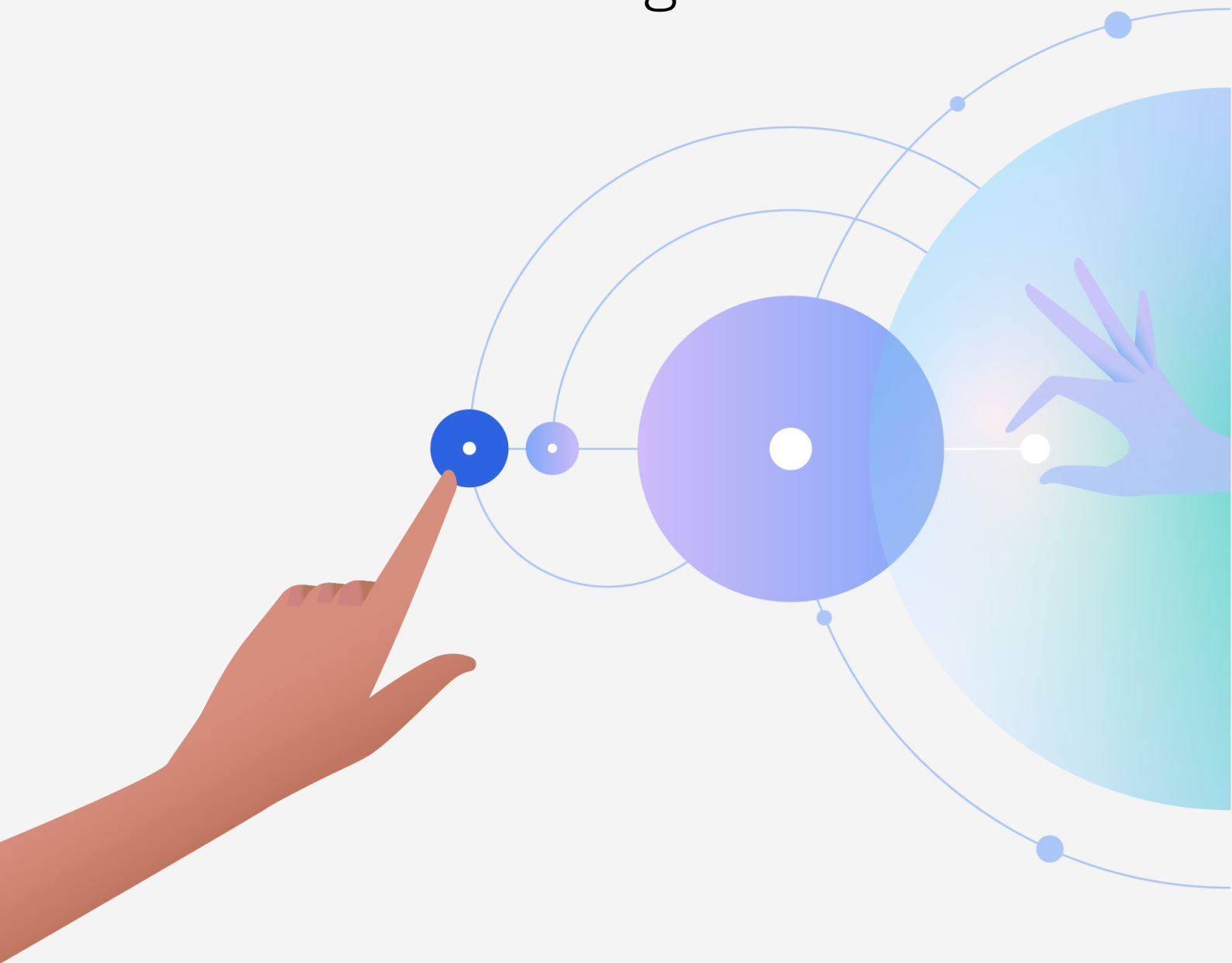


Getting Started with generative AI

Examples and Methodology
for Pharmaceuticals,
Life Sciences and
Healthcare Marketing



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Introduction

Although the degree of digitalisation in the healthcare sector in Germany is still very rudimentary compared to other industries, things have started to change here too since the coronavirus pandemic.

Telemedicine, e-prescriptions, digital health applications (DiGA) and many other digital services are either already available or are about to be introduced. These are increasingly finding their way into doctors' surgeries and are therefore reaching more and more patients. This poses new challenges for all parties.

And it is precisely the area where a “new” technology appeared in 2023. Since last year, there has seemed to be no way around generative AI (gen AI). The news, impressive use cases, the number of new start-ups and solutions from the big tech companies in this area are coming thick and fast. With a bang, OpenAI has shown what foundation models, and especially Large Language Models (LLMs) are capable of with its ChatGPT service. The technology is not new and the terminology is still technical – but the possibilities of machine learning are suddenly accessible and usable for everyone.

In the field of marketing and communication, this opens up undreamt-of opportunities, but also some challenges. With the generative possibilities and the integration into existing systems, the potential for applications seems endless and the value proposition high.

76%

of CMOs said generative AI will change the way marketing is operationalised in the future.

Look Forward to Working with You

In this guide, you'll learn what you need to know about generative AI for marketing in the pharmaceutical, life sciences and healthcare industry. We'll show you how to get started – with examples, best practices and your first concrete steps. In doing so, we address the challenges that can arise in this highly regulated industry and give you legal, technical and methodological tips on how to overcome them.

We'll show you different ways to get started with generative AI to take advantage of the many benefits of this technology in healthcare and marketing – we look forward to working with you.



Oliver Keigel
Healthcare & Life Sciences
Director
IBM iX Berlin



Ingo Werren
Digital Health Director
IBM iX Berlin

About IBM iX

With 50 studios worldwide, IBM iX is one of the largest providers of digital experience services worldwide. As part of IBM Consulting (IBM's consulting and services unit), IBM iX is a consultancy, digital agency, design studio and tech company all in one. At the intersection of strategy, design and technology, the teams accompany organisations, companies and brands in their digital transformation. They design digital experiences that put people at the centre – based on IBM technologies.

IBM has a long history of developing and applying AI technologies, including the groundbreaking AI systems such as IBM Watson. IBM employs over 20,000 data scientists and AI experts worldwide, working in various industries, including healthcare and life sciences. IBM is a leader in the research and development of AI technologies.

<https://ibmix.de/>



Use of generative AI

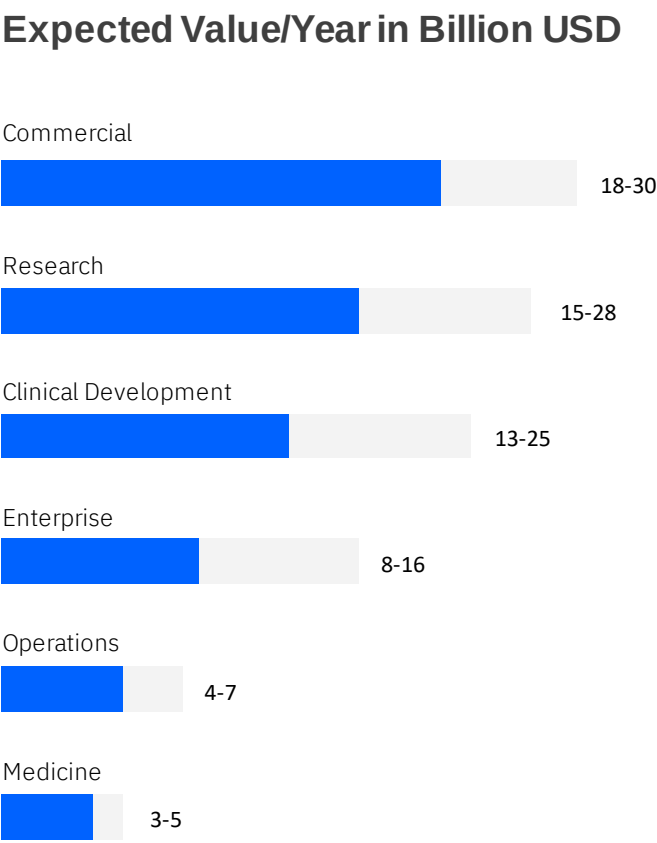
How can Marketing Teams Benefit?

