



HOW TO TRANSFORM **DATA** INTO **VALUE** WITH GENERATIVE AI

WHAT'S IN THIS GUIDE?

Introduction	4
At a glance: The next 5 years of generative AI	4
AI definitions	5
Your AI journey starts here	6
Creating an AI adoption roadmap	6
AI readiness assessments	7
How to identify good AI use cases	8
Ideal first AI use cases for businesses	8
Developing safe and ethical generative AI solutions	9
How to implement AI responsibly	9
On-Premises vs. Cloud-Based Development	11
On-Prem Development	11
Cloud-Based Development	11
AI project inspiration	12
Personalized, streamlined content generation	12
Advanced support chatbot	12
Accurate and intuitive search	13
Taking your next steps in AI development	13
The future is now	14
Benefit from an experienced AI solutions partner	15
More resources	15

Introduction

Few organizations today are unaware of the potential power of data. And yet, most are only scratching the surface of what can be achieved with data insights. Why?

It has long been a challenge to process and analyze large volumes of unstructured data in diverse formats. But now, generative AI offers a low-cost, accessible way to start strategically applying data insights to increase revenue, reduce costs, improve productivity, and enhance customer satisfaction. That's why it's unlocking unprecedented opportunities for businesses that are just beginning their AI journey.

We developed this guide to demystify generative AI. You'll find straightforward strategies for seamless integrations into your existing operations, even if you're new to AI technologies. Overcome your data challenges, mitigate risks and discover an ideal first use case for generative AI. Whatever you do, don't wait to begin exploring the possibilities to use data insights to deliver true value for your organization.

At a glance: The next 5 years of generative AI

OpenAI's ChatGPT launched the generative AI revolution in November 2022. Here's a quick look at the impact of the technology since then and what you can expect in the next few years.

Today

- The market size in the generative AI market is projected to reach \$36 billion USD in 2024, up from \$29 billion in 2022. ([Statista](#))
- 90% of global enterprise AI decision-makers have definite plans for generative AI. ([Forrester](#))
- 71% of employers say a lack of internal expertise on how to effectively use generative AI is a challenge ([Forbes](#))

By 2030

- \$79 billion spent annually on applications for improving automation and increasing productivity ([Forrester](#))
- 75% of executive survey respondents expect gen AI to cause significant or disruptive change. ([McKinsey](#))
- Generative AI could add \$2.6 trillion to \$4.4 trillion annually to the global economy ([McKinsey](#))

AI definitions

You'll encounter many different terms and technologies in the realm of artificial intelligence. Here are the basic topics we'll cover in this guide with quick-and-easy definitions:

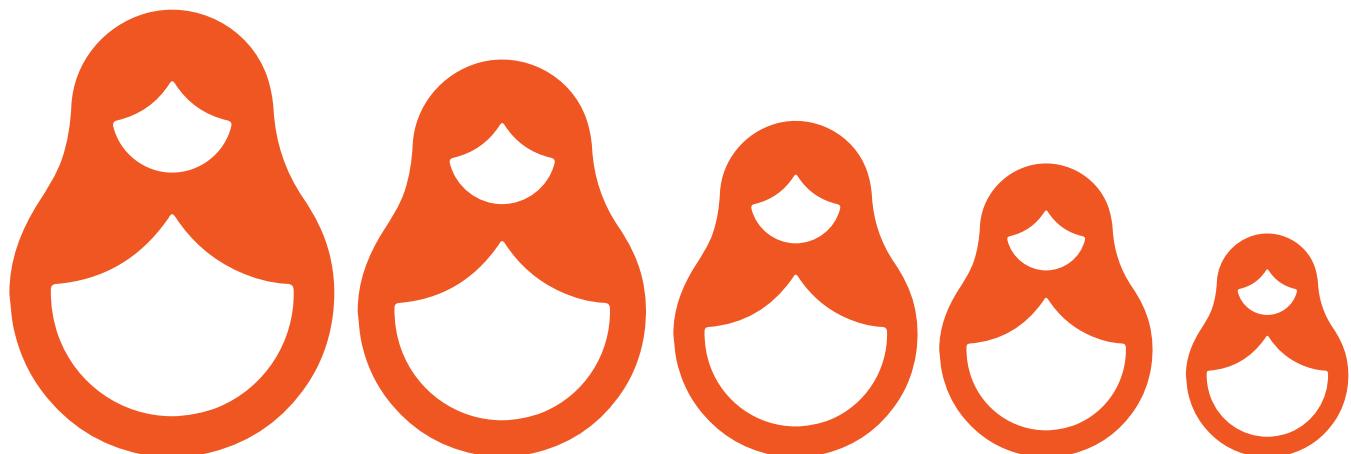
Artificial Intelligence (AI): creating machines with the ability to simulate human intelligence, particularly in tasks such as learning, problem-solving, perception, and decision-making.

