIVE KNOWLEDGE MGT.

AI-POWERED AUTOMATIC GOVERNANCE

(SECOND BRAIN, NERVE CENTER, TRUSTED-AI)

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TRAIDA FRAMEWORK

ENTERPRISE GOVERNANCE

ENTERPRISE GOVERNANCE AIMS TO ENSURE THE QUALITY OF DATA AND AI ACROSS THE ORGANIZATION

ENTERPRISE GOVERNANCE

Enterprise governance aims to ensure the quality of data and AI across the organization. It revolves around risk management and regulatory compliance, the application of ESG (Environmental, Social, and Governance) and CSR (Corporate Social Responsibility) principles, as well as ensuring the reliability of the IT system.

1. CONDITIONS OF SUCCESS

Enterprise governance ensures that decision-making and management processes are conducted in compliance with the company's internal rules and regulations. Given the complexity of the organization, it often mobilizes significant human and technical resources. These resources focus on two major areas: risk control and regulatory compliance. The following key domains of governance are then considered:

- The management of internal risks and compliance with industry-specific regulations.
- The application of ESG (Environmental, Social, and Governance) principles for non-financial performance and their translation into regulations.
- The application of CSR (Corporate Social Responsibility) principles and their translation into regulations.

IT management is delegated to the governance of the information system, which uses frameworks such as COBIT and ITIL, as well as enterprise architecture with TOGAF (see TRAIDA card on Enterprise Architecture).

Governance quality

The quality of enterprise governance increases with its level of automation.

In other words, the less human intervention is required to execute processes, the more governance is embedded in the software code. For example, the control of an expense commitment amount, based on a matrix that cross-references actors and needs, is integrated into the order processing software. However, if this matrix or software has flaws, it challenges governance as seriously as a human error would. A balance between controlled automation and human intervention is a goal to be clarified, especially since AI enhances this potential for automation and shifts the usual balance.

It introduces new use cases depending on the context of each company. Here are some examples for illustration:

- A human resources management AI is integrated into the employee promotion process to automate certain decision-making steps that were previously exclusively human. Enterprise governance ensures that this AI's training aligns with HR policy and complies with regulations, such as CSR criteria.
- The organization finds that increasing the use of AI for decision-making correlates with a decrease in informal communication between actors. Enterprise governance examines the risk of

TRAIDA FRAMEWORK

Powered by AI

INTERNAL RISKS

CSR
Corporate Social Responsibility

Enterprise Governance

IT Management

Enterprise Architecture

ESG
Environmental, Social, and Governance

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IT CARDS

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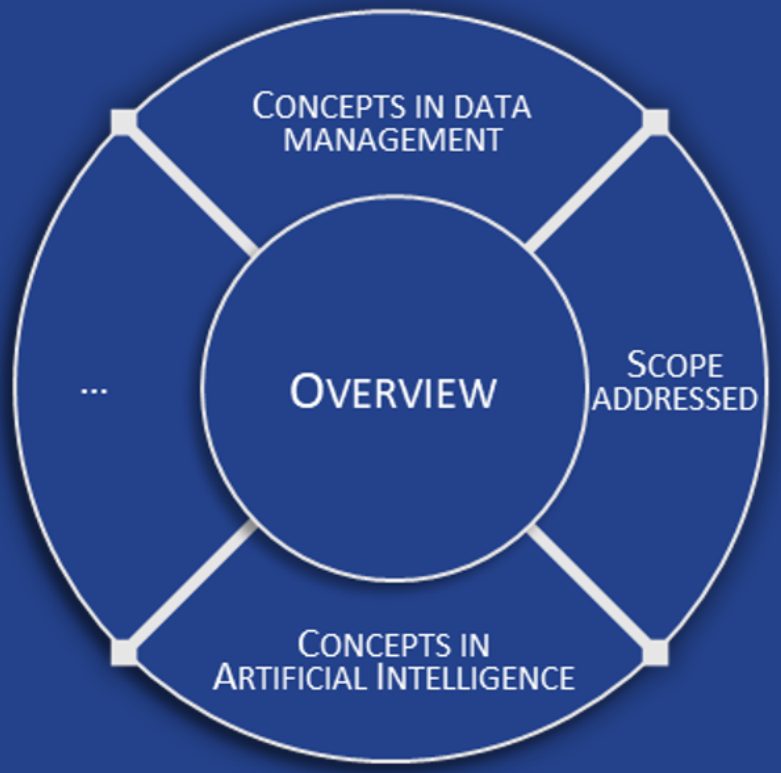
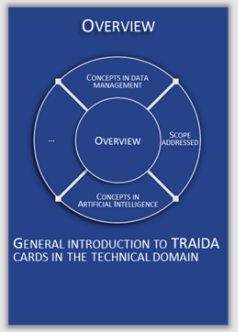
OVERVIEW



GENERAL INTRODUCTION TO TRAIDA CARDS IN THE TECHNICAL DOMAIN

IT DOMAIN OVERVIEW

General introduction to TRAIDA cards in the technical domain. The cards in this domain are universal and apply to all business contexts. You select the practices that correspond to your needs and complete them to manage a roadmap for implementing your minimum architecture to scale AI and data management solutions in your company.



1. CONDITIONS OF SUCCESS

The TRAIDA framework (Transformative AI and Data Solutions) is based on three domains:

1. Technical (blue cards).
2. Governance (green cards).
3. Business (red cards).

To scale AI profitably across the enterprise, these three domains must be aligned. The technical domain is based on a foundational principle that serves as the cornerstone of the entire TRAIDA approach: "***The idea of integrating AI with existing databases is rejected***." The reasons for this recommendation are as follows:

- A strong coupling between AI and the databases of the existing information system creates point-to-point connections that are fragile (difficult to maintain) and poorly auditable (lack of central governance). From a software engineering perspective, this coupling creates technical debt and must be replaced by loose coupling. This allows AI systems to be independent of the physical access layers to production databases.
- A new data repository is necessary to store the tacit knowledge required for AI training. This type of knowledge, also known as informal knowledge, exists in the minds of human actors and is increasingly necessary to enhance AI's capabilities. This new repository is disconnected from production databases and aligns with the objective of loose coupling.

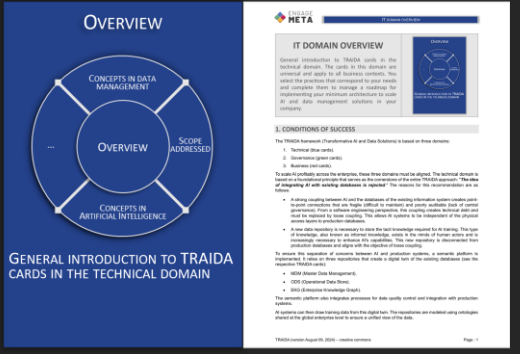
To ensure this separation of concerns between AI and production systems, a semantic platform is implemented. It relies on three repositories that create a digital twin of the existing databases (see the respective TRAIDA cards):

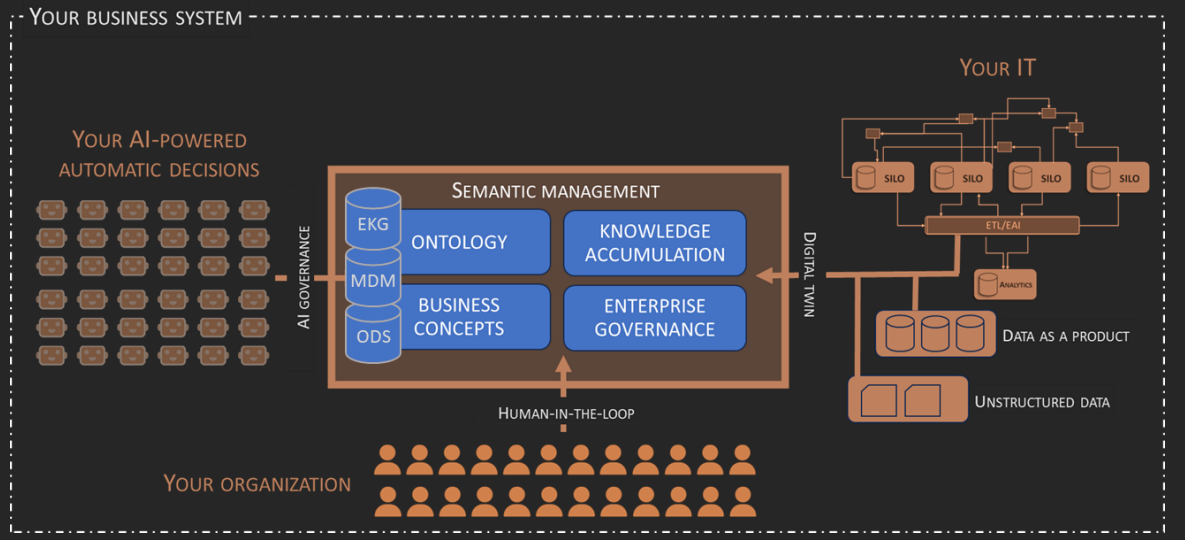
- MDM (Master Data Management).
- ODS (Operational Data Store).
- EKG (Enterprise Knowledge Graph).

