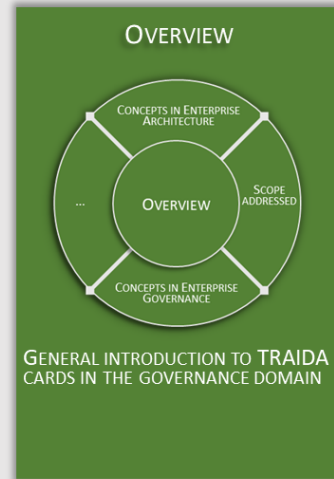


GOVERNANCE DOMAIN OVERVIEW

General introduction to TRAI DA cards in the governance 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 TRAI DA 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 field of governance is based on a foundational principle: **AI is not just a new technology, but a stakeholder to be integrated into the company**. In other words, it is a kind of super collaborator that can intervene in all processes. It optimizes the way people work, helps humans be more productive, and makes decisions with a level of autonomy that depends on its configuration. This is a revolution that is transforming the world.

The benefits of AI are already visible, but this is only the beginning. Innovation in this field is dynamic. As of the writing of this TRAI DA card (September 2024), competition among players in the field is primarily focused on the IT infrastructure necessary for AI training. However, the next step is already in sight, with the idea that the benefits of these massive trainings on billions of parameters are approaching an asymptote in the creation of intelligence.

Moreover, after absorbing the entire Internet, sources of information are not infinite, which poses a structural limit to the large-scale training of AI models. **It is, therefore, time to open a new chapter to improve generative AI with an additional intelligence called deductive**, meaning it is capable of conducting complex reasoning based on a chain of thought.

Generative AI would then be able to question itself about the user’s request, and then about the results it proposes to improve the relevance of its final answer. During this reflection, it can detect issues in the initial request, inconsistencies in the data, and gaps in information that it will seek to fill either on its own or with the support of the user. This system reduces hallucinations and refines the quality of the final answer.

With innovations like this, and others sure to follow, it is likely that artificial general intelligence (AGI) will emerge by 2030. It is not a certainty, but it signals at least that much more powerful AIs will be available in the coming years. AI will be able to address any problem with a level of intelligence superior to the best human experts in the relevant field.

To be convinced, one must ask how innovation emerges in the thought process. For example, in my personal case^(*), my engineering background and experience lead me to seek innovation by practicing these principles:

- a) Creating mental representations of my knowledge in the form of graphs, and regularly accumulating new knowledge in my field of expertise and in other areas to build knowledge.
- b) Formulating a response to a problem by recycling my knowledge and adding ideas outside the context of study to create something new; this is the innovative effect.
- c) Critically analyzing the result of my analysis to identify points of inconsistency, improvement, and clarification, and looping back to the previous step (b) as much as necessary and possible.
- d) Sharing my work with others to benefit from intellectual impulses that contribute to value creation.

(*) Pierre Bonnet, main author of TRAIDA.

This magic sauce for innovation is not unique to me. Most people work according to these principles without even questioning their way of thinking and acting. The question, then, is how AI uses the same sauce; let's revisit the four principles from the perspective of AI practice:

- a) AI absorbs large amounts of information to generate usable internal representations. It applies this first principle more efficiently than humans.
- b) AI recycles its vast knowledge to combine it into a response. Like humans, a degree of hallucination is introduced, varying in intensity depending on its configuration.
- c) Classic generative AI is less efficient than humans at critiquing its own responses to enrich them. Without additional systems, the hallucinations produced earlier (b) are not identified and corrected. This is where the addition of deductive intelligence significantly enhances the power of generative AI. It can now critique its own responses to detect reasoning errors and loop back to the previous principle (b).
- d) AI can share its results with humans, who can then contribute to improving the responses. It can also autonomously interact with other AIs, especially in the context of the reasoning process inherent to deductive AI.