Natural Language Processing (NLP): field of AI that uses machine learning, statistical models, and rule-based systems to enable machines to understand, interpret and generate human language in a natural way.

Machine Learning: AI that enables systems to learn and improve from experience without being explicitly programmed. It involves using algorithms to analyze data, identify patterns, and make decisions or predictions based on that data.

Generative AI: uses machine learning algorithms to model and understand patterns in existing data and then create new and original content, including audio, code, images, text, simulations, and videos.

Large Language Models (LLMs): advanced AI trained on massive amounts of text data to generate human-like responses and understand natural language. They can perform tasks like answering questions, writing coherent paragraphs, offering suggestions, or engaging in conversations. ChatGPT is an example of generative AI that uses advanced LLM techniques to generate human-like responses in conversations.



Artificial
Intelligence (AI)

Natural Language
Processing (NLP)

Machine
Learning

Generative AI

Large Language
Models (LLMs)

Your AI journey starts here

AI adoption is a marathon, not a sprint. It requires careful planning, patience, and a willingness to learn and adapt. This approach will empower your organization to build on early successes, learn from challenges, and gradually increase the sophistication and impact of your projects.

For organizations new to AI, we recommend taking your first steps with small, manageable initiatives. Consider how AI can help you leverage your data. Think about ways to improve one existing process instead of transforming your entire operation. Look for open source models to quickly and efficiently create an AI solution without starting from scratch.

Stages of AI Maturity (Gartner, 2023)

- 1. Awareness:** Exploring AI's potential impact on the business but has not yet started any formal initiatives.
- 2. Active:** Experimenting with AI projects, often in a proof-of-concept stage, to understand capabilities and limitations.
- 3. Operational:** AI projects are moving beyond experiments and being integrated into processes.
- 4. Systematic:** AI use is more widespread, with clear strategies and governance. AI is driving efficiencies and innovations across several business units.
- 5. Transformational:** AI is a core part of the business strategy, enabling significant business transformations, new business models, and competitive advantages.

Creating an AI adoption roadmap

A first essential step in your AI journey is determining where you are now. This involves understanding the organization's readiness from a holistic perspective, including current capabilities, infrastructure, and culture.

We've created a checklist of different assessments to help you get started. You can gather the information through internal audits, surveys, interviews with key stakeholders, and consultations with external experts. Get honest feedback so you gain a clear, comprehensive view of your organization's strengths and areas that need improvement. Then, develop a tailored roadmap to address gaps, build capabilities, and set the foundation for AI success.

AI readiness assessments

1. Digital maturity

What are your organization's current digital capabilities, including existing technologies, digital skills of the workforce, and the maturity of digital processes? Knowing this will help determine whether you have a solid foundation for adopting advanced technologies.

2. Data readiness

What is the quality, accessibility, and governance of your organization's data? Are your business decisions guided by the data you've gathered and its relevance? Assess whether data is structured, clean, and available for use in AI models. Determine the effectiveness of your data management practices and data strategies.

