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How to leverage AI into your existing investments

A guide for organisations ready to leverage
AI to maximize business outcomes.

Artificial Intelligence (AI) has revolutionised industries and improved the lives of countless people across the globe.

Despite the rapid adoption of AI, some people still harbour doubts about the technology, ranging from concerns about job replacement to fears of AI world domination. Nonetheless, the impact that AI has had on the world is undeniable.

Today, we are living in a time where AI is attainable to all — no hardware required. You can easily find a variety of photo-generating apps ready for instant use in the app store on your phone. Additionally, you can log into your Spotify account from your computer, phone, or television and explore an extensive selection of music recommendations using OpenAI technology.[1] AI is no longer only for tech-savvy professionals and companies with deep pockets — it's within reach for everyone.

In this ebook, we'll explore trends in AI implementation and ways to leverage AI within your existing infrastructure. We'll cover the following:

Let's get started!

01 Top reasons why organisations are jumping on the AI train

AI has many applications, particularly in the business world, where its popularity is on the rise. Organisations seeking to fully leverage and maximise AI can benefit from understanding how these technologies can be suitable for specific tasks, establishing a project list based on their business requirements, and implementing strategies for expanding its use throughout the company. Sounds straightforward, right?

The truth is, this is where many organisations encounter challenges — identifying the reasons for using AI. Companies know that implementing AI can provide them with a competitive edge, but they struggle to determine how to use it and which problems to solve.

In a study in the Harvard Business Review, 152 AI projects were analyzed within the business domain, revealing that AI can address three business needs: process automation, cognitive insight, and cognitive engagement.[2] Let's delve deeper into why these business needs are pivotal to AI success.

AI streamlines back-office administrative & financial processes

Companies use **process automation** to automate processes. One way they accomplish this is by using robotic process automation (RPA), which are code robots that automate repetitive and time-consuming tasks, such as record updates and data transfers, from multiple IT systems. This type of AI is well-suited for environments with multiple back-end systems.

EXAMPLE
When NASA launched an RPA pilot on a shared server for HR and three other business areas, all were successful. For HR, 86% of transactions were completed without human assistance. NASA is presently incorporating additional RPA bots with advanced intelligence levels organisation-wide.

RPAs are code robots that act like humans, inputting and consuming information from multiple IT systems.

AI searches for patterns to predict outcomes and interpret significance

Powered by deep learning, **cognitive insight analytics** take a vast amount of a company's data to search for patterns to enhance analytical capabilities. Machine-learning includes deep learning, which imitates the brain by achieving tasks like speech and image recognition. Although data curation can be time-consuming, machine learning can recognise probable matches between databases and across formats.

Here are three ways machine learning models surpass traditional analytics:

1. More data-intensive and detailed

2. Better trained on a specific part of the data set

3. Get more intelligent over time by using new data for making predictions and refining categorization

EXAMPLE
In its first year, GE saved $80 million by using cognitive insight to merge supplier data, remove redundancies, and renegotiate contracts previously handled at the business unit level.

Cognitive insight ranks second among common types of AI used for business purposes, according to the Harvard Business Review.[2]

AI improves engagement with employees and customers

Cognitive engagement engages employees and customers using natural language processing chatbots, intelligent agents, and machine learning. Generative AI platforms like ChatGPT and Jasper fit into this category. Cognitive engagement involves:

→ The use of intelligent agents that offer 24/7 customer service

→ Product and service recommendation systems for retailers that increase personalisation, engagement, and sales

→ Recommendation systems for healthcare treatment that help providers develop personalised care plans based on each patient's unique health status and past medical history

Cognitive engagement is still being tested. Organisations using it are primarily looking to implement it for routine communications while transitioning customer-support personnel to more complex activities such as handling escalating customer issues, conducting extended unstructured dialogues, or reaching out to customers before they call in with problems.

EXAMPLE

SEBank in Sweden employed Amelia, a realistic intelligent-agent avatar, to provide IT support to its employees as an internal helpdesk. SEBank is currently testing Amelia's performance and customer response by making it available to customers on a limited basis.

