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FROM ASSISTANTS TO AGENTS

SMARTER AI FOR REAL-WORLD OPS

TABLE OF CONTENTS

01. Introduction: A Workforce Revolution

> Before we begin, a quick note. Everything you're about to read is fully human-written, drawing on the real-world expertise of our engineers, developers, and business strategists. This might seem a strange way of opening a whitepaper on AI. However, nuance is everything with emerging technology. And we think it's important to recognise when AI should take a back seat. Rest assured you're hearing **directly from us, not a bot.**

The idea of artificial intelligence running business ops is not new. Howe2ver, until fairly recently, it existed mostly in science fiction.

Today, the reality is very different. AI agents, which are capable of handling a whole host of operations autonomously, are cutting costs, driving efficiency and fuelling expansion. There are significant opportunities, and now is the time to start taking advantage of them.

This whitepaper explores the current possibilities and applications of AI agents. It also provides a practical implementation roadmap and an overview of the most common obstacles to watch out for.

02. What Is An AI Agent?

> **AI agents mirror autonomous humans.** When you hire a human, you're looking for someone that can own the turf within a business. For example, a salesperson really owning the sales component of the business. That's ultimately what an AI agent is.
>
> **Frank Sondors**
> Founder of Salesforge
>
> Source: Sigli Innovantage Podcast

An AI agent is a computer programme that can execute complex tasks autonomously. AI agents can design and execute entire workflows—such as, for example, resolving a technical issue for a software customer—with limited (and in some cases, zero) human oversight.

The core difference between an AI agent and a generative AI chatbot, such as ChatGPT, is that agents can understand and interact with a digital context or environment. They can reason across different inputs and initiate actions and keep iterating until they achieve an outcome, not just generate text and images.

In certain circumstances, AI agents can even act as intermediaries between the digital and physical worlds. For example, an agent evaluating warehouse performance might create a task to perform extra label scans in an area with a high rate of misplaced goods.

03. What's The Difference Between AI Assistants And Agents?

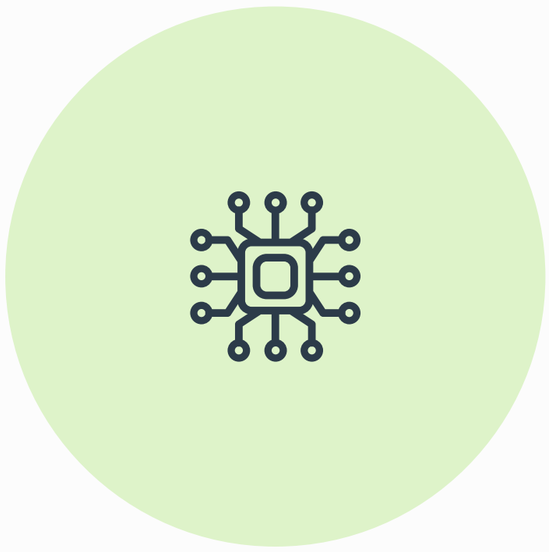
The terms "assistant" and "agent" are often used interchangeably. However, they are separate technologies, with AI agents representing a significant innovation.

AI agents build on the capabilities of AI assistants. They take the underlying LLM and integrate it with a surrounding software architecture, combining generative capabilities with workflow planning algorithms, memory (state maintenance), probabilistic reasoning, API access, and more.

Here are summaries of the key differences:

AI assistant (or copilot)	AI agent
AI assistants perform self-contained tasks in response to specific commands (or prompts) through a conversational interface. Most AI assistants are conversational chatbots, but it is possible to integrate them with APIs to offer some real-world functionality, although functionality tends to be limited.	AI agents act autonomously and execute complex, multi-step tasks without relying on prompts. AI agents operate in a context and can access a range of tools to complete workflows. Many AI agents can self optimise.
Example: *Asking ChatGPT to write an email or summarise a web page*	***Example:*** *A virtual AI salesperson that researches, composes, and sends outreach emails to a company's prospective customers.*

Here's An Overview Of The Key Technologies That Underpin AI Agents:



Language learning model (LLM):

An AI system that's been trained on large amounts of data and can understand and generate human language.