3. AI skills and talent

What AI skills do you have within your existing workforce? Identify any gaps in skills and knowledge. This can help guide upskilling programs, recruitment strategies, and potential technology partnerships.

4. Technology infrastructure

Is your organization's existing IT infrastructure capable of supporting AI initiatives? Evaluate computing power, storage capabilities, and the scalability of current systems to handle AI workloads.

5. AI strategy and vision

Does your organization have strategic plans for AI adoption and integration, with a clear vision for how AI can support business goals? Do the plans have support at the executive level?

6. Cultural readiness

How does your organization generally respond to change? AI adoption often requires transformation in organizational culture, including openness to innovation, a willingness to experiment, and an acceptance of failure as part of the learning process. How will you prepare the organization for the changes?

7. Ethics and governance

Are you familiar with existing guidelines for ethical AI? Do you have processes for ethical decision-making and governance in AI projects?

8. Risk management and compliance

Is your organization able to manage risks associated with AI, including data privacy, security, and compliance with relevant regulations? Identify potential risks and current measures to mitigate them.

How to identify good AI use cases

Whether it's improving customer service, optimizing operational efficiency, or driving innovation, your AI initiatives should be closely aligned with your overall business goals. This way, you can ensure AI investments deliver tangible value and contribute to your organization's strategic priorities.

We recommend starting with pilot projects that deliver quick wins and valuable learning experiences. Use these projects to refine your approach, demonstrate the value of AI to stakeholders, and build momentum for larger initiatives. Then, as your organization becomes more comfortable with AI, gradually expand your efforts and explore more complex applications and integrations. Remember – strategic AI adoption involves careful planning, ongoing evaluation and continuous improvement.

Ideal first AI use cases for businesses

1. Customized content and recommendations

- Generate tailored content such as recipes, training programs, and marketing materials.
- Analyze customer data and generate personalized product or service recommendations.
- Create bespoke learning materials and simulations to meet individual styles and needs.

2. Customer Service automation

- Develop sophisticated chat capabilities or virtual assistants to answer questions and deliver quick, 24/7 responses to inquiries.
- Provide advanced real-time language translation and content localization.

3. Email and communication automation

- More efficiently draft emails, reports, and other communications.
- Get suggested responses or automate routine messaging.

4. Data analysis and insights

- Process and analyze large datasets to identify trends, generate insights, and make predictions.
- Improve data-driven decision making without extensive data analysis.

5. AI-assisted coding

- Generate code snippets or even entire modules based on specifications.
- Accelerate the development process and allow developers to focus on more complex problems.

6. Design and prototyping

- Generate creative concepts for graphics, product designs, or user interface elements.
- Accelerate the prototyping phase and inspire innovative solutions.

7. Document and contract review

- Review and summarize documents or contracts.
- Highlight important clauses and suggest modifications to save time and reduce the risk of human error.

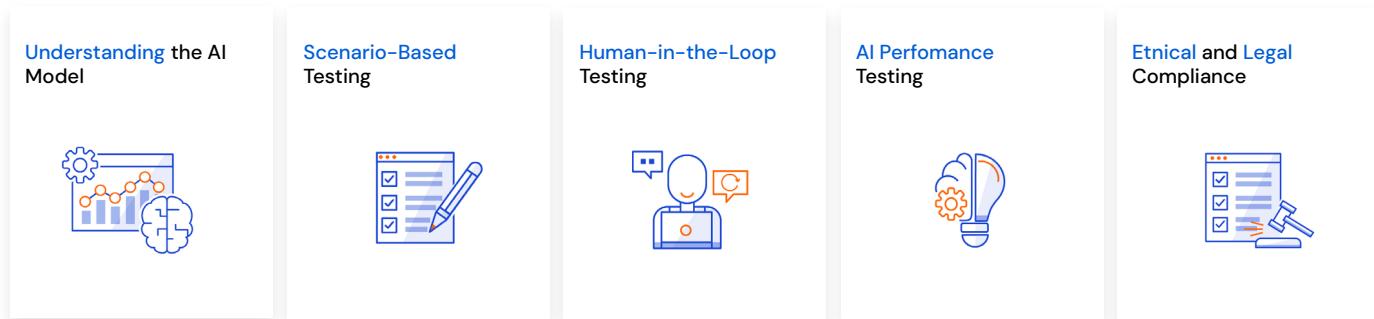
Developing safe and ethical generative AI solutions

