

Sema4.ai

# Revolutionizing knowledge work through enterprise agents



# Table of contents

Introduction	3
Understanding the need for enterprise AI agents	3
Sema4.ai – vision and purpose	5
The Sema4.ai approach to enterprise AI agents	5
The power of runbooks: defining and refining workflows	6
The Sema4.ai Enterprise AI Agent Platform	7
Sema4.ai Studio	7
Sema4.ai Control Room	8
Sema4.ai Action Gallery	8
Sema4.ai Dynamic Data Access	9
Sema4.ai Work Room	9
What makes a good use case for AI agents?	10
Examples of common use cases for enterprise AI agents	11
Compliance	11
Invoice reconciliation	11
Customer support	12
The future of work with Sema4.ai	13
Additional considerations	13

# Introduction

In today's rapidly evolving technological landscape, artificial intelligence (AI) is transforming how businesses operate and make decisions. Sema4.ai stands at the forefront of this revolution, developing cutting-edge enterprise AI agents that redefine knowledge work and unlock new levels of productivity. This whitepaper explores Sema4.ai's innovative approach to building, running, and managing enterprise AI agents.

## Understanding the need for enterprise AI agents

LLMs, copilots, and RPA (Robotic Process Automation) fall short when it comes to supporting the intricate and dynamic workflows of knowledge workers. Many of these options look promising at first, but don't work in practice because they lack the ability to adapt to real-world changes. Below are just a few of the reasons why traditional approaches to enterprise automation have missed the mark.

### 1. Lack of reasoning and judgment skills

Legacy automation solutions like co-pilots and RPA often struggle with intricate, end-to-end processes that require human-like reasoning, judgment, and flexibility. They are great at doing the same thing over and over again, but lack the flexibility needed to do real work.

### 2. Require developers and technical specialists

Traditional automation solutions are highly technical, requiring specialized IT skills or entire teams to build, maintain, and update the code - limiting accessibility for business users.

### 3. Not trained on your data

Many of today's automation tools lack the ability to seamlessly integrate with enterprise data, especially unstructured data like PDFs and e-mails - limiting their ability to automate knowledge work.

### 4. Don't like change and don't learn from their mistakes

The previous generation of automation solutions have rigid rules that make it difficult and expensive to adapt to the rapid pace of business change. This requires rewrites for new workflows. Making matters worse, these older technologies don't learn from previous results.

### 5. Lack transparency

Even more modern automation solutions like LLMs are effectively "black-boxes" in terms of visibility of their decision-making. This lack of transparency makes them difficult to implement for mission-critical processes.

Unlike traditional automation technologies and co-pilots, enterprise AI agents can actually replace human labor, automate end-to-end processes, and deal with ambiguity. Enterprise AI agents use LLMs to provide natural language understanding and communication capabilities needed for the agent to interact with humans or other apps. These agents can plan, reason, collaborate, and act with or without human supervision. They can analyze situations, identify problems, and devise solutions. Most importantly, Sema4.ai enterprise AI agents actually “do work”.

That is why the world’s leading researchers, analysts and consultants believe that we are on the cusp of a massive boom in the world of enterprise AI agents. In fact, Jorge Amar from McKinsey recently stated that “... Gen AI enterprise use cases could yield \$2.6 trillion to \$4.4 trillion annually in value across more than 60 use cases.” Why? It’s because “Gen-AI-enabled agents hold the promise of accelerating the automation of a very long tail of workflows that would otherwise require inordinate amounts of resources to implement. And the potential extends even beyond these use cases: 60 to 70 percent of the work hours in today’s global economy could theoretically be automated by applying a wide variety of existing technology capabilities, including generative AI, but doing so will require a lot in terms of solutions development and enterprise adoption.”<sup>1</sup>

60-70%

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McKinsey  
& Company



# Sema4.ai - vision and purpose

At Sema4.ai we believe that enterprise agents are the **“killer app” of the AI era** – generating unprecedented breakthroughs in productivity and forever changing how work gets done. We transform how enterprises plan and execute work by empowering **business users, not just developers**, to build and operate AI agents at scale. Our agents can see, act, and learn in ways that were previously unimaginable.