The semantic platform also integrates processes for data quality control and integration with production systems.

AI systems can then draw training data from this digital twin. The repositories are modeled using ontologies shared at the global enterprise level to ensure a unified view of the data.

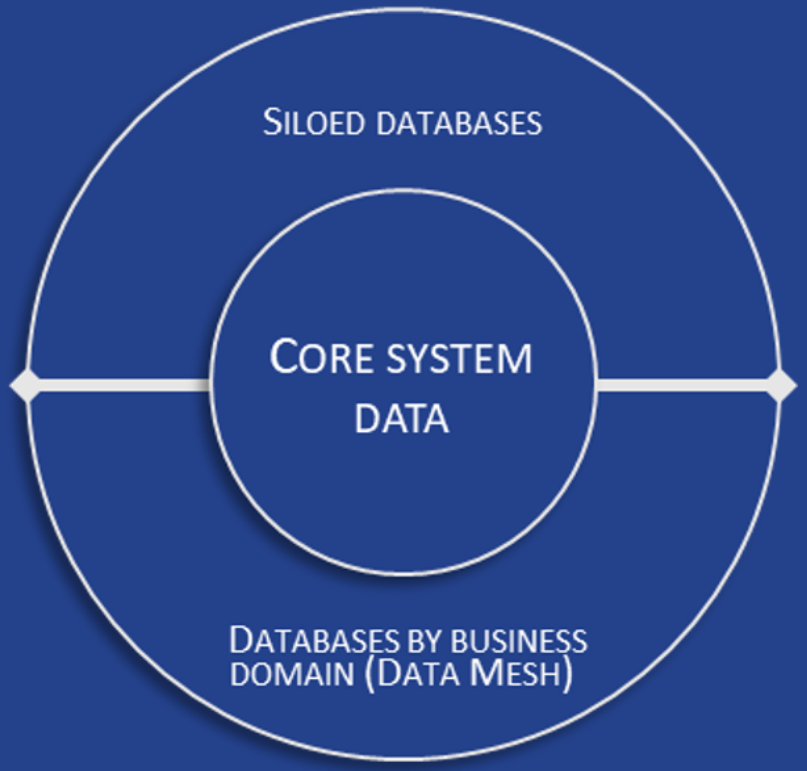
TRAIDA FRAMEWORK





IT CARD	TOPIC
CORE SYSTEM DATA	SILOED DATABASES
	DATABASES BY BUSINESS DOMAIN (DATA MESH)
OPERATIONAL DATA STORE (ODS)	READ-ONLY MODE
	WRITE-MODE
	ANALYTIC-MODE WITH KNOWLEDGE GRAPH
MASTER DATA MANAGEMENT (MDM)	DATA CATALOG (METADATA) & GOVERNANCE FEATURES
	REFERENCE & MASTER DATA
	ID MAPPING & DATA LINEAGE
	API MANAGEMENT
ENTERPRISE KNOWLEDGE GRAPH (EKG)	ONTOLOGY MANAGEMENT (ANALYTICS, OLTP)
	REGULATORY MANAGEMENT
	PERSONAL AND COLLECTIVE KNOWLEDGE ACCUMULATION
DATA LAKE WAREHOUSE	DATA WAREHOUSE, DATA LAKE AND METADATA MANAGEMENT
	DURABLE AND LONG-TERM STORAGE
DATA INTEGRATION	DATA HUB
	DATA FABRIC
STYLE OF DATABASE	STRICT-SCHEMA
	META-SCHEMA
	DOCUMENT SCHEMA
	GRAPH SCHEMA & SCHEMA-FREE
	VECTOR DATABASE
	FULL-TEXT SEARCH DATABASE
	ANALYTICAL DATABASE
ARTIFICIAL INTELLIGENCE	GENERATIVE AI & RAG PROCESS
	SYMBOLIC AI
	ANALYTICAL AI
	DATA COLLECTION & LABELING

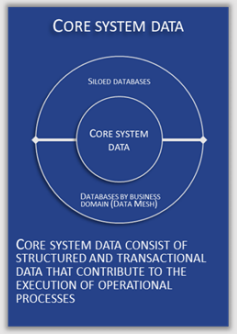
CORE SYSTEM DATA



CORE SYSTEM DATA CONSIST OF STRUCTURED AND TRANSACTIONAL DATA THAT CONTRIBUTE TO THE EXECUTION OF OPERATIONAL PROCESSES

CORE SYSTEM DATA

Core system data consists of your structured and transactional data that contribute to the execution of operational processes, as well as links to unstructured and multimedia data structures. These data elements have predetermined usage objectives. This does not refer to decision-making system data (business intelligence, data analytics…). Core system data relies on OLTP technologies capable of handling high-frequency multi-user and multi-system concurrent access.



1. CONDITIONS OF SUCCESS

Implement a metadata catalog.

If you do not have unified and up-to-date knowledge of your core-system data structures such as dataset names, table names, field names, relation names, you need to build or strengthen your metadata repository while avoiding extensive semantic modeling that could be lengthy and costly. This repository isn't meant to handle the data values but to help you understand the metadata managed in your core-system databases. It facilitates the creation of a business terms glossary that must be synchronized across all your operational systems.

This is a sort of data catalog, but it is limited to the work of capitalizing on the knowledge applied to core system databases. It does not replace a complete data catalog repository, which is usually managed through a Master Data Management (MDM) (see the related card).

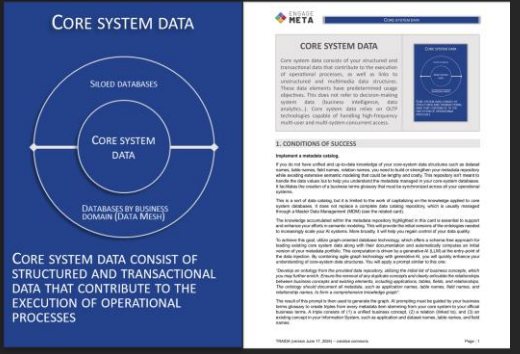
The knowledge accumulated within the metadata repository highlighted in this card is essential to support and enhance your efforts in semantic modeling. This will provide the initial versions of the ontologies needed to increasingly scale your AI systems. More broadly, it will help you regain control of your data quality.

To achieve this goal, utilize graph-oriented database technology, which offers a schema-free approach for loading existing core system data along with their documentation and automatically computes an initial version of your metadata portfolio. This computation is driven by a generative AI (LLM) at the entry-point of the data injection. By combining agile graph technology with generative AI, you will quickly enhance your understanding of core-system data structures. You will apply a prompt similar to this one:

"Develop an ontology from the provided data repository, utilizing the initial list of business concepts, which you may further enrich. Ensure the removal of any duplicate concepts and clearly articulate the relationships between business concepts and existing elements, including applications, tables, fields, and relationships. The ontology should document all metadata, such as application names, table names, field names, and relationship names, to form a comprehensive knowledge graph".

The result of this prompt is then used to generate the graph. AI prompting must be guided by your business terms glossary to create triples from every metadata item stemming from your core system to your official business terms. A triple consists of (1) a unified business concept, (2) a relation (linked to), and (3) an existing concept in your Information System, such as application and dataset names, table names, and field names.

TRAIDA FRAMEWORK



CORE SYSTEM DATA

DOCUMENTATION

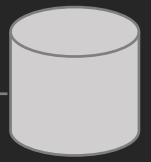
KNOWLEDGE GRAPH FOR THE DATA INJECTION

AI PROMPT

"Develop an ontology from the provided data repository, utilizing the initial list of business concepts, which you may further enrich. Ensure the removal of any duplicate concepts and clearly articulate the relationships between business concepts and existing elements, including applications, tables, fields, and relationships. The ontology should document all metadata, such as application names, table names, field names, and relationship names, to form a comprehensive knowledge graph"

i=0

LLM



BUSINESS CONCEPTS MANAGED ACROSS YOUR INFORMATION SYSTEM (GLOSSARY)

i++

Diff analysis (i) vs (i++)

KNOWLEDGE GRAPH FOR THE METADATA PORTFOLIO (DATA CATALOG ON CORE-SYSTEM)

Analysis of the graph and improvement of the list and definition of business concepts (glossary)

The metadata portfolio supports the development of necessary ontologies for data cleansing and AI scaling