Natural language processing (NLP):

The application of computational techniques to interpret, understand and respond to human language.

Goal orientation:

The ability of an AI to autonomously pursue set objectives or tasks without human oversight.

Long-term memory:

Infrastructure that lets AI store and access past information across sessions or tasks (as opposed to one session).

Tool calling:

An AI's ability to use external tools like databases, APIs, and search engines to execute tasks.

04. AI Agents: 6 Real-World Applications With Case Studies

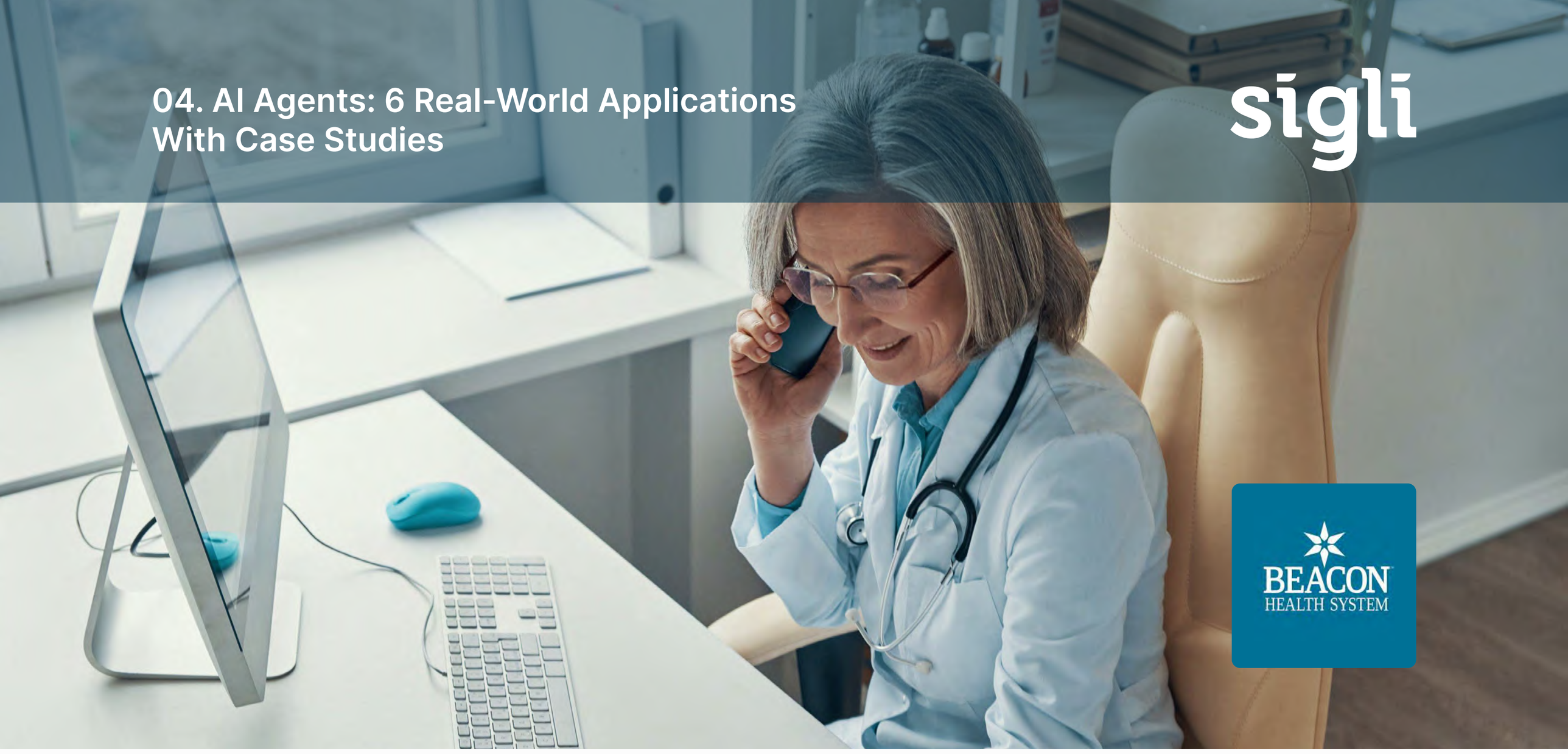
I'm hopeful that agents can solve things that RPA could not, making automation easier within large complex processes and actually giving more people access to technology that they can leverage to help automate not just their day-to-day operations but also end-to-end processes.