While the digitalisation of the healthcare system in Germany is still lagging behind compared to other countries, with both providers and citizens only gradually coming into contact with digital services in healthcare, there is small, noticeable progress in many areas.

For example, doctors are increasingly using digital channels for day-to-day tasks and communications within their practices, and on the industry side, digital procurement and sales channels now complement traditional sales channels methods. Patient treatment, or the path to treatment, is also becoming more digital: from making appointments (e.g. Doctolib, Jameda, etc.) to telemedical treatments (e.g. Teleclinic, TKDoc), symptom checkers (e.g. Ada) to digital therapies (DiGAs) – digital health services are everywhere. And patients are becoming increasingly well-informed, proactive, and engaged.

As a result, the challenges for marketing teams are also increasing: it is important to be present with up-to-date and appropriate content, to communicate precisely, to aggregate and use data, and to effectively combine digital and traditional channels for field marketing. Generative AI can help with this complexity. Not least because of the ease of use and the high speed with which results are available.

Generative AI is expected to generate an annual value creation of \$60 billion to \$110 billion across the pharmaceutical industry.



Source: McKinsey analysis, January 2024

Additionally, generative AI is also providing exciting news and hope in the field of life sciences in terms of research and drug development. Foundation models and generative AI can also be used profitably in further stages of development and production.

However, there are already many concrete application scenarios for use in marketing, often with low barriers to entry, as well as usable or quickly adaptable services.

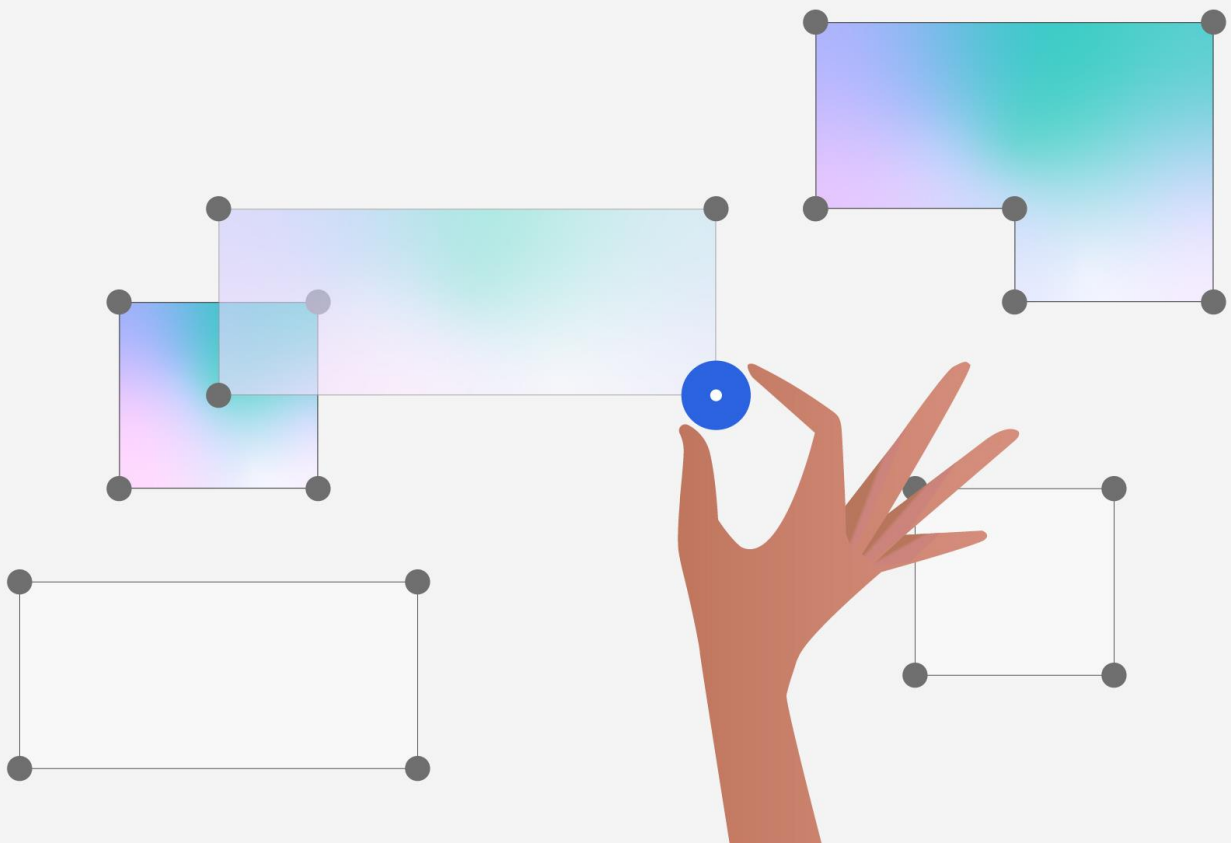
At IBM iX, we have successfully implemented numerous AI projects.

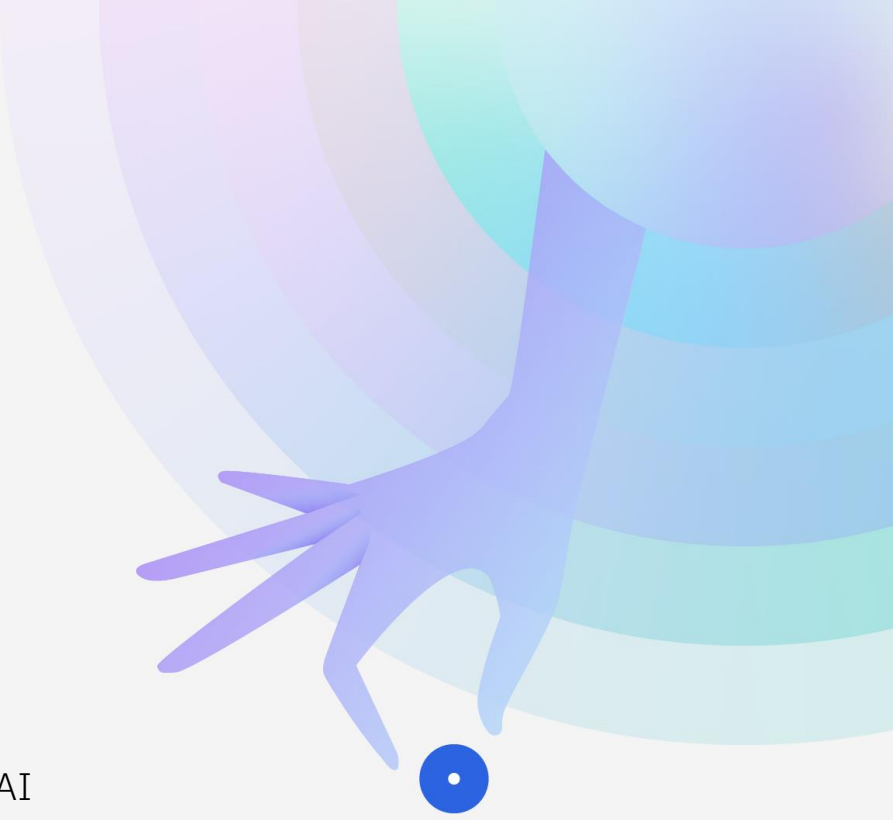
67%

of CMOs will be using
generative AI in the next
12 months.

