



UNLOCKING SPAIN'S AI POTENTIAL 2025

Spain's AI adoption accelerates among businesses

Halfway through the decade, Spain is at a pivotal moment in its digital transformation journey, with AI adoption accelerating at an unprecedented pace. Spanish businesses continue to embrace AI, with around 450,000 businesses adopting the technology in the last year alone, or nearly one every minute.

AI adoption amongst businesses now stands at **50%**. Today, over 1.6 million businesses in Spain are using AI, a growth rate of **39%** from [last year](#). This shows an acceleration in AI adoption, compared to last year's growth rate at **29%**, outpacing the current European average of **42%**. This also outpaces the early uptake of adoption of game-changing technologies like mobile phones in Europe in the 2000s.¹

For businesses that have adopted AI, a striking majority (**96%**) report an increase in revenue, at an average of **34%**. A further **79%** have seen significant productivity gains, including from streamlined data analysis (**63%**), customer service improvement (**48%**), and the automation of routine tasks (**54%**). As a result of these gains, businesses estimate they are saving 23 hours a week, and with the time saved, businesses and their employees are able to focus on improving customer service (**71%**), employee training and development (**50%**), and developing new products or services (**46%**).

These benefits are driving rising investments in AI in Spain. Firms report a **25%** increase in investment in AI in the past year, with **68%** saying that they have dedicated AI budgets.

Supporting this momentum, the Spanish government has taken action and introduced its [2024 Artificial Intelligence Strategy](#). This strategy aims to accelerate, facilitate, accompany, and promote the development and expansion of AI in Spain, recognising the potential of AI for growth. Building on this is the [HispanIA 2040](#) plan, a long-term strategy to integrate AI across all sectors and society. It targets five key areas: modernising the private sector, strengthening the welfare state, driving sustainability, enhancing security and defence, and reducing inequality.

As a result of the momentum behind the digital transition, Spain is becoming an attractive hub for tech investment and infrastructure. [The Spain Data Center Association](#) calculated that €58 billion will be invested into data centre infrastructure in Spain by 2030. AWS [announced](#) plans to invest €15.7 billion in Spain in its AWS Europe (Spain) region, which will support an estimated 17,500 full-time equivalent jobs in local businesses on an annual average basis, and will contribute an estimated €21.6 billion to Spain's GDP through to 2033. Access to advanced cloud and AI infrastructure has been one of the most helpful factors for **46%** of businesses in their AI uptake and integration.

Now, the question is no longer whether Spanish businesses will adopt AI, but how they can leverage its full potential to fuel economic growth, improve productivity, and strengthen Spain's position in the global digital economy. This will require overcoming various barriers, including the perceived high upfront cost of adoption, regulatory uncertainty across European borders, and a digital skills gap that risks growing.

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

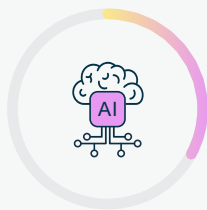
This report argues that proactively embracing AI represents Spain's most powerful lever to meet and exceed digital decade targets, accelerate innovation, boost competitiveness, and improve its standing on the global stage.

Key findings:

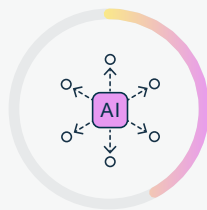
- Over 1.6 million businesses are now using AI in Spain,² representing **50%** of businesses and up from **36%** [last year](#). This adoption has a year-on-year growth rate of **39%**.
- Around 450,000 businesses across Spain adopted AI in the last year.
- Businesses also report a **24%** increase in investment in AI over the last year—on par with the European average of **22%**. In three years' time, businesses predict that AI will comprise **17%** of their overall IT budgets.
- **79%** of adopters have seen transformative or significant productivity improvements. Notably, **48%** of AI adopters in Spain have seen AI improve customer experience, and **47%** see enhanced automation.
- **96%** of Spanish 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.
- Startups³ are pioneering AI innovation, with **63%** of startups having adopted AI
- Despite this momentum, barriers remain. Currently, **60%** of businesses say a lack of AI skills is hindering innovation.
- To attract top talent, businesses report they are willing to offer an average **45%** salary premium for candidates with strong digital skills, one of the highest premiums in Europe.