Maxime Vermeir
Senior Director of AI Strategy at ABBYY

Source: Sigli Innovantage Podcast

Companies are using AI agents to help with an array of sophisticated, multi-stage tasks. They are becoming widespread in different sectors, from healthcare to manufacturing.

It’s also important to note that while large enterprises represent the largest group of early users, small and medium businesses are also seeing impressive results.



4.01 Healthcare

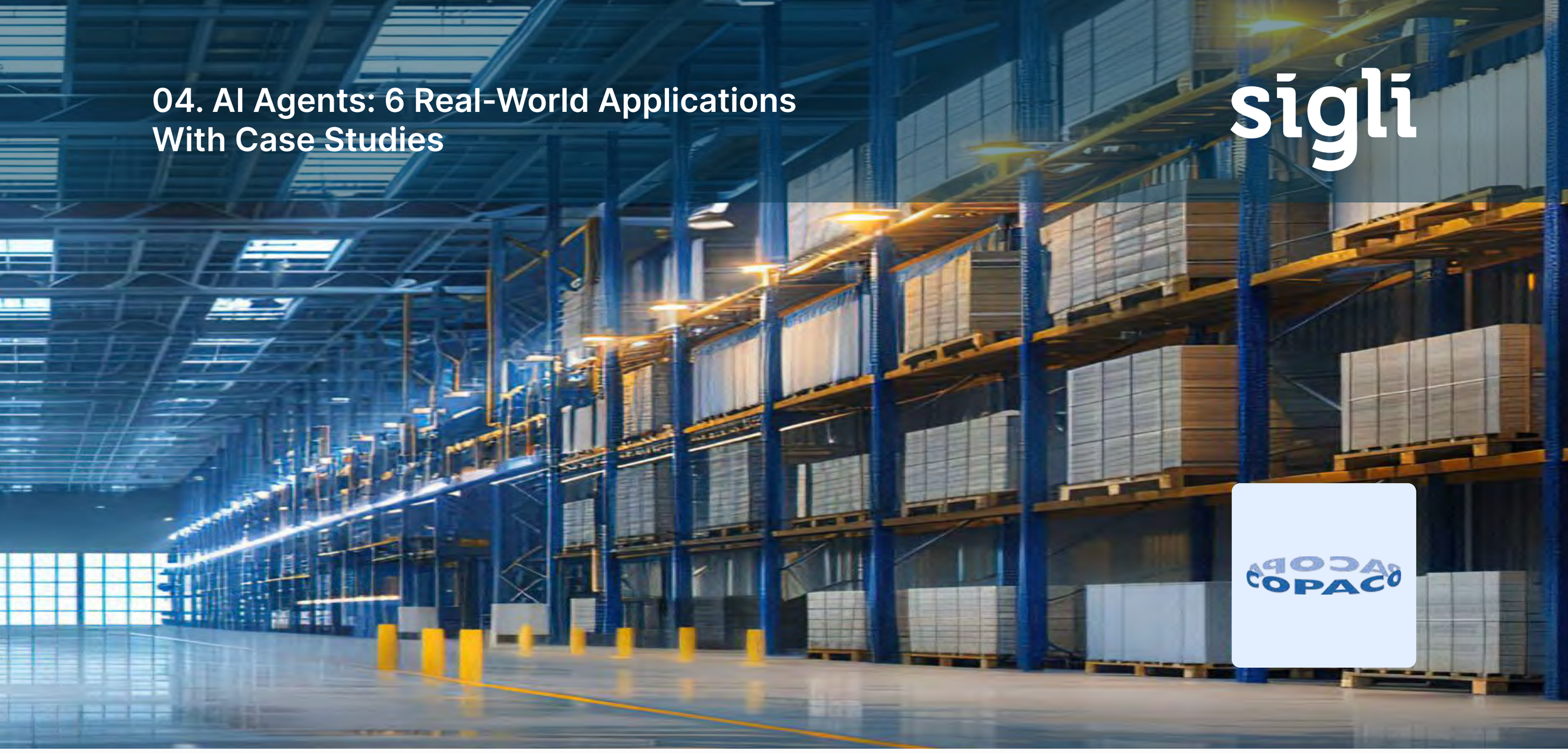
Beacon Health, a not-for-profit health system, used the Oracle Health Clinical AI agent to reduce physician burnout by reducing bureaucracy.

