



AgileAI

# PAPER

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# AgileAI

an AgileConstellation Star



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## 1. Overview

Like any self-respecting big change, *Artificial Intelligence* also has countless nuances and areas of application, some already consolidated and others yet to be discovered. For this reason, it is essential to start approaching this new technology (if we can limit ourselves to calling it such) with the right mentality, which will certainly have enormous personal and professional impacts.

In particular, AI (*Artificial Intelligence*) will change the way organizations make strategic decisions, obtaining increasingly contextualized and detailed "suggestions" to support the People who will then have to make the choices.

It is precisely in this perspective that **AgileAI** specializes: a framework that aims to project the iterative-incremental approach into the new era supported by *AI Agents*, i.e. intelligent agents capable of helping and supporting people in different activities.

All with the awareness that AI will not replace the experience and creativity of professionals, but will be a valuable aid to extricate oneself from the ever-increasing density of information (or raw data) available.



## 2. Artificial Intelligence

### 2.1 A new vision

The drive to renew organizational models can "intelligently" exploit innovations in the field of artificial intelligence for a further implementation boost. All this goes through an intense automation of processes (and activities), particularly effective in all areas where decisions are closely linked to the data owned.

The trend, also according to a study<sup>1</sup> by the *MIT Sloan Management Review*<sup>2</sup> (in collaboration with *The Boston Consulting Group*), is that of *cooperation between man and machine*, enhancing the ability of the latter to collect and analyze large amounts of data in order to provide both operational and strategic "advice" and "suggestions".

The main advantages that can be obtained from this partnership concern: *better positioning of the company in the market, development of personalized marketing strategies, customer enhancement, loyalty, cost reduction and employee enhancement*. The level of results that can be achieved depends on the organization's ability to innovate and renew itself, as well as the quality of the data possessed. This leads to a distinction of four possible behavioral models of companies, in relation to the combination of artificial intelligence and market positioning strategies:

- **pioneers**, who have understood and adopted artificial intelligence to support flexible and adaptive organizational models;
- **experimenters**, who are investing in pilot projects to assess their related impacts;
- **investigators**, who have understood the importance of this and are considering the possibility of activating specific trials;
- **who** have not taken any action in this regard.

Pioneers are obviously at an advantage in this new challenge, thanks also to a better understanding of the opportunities and technologies involved, as opposed to the *passives* who struggle to understand their usefulness, also due to the absence of structured historical data, which is essential for training specific algorithms.

One of the underlying problems is the speed with which the related technologies evolve, putting at risk the investments of pioneers to the advantage of pursuers, or startups, who could turn the tables with a new innovative solution.

At the macro level, it is now possible to refer to artificial intelligence, starting from two macro-categories:

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<sup>1</sup> <https://sloanreview.mit.edu/article/the-key-to-success-with-ai-is-human-machine-collaboration/>

<sup>2</sup> <https://sloanreview.mit.edu>



- **Weak Artificial Intelligence**, which identifies those systems capable of simulating some cognitive functions of man without reaching the real intellectual abilities typical of the latter.
- **Strong Artificial Intelligence**, which refers to the so-called "sentient systems", i.e. capable of developing real intelligence without emulating thought processes or cognitive abilities similar to humans.

## 2.2 AI Agents: from passive agents to active agents

An *agile organization* is an organization that focuses on "*sociality*", with the operational dimension characterized by the many uncertainties deriving precisely from the variability of "human relationships".

All this requires appropriate tools capable of collecting process data, covering different areas characterizing the operations of a company: from the strategic to the detailed.

The tools available today can mostly be characterized as "*passive agents*" because, while facilitating the exchange of information in real time and collaboration through centralized information, they are limited to supporting the creation, management and monitoring of *the artifacts* of a project/program and the visualization of *historical* data through specific diagrams and reports. Therefore, there is a lack of advanced analytical methods, equipped with "intelligence" that allow the tool to make "reasoning" and provide specific "recommendations", all fundamental characteristics to be able to speak of "*intelligent agents*" (or even "*active agents*"). Intelligent agents are necessarily AI-based and allow you to support the organization in its primary aspects, thanks to the ability to analyze many of the management activities.

The efficiency and effectiveness of active agents is clearly linked to data and the ability to update and manage it adequately: the more up-to-date they are, the more the agent will be able to provide reliable predictions and avoid costly errors during the implementation of the various initiatives. In the same way, active agents are able to operationally support the implementation of projects, improving the use of related resources and developing a whole series of predictive actions.

