



UNLOCKING GERMANY'S AI POTENTIAL 2025

Introduction

Germany stands at a critical moment in its artificial intelligence (AI)¹ journey, with the government having set a goal of becoming a global leader in responsible AI development and adoption.² Halfway through the decade, the nation's businesses are following this lead and are driving the charge for the EU - the country's overall adoption rate of **53%** is striding ahead of the European average of **42%**, with one of the highest levels of adoption in Europe. The rapid **47%** year-on-year growth of adoption (up from **36%** AI adoption in [last year's report](#)) highlights a significant shift in the readiness of German businesses to embrace AI. Currently, Germany is a standout leader in AI adoption growth across Europe, which is an encouraging signal for the country's future competitiveness.

Now, over 1.8 million businesses are now using AI in Germany, and this growth has driven action by the German government, including Germany's [AI Action Plan](#) by the Ministry for Education and Research (BMBF). The plan is designed to take the government's commitment to the next level, with objectives to invest in computing capacity, skills, and research, and ensure coordination with the rest of Europe in AI development. The BMBF has provided extensive funding to researchers doing experimental work in AI, launched AI service centres and six 'AI competence centres,' to form the nucleus of the German AI research ecosystem.

Yet, for Germany to fully leverage this technological revolution, businesses need to move beyond pilot projects and focus on embedding AI more strategically and comprehensively. While many companies have begun their AI journeys, only a minority have deeply integrated these technologies into their core operations. Without increased investment in AI-related skills, clearer regulatory guidance, and a shift towards full-scale deployment, Germany risks falling short of AI's long-term economic potential.

The research provides a comprehensive analysis of Germany's AI adoption, highlighting both its strengths and areas for further development. Findings reveal that Germany is emerging as a key innovation hub in Europe, with startups playing a pivotal role in AI integration.

To fully unlock AI's potential, Germany must address these challenges, ensuring that AI adoption moves beyond surface-level implementation to drive real, long-term impact across industries.

Key findings from this study:

- In Germany, AI adoption amongst businesses is widespread and accelerating, with **53%** now consistently using AI, up from **36%** last year. The percentage of German companies using AI has grown at an impressive rate of **47%** in just one year. This is one of the highest rates of growth in the EU, and this rapid growth outpaces the mobile phone revolution in the 2000s.³
- Over 1.8 million businesses are now using AI in Germany.⁴
- Despite momentum, there are various barriers to adoption that businesses see – compliance cost being one. Currently, German businesses report they allocate **44%** of their tech spend on compliance – slightly above the European average of **40%**. Since tech spend includes broader technology-related expenses beyond the IT budget, such as on operations tech, analytics tools, and sales tools, this highlights how compliance costs are impacting overall digital investments, and **79%** of German businesses expect this figure to increase.
- Startups⁵ are on the cutting edge of AI innovation; **45%** of German startups have launched a new AI-driven product, compared to only **16%** of large businesses.⁶
- Those who have adopted AI are seeing clear benefits. **96%** of German businesses report an average **34%** increase in revenue thanks to AI adoption, attesting to the true power of AI in businesses' competitiveness. To put this in perspective, a medium-sized enterprise with an average revenue of €50 million may see revenue gains of €17 million thanks to AI adoption and integration.

Harnessing AI to drive growth

Across Germany, businesses are integrating AI at an accelerating pace, with **53%** now using AI, up from **36%** last year, marking **47%** growth rate of adoption in just one year. This makes Germany a leader in AI adoption, above the European average of **42%** – showing that businesses are ready to go all-in on AI.

Key factors driving this growth include the clear benefits AI brings, such as a **34%** revenue increase for adopters, improved productivity, and enhanced customer experiences. Additionally, the rise in AI-related investment (with **25%** more spending in the last year) and growing support for AI-driven innovation are fuelling this rapid adoption.