As with implementing any new technology, generative AI has risks and challenges. Hallucinations, biased and inaccurate outputs are well-known issues. The quality of an LLM also has a significant impact on the generated content. Use the “human-in-the-loop” approach to manually review generative AI results and make necessary adjustments. Closely monitor new models. Keep up to date with the latest AI solutions and trends.

Data privacy and security are valid concerns. Any data used to train generative AI models should comply with applicable regulations such as GDPR. Protect sensitive information with data anonymization and encryption and don’t put anything into a public generative AI model, such as ChatGPT, that you wouldn’t want publicized.

Carefully assessing the challenges and risks associated with AI is a critical step in developing AI maturity. A good strategy includes a solid governance framework that establishes rules, standards, and oversight mechanisms to mitigate risks while fostering innovation and trust. Continue testing and making necessary adjustments after deployment to ensure reliability and quality.

We utilize the following approaches:



How to implement AI responsibly

Responsible AI is an approach that considers the implications of AI from a technical, legal and societal perspective. Crucially, responsible AI aims for fairness, transparency, accountability, and respect for human rights in the design, development, and deployment of AI systems.

Involve a diverse group of stakeholders, including end-users, policymakers, and ethicists when evaluating your AI model. Their insights can help identify potential ethical issues and societal impacts that may not be immediately apparent. Mitigate risks throughout the various stages of the AI lifecycle by taking these important actions:

Ethical risk assessments

- Evaluate potential biases, the impact on privacy, and the risk of misuse.
- Develop mitigation strategies for identified risks.
- Continue to regularly perform audits for fairness and bias using tools and methodologies to detect and mitigate biases in datasets and algorithms.
- Consider the diverse demographics of end-users and the contexts in which the AI will operate.
- Ensure your AI systems are explainable to a non-technical audience, enabling stakeholders to understand how and why decisions are made.

Data privacy protection

Implement robust data protection measures that comply with relevant privacy laws and regulations. Use techniques such as anonymization and secure data storage to protect privacy.

Continuous monitoring and feedback loops

Establish a process to continuously monitor AI systems post-deployment. Collect feedback from users and other stakeholders to identify unforeseen ethical issues and improve the system over time.

Compliance with ethical regulations and guidelines

We're going to see many changes in AI regulations as governments try to manage this rapidly evolving space. As such, you'll need to keep a close eye on legal developments and ethical standards, such as those proposed by the OECD, IEEE, and the EU's Ethics Guidelines for Trustworthy AI.

Your teams should receive training on ethical AI principles and practices. Foster an organizational culture that prioritizes ethical considerations in all AI-related activities.

Establish an ethics board

As you integrate AI throughout your business operations you may want to consider setting up an ethics board or committee within your organization to review and advise on AI projects. This board should have the authority to make recommendations and ensure that ethical considerations are integrated into decision-making processes.

On-Premises vs. Cloud-Based Development

Another decision in your AI journey is whether you want to develop your solutions on-premises (on-prem) or in the cloud. There are advantages and disadvantages to both and the choice should be guided by the organization's specific needs, budget, and priorities. Here's a brief overview of the pros and cons of each option:

On-Prem Development

Pros

- Data Security and Privacy
- Customization and Control
- Performance

Cons

- High Initial Costs
- Scalability Challenges
- Maintenance and Upgrades

Cloud-Based Development

Pros

- Scalability
- Cost-Effectiveness
- Maintenance and Updates
- Accessibility

Cons

- Data Security and Privacy Concerns
- Dependence on Internet Connectivity
- Potential for Higher Long-Term Costs
- Limited Customization

For organizations with high data sensitivity and regulatory compliance needs, on-prem might be preferable. On the other hand, businesses looking for flexibility, scalability, and cost efficiency might find cloud-based development more suitable. With the right expertise, cloud development offers [speed and simplicity in development](#) by using standard services and serverless technologies.