Interestingly, intelligent agents save a considerable amount of the time experts spend formulating hypotheses and analyzing supporting information by intervening in the typical steps of defining a strategy:

- *Analysis*: The initiatives to be implemented originate from different sources, such as, for example, new explicit customer requests, market changes, insights, etc. Manually processing all this data, especially with different perspectives, is very expensive and often not all the related factors can be considered.
- *Review*: the initiatives to be pursued require continuous reviews and re-evaluations to be aligned with what is really happening and to consolidate them over time. All this requires



being ready for the current internal operating conditions of the company and the evolution of the market, which is clearly complex and difficult to achieve.

- *Planning*: identifying which initiatives to implement, and above all which not to implement, is almost always a sort of "alchemy" that can put the very future of the company at risk. It is a very demanding choice process since it is necessary to consider many factors, often in dissonance with each other but with strong dependencies and not easily prioritized.
- *Monitoring*: As the initiative is developed, progress must be monitored. This includes *risk management*, typically based on high-level guidance and often subjective judgments. This is a particularly difficult and costly activity due to the inherent uncertainty, time dependencies and, above all, the dynamic nature of today's products and services.

It should be evident that a strategic approach to the integration of artificial intelligence into business processes cannot be separated from having an adequate set of intelligent agents, first and foremost *chatbots* to break down the barriers of human-machine interaction.

### 2.3 The Importance of Data Quality

The effectiveness of any AI system depends on the *quality of the data* on which it is trained and optimized, which is why **Data Quality** is a fundamental factor that guides the development and integration of AI into business processes:

- *Ensuring reliable decisions*: AI trained on inaccurate, incomplete, or biased data generates erroneous results, negatively affecting decision-making processes.
- *Reduced bias*: Poor quality data can introduce bias into AI models, leading to discriminatory or ineffective decisions.
- *Continuous improvement of AI*: Machine learning is based on up-to-date and well-structured datasets. Without data quality management, AI becomes obsolete or ineffective.
- *Compliance and governance*: AI must comply with privacy and data management regulations (e.g. GDPR). Data quality helps ensure compliance.

### 2.4 The issue of Data Privacy

The amount and diversity of data used in artificial intelligence means that specific *privacy and security requirements must be met*.

Different contexts may require specific approaches and organizations try to adopt the less "stringent" solutions to obtain wide-ranging results, often generating "gray areas": think, for example, of video surveillance cameras and facial recognition.

Privacy protection laws are continuously updated in order to keep up with new technologies and to be able to guarantee a wide level of transparency to the end user. In particular, *personal data* is



increasingly perceived as a "bargaining chip": consumers are willing to give it up in exchange for specific services.

Depending on the different behaviors, two distinct categories of users can be observed:

- *conservatives*, who try to be as careful as possible about the disclosure of their personal data.
- *libertines* (typical of the youngest), who share their personal data very easily, without particular attention.

In addition to the privacy aspect, there is also an increasing focus on security, so much so that terms such as *cyber attack* and *cyber security* have now entered our daily jargon, as well as the related protection solutions to support them.

In particular, the European Commission, in agreement with national supervisory authorities, in 2016 approved the reform of the rules related to the protection of personal data which goes by the name of *General Data Protection Regulation (GDPR)*. The objective of the reform is the harmonization of the regulations on the protection of personal data within the European Union, protection that with the *Lisbon Treaty of 2007* has become a fundamental right of citizens, to be guaranteed and protected like any other right. With the new European regulation, we move from a *proprietary vision* of data to a vision of *data control*, which favors the free circulation of the same, provided that the interested party knows how it will be used.

This regulation, therefore, is the reason for a double change. On the one hand, it has a strong cultural value: in the digital age we are living in, data protection means defending the integrity and identity of the person. On the other hand, data protection also takes on a strong significance at the organizational level within a company. In fact, when you decide to launch a new product, a new service or even a new procedure, you must first of all evaluate the problems related to the security of personal data.

Another directive approved at European level in 2016 is the *NIS* (acronym for *Network and Information Security*), which requires the Member States of the European Union to adopt a series of common measures for the security of networks and information systems. In Italy, it entered into force in 2018. The main objective of the directive is to define a homogeneous strategic line in the various European countries in order to prevent and combat the risk of accidents caused by computer networks and information systems. In concrete terms, the directive goes into the merits of the management of attacks by *cyber criminals*, protection against hackers, identification of risks and reduction of such incidents.