Marketing in pharmaceuticals and life sciences differs significantly from marketing in other industries due to its numerous regulations. This includes the Therapeutic Products Advertising Act and the resulting design of access to end users.

For marketing teams, the question arises as to how they can successfully get started using generative AI in their day-to-day business. On the following pages, we will show low-threshold entry opportunities with scaling options that can make your marketing the pacesetter for the company-wide use of generative AI.





Areas of Application

The areas of application of generative AI in marketing are currently focused on the following areas of application. These are only a snapshot and are always in flux as the momentum continues.

Omnichannel Marketing Support

Content can be quickly created, adapted, or personalised to meet the needs of different channels using gen AI tools. Gen AI can also help with translating content and adjusting the effectiveness of chatbots, as well as analysing and segmenting requests from pharmacovigilance reports. It can also be used to quickly create user journeys and personas for the various channels, or to use GenAI to evaluate social listening insights. The possible applications here are manifold.

Breaking Down Data Silos

With the help of GenAI, the data, which exists in different silos but is still difficult to use for marketing insights, can be linked more quickly and made easier to evaluate.

Sales Team Enablement

It is possible to train and support sales staff better and faster by using AI tools to make the sometimes extensive content and offers available faster and more precisely tailored to the individual sales situation.

Content Creation

Content generation from text to image to video is the domain where gen AI is producing the most impressive results and making the most progress. Even here, where the life sciences industry with its specific regulations has the greatest restrictions, the use of GenAI can shorten existing processes, support them or even take over entire steps or even make them superfluous.

"Generative models are changing the way we think about machine intelligence and creativity, and have the potential to transform industries from media to finance to healthcare."

Oriol Vinyals, Research Scientist at Google

Why Should You Use Gen AI in Marketing?

Moving on from the possible areas of application for generative AI, the reasons for its use can be summarised as follows:

1. Time savings

With generative AI, more can be produced in less time and intermediate steps can be shortened or omitted. This applies to the creation and translation of content, the evaluation of data, etc.

2. Cost savings

Since time is often equals to money, cost savings through the use of generative AI are an obvious benefit. Economies can thus be made by doing away with time-consuming shootings, licensing costs for images or costs for service providers. This is made possible by more precise briefings and the partial relocation of service modules to the company's own organisation.

3. Increased Creativity

It's not necessarily about generative AI taking over the creation of final content.

But a lot of tangible output (text, image, video, insights, etc.) can be generated in a short time, which can prevent "writer's block" and opens up different starting points for new solutions. In addition, new perspectives are shown that can be used for the creation process.

Terms, Definitions and Background of Generative AI

To classify the terms, here is a short discussion and explanation of the technology:

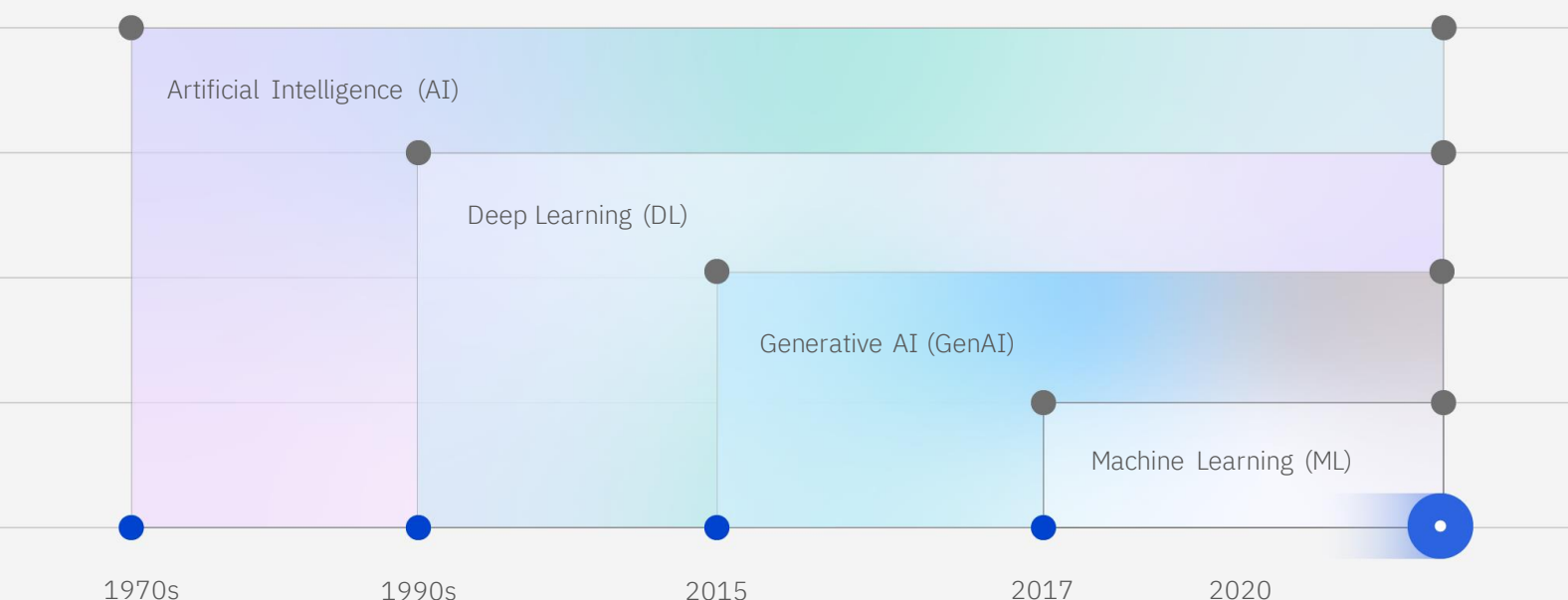
Even though there is always talk of "artificial intelligence" or "AI", strictly speaking it does not (yet) exist. Most of the services labelled "AI" should actually more properly be termed "machine learning".

Many of these systems or models, as well as what is often referred to as "traditional AI", recognise patterns using algorithms.

In traditional AI, these models are trained on a specific task (recognising cats). These require a lot of data and a lot of training under human supervision. And in the end, they can only do what they have been specifically trained to do.

From AI to Generative AI

Expert systems were among the first successful AI systems in the 1970s and 1980s. Machine learning (ML) then emerged as a specialist field of AI in the 1990s, deep learning (DL) as a subfield of ML around 2015, and foundation models, a special type of DL model, emerged around 2020.