Oracle's AI agent is an ambient listening application which generates draft reports based on clinical sessions. The agent is integrated into the Beacon's databases and is able to draw on previous material and data to create documentation.[1]

Examples of AI agent capabilities in healthcare:

1. Automation of administrative tasks in complex environments like hospitals, such as document classification
2. Diagnosis of illnesses by interpreting test results and patient histories
3. Creation of personalised treatment plans based on patient health forecasting

[1] https://www.oracle.com/customers/beacon-health/



4.02 Manufacturing & Logistics

Sigli worked with **Copaco**, a European logistics and ICT leader, to build an AI-based reverse logistics platform (returns and repairs).

Specifically, Sigli built an AI agent to execute complex data extraction and analysis tasks and communicate relevant information with other components of Copaco's tech stack.[2]

Examples of AI agent capabilities in manufacturing and logistics:

1. Coordination of factory-floor operations using data from sensors
2. Notifications to engineers alerting them to issues with machines
3. Creation of forecasts to predict buyer demand

[2] https://www.sigli.com/case-studies/building-an-end-to-end-reverse-logistics-platform

4.03 Finance

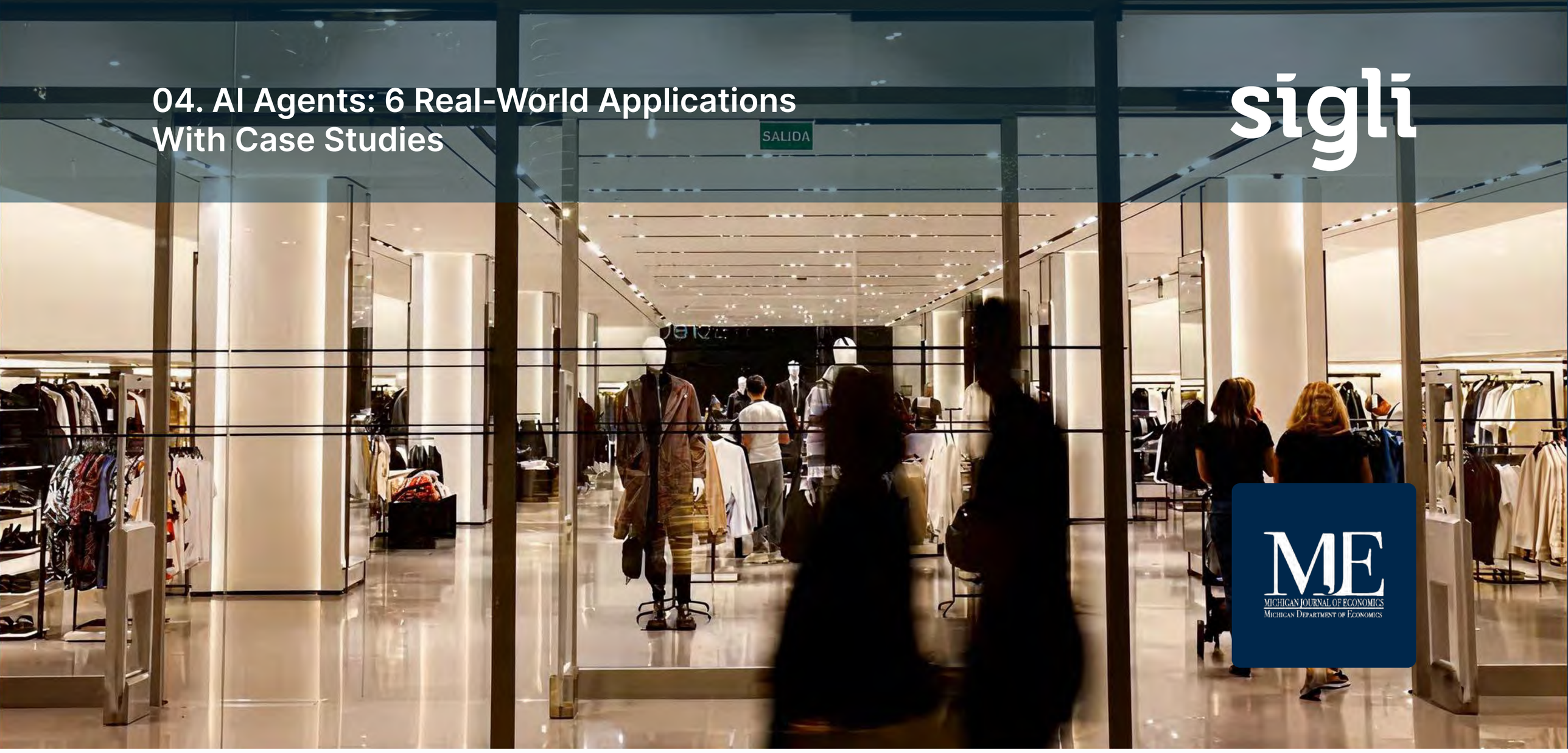
JP Morgan built an AI agent capable of performing investment research with LangGraph, an open-source AI agent framework.