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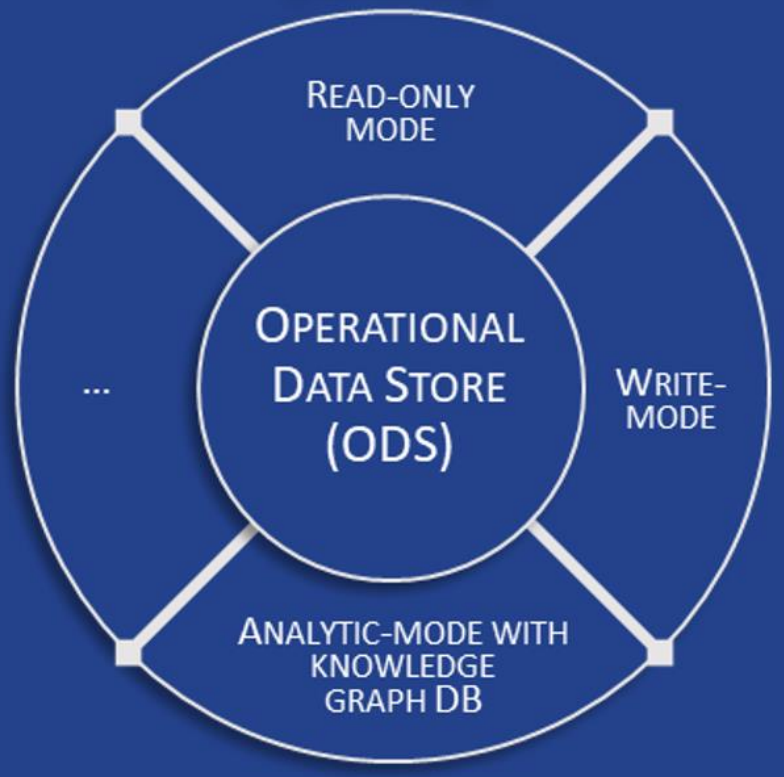
TRAIDA FRAMEWORK

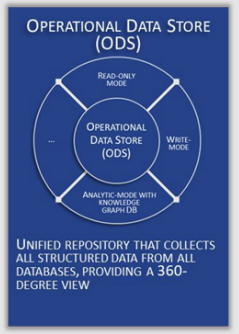
Operational Data Store (ODS)



Unified repository that collects all structured data from all databases, providing a 360-degree view

OPERATIONAL DATA STORE

The Operational Data Store (ODS) is a unified repository that collects all structured data from all databases, providing a 360-degree view. In practice, a read-only ODS can cover just one functional or business domain of the enterprise to build a unified view of data within this limited scope.



1. CONDITIONS OF SUCCESS

History

Since the beginning, information systems have gradually structured around multiple data sources. These systems generate information quality issues due to duplications and complex relations between objects stored in these different sources.

In the early 1990s, the need for a unified repository to consolidate these sources into a single point emerged. At that time, it was about preparing data downstream from business intelligence repositories like data warehouses. In this context, the term Operational Data Store (ODS) became widespread. It didn't introduce new storage technologies since the use of relational databases was the norm. It was used as a new data source exclusively for consultation in business intelligence. Although its data model needed to be properly constructed, it was not yet a semantic modeling. It was just necessary to ensure an organized structure of data for their use in decision-making systems, in a context where data warehouses presented significant constraints for the volumes of data managed.

A few decades later, the emergence of massive data storage technologies with big data made the use of ODS less useful: why spend money on this repository when it was possible to dump all data sources into big data? Unfortunately, experience showed that the lack of data structuring in big data harms the quality of analyses.

Today, many companies are dissatisfied with their big data projects partly due to the absence of an ODS upstream of decision-making systems. This results in a lack of semantics in big data that prevents leveraging the deep richness of data.

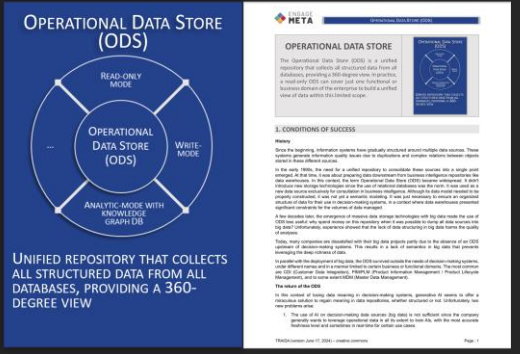
In parallel with the deployment of big data, the ODS survived outside the needs of decision-making systems, under different names and in a manner limited to certain business or functional domains. The most common are CDI (Customer Data Integration), PIM/PLM (Product Information Management / Product Lifecycle Management), and to some extent MDM (Master Data Management).

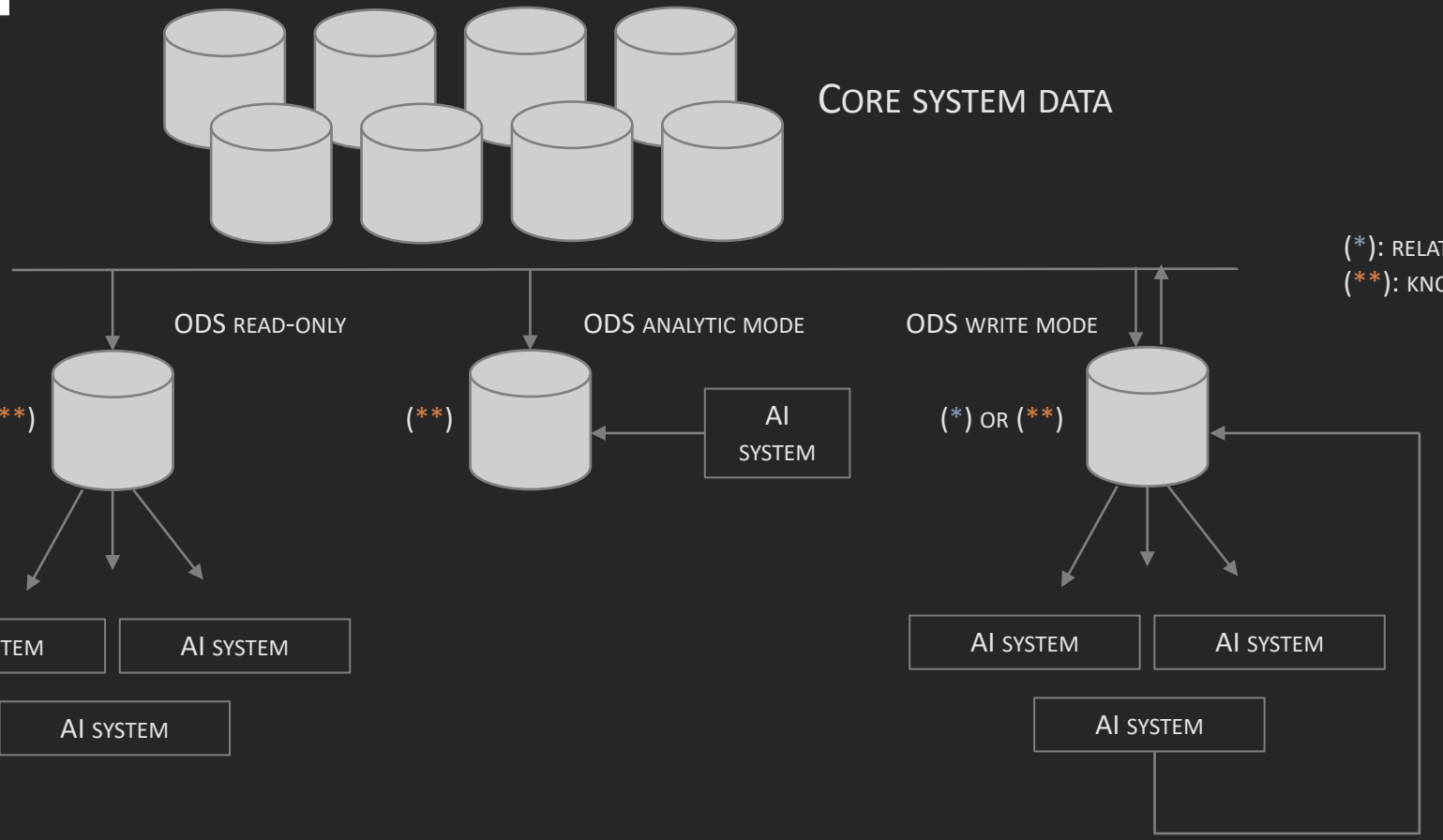
The return of the ODS

In this context of losing data meaning in decision-making systems, generative AI seems to offer a miraculous solution to regain meaning in data repositories, whether structured or not. Unfortunately, two new problems arise:

1. The use of AI on decision-making data sources (big data) is not sufficient since the company generally wants to leverage operational data in all its extent to train AIs, with the most accurate freshness level and sometimes in real-time for certain use cases.