## The Sema4.ai approach to enterprise AI agents

Sema4.ai’s enterprise AI agents are sophisticated AI-powered apps capable of handling complex, high-value tasks that traditionally required human intervention. These agents go beyond simple automation, exhibiting human-like reasoning, collaboration, and judgment to autonomously execute end-to-end workflows. Our agents run autonomously, only involving humans for approvals and exceptions. They also perform all of these tasks with unprecedented levels of accuracy and efficiency... working 24x7 with no need for coffee or breaks.

Sema4.ai’s enterprise AI agents leverage the vast amounts of data residing within enterprises to gain a deep understanding of business context. By accessing and analyzing structured and unstructured data, these agents can make informed decisions, provide intelligent insights, and support effective decision-making. Lastly, our agents show their work. Our **Transparent Reasoning** feature provides real-time visualization of your AI agent’s thought processes. This transparency enhances understanding and trust, showing how the agent plans, reasons, and makes decisions.

### Below are the 5 essential characteristics of enterprise AI agents.

1. **Defined in English** by business users for business users
2. Understand full **business context** – data, apps, and docs
3. Work autonomously and **improve over time** through feedback and training
4. Provide **complete transparency** of reasoning and actions
5. Are **secure and governed** from inception to production

# The power of runbooks: defining and refining workflows

At the heart of Sema4.ai's solution lies the concept of "runbooks." These are not mere prompts but comprehensive definitions of business processes, tasks, and desired outcomes. Natural language runbooks empower business owners to take full control of their workflows, enabling them to define, optimize, and continuously improve the work performed by Sema4.ai Agents. Runbooks eliminate the need for complex coding and workflow tools - enabling rapid development and iteration.

Below are **3 of the core benefits of Sema4.ai Runbooks.**

## 1 Focus on work:

Runbooks allow businesses to concentrate on their core work, leaving the automation to intelligent agents.

## 2 Continuous improvement

Runbooks provide a framework for ongoing optimization and refinement of business processes.

## 3 Business owner empowerment:

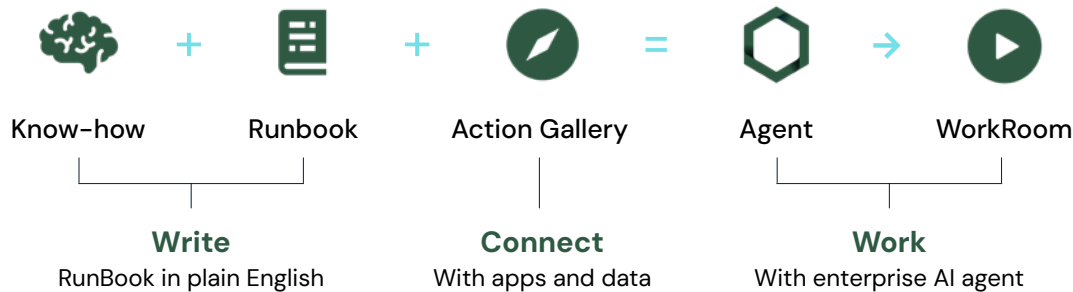
Business owners have complete control over defining and managing their workflows.





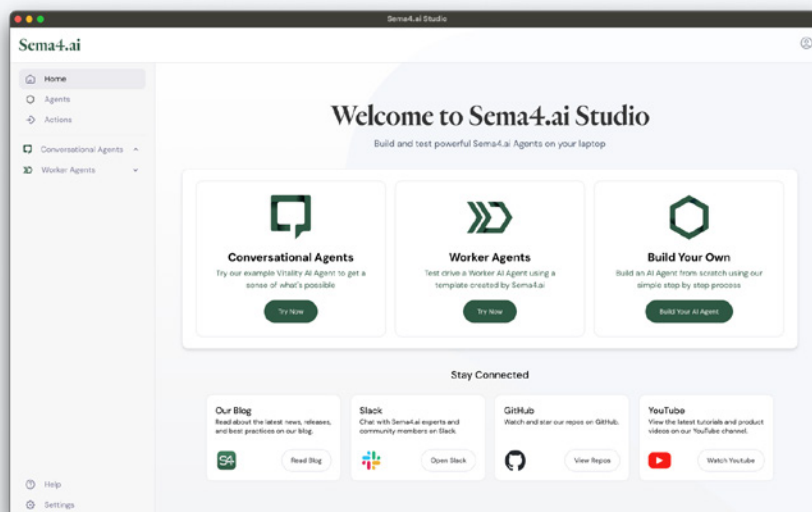
# The Sema4.ai Enterprise AI Agent Platform