In January 2023, the legislation was updated with the so-called NIS2, which was transposed by individual member states by October 2024.



### 3. AgileAI

Traditional agile frameworks, such as Scrum or SAFe, were not designed to handle the integration of AI agents into development teams.

**AgileAI** was created to address this need, combining the principles of Agile with the capabilities of AI to improve human-machine collaboration and accelerate innovation.

AgileAI is based on an adaptive and collaborative approach, where AI agents are not just tools, but active team members, capable of contributing to analysis, development and continuous improvement. The framework is based on three pillars:

1. *Human-AI collaboration*: AI does not replace humans, but supports them in making decisions and accelerating processes.
2. *Adaptability and Optimization*: the workflow is continuously recalibrated by AI agents based on progress, business priorities and emerging needs.
3. *AI-Ethical and Transparent Development*: AgileAI ensures that the use of artificial intelligence is understandable, reliable, and ethically compliant.

The main benefits are:

- **Improve Data Quality** with AI continuous monitoring systems.
- **Reduce time lost in meetings** thanks to automatic reports from AI agents.
- **Optimize the development process** with an adaptive and dynamic backlog.
- **Balance the workload** by distributing tasks between humans and AI.
- **Improve product quality** with automated testing and validation.
- **Support smarter decisions** based on real data.

#### 3.1 Mindset

At the heart of AgileAI is the *Philosophy, Principles and Practices* of the **AgileConstellation Manifesto**<sup>3</sup>, of which AgileAI is a *Star*, defining specific practices and principles relevant to the domain of reference.

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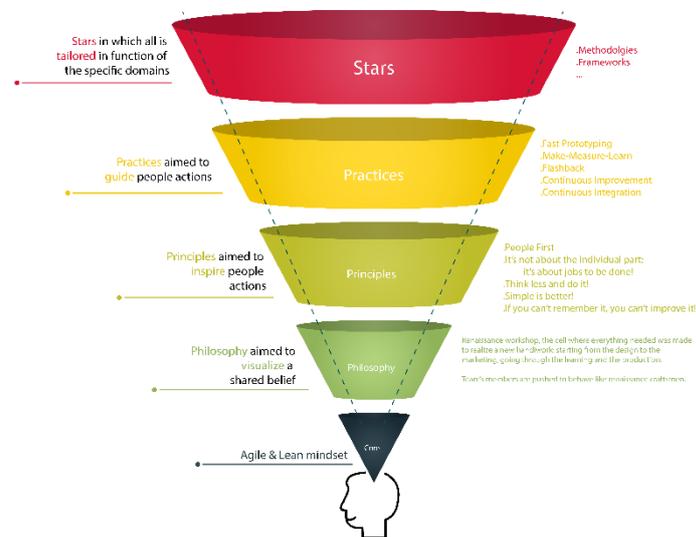
<sup>3</sup> [www.agileconstellation.info](http://www.agileconstellation.info)





## THE AGILECONSTELLATION FUNNEL DISCOVER THE FOUNDATION

AgileConstellation.info



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Figure 1 - AgileConstellation funnel

We have, therefore:

1. **Philosophy**, inspired by the **Renaissance Workshop**, or the cell that fulfills what is necessary for the creation of a new work: from design, to construction and marketing.
2. **Principles (core):**
  1. *It is not a question of the individual parts: it is the whole that must be done well!*
  2. *Think less and act sooner!*
  3. *Simple is better!*
  4. *If you can't remember it, you can't improve it!*
3. **Practices (core):**
  1. *Fast Prototyping*, validating the sustainability of the solution
  2. *Make-Measure-Learn*, quickly experiment with different assumptions and assumptions
  3. *Flashback*, quick alignment in which the observer goes to the work desk
  4. *Continuous Improvement*, constantly improving every aspect
  5. *Continuous Integration*, constantly integrating the different souls of the solution