TRAIDA FRAMEWORK





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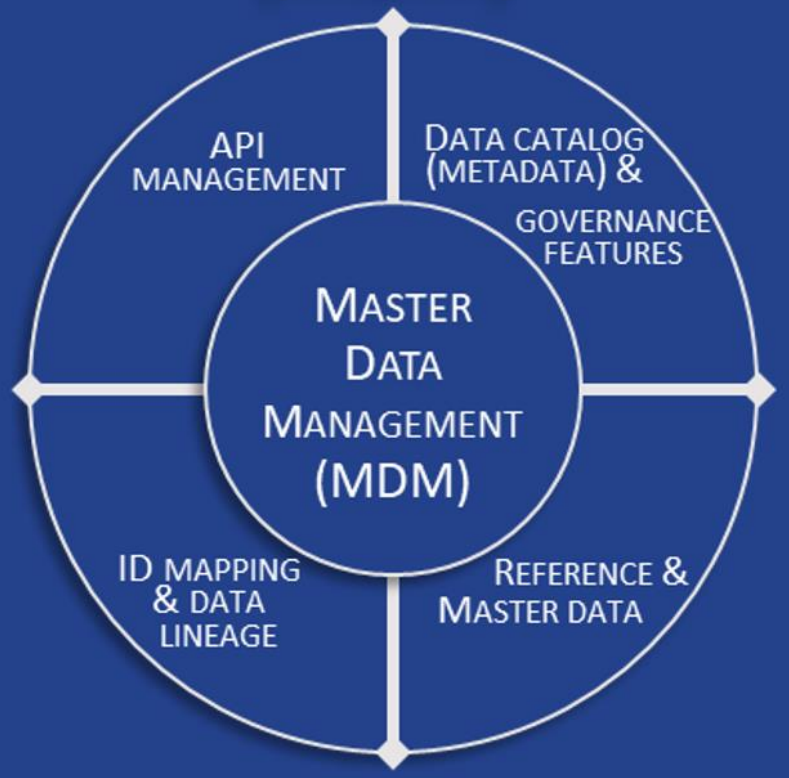
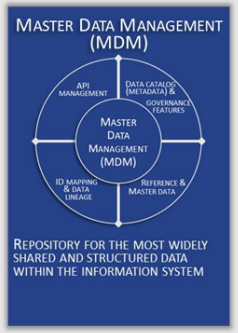
MASTER DATA MANAGEMENT (MDM)



REPOSITORY FOR THE MOST WIDELY SHARED AND STRUCTURED DATA WITHIN THE INFORMATION SYSTEM

MASTER DATA MANAGEMENT

Master Data Management (MDM) serves as a repository for the most widely shared and structured data across the information system. It is particularly important for AI at scale, as it plays a crucial role in creating ontologies in conjunction with the Operational Data Store (ODS).



1. CONDITIONS OF SUCCESS

Master Data Management (MDM) offers advanced data governance features such as version and variant management, temporal management (historical), version comparison and merging, data deduplication, data cleaning, data authoring UI, etc. The richer this governance is, the less feasible it is to apply it to data that is frequently and massively (OLTP) modified. Therefore, master and reference data are primarily concerned with MDM.

For instance, the stock of a product in a company's offer catalog evolves in real-time with the flow of orders. However, the physical locations of these stocks in warehouses remain stable over a predetermined period, such as a day, week, or longer. MDM does not manage stock values for each order but handles data concerning their warehouse locations. This is a meta-knowledge applied to the concept of stock. Specifically, MDM manages the metadata of the business concept of "stock" (name, format, nature, application linkage, etc.) without knowing the successive stock values of products. Conversely, for product storage locations, MDM manages both the metadata of associated business concepts (warehouses, geographic location) and the values with warehouse instances and their physical addresses.

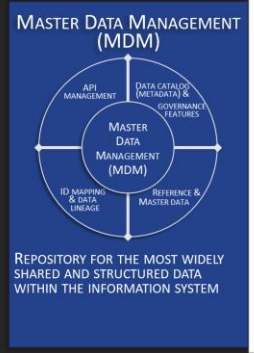
The previous example highlights two principles essential for establishing a minimum architecture to scale Artificial Intelligence:

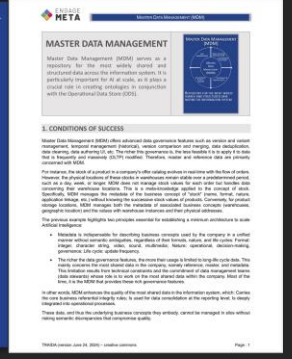
- Metadata is indispensable for describing business concepts used by the company in a unified manner without semantic ambiguities, regardless of their formats, nature, and life cycles: Format: integer, character string, video, sound, multimedia; Nature: operational, decision-making, governance; Life cycle: update frequency.
- The richer the data governance features, the more their usage is limited to long-life cycle data. This mainly concerns the most shared data in the company, namely reference, master, and metadata. This limitation results from technical constraints and the commitment of data management teams (data stewards) whose role is to work on the most shared data within the company. Most of the time, it is the MDM that provides these rich governance features.

In other words, MDM enhances the quality of the most shared data in the information system, which: Carries the core business referential integrity rules; Is used for data consolidation at the reporting level; Is deeply integrated into operational processes.

These data, and thus the underlying business concepts they embody, cannot be managed in silos without risking semantic discrepancies that compromise quality.

TRAIDA FRAMEWORK





CORE SYSTEM DATA

METADATA CATALOG ON EXISTING CORE SYSTEM DATA (*TRAIDA CARD: CORE SYSTEM DATA*)

ODS (*TRAIDA CARD: OPERATIONAL DATA STORE*)

MDM

SCOPE:

- ✓ METADATA CATALOG
- ✓ ID MAPPING
- ✓ DATA LINEAGE
- ✓ REFERENCE / MASTER DATA
- ✓ BUSINESS CONCEPT'S LIFECYCLE
- ✓ ../..

GOVERNANCE FEATURES:

- ✓ VERSION AND VARIANTS
- ✓ SECURITY
- ✓ WORKFLOW
- ✓ UI DATA AUTHORING
- ✓ DATA HIERARCHY MANAGEMENT
- ✓ ../..

EKG (*TRAIDA CARD: ENTERPRISE KNOWLEDGE GRAPH*)

SEMANTIC PLATFORM

TRAINING

READ FOR FINE-TUNING (RAG)

AI SYSTEM

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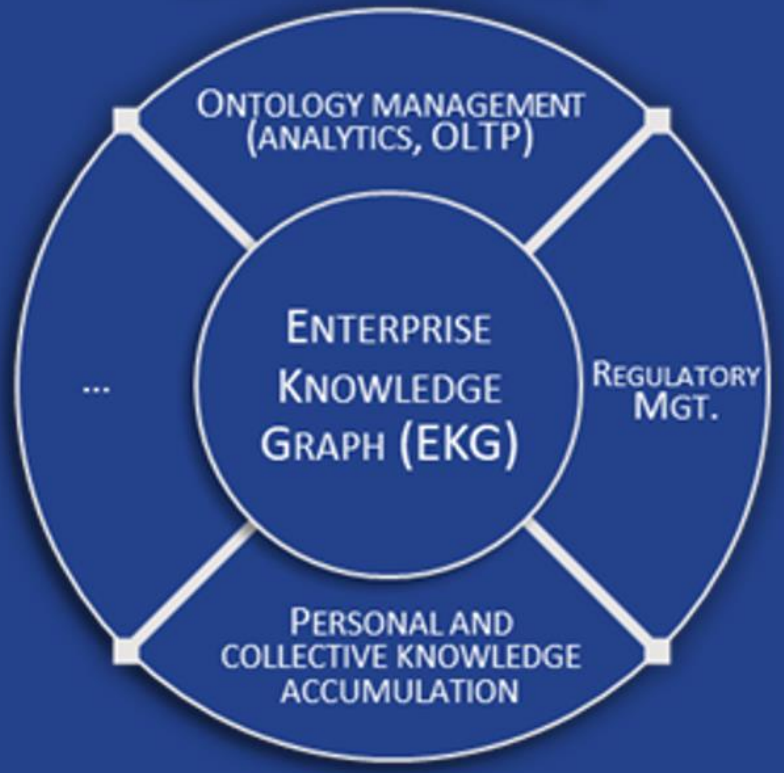
TRAIDA FRAMEWORK

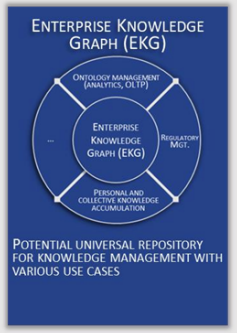
Enterprise Knowledge Graph (EKG)



Potential universal repository for knowledge management with various use cases

ENTERPRISE KNOWLEDGE GRAPH

The Enterprise Knowledge Graph (EKG) is a potential universal repository for knowledge management with various use cases. It is the cornerstone of the semantic platform promoted by the TRAIDA platform. It serves as the unique point of contact for all AI systems within the company (digital twin).