While Harvard Business Review reported that this type of AI is the least common, we're betting it'll make a huge impact in the coming years.

AI can transform businesses with profitable innovations & enhanced efficiency

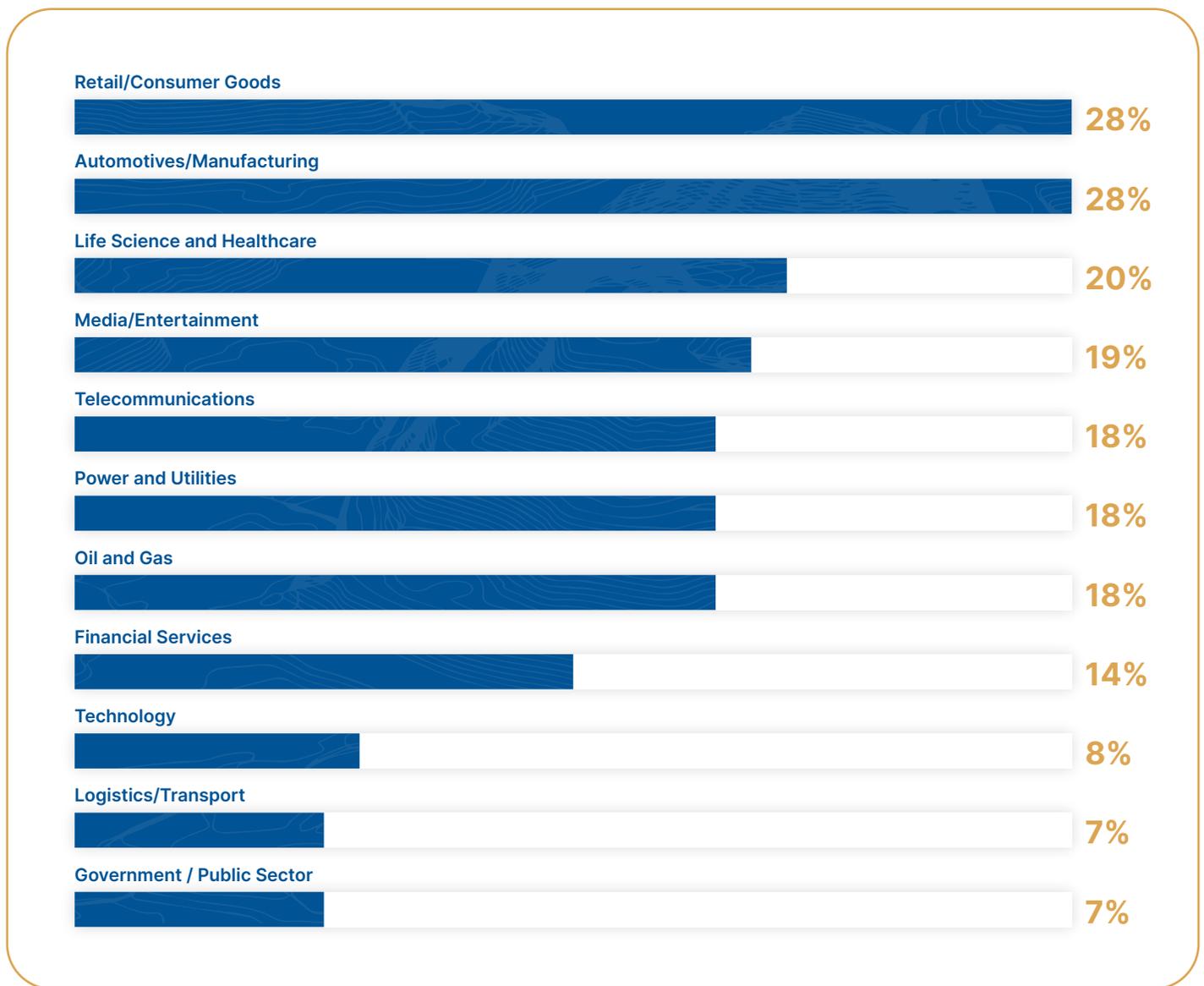When considering the business needs that AI can help to address, two themes emerge.