## 3.2 Principles

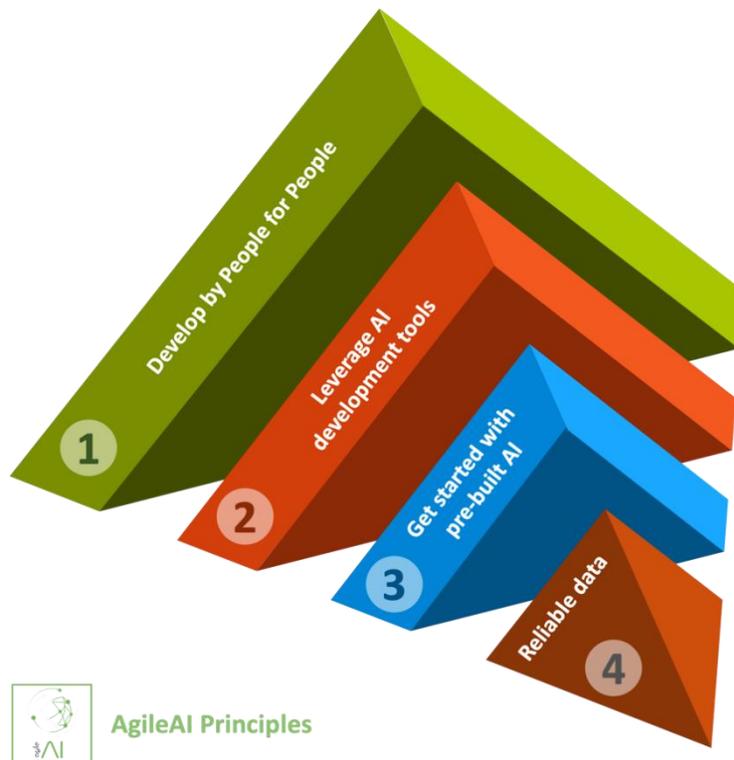


Figure 2 - AgileAI Principles

In addition to the principles "inherited" from the AgileConstellation funnel, AgileAI defines a further 4 principles that look specifically at aspects related to data and related analysis algorithms:

- **Develop by People for People**, not to replace them in decisions.
- **Leverage AI development tools**, constantly improve what has been achieved, without fear of changing something that works.
- **Get started with pre-built AI**, before embarking on the creation of something new, analyze the market solutions, or the internal ones, available.
- **Reliable Data**, only with reliable and updatable data can artificial intelligence systems give valuable analyses.

## 3.3 Specialization of Practices

Compared to the inherited practices, the first specialization concerns *Fast Prototyping* which adds 5 new aspects (bubbles) of reference which, as a whole, go under the acronym *S.T.A.I.R.*:

- **Security**, protecting information and ensuring high levels of privacy
  - design intelligent systems in a way that anonymizes data and maintains its integrity
  - Protect your system from external attacks
  - conduct regular security and privacy reviews
- **Transparency**, clearly supporting organizational decisions
  - Share key elements



- exploit understandable models and have intelligible explanations of the behavior of the model itself
- train people on how to interpret suggestions
- **Accountability**, awareness of decision-making responsibility
  - make responsibilities clear
  - Ensure that people are properly trained to use the results correctly
  - keep people at the center of decision-making
- **Inclusiveness**, enhancement of different points of view
  - Human Experience, Automated Analysis
  - Attract a diverse talent pool
  - research and use best practices, analytical techniques and best tools
- **Reliability**, operating reliably, safely and consistently in all conditions
  - review of support systems for foreseen and unforeseen circumstances
  - provide detailed explanations of the operation of the system
  - Properly report performance issues



Figure 3 - AgileAI Fast Prototyping

The second specialized practice is *Make-Measure-Learn*, which focuses on the effective implementation of AI solutions for business agility 6 operational steps:

1. *Minimum Viable Model (MVM)*, artificial intelligence is used to identify an operating model (or practices) that can offer a convincing solution to the problem.



2. *Minimum Viable Product (MVP)* is the first implementation of MVM made to assess its possible impacts. The implementation should be done in a "protected" context but representative of the specific organizational structure.
3. *Implementation*, which moves from the experimentation phase to an initial concrete integration with existing processes. The goal is to identify the main critical issues of the model and take action in solving them.
4. *Data Flow*: implementation data must arrive in the AI system suitably prepared, thanks to *data cleaning* and *dataset creation actions*.
5. *Production*, the new model is fully integrated into decision-making processes and moves on to refining them, with a focus on the impact on people.
6. *Refinement*, the model is continuously monitored, continuously updating it in relation to continuous changes to preserve and improve its effectiveness and efficiency.