Germany's digital landscape is already undergoing profound and positive shifts. A game-changing AI revolution that gained momentum in 2023 is rapidly gathering pace – and Germany is well-positioned to meet and exceed its [Digital Decade targets](#) of **75%** of businesses using AI by 2030. As startups and global enterprises alike push the boundaries of what's possible, a pivotal question comes into focus: How can Germany continue to harness the transformative potential of AI to drive inclusive growth and shared prosperity across its economy and society?



The direction is clear, and the momentum is building

In the last year, over 600,000 businesses in Germany used AI for the first time, or over one every minute on average in the last year, showcasing the rapid pace of adoption and the immense potential for further growth.

And the rewards are undeniable. Businesses that adopt AI are unlocking a wide range of powerful benefits:



80% of businesses that have adopted have seen transformative or significant productivity improvements. Thanks to this productivity, businesses estimate that they are saving approximately 21 hours a week, enabling them to focus on other efforts, including improving customer service (**66%**), employee training and development (**49%**), and innovation (**47%**).



Notably, **54%** of AI adopters in Germany have seen AI improve customer experience, and **50%** see enhanced automation.



96% of German businesses report an increase in revenue thanks to AI adoption, at an increase of **34%**, attesting to the true power of AI in businesses' competitiveness.

Recognising these advantages, German businesses have ramped up their AI investment by **25%** in the last year, slightly exceeding the European average of **23%**. A further **66%** of German businesses already have a dedicated AI budget, which businesses estimate will comprise **17%** of their total IT budget in the next three years, and this upward trend of investment signals ongoing growth and untapped potential.

German startups are pioneering transformative innovation

Startups aren't just using AI – they're building entirely new products and business models around it that would have been impossible just years ago.

- **33%** of startups are harnessing the most advanced AI⁷ uses that combine multiple types of AI tools or models to perform complex tasks (this is higher than the **26%** of startups across Europe).
- **50%** of German startups are leveraging AI as part of their research and development.
- **45%** have launched new AI-driven products or services, compared to only **16%** of large businesses.
- **61%** have launched new AI-based customer service solutions, while **31%** are using advanced AI systems that integrate multiple models or tools, compared to just **6%** of large enterprises.
- Finally, **88%** of startups believe that Europe is competitive as a global hub for innovative startups compared to other regions.

A vibrant, burgeoning startup landscape supports Germany's startups. The [2024 Deutscher Startup Monitor](#) reveals a vibrant ecosystem where the availability of the cloud, collaboration, and a robust economy are powering the nation's startups.

Many SMEs and large enterprises are not yet harnessing AI for its most advanced uses

Celebrating Germany's high AI adoption, which is underpinned by widespread adoption of AI across businesses of all sizes, risks masking a deeper challenge, that many businesses, particularly SMEs and large enterprises, are still not fully leveraging its potential. This risks creating a two-tier economy where startups surge ahead of their counterparts, harnessing AI for innovation.

- **65%** of large enterprises have adopted AI, at a very strong year-on-year growth rate of **36%**.
- However, despite widespread adoption across large enterprises, many have not yet integrated AI's most advanced uses. As it stands, **71%** of large enterprises in Germany currently focus their use of AI on more basic, incremental use, such as improving efficiency or productivity. On the other hand, this falls to **53%** among startups who are pioneering deeper adoption.
 - Fewer than one-in-ten (**8%**) of German large enterprises are leveraging AI for its most advanced uses, such as combining multiple types of AI tools or models to perform complex tasks or creating their own AI models, compared to **14%** in Europe.

SMEs, which [make up the majority of businesses in Germany](#), see a similar story. Their adoption is high at **49%**, aligning with the German national average (**53%**). However, **60%** of SMEs remain using AI for basic purposes.