1. **Investing in AI impacts an organisation's bottom line.** From cost savings to opening new revenue streams, infusing AI into your business leads to nice dividends.

2. **AI is not replacing jobs, it's improving them.** AI opens doors to more opportunities. In the examples above, AI is used as an extra set of eyes or to automate mundane tasks to free up workers' time to tackle bigger person-to-person challenges, such as solving escalated customer problems.

02 Industries leading the AI-implementation race

A 2022 MIT Technology Review Insights report revealed that retail and manufacturing industries are more ambitious than other industries about becoming AI-driven.[3]

Industries where AI leaders are most numerous

Retail/Consumer Goods
28%

Automotives/Manufacturing
28%

Life Science and Healthcare
20%

Media/Entertainment
19%

Telecommunications
18%

Power and Utilities
18%

Oil and Gas
18%

Financial Services
14%

Technology
8%

Logistics/Transport
7%

Government / Public Sector
7%

Source: MIT Technology Review Insights Survey, 2022; 600 CIOs, CTOs, CDAOs, and other senior data and technology executives from 14 different industries distributed among North America, Europe, and Asia-Pacific.

The report also provided insight into how leaders view the adoption of AI, including successfully scaling AI:

78% of executive respondents said that scaling AI and machine learning use cases to create business value is a top priority.

Creating business value in manufacturing and industrial settings is most commonly linked to improving efficiency, productivity, and quality control.

The manufacturing industry has been trailblazing process optimisation since the industrial revolution in the late 18 and 19 centuries, so it's no surprise that they continue to lead the way.

We turned to AI for additional examples of how AI can add value, and here's what we found:

Predictive maintenance
AI algorithms analyse sensor data from machines in real-time to identify patterns and detect anomalies that could indicate potential failures before they occur, helping companies prevent costly unplanned downtime and optimise maintenance schedules.

Quality control
AI-powered image recognition systems can quickly analyse images of manufactured products to identify defects and anomalies that human inspectors might miss, thereby reducing the likelihood of faulty products making it to market and saving time and money for manufacturers.

Supply chain optimisation
AI can be used to optimise supply chain management, improving the accuracy of demand forecasting, reducing inventory costs, and optimising delivery routes.

Process optimisation
AI algorithms can analyse production data to identify opportunities for process optimisation, such as reducing waste or improving energy efficiency.

Asset tracking & management
AI-powered asset tracking and management systems can monitor equipment and inventory in real-time, optimising resource allocation and reducing the risk of lost or stolen assets.