Source: IBM (2023) AI for Businesses

The generative AI models that are currently so successful use what are known as "foundation models". These are based on models that have been pre-trained independently using methods of unsupervised learning. However, they are no longer completely new. IBM has been involved in this since the beginning of development, and developed its own foundation models early on. The latest breakthrough was made possible, among other things, by the large amount of data used to train successful models such as ChatGPT and the combination with large language models capable of understanding and processing natural language. Using the learned statistical information and the recognised patterns, it is now possible for the models to create new content (texts, images, videos, etc.) in response to a natural language command (prompt).

With more specific data and fine-tuning, these models can perform more and more new tasks. So-called multi-modal models combine the capabilities of several different specific models (e.g. only text, only image) in a single system.

Generative AI has created a new AI paradigm for greater speed and efficiency: It mimics human creativity and shows a wide range of capabilities, especially in natural language processing and content creation. The strategic combination of both approaches enables a comprehensive, value-added AI toolbox that can deliver far-reaching solutions.

AI models have evolved significantly over the past decade.



Advanced Analytics

Human-programmed step-by-step logic and instructions. Very deterministic.

E.g. business intelligence, rule-based anomaly detection, etc.



Deep Learning

Unsupervised learning, where the AI is fed with results and data to create rules and algorithms.

E.g. image recognition, autonomous driving, etc.



Machine Learning

Human-created features with supervised learning to analyze data for a specific task.

E.g. prediction, price optimisation, etc.



Foundation Models

Unsupervised AI that processes enormous amounts of data to generate new texts, art, images, videos, etc. as if by human hands.

E.g. DALL·E, ChatGPT, BERT, T5, LaMDA, etc.

Challenges

in the Use of Generative AI

However, the resounding success of the models is accompanied by legal and regulatory developments that require careful planning of how they are used. For example, the AI Act, which is shortly to become law, creates a legal and regulatory framework for dealing with artificial intelligence. This will impose transparency and documentation requirements on suppliers of general-purpose artificial intelligence systems (GPAI).

In order to counter these risks, internal regulations (e.g. guidelines, policies) should be implemented for internal company use, which specify a permissible framework for use within the company.

On the other hand, when contractually integrating these services, care should always be taken to ensure that inputs are not reused for training purposes. Many vendors are responding to this and offering "enterprise" versions that address these issues.

IBM also offers its customers the opportunity to use the "IBM Consulting Advantage" platform in joint projects. Part of this is the generative AI chatbot "Sidekick". This can be used flexibly with a variety of models. Users have one-click access to all these models in one interface. This avoids all the problems associated with transmitting the prompts to the model providers.

Many language models have been trained with data that is protected by copyright or has sometimes significant, but often unknown bias effects, which can lead to problems when using these models. Depending on the provider, the use of these GenAI systems also means that the transmitted content (prompts, etc.) can then be transferred to the databases and models of the operators in order to further train the AI models.

This can lead to several issues. For one thing, you are helping to train other companies' models. For another, you run the risk that this content may become accessible to the competitor. In addition, if the prompts contain personal data or business secrets, the transfer to the providers may lead to data protection problems or lead to breaches of confidentiality obligations.

67%

of respondents cite privacy and security concerns as a challenge for getting started with generative AI

Challenges

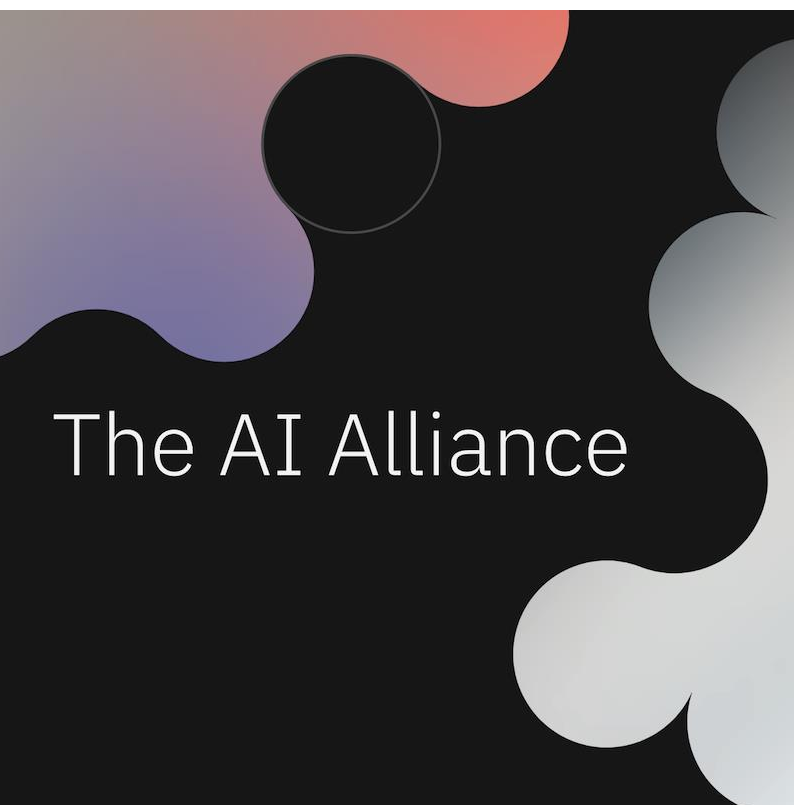
Don't Have to Be an Obstacle

But even then, the models usually remain a black box and it is never clear how trustworthy the basic data is for the model you are using. However, there is an ever-increasing selection of models – especially open source – with more and more transparency and specialisation.

To promote this development, IBM has founded the "AI Alliance" together with Meta, which now has over 50 other well-known members. Despite these and numerous other industry initiatives, choosing the right model remains a challenge for the reasons mentioned above.

However, these challenges are not insurmountable. With the right planning (which we will discuss in more detail below), the right models, sensible implementation, transparency and early involvement of relevant stakeholders, nothing need stand in the way of the use of generative AI, even under difficult regulatory conditions.

In the following chapter, we would like to show a few options for implementation.



We are happy to support you in strategic planning with our workshop or audit formats.

See page 29



Checklist of the Five Most Important Questions for the Introduction of generative AI:

What do you need for successful implementation?



Which providers do you choose?

How do you decide between the foundation model providers?

Should we adopt a diversification strategy to avoid technology lock-in?

Do we need a dedicated team to do this?



How do you manage compliance?

How do you ensure that new and existing regulations (EU AI Act) are complied with?

How do we ensure data security and privacy?

How do we manage the risk associated with using proprietary data?

Should we own intellectual property in GenAI artifacts?



What should you invest in?

What are the most impactful use cases?

How deeply are use cases embedded in current business processes?

Can you set a GenAI-driven transformation agenda?



What talents are needed?

What new skills and knowledge are needed?

Can we train the current staff?

Should we hire?

Should we focus more on consulting firms to bridge the gap?



How do you ensure ROI?

How do you minimise costs while maintaining GenAI performance?

How do the most important cost drivers (data, system operation, software, employees) interact?

Should you have your own GenAI models as a competitive advantage?

Three Application Levels of Gen AI within a Company

Before you start, you should work out which problem or task needs to be solved in the first place. And whether and how generative AI can help here.

As a rule of thumb, generative AI can help you if:

- ... you need text and image content for one or more channels.
- ... you need to translate something.
- ... a lot of complex content (text, images, data) needs to be made easily accessible and interpretable.
- ... concepts, briefings or other precursors of marketing assets are needed.
- ... personalised solutions/ content are needed.