1. CONDITIONS OF SUCCESS

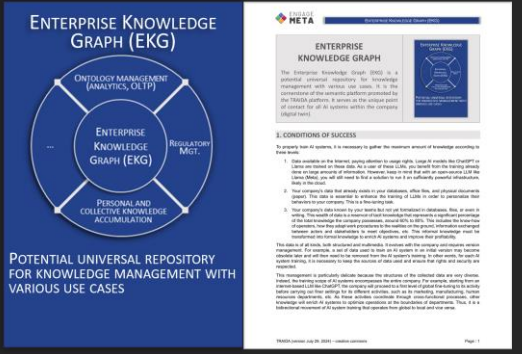
To properly train AI systems, it is necessary to gather the maximum amount of knowledge according to three levels:

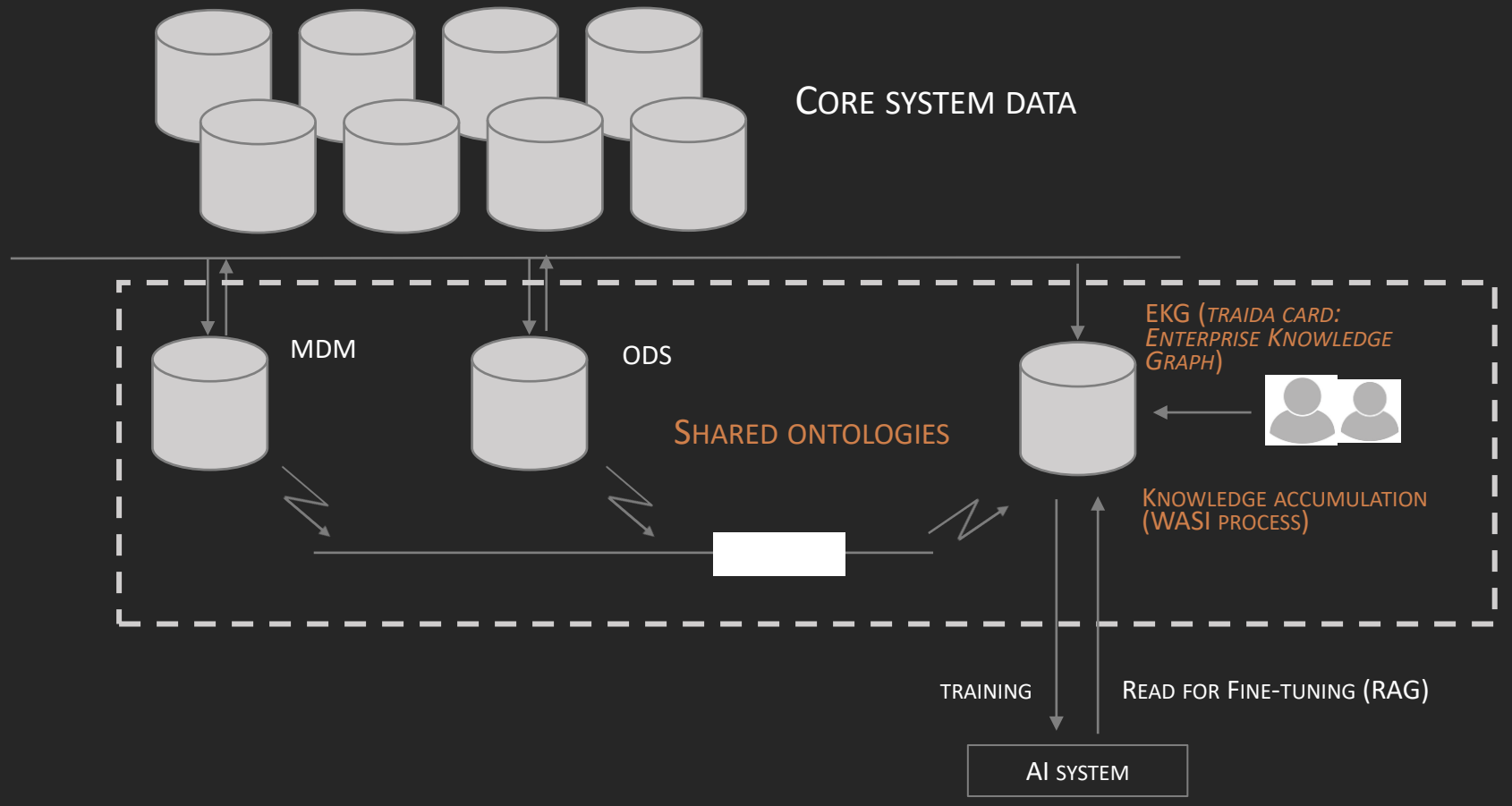
1. Data available on the Internet, paying attention to usage rights. Large AI models like ChatGPT or Llama are trained on these data. As a user of these LLMs, you benefit from the training already done on large amounts of information. However, keep in mind that with an open-source LLM like Llama (Meta), you will still need to find a solution to run it on sufficiently powerful infrastructure, likely in the cloud.
2. Your company's data that already exists in your databases, office files, and physical documents (paper). This data is essential to enhance the training of LLMs in order to personalize their behaviors to your company. This is a fine-tuning task.
3. Your company's data known by your teams but not yet formalized in databases, files, or even in writing. This wealth of data is a reservoir of tacit knowledge that represents a significant percentage of the total knowledge the company possesses, around 60% to 80%. This includes the know-how of operators, how they adapt work procedures to the realities on the ground, information exchanged between actors and stakeholders to meet objectives, etc. This informal knowledge must be transformed into formal knowledge to enrich AI systems and improve their profitability.

This data is of all kinds, both structured and multimedia. It evolves with the company and requires version management. For example, a set of data used to train an AI system in an initial version may become obsolete later and will then need to be removed from the AI system's training. In other words, for each AI system training, it is necessary to keep the sources of data used and ensure that rights and security are respected.

This management is particularly delicate because the structures of the collected data are very diverse. Indeed, the training scope of AI systems encompasses the entire company. For example, starting from an internet-based LLM like ChatGPT, the company will proceed to a first level of global fine-tuning to its activity before carrying out finer settings for its different activities, such as its marketing, manufacturing, human resources departments, etc. As these activities coordinate through cross-functional processes, other knowledge will enrich AI systems to optimize operations at the boundaries of departments. Thus, it is a bidirectional movement of AI system training that operates from global to local and vice versa.

TRAIDA FRAMEWORK





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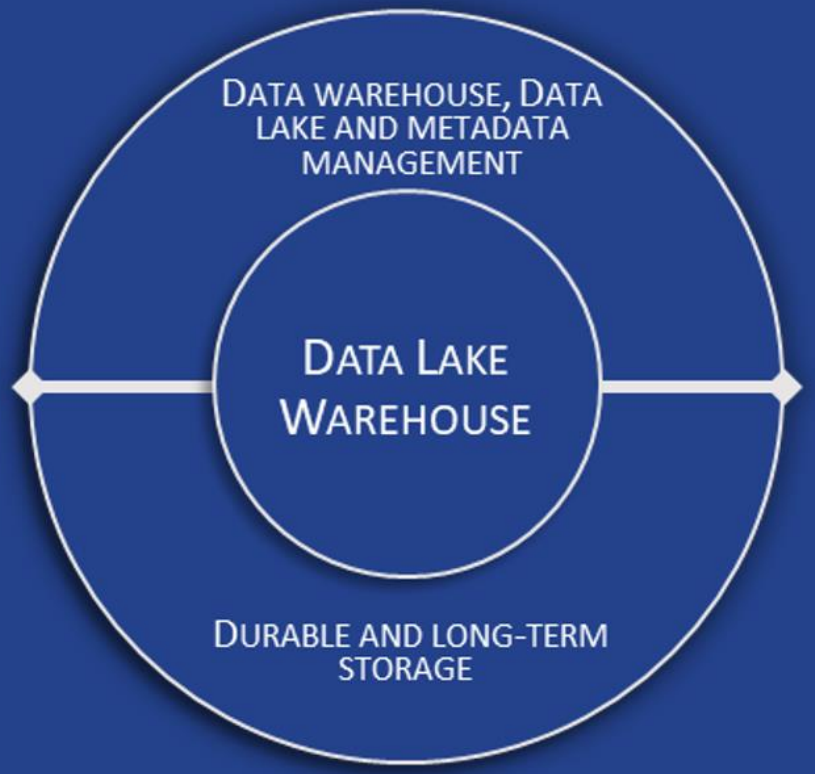
DATA LAKE WAREHOUSE



REPOSITORIES CONTAINING RAW, STRUCTURED, AND UNSTRUCTURED DATA FOR BUSINESS INTELLIGENCE PURPOSES

DATA LAKE WAREHOUSE

Repositories contain raw, structured, and unstructured data for business intelligence and data analytics purposes. In TRAIDA, the term 'Data lake warehouse' encompasses data warehouse, data lake, and data lakehouse. The term 'Business intelligence' includes data reporting and OLAP. The term 'data analytics' refers to data science.

1. CONDITIONS OF SUCCESS

When "big data" solutions do not fully meet expectations, most decision-makers believe that AI and knowledge graphs are the solution to better address data analysis needs. However, successfully integrating transformative AI at the decision-making system level requires clarifying the architecture. With TRAIDA, the effort made at the semantic platform level and with shared ontologies facilitates this integration. We will explain how in this TRAIDA card, but first, we need to clarify the meaning of the term "big data" by reducing it to the identification of multimedia databases. Since this term does not impose specific technologies or use cases, it becomes a commodity that is not structurally important for architectural choices.