Amazon web services:

- AWS Advanced Partner from 2016
- AWS Well Architected Partner since 2020
- Part of the AWS Migration Acceleration Program since July 2023



Microsoft Azure:

- Microsoft Gold Partner for 13+ years
- Microsoft Managed Partner since 2021
- Recognised designations
- for Data & AI + Digital & App InnovationA zure
- Winner of the Mission65 Award 2023, for achieving the highest Security Score among all Microsoft Partners in The Netherlands.

Google Cloud Platform:



Google Cloud
Partner



AI project inspiration

Still trying to imagine what data insights and generative AI can really do for your organization? Take some inspiration from projects we've developed together with our customers at the beginning of their AI journey.

Personalized, streamlined content generation

Meal Mosaic is a mobile app that serves up personalized recipes and nutritional information, making healthy meals less time consuming and more accessible to everyone. The company needs to quickly generate a large volume of bespoke content without relying on constant human input.

Within a few months, our team delivered a user-centric mobile app, custom backend microservices, and integration with external AI APIs. Meal Mosaic users can input dietary preferences and receive custom meal plans, recipes, and educational content – all powered by generative AI. The app also enables users to upload images to identify and classify segments of a meal, such as the protein, carbohydrates, etc.

An advanced AI-chat assistant answers food-related questions, tailoring responses based on the context and the user's dietary preferences.

By implementing advanced AI technologies into the Meal Mosaic platform, our team significantly reduced manual processes, leading to cost savings and a more scalable solution for customized nutritional advice. The AI-powered platform has also elevated the user experience by seamlessly generating personalized content and interacting with users in a meaningful way.

[Read the full story here.](#)

Advanced support chatbot

Consumer expectations are at an all time high and businesses have more touchpoints with their customers than ever before. Like many companies, our partner's support team was overloaded with inquiries and repetitive tasks. They serve clients from over 30 countries, making it difficult and expensive to add skilled agents to the workforce. We helped them streamline their support with a custom-made chatbot, powered by generative AI.

We built the solution using OpenAI's GPT-3.5-turbo and Llamaindex. The sophisticated chatbot integrates with Probo's website admin panel, providing 24/7 assistance. The company initially implemented the tool to support the customer support team by answering common queries. Based on the performance in that capacity, the company can further integrate the solution to directly interact with customers.

This scalable, consistent chatbot uses machine learning to improve over time with multilingual embeddings and additional data sources. Within a few short months, the solution has reduced both operational costs and the support team's workload. Meanwhile, customers receive swift, accurate responses to their queries.

Accurate and intuitive search

A leading online retail platform in the Netherlands partnered with Levi9 to enhance their shopping experience through AI solutions. This collaboration focused on using data more effectively to improve operations in three key areas:

1. Improving Product Recommendations:

We applied the Alternating Least Squares algorithm to tailor product suggestions based on customer interactions, achieving a 33% accuracy rate in predicting what shoppers might purchase next. This personalized approach enhances customer satisfaction with relevant brand recommendations.

2. Enhancing Product Images:

To improve the visual appeal of products, we used the U2Net model for efficient background removal in images. The fast, accurate AI tool significantly reduces the manual workload and speeds up the addition of new products to the online store.

3. Streamlining Financial Operations:

We automated the validation of income and expense declarations using Tesseract OCR and machine learning models. This automation ensures accurate data extraction from bank statements and customer forms, minimizing human errors and increasing operational efficiency.