Sema4.ai's platform is designed to support the entire lifecycle of AI agent development, deployment, and management. The portfolio is comprised of 5 core components:



## Sema4.ai Studio:

Enables business teams to turn ideas into ready-to-deploy AI agents faster than ever. Studio uses natural language runbooks to define agent workflows and connect them to enterprise apps with pre-built actions for tools like SharePoint and HubSpot, or create custom actions with our SDK. Agents can be built in a secure, isolated environment with seamless OS integration. Studio utilizes leading LLMs, including OpenAI, Microsoft Azure, and Amazon Bedrock, to tailor performance to specific business requirements. Studio empowers business users to build and test agents locally, and then share them seamlessly with their teams.

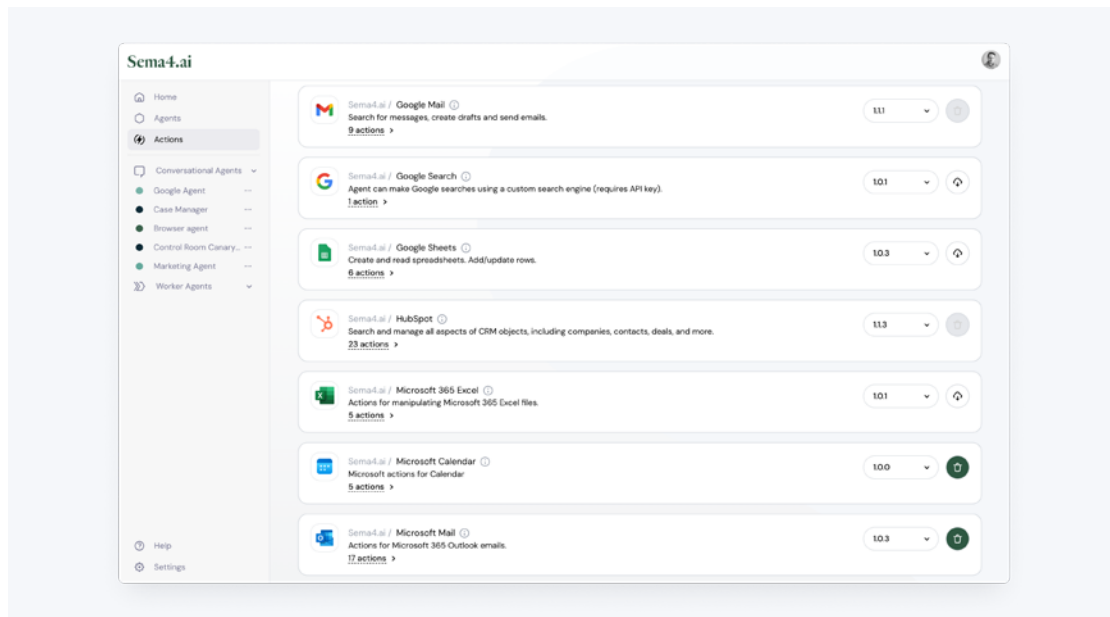


## Sema4.ai Control Room:

Designed for enterprise needs, Control Room offers robust security, seamless scalability, and complete lifecycle management for your AI agents. It is built from the ground up for the enterprise, ensuring that all data remains within your AWS VPC – providing maximum security and compliance. It also integrates with your existing identity management system for seamless SSO access and offers real-time observability with tools like Splunk and Datadog. With Control Room, businesses gain full control over their AI agents, ensuring they operate securely and efficiently within your IT infrastructure.