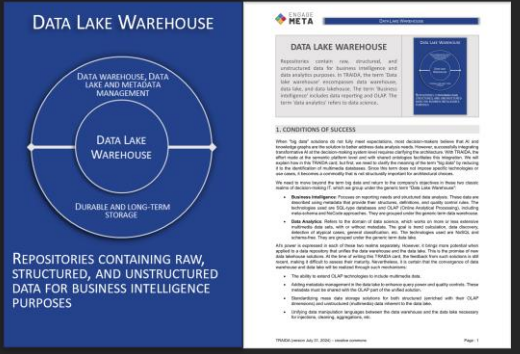
We need to move beyond the term big data and return to the company's objectives in these two classic realms of decision-making IT, which we group under the generic term "Data Lake Warehouse":

- **Business Intelligence**: Focuses on reporting needs and structured data analysis. These data are described using metadata that provide their structures, definitions, and quality control rules. The technologies used are SQL-type databases and OLAP (Online Analytical Processing), including meta-schema and NoCode approaches. They are grouped under the generic term data warehouse.
- **Data Analytics**: Refers to the domain of data science, which works on more or less extensive multimedia data sets, with or without metadata. The goal is trend calculation, data discovery, detection of atypical cases, general classification, etc. The technologies used are NoSQL and schema-free. They are grouped under the generic term data lake.

AI's power is expressed in each of these two realms separately. However, it brings more potential when applied to a data repository that unifies the data warehouse and the data lake. This is the promise of new data lakehouse solutions. At the time of writing this TRAIDA card, the feedback from such solutions is still recent, making it difficult to assess their maturity. Nevertheless, it is certain that the convergence of data warehouse and data lake will be realized through such mechanisms:

- The ability to extend OLAP technologies to include multimedia data.
- Adding metadata management in the data lake to enhance query power and quality controls. These metadata must be shared with the OLAP part of the unified solution.
- Standardizing mass data storage solutions for both structured (enriched with their OLAP dimensions) and unstructured (multimedia) data inherent to the data lake.
- Unifying data manipulation languages between the data warehouse and the data lake necessary for injections, cleaning, aggregations, etc.

TRAIDA FRAMEWORK



CORE SYSTEM DATA

MDM

ODS

EKG

SHARED ONTOLOGIES

AIS THAT ACT ON OPERATIONAL SYSTEMS

DATA WAREHOUSE

SHARED ONTOLOGIES

DATA LAKE

DATA LAKEHOUSE

AIS THAT OPERATE AT THE DATA ANALYSIS LEVEL

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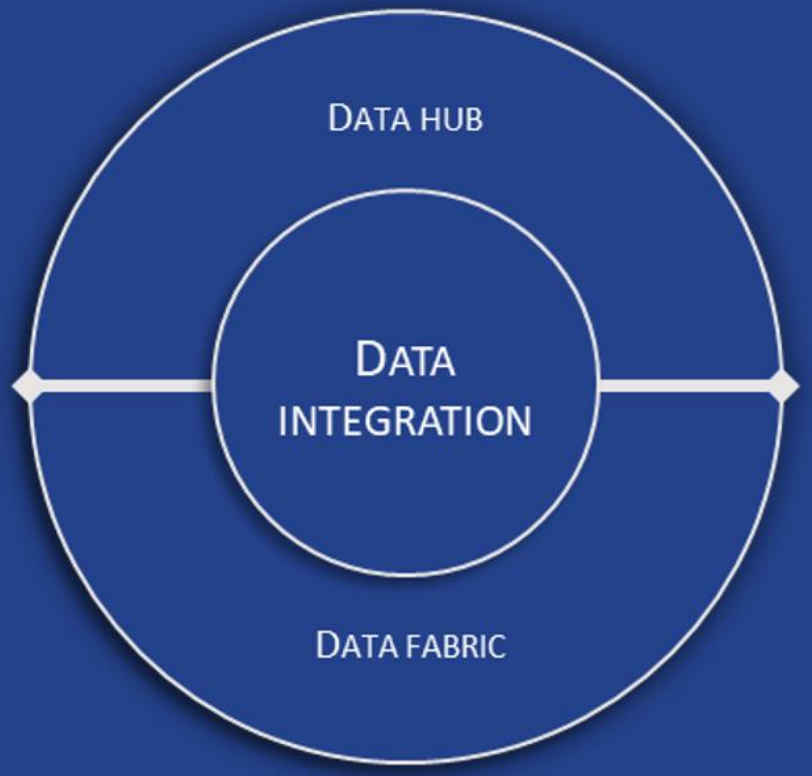
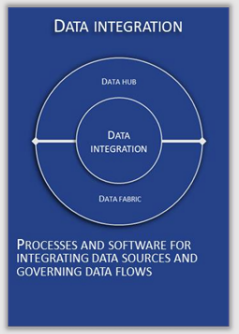
DATA INTEGRATION



PROCESSES AND SOFTWARE FOR INTEGRATING DATA SOURCES AND GOVERNING DATA FLOWS

DATA INTEGRATION

Processes and software for integrating data sources and governing data flows. The data hub might compete with the ODS (Operational Data Store) of the semantic platform; and the data fabric might compete with the EKG (Enterprise Knowledge Graph). Therefore, a choice must be made to either use the data fabric as a component of the semantic platform or integrate it with more transversal MDM (Master Data Management), ODS, and EKG.



1. CONDITIONS OF SUCCESS

Data integration synchronizes and transforms multiple sources of information to provide a standardized data flow to consumers. These consumers can be repositories like MDM (Master Data Management), ODS (Operational Data Store), EKG (Enterprise Knowledge Graph), data warehouses, data lakes or application systems and AI systems for training.

Historically, this need has been covered by ETL (Extract, Transform, Load) and EAI (Enterprise Application Integration). However, to handle the complexity of integration processes, specific developments are often necessary to adapt them. These implementations become a significant technical debt and create a high rigidity in data flow integration. This rigidity is incompatible with agile governance. For instance, a simple change in data type requiring several days of maintenance would be unacceptable in a business emergency.

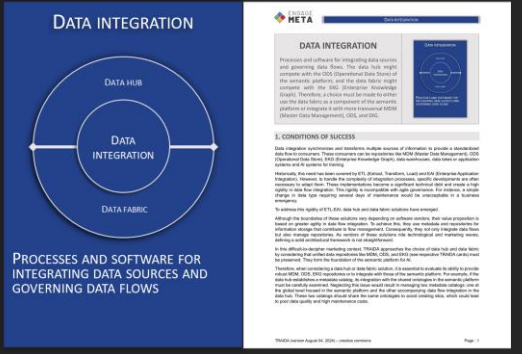
To address this rigidity of ETL-EAI, data hub and data fabric solutions have emerged.

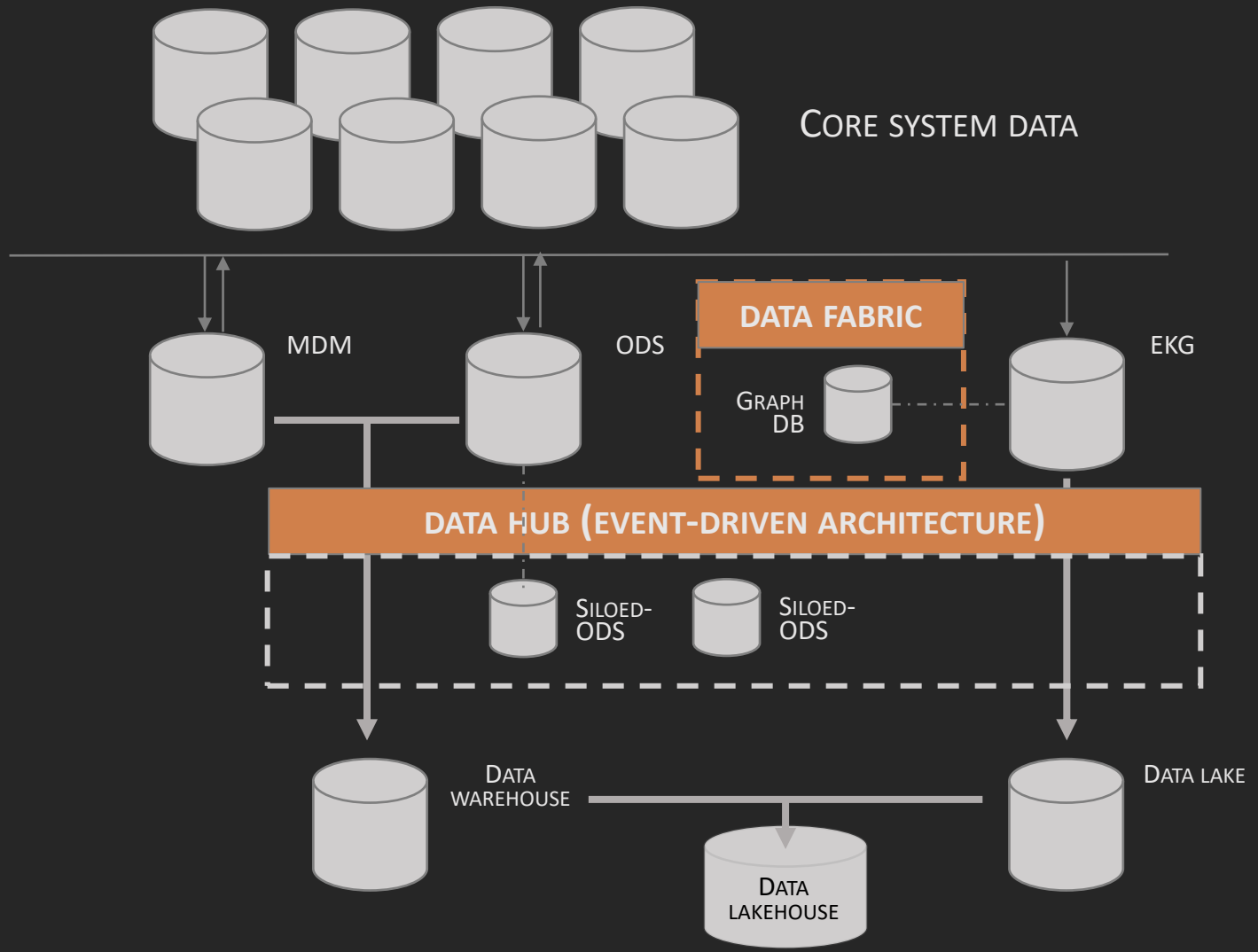
Although the boundaries of these solutions vary depending on software vendors, their value proposition is based on greater agility in data flow integration. To achieve this, they use metadata and repositories for information storage that contribute to flow management. Consequently, they not only integrate data flows but also manage repositories. As vendors of these solutions ride technological and marketing waves, defining a solid architectural framework is not straightforward.