Source: ChatGPT
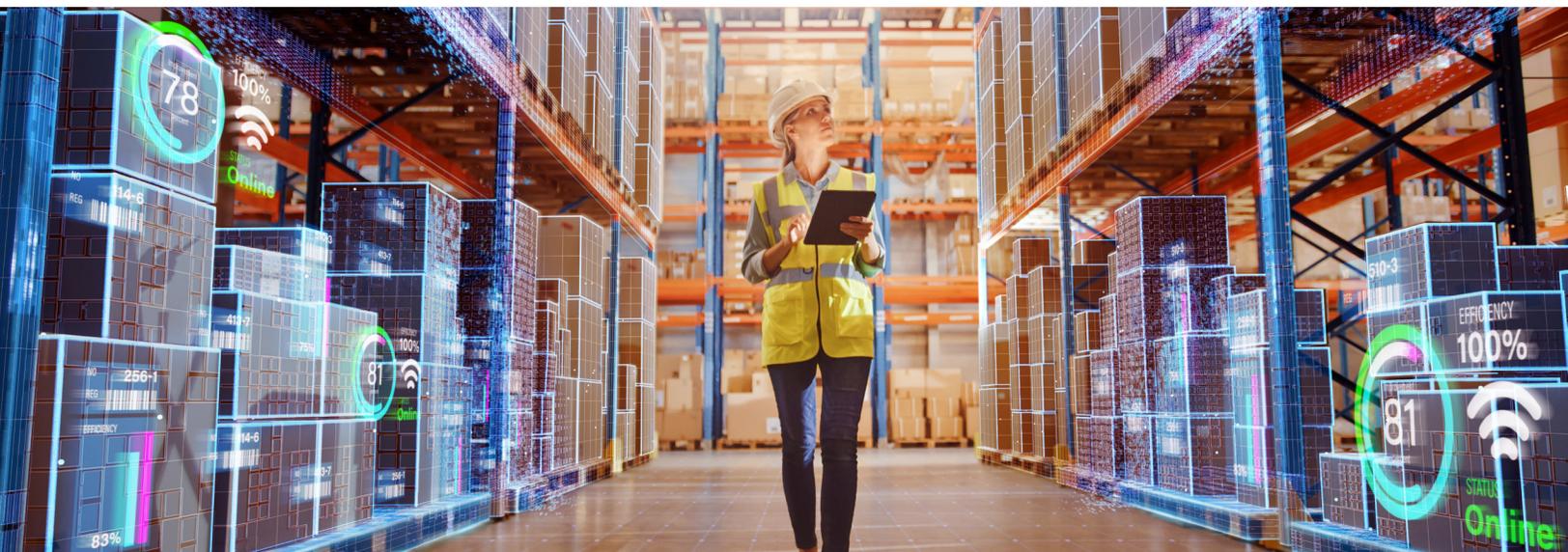
03 How to begin your AI journey

We've introduced the steps at a high level — from identifying and understanding technologies that are suitable for specific tasks, to establishing a project list based on business requirements, to implementing strategies for expanding its use throughout the company.

Here are steps in more detail that you can take toward leveraging AI for your business:

1. Identify and understand the technologies that are suitable for specific tasks.

This is a crucial step for helping to identify the AI combination that best suits your needs — process automation, cognitive insight, or cognitive engagement. Each AI has its own strengths and weaknesses, and organisations must familiarise themselves with them to understand which type will suit their use case(s). We recommend categorising your organisation's problem types. For example, is your use case associated with person-to-person engagement? Or is it a data problem with too many bottlenecks? If it's an engagement problem, cognitive engagement might be the solution. If it's a data problem, you may fare well with cognitive insight.

2. Establish a project list based on business requirements.

Business requirements will vary from industry to industry. One type of AI that's suitable to solve problems in the automotive industry may not be suitable for the financial industry. For example, rule-based expert systems and robotic process automation are transparent in how they do their work, but neither is capable of learning and improving. On the other hand, deep learning is great at learning from large volumes of labeled data, but it's almost impossible to understand how it creates the models it does. The problem of the "black box" can arise in heavily regulated industries, such as financial services, because regulators require an explanation for why decisions are made in a particular way.

3. Implement strategies for expanding its use throughout your company.

To ensure organisational success, detailed plans for achieving goals, scaling up, and implementing automation are crucial. Collaboration between technology experts and process owners is essential, as is integrating cognitive technologies with existing systems and processes. Scaling up with these technologies requires addressing specific task limitations. Therefore, discussing scaling considerations with IT leaders before or during the pilot phase ensures successful implementation across the company.
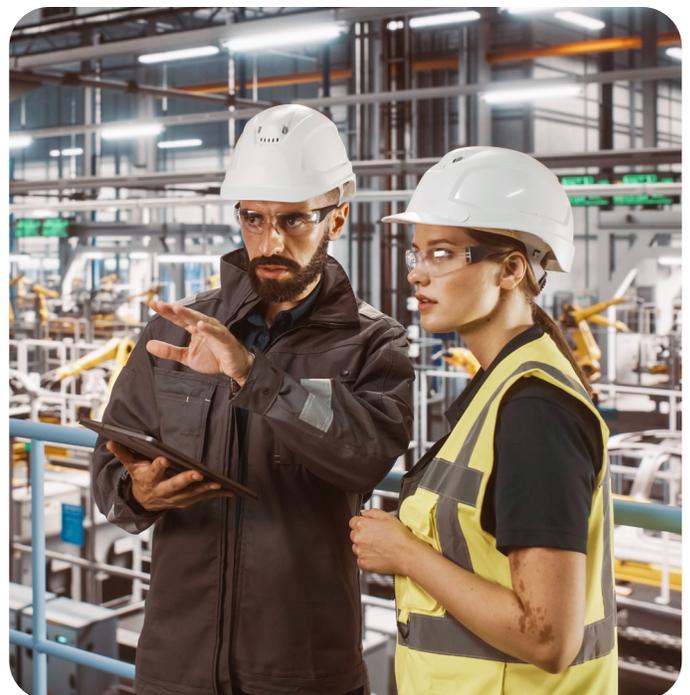
04 How to identify value