Cloud services are a key enabler for AI adoption in Germany. Cloud usage is widespread, with **79%** of German businesses using cloud services, well above the European average of **59%**. This includes strong adoption, at least **50%**, across all major segments, from SMEs to large enterprises. The cloud supports experimentation, rapid prototyping, and cost-effective deployment of AI solutions. Nearly half (**45%**) of German businesses say that access to cloud infrastructure has been the most helpful in enabling their AI adoption and integration.

Many markets surveyed across Europe identified large gaps in adoption, yet Germany has succeeded in encouraging broader-based adoption than other markets. Germany's success is due to a positive mix of digital readiness, ambition, and support that is accelerating AI transformation across parts of the economy. For example, apart from the availability of cloud, among adopters, **71%** say government support (including grants) was important to their adoption of AI, and **17%** said that it was crucial. This is higher than **66%** in Europe.

Maintaining momentum behind AI and moving beyond basic adoption for businesses of all sizes is key to unlocking the full benefits of AI for Germany's economy and society. Recent [research](#) by the Telecoms Advisory Service, on behalf of AWS, found that cloud-enabled AI added over \$9 billion to Germany's GDP in 2023. The research also found that cloud as a whole is set to add \$2.6 trillion to Europe's GDP by 2030, with nearly \$434 billion alone coming from cloud-enabled AI.

Case study: CareMates uses AWS to streamline care processes with AI and ease pressure on healthcare professionals



Healthcare workers are under immense time pressure—up to **83%** report not having enough time to complete their daily tasks. CareMates, a Munich-based healthtech startup, aims to change that. With support from AWS, Caritas, and UnternehmerTUM, founder Dylan Gruner and his team developed an AI-powered solution that automates administrative tasks in care settings, helping professionals focus more on direct patient care. The tool is built on a scalable serverless architecture using AWS Lambda, and its AI models are developed with Amazon SageMaker. By using AWS infrastructure in the Frankfurt region, CareMates ensures high data protection and compliance standards.

CareMates' digital intake form enables care professionals to create personalised care plans and related documentation in just a few clicks—while maintaining control over clinical decisions. This reduces administrative effort by up to **80%**. In the future, the tool will also offer automatic suggestions to update care plans based on changes in a patient's condition, with AI learning from professional feedback. CareMates is helping give caregivers back what matters most: time with their patients.

Read more about CareMates [here](#).

Barriers to Deeper AI Adoption

Four key challenges continue to hinder businesses from adopting and innovating with AI. If left unaddressed, these obstacles risk slowing Germany's progress.

1. Skills

With Germany's AI market experiencing rapid momentum and strong growth, businesses are increasingly feeling the pressure of talent shortages. Currently, **35%** of businesses identify skills as a key barrier to their AI adoption. Nearly half (**48%**) of German businesses identify skills as a barrier to deeper AI adoption, **56%** say that a lack of skills is hindering innovation, and **45%** say that it is hindering their businesses' growth. With AI literacy expected to be required in **51%** of new jobs in Germany in the next three years, bridging this gap will be especially important. **43%** of German businesses say they struggle to attract the talent with the necessary digital skills, and are, in turn, willing to offer premiums for candidates with strong digital skills – at an average of a **45%** salary increase.

2. Compliance

German businesses face high compliance costs, estimating that €44 out of every €100 they spend on tech goes towards compliance-related costs, such as data and privacy protection, costs to classify, monitor, and document AI systems to meet transparency and risks requirements, training and certification costs, and more.



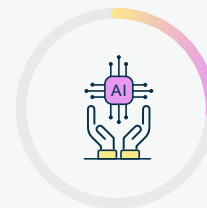
81% of businesses say their compliance spend has increased over the previous three years.



Looking ahead, **79%** of businesses expect these compliance costs to increase further in the next three years, similar to the European average (**75%**).



Of businesses that seek support from external consultants for AI expertise, over a third (**38%**) require support for regulatory compliance.



26% of businesses say they have adopted or plan to adopt AI to automate compliance processes

3. Regulatory uncertainty

Currently, **63%** of German businesses do not understand their roles and responsibilities under the EU AI Act. Furthermore, **60%** of German startups say that regulatory uncertainty has delayed or altered their AI and technology strategies.