In this difficult-to-decipher marketing context, TRAIDA approaches the choice of data hub and data fabric by considering that unified data repositories like MDM, ODS, and EKG (see respective TRAIDA cards) must be preserved. They form the foundation of the semantic platform for AI.

Therefore, when considering a data hub or data fabric solution, it is essential to evaluate its ability to provide robust MDM, ODS, EKG repositories or to integrate with those of the semantic platform. For example, if the data hub establishes a metadata catalog, its integration with the shared ontologies in the semantic platform must be carefully examined. Neglecting this issue would result in managing two metadata catalogs: one at the global level housed in the semantic platform and the other accompanying data flow integration in the data hub. These two catalogs should share the same ontologies to avoid creating silos, which could lead to poor data quality and high maintenance costs.

TRAIDA FRAMEWORK





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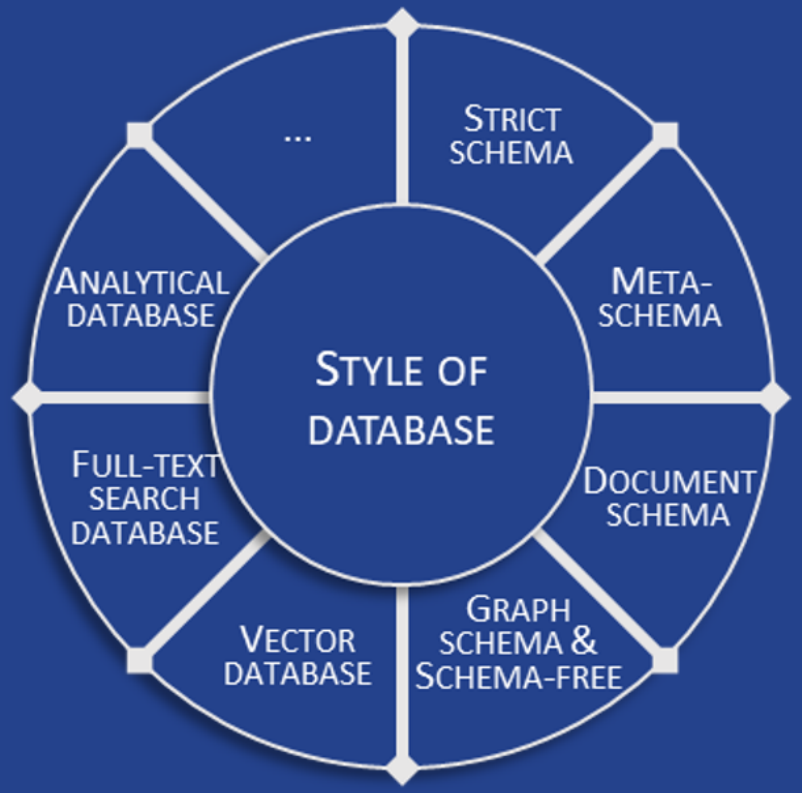
STYLE OF DATABASE



DATA STORAGE TECHNOLOGIES ACCORDING TO OPERATIONAL NEEDS: TRANSACTION, INTEGRITY, CONCURRENT ACCESS, HISTORY, ETC.

STYLE OF DATABASE

Data storage technologies according to operational needs: transaction, integrity, concurrent access, history, data natures; volume, governance, etc. The choice of these technologies is important for deciding the architecture of the semantic platform and more specifically the MDM, ODS, and EKG repositories.

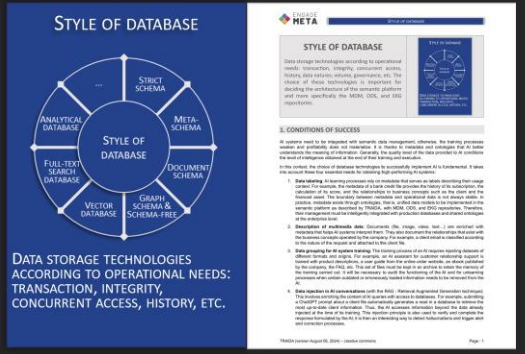
1. CONDITIONS OF SUCCESS

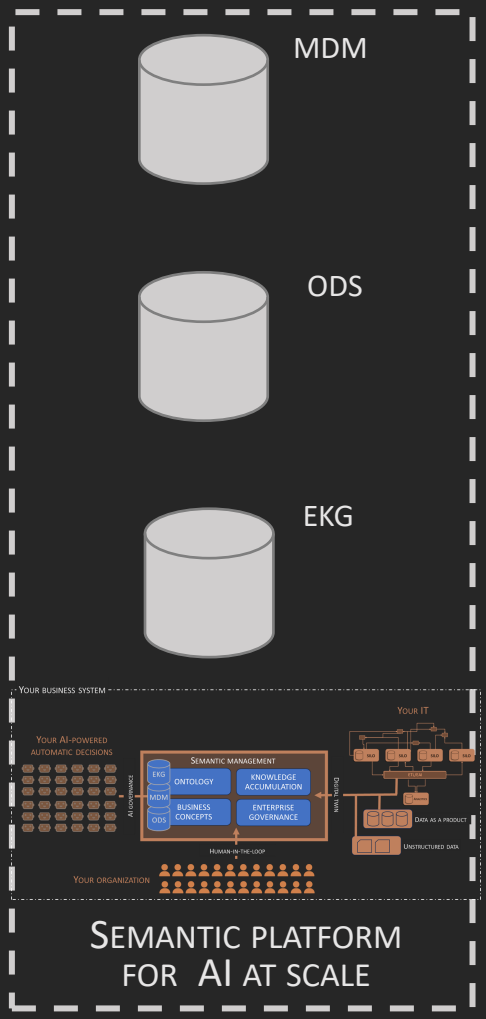
AI systems need to be integrated with semantic data management; otherwise, the training processes weaken and profitability does not materialize. It is thanks to metadata and ontologies that AI better understands the meaning of information. Generally, the quality level of the data provided to AI conditions the level of intelligence obtained at the end of their training and execution.

In this context, the choice of database technologies to successfully implement AI is fundamental. It takes into account these four essential needs for obtaining high-performing AI systems:

1. **Data labeling**: AI learning processes rely on metadata that serves as labels describing their usage context. For example, the metadata of a bank credit file provides the history of its subscription, the calculation of its score, and the relationships to business concepts such as the client and the financed asset. The boundary between metadata and operational data is not always stable. In practice, metadata exists through ontologies, that is, unified data models to be implemented in the semantic platform as described by TRAIDA, with MDM, ODS, and EKG repositories. Therefore, their management must be intelligently integrated with production databases and shared ontologies at the enterprise level.
2. **Description of multimedia data**: Documents (file, image, video, text…) are enriched with metadata that helps AI systems interpret them. They also document the relationships that exist with the business concepts operated by the company. For example, a client email is classified according to the nature of the request and attached to the client file.
3. **Data grouping for AI system training**: The training process of an AI requires injecting datasets of different formats and origins. For example, an AI assistant for customer relationship support is trained with product descriptions, a user guide from the online order website, an ebook published by the company, the FAQ, etc. This set of files must be kept in an archive to retain the memory of the training carried out. It will be necessary to audit the functioning of the AI and for unlearning processes when certain outdated or erroneously loaded information needs to be removed from the AI.
4. **Data injection in AI conversations** (with the RAG - Retrieval Augmented Generation technique): This involves enriching the content of AI queries with access to databases. For example, submitting a ChatGPT prompt about a client file automatically generates a read in a database to retrieve the most up-to-date client information. Thus, the AI accesses information beyond the data already injected at the time of its training. This injection principle is also used to verify and complete the response formulated by the AI; it is then an interesting way to detect hallucinations and trigger alert and correction processes.