### 3.4 Roles in AgileAI

In addition to the traditional roles of Agile, AgileAI introduces new figures to orchestrate collaboration between humans and AI, with a strong emphasis on data quality:

- **AgileAI Coach (AAC)**: the equivalent of the Scrum Master, with the responsibility of *facilitating integration between humans and AI*, optimizing processes, and monitoring AI agents to avoid systematic errors or bias in data.
- **Product Owner (PO)**: defines the vision and priorities of the product, supported by *AI-Explorer Agents*, who analyze data and suggest features based on real insights.
- **AI-Agents (AA)**:
  - *AI-Explorer*: analyzes data, suggests market trends and improves user understanding.
  - *AI-Optimizer*: monitors team productivity, suggests improvements in processes and rebalances the workload.
  - *AI-Developer*: Generate code, automate tests, and fix minor bugs.
  - *AI-Analyst*: Develop quality metrics, predict risks, and *control data quality*.

### 3.5 Events in AgileAI: From Ritual to Continuous Flow

AgileAI adopts a *fluid and adaptive work model*, dynamically optimized by AI agents, without rigidities imposed by traditional sprints.

- **AI-Enhanced Planning**: Similar to Sprint Planning, but with one key difference that sees the plan *continuously updated* by AI agents based on real-world progress.
  - The **Product Owner** defines the objectives.
  - AI **agents** suggest optimal priorities based on historical data and team capabilities.
  - The plan automatically **recalibrates** if there are any changes.



- **AI-Daily Sync:** asynchronous and automated *update system*.
  - Each AI agent generates **real-time reports** on progress, issues, and anomalies.
  - Humans receive notifications and intervene only when necessary, reducing unnecessary meetings.
- **AI-Enhanced Review:** continuous analysis of product performance.
  - AI agents monitor the impact of released features.
  - They offer insights into business and user experience KPIs.
  - They suggest **future priorities** based on collected data.
- **AI-Driven Retrospective:** AI analyzes productivity and quality metrics and suggests improvements based on objective data. Humans validate and decide which actions to implement.

### 3.6 Artifacts in AgileAI: Dynamic and Self-Adaptive

- **AgileAI Backlog:** A *live, adaptive* backlog that automatically updates based on progress, business priorities, and team capabilities.
- **AI-Performance Dashboard:** not only tracking completed work, *but dynamic forecasting* of future performance.
- **AI-Test Automation Report:** Intelligent testing system that monitors code quality and suggests missing tests.

### 3.7 Key Differences Between Scrum and AgileAI

<i>Characteristic</i>	<i>Scrum</i>	<i>AgileAI</i>
<b>Structure</b>	<i>Fixed sprints</i>	<i>Continuous and adaptive flow</i>
<b>Planning</b>	<i>Defined at the beginning of the sprint</i>	<i>Recalibrated in real time by AI agents</i>
<b>Daily Meeting</b>	<i>Obligatory</i>	<i>Automatic asynchronous reports</i>
<b>Backlog management</b>	<i>Manual</i>	<i>Adaptive, AI-optimized</i>
<b>Roles</b>	<i>Human</i>	<i>Humans + AI agents</i>
<b>Performance analysis</b>	<i>Feedback-based</i>	<i>Data-driven + insights</i>

### 3.8 Data Quality Management in AgileAI

To ensure high data quality, AgileAI introduces a *Data Quality Management cycle*, based on three principles:



1. *Data Profiling and Continuous Monitoring: AI-Analyst Agents* constantly analyze the quality of the data, reporting anomalies and inconsistencies.
2. *Automatic Data Cleaning and Preprocessing: AI-Optimizer Agents* correct errors in datasets, eliminate duplicate values and normalize information.
3. *Data Validation and Governance: the human team* oversees and validates AI processes, ensuring that the data used is always *reliable and complies with ethical and legal standards*.

Data-Driven Artifacts in AgileAI:

Artificial	Description
<b>AI-Enhanced Backlog</b>	Feature prioritization based on clean, validated data.
<b>Data Quality Scoreboard</b>	Dashboard that monitors data quality and reports issues in real time.
<b>AI-Trust Report</b>	A system that measures the reliability of the decisions made by AI Agents, based on the quality of the data.



## 4. Conclusions

As we hope has emerged from reading the paper, the goal of its content is to develop a perspective on how artificial intelligence can impact the development of new products, suggesting a framework that finds its roots in Scrum, but evolves it towards a new "intelligent" data-driven dimension.

If you are interested in the in-depth study and concrete application, you can contact us at the e-mail address [info@agileconstellation.info](mailto:info@agileconstellation.info) or through our social channels that you find on the official website.





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