Among other capabilities, Ask D.A.V.I.D. (which stands for Data Analytics, Visualization, Insights, and Decision-making Assistant) is able to answer complex investment questions by drawing on a range of internal resources.[3]

Examples of AI agent capabilities in finance:

1. Automated portfolio management
2. Customer pattern monitoring for fraud detection
3. Identification of investment opportunities through deep market research

[3] https://www.youtube.com/watch?v=yMaIr0jiOAc



4.04 Retail

Fashion giant **Zara** has implemented AI systems in multiple domains, including style trend forecasting and customer journey personalisation.

It has seen efficiency gains across warehouse storage, waste management, inventory management, logistics, and process automation.[4]

Examples of AI agent capabilities in retail:

1. Management of stock, including monitoring and reordering
2. Actionable advice and guidance to online and in-store shoppers
3. Autonomous troubleshooting of issues in logistics networks

[4] https://sites.lsa.umich.edu/mje/2025/04/04/ai-powered-fashion-how-tech-is-reshaping-the-future-of-zaras-fashion-empire/

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4.05 Sales

Readymode, a sales outreach platform, integrated AI sales reps into its human workflows, boosting revenue.

These AI agents are capable of independent research, lead evaluation, and message composition and delivery.[5]

Examples of AI agent capabilities in sales:

1. Qualification of leads through analysis of prospect behaviour
2. Auto-composition of personalised outreach messages
3. Enrichment of lead profiles in CRM systems

[5] https://salesandmarketing.com/case-study-how-readymode-increased-revenue-40-by-combining-ai-sdrs-with-value-based-selling/

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4.06 Education

Sigli collaborated with **Allkind**, a technology services provider for people with disabilities, to upgrade their infrastructure with the latest AI functionality.

Sigli implemented AI-based customer features like personalisation, smart tutoring and automated customer service helpdesk capabilities.[6]

Examples of AI agent capabilities in education:

1. Agent interaction with learners as part of independent study
2. Creation of personalised learning plans and materials
3. Responses to student answers with nuanced feedback

[6] https://www.sigli.com/case-studies/ai-accessibility-solutions

05. How To Implement Agentic Workflows: A Roadmap

> We cannot deny the impact of AI, though it is very important to look at how human beings fit in and ask, 'Where do human beings have to grow and to learn?
>
> **Stijn Staes**
> Author & Trusted Advisor | Transformation Counselor | Podcast Host
> Source: Sigli Innovantage Podcast

How can businesses like yours begin benefiting from AI agents?