4. Perceived Costs

35% of German businesses cite perceived upfront costs as a key barrier to AI adoption. Currently, **18%** of businesses say they need a clearer understanding of AI's return on investment, yet the evidence speaks volumes: **96%** of German businesses have seen an increase in revenue as a result of AI adoption, with an average **34%** revenue growth attributed to AI.

These barriers could become a handbrake on the speed of digital transformation across Germany. Tackling these barriers will be critical in enabling Germany to maintain its leadership position in AI.

Accelerating AI adoption: A three-point plan

It is clear that Germany has all of the right tools to succeed and excel as a leader in the AI space in Europe. AWS is urging German and European policymakers and industry leaders to take immediate steps to unlock the full potential of AI across both fast-paced start-ups and larger enterprises:

1. Create a pro-growth regulatory environment that incentivises adoption and innovation

By addressing German businesses' concern about the cost and compliance complexity associated with new regulations, Germany can overcome a key barrier to digital transformation. Therefore, the German government could consider:



Implementing supportive economic policies that widen access to needed capital and act to encourage investment in R&D, incentivising the adoption and development of new technologies by German businesses.



Reduce compliance costs, currently **44%** of IT spending, and establish clearer AI governance policies to promote faster adoption.



Clear regulatory frameworks can support faster AI adoption while ensuring safety considerations are met.

2. Foster AI-driven innovation across all business sizes, especially large enterprises, through strategic support and incentives

To unlock AI's full potential across the broader economy, Germany must empower larger businesses to adopt AI in more ambitious, strategic ways:

- Expand targeted financial incentives for enterprises to pursue high-impact AI projects, such as tax credits for R&D in AI, co-financing schemes for AI pilot programmes, and innovation grants that encourage risk-taking and experimentation
- Maintain focus on AI adoption across sectors, including manufacturing. Germany has a strong industrial base; these industries profit from AI adoption for production and high-tech manufacturing.
- Strengthen Germany's dynamic AI ecosystem by maintaining an open and competitive technology environment. German businesses are supported by a network of AI and cloud providers that enable their AI ambitions, and **91%** of all businesses value the ability to choose between AI providers and solutions that fit their needs. Encouragingly, **93%** believe they have sufficient choice to select and switch AI providers, underscoring Germany's dynamic and technology-positive ecosystem—a key strength in its AI-driven future.
- Launch AI innovation hubs and sector-specific accelerators to help large firms collaborate with startups, research institutions, and AI specialists to co-develop solutions that go beyond automation and aim at genuine transformation (e.g., new products, business models, or services).
- Improve access to private financing and government funding, which **71%** of German businesses cite as crucial or very important.

3. Invest in AI skills efforts

Germany should establish a virtuous cycle of investment and growth, centred around digital transformation and a skilled workforce. **58%** of firms see AI skills as critical in the next five years. Over half (**52%**) of businesses also indicate that widespread availability of training and support would make AI tools more accessible to their industry. Germany's [Digital Strategy 2025](#) places education as a key pillar of the nation's digital transition, with the understanding that digitisation is not only changing the ways of working, but also opening new doors for innovation and growth. Therefore, the strategy aims to invest in AI and digital education at all levels and ages, and boost vocational training for IT positions. Continued delivery and expansion on these efforts is Germany has a special environment at its disposal – from creating cutting-edge AI research at universities to including AI skills as part of the vocational apprenticeship programmes, the country can remain a leader with a skilled, innovative workforce.

Germany stands at the forefront of AI adoption in Europe, demonstrating remarkable growth and strong momentum. However, to fully capitalise on this potential, businesses must move beyond experimentation and embed AI strategically into core operations. Addressing key challenges, such as regulatory uncertainty and digital skills shortages, will be crucial in sustaining long-term competitiveness. With the right investments and policies, Germany can solidify its position as a global leader in AI, fostering innovation, economic growth, and digital transformation across industries. The path forward is clear: embracing AI boldly will drive lasting impact and secure Germany's place in the future digital economy.