For the initial phase, we offer a Strategy Sprint specially tailored to "Marketing & Sales". The format is based on the design sprints developed by Google and is implemented by IBM iX experts. It can be scheduled for one day or – depending on the scope and objective – one week. In an interdisciplinary manner, together with representatives of your team, we work out your GenAI skills and challenges and go as far as defining a high-level Generative AI architecture setup.

In a Strategy Sprint, in a series of workshop formats and using design thinking methodology, challenge in question can be assessed in a structured manner and checked for its fit for GenAI applications. In the further course of the project, relevant fields of action such as strategy, experience design, technology, data, and operation of AI are developed.

The insights and artifacts gained from the sprint then form an important basis for setting up a project with GenAI. They continue to provide the basis for coordination and decision-making for cooperation within the company, with service providers and team members working together.

You can use GenAI at different levels. Use, Boost or Build.



Use

Leverage existing GenAI models or features from software vendors to increase productivity.

GenAI tools are now also available in more and more software products. A low-threshold first step can be the use of these services (e.g. Firefly from Adobe for generating images, or Einstein GPT from Salesforce).

This allows for a quick and easy start. Implementation is not complex, and little to no AI capabilities/knowledge is required.



Boost

Expand the capacities of existing models with your own data or integrate models into your own services.

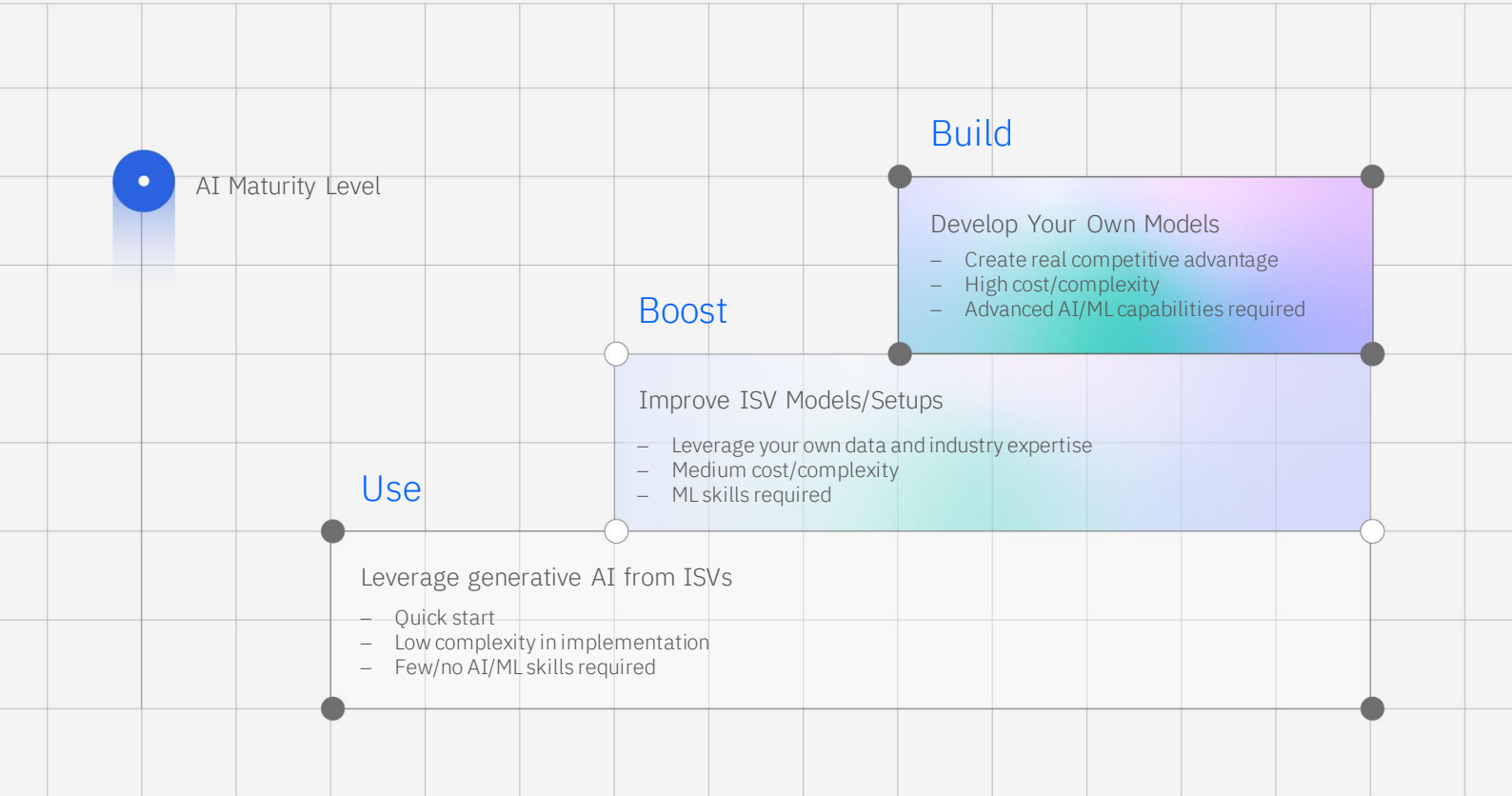
You use existing models (e.g. ChatGPT, Google Bard) and improve them for your own use case. Either by the way you set them up or by adapting and harmonising them with your own data to suit your use case. In doing so, you can make sensible use of existing data. The effort and costs here are still within a medium range. However, a certain level of skill with machine learning is required.



Build

Develop and operate your own models with your own data to gain a competitive advantage.

Build your own models, which will then belong only to you. This can give you a real competitive advantage and may be the only sensible way to do it in certain use cases. However, it comes with elevated complexity and high costs and also requires advanced skills in the field of AI/machine learning.



Field of action

Use

If you want to get started with generative AI quickly and easily, 'use', i.e. the utilisation of existing solutions, is the best option. However, you should keep the following recommendations in mind.

File analysis

First of all, you should carefully analyse the use case, the expected results, the current software landscape, and the processes and stakeholders involved.

Once the results are available, the selection of a suitable provider can begin on this basis.

That may even be software that you are already using, but whose gen AI functions you do not yet know or use correctly. If a strategy for the use of generative AI has been created in advance (e.g. as part of a Strategy Sprint), you should fall back on the criteria and framework conditions laid down there. → [See the question checklist, p. 14](#)

The pitfalls are manifold, but can sometimes be easily solved. In some cases, use of the tool is not possible because the provider does not offer a business version or the purchase is only possible via a credit card. The procurement does not follow standard purchasing procedures.

Being able to handle the process can already be the first insurmountable hurdle in the company.

Depending on your own expertise and capacities, it makes sense to bring external advice on board for the tool selection process. At IBM iX, we offer you workshop formats for this purpose. → [See p. 28](#)

Selecting an AI Application

The number of startups and new tools that offer marketing applications with the help of generative AI is increasing every day. It is becoming increasingly difficult to check which provider best serves your own use case, acts in a legally compliant manner and can be well integrated into your own software landscape and existing processes.

85%

of respondents said they already use generative AI tools, or plan to use them in the next 12 months*

*IVB Study



+10%

return on investment expected
by executives by 2025 from
investments in gen AI*

Integration into the Processes

Have you found the right application with generative AI? Now it's time to integrate the software into existing processes or adapt the processes. The implementation process can mean working more closely with other areas of the company, as the required input and output requires data from other departments that has not previously been used for marketing purposes.