Rather than dive into the details regarding the financial and accounting equations to measure value — such as return on investment (ROI), internal rate of return (IRR), and net present value (NPV) — this section will focus on determining common business areas where value uplift can be measured.

A critical part of identifying and prioritising your AI project list is evaluating the value uplift of each project. The upfront cost of developing products for new AI use cases can be high, and your organisation may have limited resources to take on new projects. That's why it is vital to prioritise opportunities that get the most bang for your buck. Several months or even years may be needed for use cases to deliver the payoffs. In fact, many new AI projects fail to meet expectations because of the following reasons:

→ Cost overrun
→ Over-optimistic forecast of benefits
→ Inability to hire the right talent or find the right external solution provider
→ Inability to incorporate the AI solution into business workflows
→ Inability to prioritise scarce resources, such as data scientists, appropriately

Therefore, it is important to ensure the upfront investment can justify the longer-term benefits and deliver the right ROI over time. The benefits of AI projects and products can be both direct and indirect.
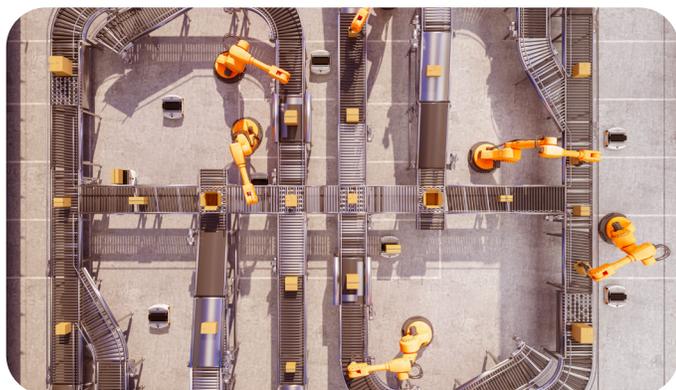
Direct benefits of AI may include:

Cost savings: Reduce rework costs with the same resources or reduce resources while maintaining rework costs.

Increased productivity: Increase throughput with the current resources or reduce resources while maintaining current throughput. In combination with robotic process automation, small teams can effectively utilise generative AI, time-series prediction, and computer vision technologies to do more with fewer resources.

New products and services: Create new products and services in areas that were previously infeasible in the absence of AI using emerging technologies, such as large language models.

Improved quality: Use automated or assisted defect recognition to efficiently reduce errors. AI-assisted additive manufacturing can be used to help workers make fewer errors when assembling electronic or mechanical devices, industrial food preparation, and similar use cases.

Increased working capital: Improve cash flow using state-of-the-art financial risk management.

Faster decision-making: Expedite decision-making, enhance operational efficiency, agility, and competitiveness; Adapt to evolving market dynamics, seize emerging opportunities, and address risks for improved performance and increased value.

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Indirect benefits may include:

Enhancing customer satisfaction: As you reduce error rates and rework costs, your customers will start to notice. The improved quality of your products and services can lead to enhanced customer satisfaction and improvement to your company's reputation.