## Sema4.ai Action Gallery:

Offers a robust and flexible framework for integrating AI agents with enterprise apps. Sema4.ai Actions enable connections to common business platforms like SharePoint, custom enterprise apps like SAP, ServiceNow, and Workday, or even APIs, browsers and existing RPA bots. The Action Gallery offers a curated library of pre-built actions for quick integration without writing a line of code. Optionally, businesses can use a complete **automation-as-code framework** with the full power of the Python ecosystem to create custom actions – enabling AI agents to interact with all of your enterprise apps seamlessly.





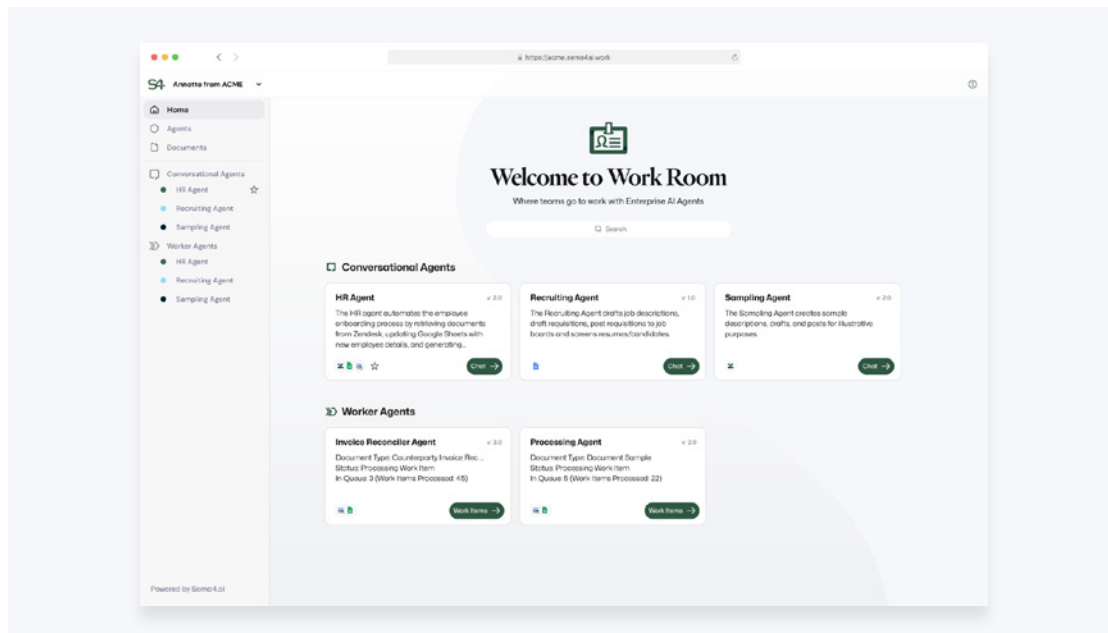
## Sema4.ai Dynamic Data Access:

Empowers agents to seamlessly access the lifeblood of your enterprise—data—without creating new silos. With zero-copy access to past, present, and future data, agents gain the complete context needed for smarter decision-making and in-context responses. DDX supports over 100 data sources, ensuring agents can interact with structured enterprise data efficiently and securely. By integrating with the **Sema4.ai SDK**, Dynamic Data Access facilitates collaboration between business users and data developers, enabling the creation of powerful, data-driven agents. This comprehensive approach enhances operational efficiency and drives innovation across your organization.

## Sema4.ai Work Room:

Unlike other agentic platforms, Sema4.ai has designed Work Room - purpose-built for business users - making it easy to quickly find and work with the agents they need. Work Room provides a secure, transparent collaboration environment for users to work with agents. Said simply, Work Room provides a secure and transparent human-AI collaboration portal.

The intuitive design ensures a seamless user experience, enhancing productivity and efficiency. It also integrates with your existing SSO solution and provides role-based access control so users only see the agents they have access to.

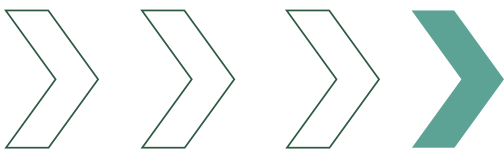


# What makes a good use case for AI agents?

AI agents can solve a wide array of complex business problems.

Below are a few key parameters and evaluation criteria to consider.