Before integration, it should be checked what needs to be considered in terms of legal certainty and data protection. It is advisable to contact the legal department or data protection officers so that any issues in these areas are clarified in advance. In certain circumstances, it may be necessary to carry out a data protection impact assessment.

Often, companies maintain an extensive marketing technology (MarTech) stack. Introducing a new application and integrating it sustainably can be a challenge. In the course of implementing efficient AI applications, it may make sense to subject your entire MarTech landscape to an efficiency or performance review.

If your company uses one of the large, established marketing solution providers (e.g. Adobe, Salesforce, Hubspot), powerful AI applications will be integrated into either the current version or an upcoming one, or you will be able to expand them module by module. This has the advantage that expenses for procurement, IT system operation and operational tasks such as workflow configurations are reduced or completely eliminated.

If gen AI applications are embedded into existing solutions, legal issues can also be better planned. For example, Adobe's image generation tool Firefly has been trained on the data of the company's own stock photos. Under these conditions, copyright risks are correspondingly lower or even excluded.

*IBV GenAI State of the Market, 2023

Onboarding of Employees

Once the right tool has been purchased, integrated into the processes and the MarTech stack, and the necessary input and output have been clarified, the next step is to train the employees in how to use it. Even if it doesn't require programming skills or training in complex software to use the GenAI application, employees should still understand how it works, internalise it, and learn how to get the best results with the new tool. In addition, internal company rules (e.g. guidelines/policies) should be created that regulate how the applications can be used in compliance with the law.

Many GenAI applications are currently operated via so-called "prompts" (text instructions). It takes practice and knowledge of how to formulate prompts to get the best possible results (prompt engineering). However, since GenAI applications are sometimes based on different foundation models, identical "prompts" can lead to different results for different models.

At IBM iX, we offer our customers editorial workshops to familiarise employees with generative AI and prompting.

→ see page 29



„Use“ Case Study

IBM iX for Minijob-Zentrale

Insight

AI in the form of large language models can significantly reduce the workload of editorial staff.

Idea

Together with the Minijob-Zentrale, we designed a prototype as part of a hackathon that shows the value of AI in everyday editorial work. The key question for the development, including the prompting workshop, was: How can AI reduce the workload of the editors at Minijob-Zentrale?

Impact

The answer to this is "Mini", the AI-powered editorial assistant. The multifunctional tool builds on existing content and, according to the editors, saves around 75% of the time involved in researching, drafting and coordinating articles. "Mini" can generate suggestions for outlines and headings, and also helps with the search for and use of SEO keywords. By carefully integrating existing content, defining target groups in the form of personas, and fine-tuning the preset prompts, undesirable outcomes such as misstatements or clichés were reduced.

This AI-supported editorial aid simplifies tasks such as communicating complex legal regulations quickly, easily and in a way that can be understood by the average citizen.

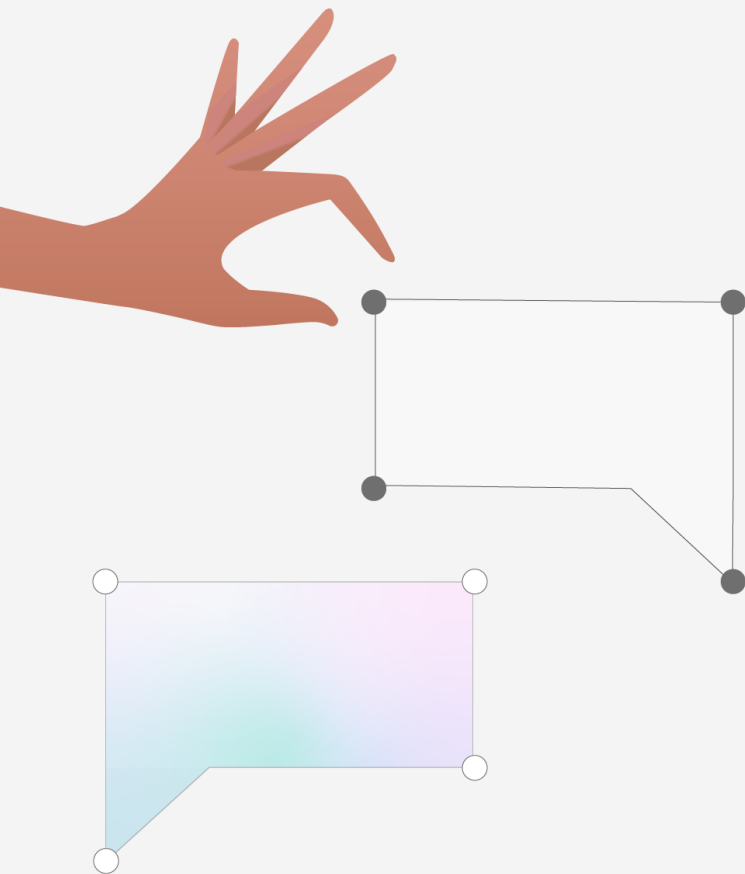
Field of Action

Boost

If your company is planning more specific use cases, such as a GenAI-based service offering, then the "out-of-the-box" applications described above will quickly reach their limits. An existing GenAI service may only be designed for a specific use case and may not be capable of being integrated into an existing solution.

Some of the more technically demanding use cases include, for example, GenAI-based chatbots for patients. From a large amount of information – for example, on a specific symptom – they quickly and easily create a comprehensible, suitable, personally tailored answer. This is the ideal area of application for LLM (Large Language Models). If your requirements revolve around applications such as the chatbot described above, you are in a "Boost" area of application.

The direct, immediate use of an AI service such as ChatGPT is not possible here, even if the results often seem impressive. This is because either the model has not been trained on the facts and content required for the use case (chatbot responses) or the information underlying the training is simply not known (data on indication are not known to the model). Then either the chatbot cannot provide answers or the AI provides incorrect answers. This is often referred to as "hallucinating" - a term that describes the not uncommon "invention" of answers by generative AI, when the AI assembles an answer purely on the basis of statistics.



The use and origin of training data from large providers such as OpenAI (ChatGPT) currently raise copyright and data protection issues that have not yet been conclusively clarified. These risks can be mitigated and controlled by training the LL model with proprietary data that is legally compliant. However, it is also important to ensure that the training data does not contain any personal data or business-critical information.

For example, we used this solution to create the chatbot solution (ISA) for the therapy support program "TheraKey" for our customer BERLIN-CHEMIE. This is based on a RAG (Retrieval Augmented Generation) solution. You can find out more about the solution and TheraKey in the [case study](#) (page 25). The process steps and solutions described below are based, among other things, on the experience gained from this project.

Retrieval Augmented Generation (RAG)

[Retrieval Augmented Generation \(RAG\)](#) is an approach that involves combining retrieval-based (query-based) and generative AI models to generate more powerful and contextual responses in applications such as chatbots.

The following steps summarise how RAG works for the data of a large language model using the example of a chatbot:

Input

First, the chatbot is either asked a question or given a prompt.

Retrieval

Instead of generating the response directly from the large language model, the chatbot uses a "retrieval model" to retrieve relevant information from an up-to-date database or corpus of documents.

Relevance Assessment

The retrieval model evaluates the relevance of the retrieved text passages based on their agreement with the user's question.

Response generation

The Large Language Model (e.g. GPT-3) uses the relevant text passages as additional context and generates an answer for the user based on them. This step represents "augmented generation", where the model uses both the original text and the retrieved information to create a more precise and contextual response.