There are four broad stages that leaders must account for to implement successful autonomous workflows: ideation, technology research, infrastructure creation, and testing.

Here is an eleven-step framework that is suitable for businesses of all sizes and covers all of these four stages.

Implementing Agentic Workflows

1 — Brainstorm Creatively
Generate innovative ideas for AI agent use

2 — Turn Dreams Into Objectives
Align ideas with concrete business goals

3 — Prioritise Inefficiencies
Identify areas for AI agent intervention

4 — Select LLM
Choose the best AI model

5 — Consider Data
Integrate relevant data for agent training

6 — Design Workflows
Create clear workflow visualisations

7 — Build Prototypes
Develop initial agent prototypes

8 — Test Prototypes
Evaluate agent performance in controlled settings

9 — Deploy with Oversight
Implement agents with human monitoring

10 — Monitor Performance
Track agent performance post-implementation

11 — Refine and Scale
Expand successful agent implementations

1

Brainstorm Creatively and Freely

Begin by letting your operations and tech teams think freely and imaginatively about the imperfections and shortcomings of existing processes. This is an open, creative space and there are no bad ideas. However, it is important to involve tech experts, who will provide constraints as regards feasibility.

> The first stage of AI agent implementation is an opportunity to “dream about a different reality where there's no need for a team to spend eight hours planning purchase orders for the next month, or perform complex, costly audits every year when an AI agent can do them every day.
>
> **Vasil Simanionak**
> Chief Delivery Officer, Sigli

Example:
Automate 90% of warehouse inventory monitoring and purchase order management.

2

Turn Dreams Into Clear Business Objectives

Once you have ideated how AI agents might help through hypothetical workflows, it’s time to see if they align with concrete business objectives.
Set measurable KPIs—aligned with core organisational goals—for each scenario. In addition, agree on clear return on investment (ROI) benchmarks to avoid unrealistic expectations associated with AI agent hype. Both of these actions test the feasibility of ideas generated in step one.

Example:
Reduce customer support response time by 30% within six months.

2

Prioritise Low-Efficiency Operations

With feasibility checks completed, prioritise specific, operational areas of your business that are most likely to impact your defined objectives and also suffer from high complexity or manual inefficiencies. Remember that these areas should require context awareness or reasoning, not simply structured automation.

Example:
Analysing accounting documentation and flagging issues that cannot be handled effectively by existing if-then automations.

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4

Select the Right LLM

An AI agent's underlying LLM is a central component that works in concert with all other agentic infrastructure. When choosing a model, consider accuracy, speed, scalability, and compliance. Always assess model suitability with domain-specific criteria, like data processing capabilities for agents intended to automate accounting tasks.

Example:
Selecting GPT-4 Turbo to build AI agents for global customer service chatbots because of its strong multilingual features.

5

Consider In-House Data and Integration Needs

Once you have selected a model, use your own domain-specific materials data to adjust it to perform well in your contexts. You will also provide database access.

Example:
Using Salesforce CRM data for training a sales-assistant agent.

6

Design Agent Workflows and Boundaries

Create clear workflow visualisations with contingency protocols. Develop decision trees and escalation paths for exceptional scenarios. And vitally, identify all required tools that will enable the agent to act, such as APIs, trigger workflows, databases, etc.

Example:
Escalation procedures for when a customer service agent encounters questions beyond its training, with access to a project management app to alert human reps.

7

Build and Train Initial Agent Prototypes

Develop minimally viable agents using small training datasets. Fine-tune these prototypes based on initial performance and human feedback.

Example:
Training an initial prototype of a customer-service chatbot using historical support-ticket data.

8

Test in Controlled Environments

Test successful prototypes more rigorously for reliability, ideally in controlled real-life scenarios. It is important to conduct A/B tests to measure performance against manual processes (and make sure agentic workflows are actually more efficient).