Parameters to consider	Evaluation criteria
Does it solve a real urgent problem vs a nice to have issue?	Unless you are saving money, improving efficiency and solving a well understood acknowledged problem, even a successful solution will not translate into adoption gains.
How frequently are humans required to execute this business process?	Processes (like compliance at banks) have to be done continuously. Infrequent processes are less likely to translate into real gains.
Does 24*7 execution make the business more responsive?	If you can resolve a problem faster or get paid quicker or make decisions faster using agents, then it is a good candidate. Also if demand fluctuates and you need to auto scale, that is an even better candidate.
Is the problem repeatable across business divisions?	Solving repeatable mainstream problems will amplify adoption as subsequent efforts become easier.
Does the problem align with key imperatives of your organization?	If your CEO can talk about this on their earnings call, then it is definitely worth automating.



# Examples of common use cases for enterprise AI agents

## Compliance

Compliance is a critical area for many industries, and Sema.ai Agents can help ensure that your organization stays up-to-date with the latest regulations, avoiding costly penalties and reputational damage. These agents produce timely reports on changes in regulatory updates, such as export controls, and allow users to query them. Agents with continuous learning capabilities are ideal for compliance tasks. These agents can maintain up-to-date models of regulatory requirements and organizational processes. The benefits of compliance agents include:

- Real-time monitoring
- Predictive risk assessments
- Decreased costs of compliance management
- Automated reporting
- Enhanced audit trails and transparency

## Invoice reconciliation

Complex invoice reconciliation work has rules and standard operating procedures that can be turned into agent workflows. Manually scrutinizing a 30-page invoice and matching it against internal systems might take hours for a human, but agents can free up this time for more productive work. Worker agents with advanced pattern recognition capabilities are ideal for finance tasks. These agents can adapt to changing financial conditions and improve their accuracy over time. The benefits of invoice reconciliation agents include:

- Automated invoice processing
- Rapid, accurate handling of invoices and payments
- Fraud detection
- Predictive financial modeling

## Customer support

Customer support operations teams are always challenged when it comes to getting a 360-degree view of the customer. Regardless of the CRM they are using, there are multiple facets of customer knowledge siloed across different systems of record, making it difficult for them to make effective conversations and decisions. A conversational AI agent can support backend processes allowing teams to get a holistic view based on the latest data or context from different systems of record and suggest the next best action. It can summarize incoming customer issues/tickets, perform context lookups across enterprise knowledge bases, and suggest optimal solutions and next steps. The benefits of customer support agents include:

- 24/7 availability
- Managing multiple customer interactions simultaneously
- Faster ticket resolution
- Continuous learning
- Reduced costs



# The future of work with Sema4.ai

Sema4.ai is shaping a future where enterprise AI agents are seamlessly integrated into every facet of knowledge work. These agents will automate tasks, provide intelligent insights, and facilitate collaboration. By embracing Sema4.ai's breakthrough platform, businesses can embark on a transformative journey, unlocking unprecedented levels of productivity, efficiency, and innovation. As AI continues to evolve, Sema4.ai remains committed to shaping the future of work, driving innovation and empowering businesses to thrive in the age of intelligent automation.

## Additional considerations:

- **Customer success:** Sema4.ai prioritizes customer success, providing comprehensive support and guidance to ensure businesses achieve their desired outcomes with our enterprise AI agents.
- **Open source collaboration:** Sema4.ai actively contributes to and leverages open-source technologies, fostering a collaborative ecosystem for agentic AI innovation.
- **Ethical AI:** Sema4.ai is committed to developing and deploying AI responsibly, ensuring fairness, transparency, and accountability in all its solutions.

1 - The promise and the reality of gen AI agents in the enterprise - McKinsey, May 17, 2024

Explore the transformative potential of Sema4.ai's enterprise AI agents and embark on your journey to redefine knowledge work and achieve unprecedented levels of productivity and innovation. Contact [Sema4.ai](#) today to learn more about how their solutions can empower our business to thrive in the age of AI.

### RECOMMENDED RESOURCES:

[Sema4.ai Blog](#)

[Sema4.ai Platform](#)







# Sema4.ai

At Sema4.ai, we're helping customers build, run, and manage intelligent AI agents that combine actions, intelligence, and enterprise context to automate complex human workflows.