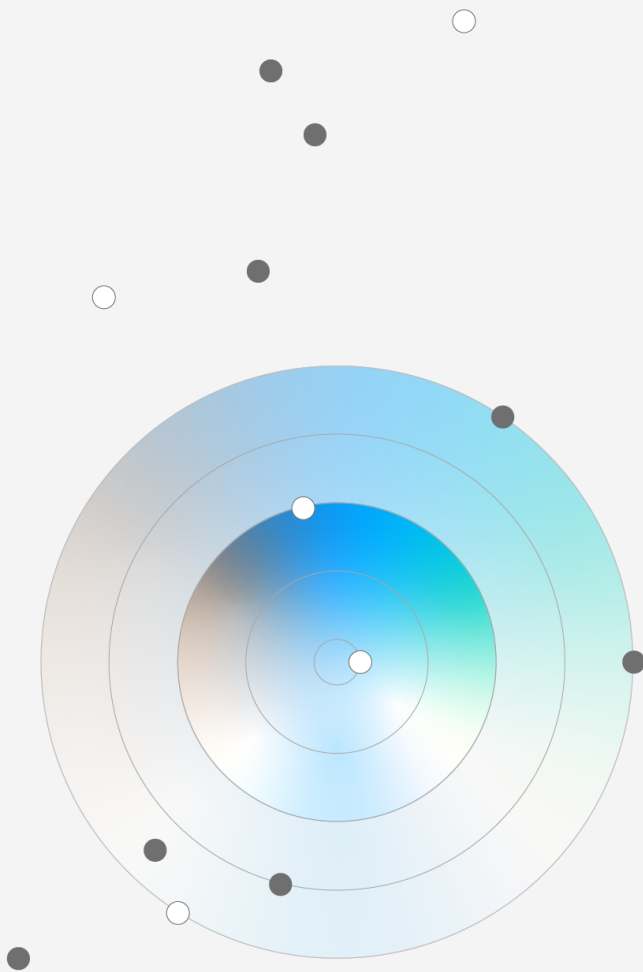
Submission of replies

The chatbot presents the generated response to the user. By combining retrieval and generation functionalities, RAG can help chatbots better respond to user queries by pulling relevant and up-to-date information from a knowledge base or document corpus to generate accurate, coherent and contextual responses.

Requirements Workshop

Here, too, a project starts with a workshop. Among other things, the following questions need to be clarified:

- **Goal of the project** and definition of the KPIs with which the achievement of the goals can be measured
- Comparison with or embedding in **existing strategies** (AI strategy, marketing strategy, etc.)
- Identification of **data sources and data formats**
- Identification of **stakeholders and relevant processes**



Model selection

The information from the requirements workshop already offers some clues for the selection of a large language model. Even though you hear a lot about ChatGPT from the company OpenAI, there are now a variety of large language models. And unlike the closed source model ChatGPT, there are other models with open source licensing, i.e. they have open source code and are accessible free of charge. IBM has other strong partnerships in addition to the Open AI Alliance, including Hugging Face, one of the leading platforms for open source AI models. In addition to the technical requirements from the perspective of the use case, requirements relating to data protection, data security, budget or scalability quickly limit the number of possible models.

The next step is to select the right model with regard to the qualitative requirements of your use case. This is done through direct testing of various LLM models. In the project for our customer BERLIN-CHEMIE, the first step was to ask patients relevant questions. And generative AI can also help in this process by generating a large number of questions, from which the team can then make a suitable selection. IBM iX has numerous access and testing options for its own and external LLMs. As a matter of principle, we advise objectively and in the interests of achieving the best possible result for our clients.

If the RAG architecture is set up with retrieval data (see above), the right architecture can be used to quickly and easily connect different models and test the previously generated questions. Since this is a qualitative selection, it is advisable to have the assessments carried out by the company's experts. For the TheraKey chatbot, we used the BERT score methodology for quality assurance. This allows qualitative outliers to be quickly eliminated and then the shortlist to be validated with random samples or qualitatively compared.

56%

of CEOs surveyed are reluctant to make a major investment until there is more clarity on legal norms and regulation.*

Compliance

The use of AI applications is also uncharted territory for the healthcare and life science industry. The use of AI touches on a wide range of areas of law. Therefore, the coordination and approval of the legal department or the assistance of external legal experts is strongly recommended and should already start in the planning phase. The data protection officer should also be involved in the planning at an early stage. Especially with regard to patient applications such as "TheraKey ISA", the requirements of data protection, copyright law, the Therapeutic Products Advertising Act and pharmacovigilance must be strictly observed.

It is important to document and integrate the individual steps, because this enables the legal department to quickly review and evaluate them – even in retrospect. From a legal point of view, such a project is a continuous process that must consistently address the real questions of the users, their feedback, new models, new data sources and the current legal situation.

Roadmap for scaling & development

The first entry into the world of AI applications described here should be followed by a continuous strategy for the expansion and scaling of further applications. With an initial "Boost" project, such as the chatbot with the RAG methodology described here, the entry has been made. The company and its employees gain experience with the technology, its possibilities and limitations, and recognize the need to adapt processes and collaborations in the company.

The structures and experience created provide a basis for the expansion and launch of further projects with GenAI. Valuable insights can be gained from the data and feedback gleaned from the earliest projects, which create the basis for further added value. For example, the findings from the use of a chatbot can provide important background information for marketing, sales and deciding when to request a doctor's opinion. The infrastructure and insights created make it possible to scale to other use cases or create new use cases. By connecting other content, AI chatbots can also be quickly set up for internal target groups (e.g. sales or human resources).

At IBM iX, we are happy to advise you on this.

*IBM Thought Leadership Report, 2023

Data Preparation

An important aspect is the selection and preparation of the data to make it usable for the TheraKey chatbot. Data can come from different media formats (PDF, text documents, PowerPoints, texts in the content management system, audio or video files, illustrations, etc.). In this case, it is important to consider your selection and, if necessary, to plan in several stages. This makes it relatively easy to process PDFs and other text sources. Other formats may require additional intermediate steps or special models that are optimised for the format. For example, it may be worthwhile to start with texts, and only later to include formats such as audio, video and images.

If the data is available in a structured source and is labelled (classified/provided with properties/characteristics), this further shortens the process. In this case, all content was already available in Magnolia's digital experience platform, which already holds the data in a structured form.

Fine-tuning

Once the data has been selected, prepared and cleaned and the appropriate model has been chosen, the next step is to configure it together. Here, too, it can happen that the model does not provide the best possible answers. Points collected in the requirements workshop can already help with the configuration (e.g. we are on a first-name basis, how high is the expertise of the target group and what are their expectations, etc.). Using a variety of adjustments, the model can be optimised directly, quickly, and collaboratively in a workshop. The team and subject matter experts should be involved in these workshops. This enables all parties involved to have a better understanding of the technology, the service and their possibilities and limitations. In this way, it is also possible to get the relevant approvals and any additional work (such as legalities) sorted out more quickly.

„Boost“ Case Study

IBM iX for BERLIN-CHEMIE

Insight

For several years, BERLIN-CHEMIE has been successfully operating the digital therapy support program TheraKey. TheraKey provides patients with chronic diseases with high-quality information from their initial diagnosis onwards. BERLIN-CHEMIE need to produce the appropriate answers to specific patient questions directly and quickly from existing content.