This is the stage where you identify hallucination risks and check output quality and implement fallback mechanisms.

Example:
Testing a recruiting agent that filters early-stage candidates before they move on to the HR department for in-person interviews.

9

Deploy with Human Oversight

Use human-in-the-loop monitoring during initial deployment phases. This will allow for real-time intervention and identification of issues that weren't spotted in the testing phase.

Example:
Introducing agents in call centres with real-time supervision by experienced operators.

10

Monitor Performance After Implementation

Deploy analytics for ongoing performance monitoring, error detection, and drift analysis (loss of performance over time).

Example:
Setting up tracking dashboards to monitor sales performance (for example, number of calls booked) of AI sales agents

11

Refine and Scale Across Departments

Document successes and develop reusable agent frameworks. Expand incrementally, adapting successful agent implementations to different departmental workflows.

Example:
Adapting a successful manufacturing automation agent for warehouse inventory management.

06. Common Challenges With AI Agent Implementation: A Checklist

> An AI agent is a compositional system that often includes planning, memory, tool usage, and feedback loops. Traditional if-then logic alone can't handle the ambiguity and variability that agents are designed to work with.
>
> **Artem Pochechuev**
> Head of Data and AI, Sigli

Agentic technologies are complex and governed by a web of regulation. At Sigli, we've identified six main areas where obstacles commonly arise. Being aware of these before setting up agentic workflows helps you plan for them before they arise.

- ✓ **Regulatory compliance:** Regulation affects AI directly and indirectly (such as with GDPR). In Europe the AI Act, the world's first "comprehensive AI law", is the most relevant piece of direct legislation. It sets standards for transparency, safety and banned applications (biometric identification is disallowed, for example, except in cases of law enforcement). AI agent implementation should always be conducted in partnership with your legal team or an experienced software development company.

- ✓ **Data integration complexity:** AI agents typically require access to multiple databases across siloed departments. Connecting these sources while maintaining integrity is an ongoing channel. Building high-quality API infrastructure and encouraging cross-departmental collaboration are crucial.

- ✓ **Maintaining reliability and accounting for hallucinations:** Hallucinations, where AI produces factually inaccurate outputs, remain a serious problem, with some experts putting rates as high as 25%. While this problem is being addressed, monitoring mechanisms and human oversight are paramount.

- ✓ **Security and compliance risks:** AI agents process large amounts of sensitive internal and customer data, and new threats have emerged, such as the accidental exposure of user data in future outputs. Existing security frameworks should be adapted to account for these risks.

- ✓ **User trust and adoption:** Trust in AI among consumers remains a significant challenge. If you plan to implement customer-facing AI agents, transparency and education will help allay user fears.

- ✓ **Scalability across departments:** Different departments often have unique workflows and tech stacks, which makes scaling AI agents difficult. An agile implementation framework and company-wide training and support programmes help coordinate different arms of the company.

07. Explore AI Agent Use Cases With Sigli

When we spoke to **Maxime Vermeir,** Senior Director of AI Strategy at ABBYY, for our Innovantage podcast, he made a very important point.

> *“AI agents are both overhyped and underestimated.”*

What does this mean?

On the one hand, AI agents are not yet the all-powerful entities that some people imagine them to be. They cannot automate entire organisations and they typically require a human in the loop.

At the same time, **however, many business leaders misunderstand the specific, nuanced applications of AI agents**, especially when it comes to filling the areas that RPA systems have traditionally struggled with. While it is not ready to be implemented everywhere, there are many areas where AI is having a significant impact.

At Sigli, we believe that businesses of all sizes are in an adapt-or-die scenario.

To remain competitive and survive, they need to do two things.

First, they should **identify use cases** for AI agents that are feasible in their organisations right now.

Second, they should **build the underlying infrastructure** that allows them to implement new agentic technologies quickly and cost-effectively as they become available.

That means connecting with the right expertise—the developers, computer engineers and domain specialists—that can help them take advantage of the opportunities of a technological landscape that is changing faster than ever.

Sources

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Zara

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Trust in AI

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