If you are convinced that the integration of this general AI is essential on a large scale in your organization, it is important to prepare and implement its proper governance. With TRAIDA, this is addressed through enterprise governance and enterprise architecture. Additionally, human resource management plays a transversal role.

2. IMPORTANCE OF THIS CARD FOR YOUR TRANSFORMATIVE AI

This card is an introduction to the governance domain of the TRAIDA framework. It helps you become familiar with the other cards in this domain. The following provides some additional information to facilitate your reading and the necessary reflection for your own context.

CONCEPTS IN ENTERPRISE GOVERNANCE

Generally speaking, enterprise governance focuses on risk management and compliance with both internal and external regulations affecting the company. It is a broad area of application that varies from one company to another.

However, the trend is an increase in requirements in this field, as the social, economic, political, financial, and technical worlds become more regulated. For instance, in managing its information for the public, a company must control all its communication channels to avoid disseminating false data, information outside of its ethics, or data prohibited by regulations. Given the speed of exchanges on social media, it is challenging to verify every message unless dedicated teams are mobilized, which may still prove insufficient.

To ease this heavy regulatory burden, AI assists in automating controls by implementing monitoring systems and reducing the need for human intervention. In other words, the principle of "code is law" is supported by AI. Enterprise governance also covers data governance, which is essential for the reliable and profitable large-scale use of AI. Finally, it also addresses AI governance, which must align with the governance applied to data. New-generation software, sometimes referred to as data fabric or more broadly as semantic platforms, offer solutions in this area.

CONCEPTS IN ENTERPRISE ARCHITECTURE

Enterprise architecture (EA) is often seen as a theoretical discipline, removed from the concrete concerns of IT projects. Yet, its goal of documenting the information system to better transform it is legitimate. Without this knowledge, it is difficult to deploy IT solutions in a coordinated manner across the enterprise.

The obstacles to the deployment of enterprise architecture lie in the difficulty of keeping documentation up to date and in the cumbersome nature of using best practices to transform the information system. Caught between a lack of alignment with the formalization of an ever-changing reality and technological variations that make cross-cutting decisions difficult, enterprise architecture struggles to justify its profitability.

In this context, AI is both a revealer of the importance of enterprise architecture and an accelerator for its more profitable implementation. Indeed, AI integrates into numerous processes and requires high-quality data. Without precise documentation of the information system, it is challenging to properly manage its transformation with AI. However, traditional practices must be adapted to give greater importance to semantic modeling (ontology), data governance, and knowledge management.

Finally, AI helps improve the automatic management of EA documentation to ensure better tracking of necessary updates as systems evolve. The combination of knowledge graph databases with generative AI enables the creation of highly efficient document repositories (see the TRAIIDA Enterprise Knowledge Graph - EKG card).

SCOPE ADDRESSED

The cards in the governance domain are listed in the table below. There is no preferred reading order to follow. From an academic perspective, that is, for discovering the cards with the aim of learning general technical culture, the order of the cards in the table is the most advisable to follow.

GOVERNANCE DOMAIN OVERVIEW

GENERAL INTRODUCTION TO TRAIIDA CARDS IN THE GOVERNANCE 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

- TRAIIDA GUIDE**
 - INITIAL PERSONALIZATION OF THE FRAMEWORK
 - CONSTRUCTION OF THE MINIMUM VIABLE ARCHITECTURE
 - BUSINESS ALIGNMENT
- GLOSSARY**
 - TERMS
- HUMAN RESOURCES**
 - MINDSET
 - TRAINING FOR BUSINESS
 - TRAINING FOR IT
 - TRUSTED-AI
- ENTERPRISE ARCHITECTURE (EA)**
 - SEMANTIC MODELING
 - SERVICE ORIENTED ARCHITECTURE (SOA)
 - CONVENTIONAL EA FRAMEWORKS
- ENTERPRISE GOVERNANCE**
 - DATA GOVERNANCE
 - COMPLIANCE
 - AI GOVERNANCE
 - TRUSTED-AI

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3. YOUR SITUATION & OBJECTIVES