Idea

For patients with chronic obstructive pulmonary disease (COPD), TheraKey has been extended with a chatbot supported by generative AI. The chatbot, dubbed "ISA", enables users to quickly find answers to their specific questions. The use of TheraKey becomes more interactive, more personalised and enables a deeper engagement with the content.

Impact

Improve relationships with pulmonologists and at the same time customer relationships, resulting in increased sales

First-mover credits and increased visibility of the relevant department within the company, as well as brand building and PR successes

Increase patient engagement by increasing user engagement and improving the user experience

Internal enablement & practical experience in the use of AI, scalability of comparable applications in the company across departmental boundaries

Insights into patients' needs as a basis for optimising patient information and input for marketing, sales and product management

Gaining experience, improving system operation, legally compliant use and cross-functional cooperation in GenAI projects.

For more details, please visit:

<https://ibmix.de/en/blog/innovation-in-healthcare>

Field of Action

Build

The third described path in AI applications, the “Build” dimension, moves into more complex and resource-intensive areas.

In this case, “resource-intensive” describes not only higher costs, but also possibly higher demands on computing power as well as on personnel and technical expertise. The basis for such a step should be an appropriate use case. Due to high investments, the use cases of the “Build” dimension may be less aimed at classic marketing use cases, but may in some cases already include new business models.

An example of a “Build” use case is [IBM's collaboration with Boehringer-Ingelheim](#) to further develop generative AI and foundation models for the development of therapeutic antibodies. In the project, IBM is refining a pre-trained model using proprietary data from Boehringer. A use case for drug discovery and development in research, or the development of other products, can quickly justify the use of “Build” cases. There is no turnkey solution here and, as is so often the case, the necessary competitive advantage can only be created with one's own data and its application through AI.

74%

of CEOs say AI will fundamentally change the way they approach CX

With watsonx, IBM offers a powerful AI platform whose components are suitable for complex use cases and “Build” cases.

The following key questions should be examined before beginning a “Build” project:

- What is my use case? Is this only feasible with a specially trained model or can I already cover it with a “Use” or “Boost” solution?
- Do I have the necessary resources (budget, technical expertise) to start such a project and then continue to run it?
- Do I have sufficient data (quantity & quality) that is necessary for my use case and the training and fine-tuning of the large language model?



“Build” Case Study

A Case for IBM watsonx

With **watsonx.ai**, you can effortlessly train, validate, fine-tune, and deploy generative AI, basic models, and machine learning capabilities. Here, you can build AI applications in a fraction of the time and with a fraction of the data.

With **watsonx.data**, existing data sources can be integrated and prepared for use in AI use cases. A large number of features simplify the use of the data.

watsonx.governance simplifies the process of developing trustworthy and transparent AI solutions, while ensuring compliance with applicable and upcoming regulations.

While not all models are created equal, each model needs governance to be responsible and ethical. The IBM® watsonx.governance™ AI governance toolkit allows you to control, manage, and monitor AI activities. It leverages software automation to strengthen your ability to mitigate risk, manage regulatory requirements, and address ethical concerns for both generative AI and machine learning (ML) models.

Depending on the type, size and complexity of a “Build” use case, the watsonx platform and its components can also offer great added value in such cases.

It All Starts with “Use”

As an introduction to the use of generative AI solutions in marketing, we recommend starting with the stages presented in this document. First "Use", then "Boost" and then "Build". However, there's nothing wrong with working through the "Use" and "Boost" levels at the same time.

Even though the hurdles for the use of generative AI solutions are getting lower and lower, we recommend not just starting to use them straightaway, but taking our checklist into account first. → [Page 15](#)

Analysing of your specific challenges in a structured process helps here. Our “Gen AI Strategy Sprint” and other workshop formats offer a good foundation for climbing the steps.

Get Started with Us

With our IBM Garage for Generative AI Framework, we can accelerate your development through a holistic and proven approach. We offer collaborative formats for rapid co-development of solutions that deliver results. Get started today with one of the following proven formats:

Strategy Briefing

One day

The ideal starting point to explore the possibilities of generative AI in the areas of customer experience, marketing, sales and service. Familiarise yourself with the concepts, capabilities, and challenges of generative AI, and start defining and prioritising use cases.

Strategy Sprint

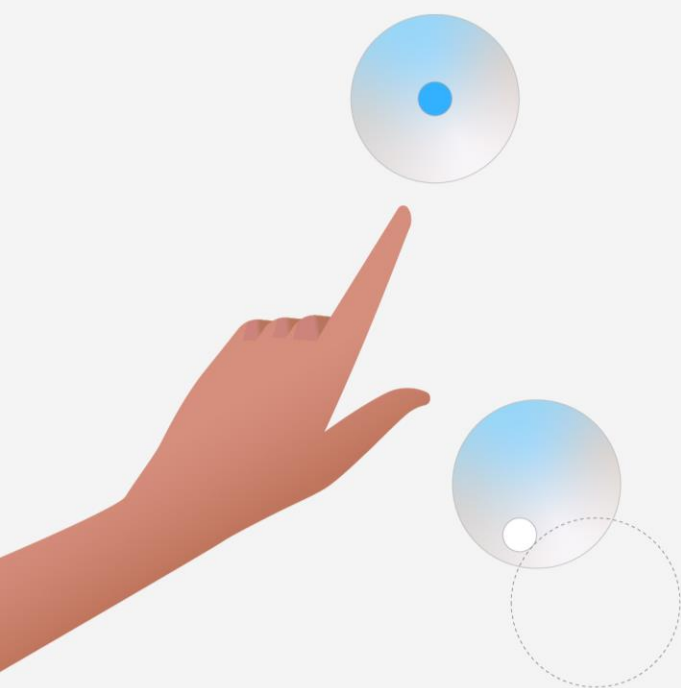
One week

Evaluate your company's status quo with regard to generative AI together with our AI experts. Develop a comprehensive roadmap and strategic framework for leveraging AI to drive growth, innovation, and competitive advantage in an intensive week-long format that delivers actionable results right away.

Pilot Project

One to two months

Work with a dedicated team of experts on a specific generative AI use case (predefined or based on a GenAI Strategy Sprint) and develop and implement a ready-to-use MVP that solves a real business problem while driving the cultural change necessary for the successful use of AI in your organisation.



Ready to transform your customer experience?

As a multidisciplinary partner, we support you at every step of your journey: from consulting and strategic analysis, to workshops, to technical and operational implementation.

Are you ready to create the best experience for your customers?

Get in touch with us! We will be happy to advise you.

Get in touch via the [contact form](#) or reach out directly to:



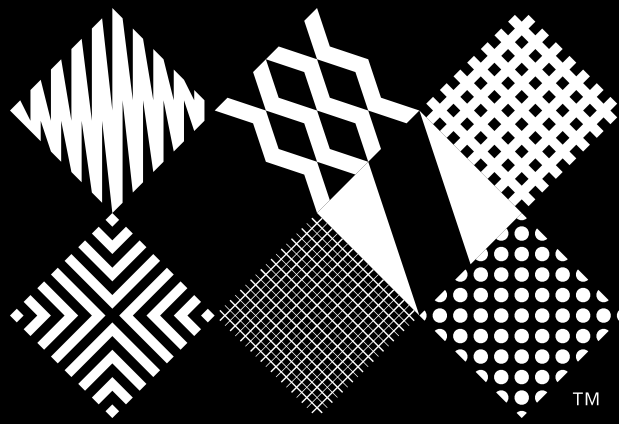
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