Appendix

Methodology

The fieldwork for this study was undertaken by Strand Partners' research team for Amazon Web Services. This research has followed the guidance set forth by the UK Market Research Society and ESOMAR. For the purposes of this study, business leaders are defined as founders, CEOs, or members of the C-suite in organisations.

'Citizens' are nationally representative members of the public based on the latest available census.

For inquiries regarding our methodology, please direct your questions to: polling@strandpartners.com.

In Germany:

- We conducted a survey targeting 1,000 nationally representative members of the public. This survey has ensured representation based on age, gender, and [NUTS 1](#) region.
- Additionally, we surveyed 1,000 business leaders, representative by their business size, sector, and NUTS 1 region.

Sampling:

Our sampling process used a mix of online panels that are recognised for their validity and reliability. These panels are carefully curated to ensure diverse representation across various demographics. For the business leaders, the panels are selected with a consideration for organisational size, sector, and position within the company. Our objective with the sampling strategy is to achieve an optimal mix that mirrors the actual distribution of our target populations in the respective markets.

Weighting Techniques:

Post-data collection, we applied iterative proportional weight to correct any discrepancies or over-representations in the sample.

Survey:

This study was designed with the objective of delving deep into the digital landscape:

- Usage Patterns: This survey gauges the evolving patterns of digital technology usage. We are particularly interested in examining the adoption and implementation levels of technologies, focusing on cloud computing and artificial intelligence.
- Perceptions and Attitudes: The survey seeks to unearth the prevailing perceptions and attitudes toward digital technologies, understanding the perceived benefits, challenges, and potential ramifications of both present and emerging tech solutions.
- Barriers and Opportunities: The survey scrutinises the predicted challenges and potential avenues that both businesses and individuals anticipate on their digital trajectory. This involves pinpointing challenges, from skill deficits to regulatory complications, and recognising opportunities for growth, innovation, and market development.
- 'Size of the Prize': The survey shed light on the economic repercussions and growth prospects linked with digital transformation. By elucidating the 'size of the prize', we aspire to stress the importance of digital transformation and foster further investments and technology adoption.

References

1. The European Parliament defines AI as the 'ability of a machine to display human-like capabilities such as reasoning, learning, planning and creativity. AI enables technical systems to perceive their environment, deal with what they perceive, solve problems and act to achieve a specific goal.' AI tools and softwares include: virtual assistants, image analysis software, search engines, personalised online shopping recommendations, and machine translations. They may also include GenAI tools, which can produce new content, such as ChatGPT or Google Bard.
2. <https://www.dw.com/en/will-germanys-ai-strategy-be-able-to-compete-with-the-us-china/a-70573169>
3. The highest annual increase in global mobile phone adoption occurred between 2007 and 2008. In this period the number of mobile subscribers increased at a growth rate of 18%. Source: https://stats.areppim.com/stats/stats_mobilexpenetr.htm
4. Calculated based on the publicly available estimation of the total percentage of businesses, which was 3.5 million in 2023. Source: https://www.destatis.de/EN/Themes/Economic-Sectors-Enterprises/Enterprises/Business-Register/_node.html
5. A business founded in the last 2 years which provides a new product/service or innovation and is aiming for rapid growth in terms of employees and turnover.

6. A large enterprise (also referred to as a large business or established enterprise) is a business with 500 or more employees, founded 10 years ago or more.
7. In this report, "Advanced" uses represent AI embedded as a core part of business strategy, where multiple AI systems are integrated across operations to drive innovation, efficiency, and competitive advantage.
"Basic" uses of AI refer to infrequent or task-specific applications, such as occasional use of generative AI tools for incremental efficiency gains such as scheduling assistance and chatbots