TRAIDA FRAMEWORK





SEMANTIC PLATFORM FOR AI AT SCALE

IT CHOICE

VOLUME, TRANSACTIONAL, STRUCTURED AND UNSTRUCTURED DATA, FLEXIBILITY FOR MAINTENANCE, REFERENTIAL INTEGRITY, PERFORMANCE, QUERIES FOR AI, METADATA, GOVERNANCE

STRICT SCHEMA

- ✓ Examples: Oracle, MySQL
- ✓ OLTP-ACID , Integrity, Reliability
- ✓ Structured data, joins
- ✓ Rigid software engineering lifecycle

META-SCHEMA

- ✓ Examples: Airtable, Knack… and model-driven tool such as MDM
- ✓ OLTP-ACID, Integrity, Reliability but less scalable than strict schema
- ✓ Structured data, some unstructured data
- ✓ Agile software engineering lifecycle

DOCUMENT-SCHEMA

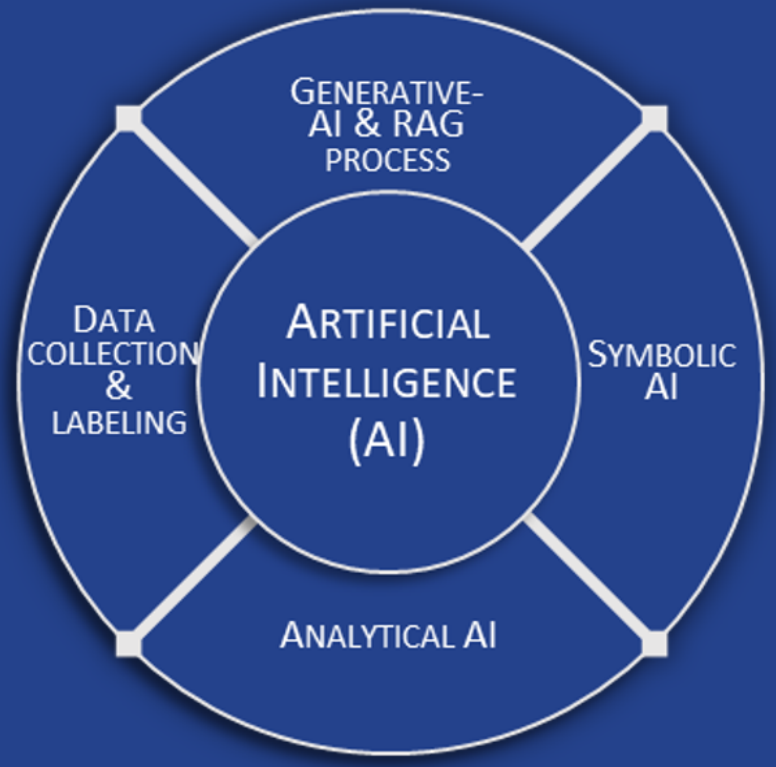
- ✓ Examples: MongoDB
- ✓ No meta-data, no Foreign keys
- ✓ Agile massive unstructured data storage
- ✓ Data denormalization to recreate relations

GRAPH SCHEMA SCHEMA FREE

- ✓ Examples: Neo4J, Stardog
- ✓ Meta-data, Foreign keys
- ✓ Partial OLTP-ACID
- ✓ Structured data, some unstructured data
- ✓ Agile engineering lifecycle for knowledge accumulation
- ✓ Possible strict schema enforcement through the application logic

+ VECTOR DB, FULL TEXT INDEXING, OLAP

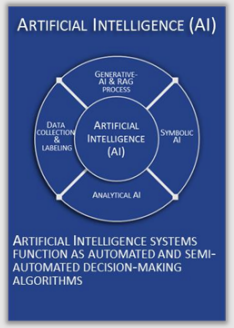
ARTIFICIAL INTELLIGENCE (AI)



ARTIFICIAL INTELLIGENCE SYSTEMS FUNCTION AS AUTOMATED AND SEMI-AUTOMATED DECISION-MAKING ALGORITHMS

ARTIFICIAL INTELLIGENCE

Artificial Intelligence systems function as automated and semi-automated decision-making algorithms. The different types of AI (generative, symbolic, analytical) share ontologies to facilitate their integration and use at the enterprise level.



1. CONDITIONS OF SUCCESS

The interest in AI depends on the use cases of each company. Nevertheless, with broad application possibilities, significant gains are to be sought in all organizations. Indeed, AI covers a wide range of functionalities, such as:

- Creativity in communication and marketing, teaching, coaching, translation, text synthesis, report creation, financial optimization, customer tracking, trend calculations, pattern and video recognition, sound production, etc.

Beyond the specific case of a company, TRAIDA identifies two universal contributions of AI that do not depend on use cases. They form a strategic foundation so that stakeholders share certain fundamental objectives for the use of AI. Without this foundation, integrating AI into the organization encounters two riks:

- In the event of failure to implement AI in certain use cases, stakeholders may become demotivated. To counter this risk, it is important to have a framework that recalls the fundamental and shared objectives throughout the company.
- Poor implementation of AI leads to a misalignment with the company's fundamental objectives. Gains are then partially recognized by stakeholders. This context disrupts the organization and opens the debate towards questioning the profitability of AI. The strategic framework is necessary to counter this risk. It ensures that the contribution of AI for each use case aligns with the major objectives that bring stakeholders together.

To build this strategic foundation, the two universal contributions are as follows:

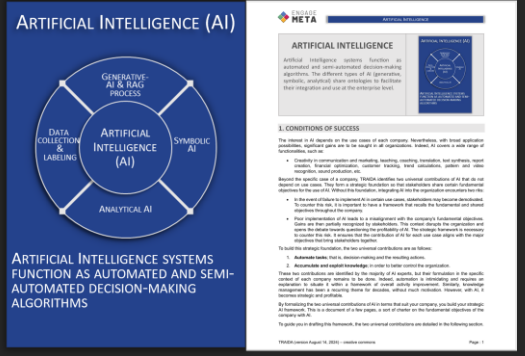
1. **Automate tasks**; that is, decision-making and the resulting actions.
2. **Accumulate and exploit knowledge**; in order to better control the organization.

These two contributions are identified by the majority of AI experts, but their formulation in the specific context of each company remains to be done. Indeed, automation is intimidating and requires an explanation to situate it within a framework of overall activity improvement. Similarly, knowledge management has been a recurring theme for decades, without much motivation. However, with AI, it becomes strategic and profitable.

By formalizing the two universal contributions of AI in terms that suit your company, you build your strategic AI framework. This is a document of a few pages, a sort of charter on the fundamental objectives of the company with AI.

To guide you in drafting this framework, the two universal contributions are detailed in the following section.

TRAIDA FRAMEWORK



CORE SYSTEM DATA

SEMANTIC PLATFORM – AI AT SCALE

MDM

ODS

EKG

ONTOLOGIES

LABELING

GENERATIVE AI

SYMBOLIC AI

ANALYTICAL AI

AUGMENTED PROCESSES WITH AI

✓ AUTOMATING TASKS
✓ ACCUMULATING KNOWLEDGE

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TRAIDA FRAMEWORK

Coming soon (last update September 12, 2024)

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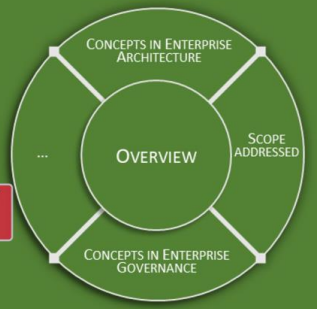
Overview



COMING SOON!

General introduction to TRAIDA cards in the governance domain

Human resources

COMING SOON!

An active mindset and aligned skill sets are required to enhance the positive impacts of AI and data solutions

Overview

COMING SOON!

General introduction to TRAIDA cards in the business domain

Productivity

COMING SOON!

Improving productivity across all company processes is a key objective of AI

Creativity

COMING SOON!

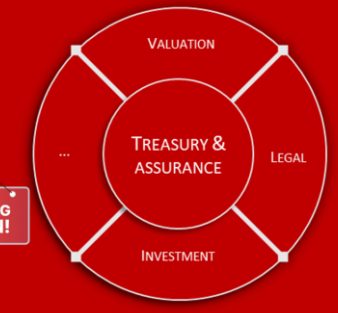
Enhancing the creativity of certain company processes is an AI objective that complements the goal of improving productivity

Trustworthiness

COMING SOON!

Trust in data and AI must be objectively assessed to successfully implement AI throughout the enterprise

Treasury & Assurance



COMING SOON!

Properly managing budgets and mastering value analysis are essential for successfully scaling AI

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TRAIDA FRAMEWORK

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