Overall, these AI-driven improvements transformed the online shopping experience by providing personalized recommendations, enhancing product presentation, and automating financial processes. The company also benefits from increased customer satisfaction and operational efficiencies.

[Read the full story here.](#)

Taking your next steps in AI development

Once you've identified your first use case, your next steps will transform it from an idea to a functional, value-adding solution. Here's how we support our business partners through the phases of AI development.

Rapid prototyping

Swiftly create functional models or prototypes of the proposed AI system to explore ideas, understand problems more deeply, and validate solutions with minimal investment of time and resources.

A good prototype will help developers and stakeholders see how the AI application could work in real-world scenarios, enabling them to make informed decisions early on.

Validation and refinement

Test prototype models with potential users or in simulated environments to gather crucial feedback. Then, refine the model to better meet user needs and project goals. Experiment quickly, learn from failures and iterate fast.

Machine learning frameworks and agile development methodologies help facilitate rapid prototyping and validation. The outcome? A more robust, user-validated AI application that's ready for the next development stage with a lower risk of costly changes later in the process.

Prioritizing and roadmapping features

Once an AI prototype has been validated, you'll start organizing the development journey. Strategically select which features of the AI system to develop first, based on factors like user needs, business objectives, technical feasibility, and potential impact. Prioritization helps the team focus on developing features that offer the most value to users and the business, rather than getting sidetracked by less critical functionalities.

Next, create a roadmap that outlines the timeline and milestones for developing and deploying these prioritized features. This will guide the development team and stakeholders, providing clarity on the project's direction, expected outcomes, and key deliverables over time.

Continuous learning and training

After you've launched your AI system, your journey is still far from over. Generative AI is a dynamic field with new advancements everyday. User expectations and business challenges are also constantly evolving. Therefore, it's vital for your teams to continue receiving professional AI education and training.

Continuous learning includes supporting users as they interact with the AI system, gathering their feedback for future improvements, and ensuring the system operates smoothly. This proactive approach will help your organization become more mature and innovative in AI development.

Ongoing Monitoring and Assessment

Effective and ethical AI governance requires ongoing monitoring and assessment of AI systems to ensure they continue to operate as intended and adhere to governance standards. This includes regular audits, performance evaluations, and impact assessments with vulnerable users and those impacted by the technology to detect and mitigate any unintended consequences or ethical issues.

The future is now

Your AI journey will be an ongoing process of learning, adaptation, and strategic investment.

By assessing your current digital maturity, aligning AI initiatives with business goals, and ensuring organizational readiness, your organization can navigate this journey successfully. Adopting a strategic approach will enable you to tap into the full potential of AI technologies, driving innovation and sustainable growth for your business.

The opportunities presented by generative AI are not on the distant horizon – they're right here, right now. What are you waiting for?

Benefit from an experienced AI solutions partner

As a technology services provider, we're excited to partner with businesses like yours to explore your new opportunities. Whether you're taking your first steps in AI or elevating existing capabilities, the journey can be both rewarding and transformative.

We have distilled a decade's worth of knowledge and expertise into a straightforward process designed to evaluate your alignment with the fundamental principles of data-driven decision-making. Gain an honest assessment of your organization's current capabilities and tailored recommendations to get you to the next stage of AI maturity. We'll guide you in making informed choices to develop a solid foundation for all your AI endeavors.

If your teams need more technical power, we can help you scale up as much as you need. Our AI specialists will integrate seamlessly to enhance the team's innovation potential and accelerate the development of intelligent solutions.

Contact us today to learn more about our [AI Adoption Workshops](#) and our expertise in generative AI development.

More resources

[Supply Chain Transparency Made Easy](#)

[Power of a Supply Chain Control Tower](#)

[Lifting AI's Sacred Veil](#)

[E-Commerce Product Image Background Removal with Machine Learning](#)

[Challenges-of-implementing-machine-learning-in-business](#)

[From-data-to-decisions](#)



Contact:

email: info@levi9.com

tel: +31(0)206701947

www.levi9.com