Attracting new talent: This can lead to a loss of motivation and, ultimately, turnover. Investing in new and emerging technologies like AI have a secondary benefit of attracting and retaining talent. Staffing challenges remain high, and attracting and retaining talent is critical to company success. A lack of investment in technology can signal to tech workers and others that the company is not committed to their success.

As you mature on your AI journey, you will want to estimate value uplift before starting a project, then measure actual uplift after implementation.

EXAMPLE

An electronics manufacturer has an ongoing quality issue with one of its product lines. They have identified an AI solution that will help them inspect items as they come off the production line and measure the following:

→ Rework cost of each error, including labor, materials, and customer complaint remediation
→ Gross revenue loss from customer attrition
→ Percent of the market that could be captured if the error rate improved

Identifying what to measure before and after implementing AI solutions will be a driving factor in your organisation's future, so you must invest time in this part of the process — and we're sure that chief financial officers everywhere will rejoice to see your value plans.

05 Your to-do list

To embark on an effective AI journey, follow these steps to identify opportunities, select technology, and create a pilot launch plan. Having an internal champion and redesigning workflows systematically are essential to a successful implementation.

☐ **1. Identify opportunities**

Assess areas of the business that could benefit the most from AI and start to categorise them, focusing on bottlenecks, scaling challenges, and the people and systems used today. Try to pinpoint areas of opportunity with the goal of developing a project portfolio, and do so with a small internal working group or a consulting company.

☐ **2. Assign an internal AI champion**

Having an internal champion that leads your organisation's working group on the AI journey is essential to maintaining momentum and ensuring a successful pilot launch. This person will serve as a liaison between your organisation and third-party vendors and a project manager and hype person for the team.

☐ **3. Determine the use case**

Once you establish your project list, conduct a deep dive into each one to figure out which ones have the potential to create value and contribute to business success with the help of AI. Develop some key questions that center around how critical the use case is to your business and the difficulties associated with addressing it with AI — from technical and organisational standpoints. Also, consider whether your use case(s) is beneficial in the short- and long-term. Your list of questions can serve as an internal ranking that will guide you to a solid decision of which use case(s) to focus on.

☐ **4. Select a technology**

Consider the AI tools at your disposal and match them up with your use cases to evaluate whether or not they can solve it in a value-generating way. Revisit the first part of the article that outlines the three types of cognitive technologies companies are implementing today — process automation, cognitive insight, and cognitive engagement — to identify how to match use cases properly. And if you find yourself overwhelmed or feel you need a bit of guidance, you can reach out to a 3rd party organization to help you in the ideation phase.

☐ **5. Create a pilot launch plan**

Applying AI capabilities organisation-wide will have its set of challenges. To identify them quickly, create pilot projects that will allow for simultaneous testing of various value-generating technologies at once. If multiple pilots will run at once, make sure they each have an internal leader who oversees its performance to serve as the point of contact for everyone involved in its testing. The internal leaders should have a set of criteria to look out for that will serve nicely when your organisation's working group evaluates performance to determine which pilots will move forward in company-wide adoption.

☐ **6. Document the new process**

To ensure that machines and humans work together effectively, it's important to redesign workflows systematically. This will help them complement each other's strengths and compensate for weaknesses. Additionally, it will help with the company-wide rollout.

AI isn't going away anytime soon, and its potential remains largely untapped. As time goes on the technology continues to evolve and improve, its implementation will be as easy to attain as downloading an image-creating application to your phone.

Aicadium is ready to take on the challenge with you

If your use case involves safety, productivity, or change detection in visuals, we'd love to explore them with you. **Contact us for a demo today.**

Sources

1. Meet Your DJ: Spotify Debuts a New AI DJ, Right in Your Pocket, 2023, Spotify
2. Artificial Intelligence for the Real World: 3 Things AI Can Already Do For Your Company, 2018, Harvard Business Review
3. CIO vision 2025: Bridging the gap between BI and AI, 2022, MIT Technology Review Insights