Spanish startups: Pioneering transformative innovation

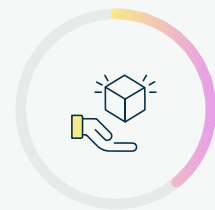
Startups aren't just using AI—they've placed AI at the centre of their business. In Spain, **63%** of startups have adopted AI, and when they do, they are more likely than their large counterparts to leverage advanced uses of the technology.



33% of startups are leveraging AI for their research and development, significantly above the European average of **26%**.



42% have AI at the centre of their strategy, slightly higher than the European average of **38%**.



39% of startups are launching new AI-driven products.

Overall, startups rate the experience of growing a business in Spain highly, with an average score of 8.1 out of 10, with access to capital, talent, and like-minded startups, helping them to grow faster and scale.

This leadership is enabled by a thriving startup ecosystem. A majority of startups (**63%**) say they're able to scale faster thanks to improved access to venture capital and funding opportunities. Importantly, there's a strong sense of optimism: **83%** of all Spanish businesses believe Europe is a globally competitive hub for innovative startups, reflecting confidence in the region's ability to support and sustain high-growth, tech-driven ventures.



Case study: Multiverse Computing



Multiverse Computing, the leading AI model compression company, specialises in making large language models (LLMs) more accessible and cost-effective for businesses. The startup reports remarkable results since implementing its quantum-inspired tensor networks technology. Multiverse Computing's solution has achieved up to 93% reduction in memory size for models like Llama3.1 8B, while reducing parameters by 70% and improving training and inference speeds by 50% and 85%, respectively. These improvements come with minimal performance impact, showing just a 2-3% accuracy drop.

Multiverse Computing is revolutionising AI deployment with its innovative CompactifAI solution, an AI model compressor which makes AI systems faster, cheaper, and energy efficient. Multiverse Computing is using Amazon SageMaker to execute distributed model compression jobs and accuracy recovery retraining at scale, while delivering compressed and secure models to customers. Multiverse Computing is demonstrating the transformative power of their technology, with customers experiencing cost reduction in operational costs and doubled inference speeds when using their pre-compressed versions of popular models like Meta Llama, DeepSeek, and Mistral.

Larger businesses and AI innovation

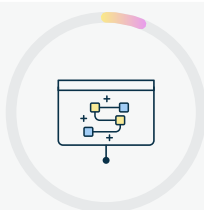
Celebrating AI leaders alone masks a deeper challenge; Spain's large enterprises⁴ are not yet harnessing AI for advanced uses and innovation.

Focusing solely on the leadership of startups risks obscuring a growing divide in adoption and innovation. Among Spain's large enterprises, **69%** are leveraging AI, but primarily for basic uses such as efficiency gains and streamlining processes. In contrast, startups are more likely to explore advanced use cases—only **42%** of them remain at the stage of using AI only for these more basic purposes.

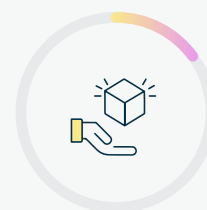
Only **11%** of large enterprises in Spain are reaching the most advanced levels of AI adoption, where businesses are harnessing multiple forms of AI or creating their own models and applications. This risks creating a two-tier AI economy where startups surge ahead of large enterprises, harnessing AI for innovation.



Large enterprises are being held back from deeper AI adoption by a lack of digital skills. Three-quarters (**75%**) of large enterprises say a lack of AI skills is hindering innovation, compared with **60%** of all Spanish businesses.



To go deeper with AI, large enterprises need to develop a clear AI strategy. Currently, only **6%** of large enterprises have a comprehensive AI strategy compared with **34%** of startups in Spain.



This is impacting their ability to innovate with AI. Just **15%** are delivering a new AI-driven product or service by harnessing AI's deeper potential, less than half of the proportion of startups (**39%**) in Spain.

Moving beyond basic adoption across businesses of all sizes is key to unlocking the full benefits of AI for Spain's economy and society. Recent [research](#) by the Telecoms Advisory Service, on behalf of AWS, found that cloud-enabled AI added over \$1.7 billion to Spain'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: Naturgy



Naturgy is a leading Spanish energy company dedicated to the generation, distribution, and commercialisation of energy and services, present in more than 20 countries. The company is undertaking an ambitious digital transformation with AWS. Naturgy has implemented a robust Data Lake that processes more than 100 TB of annual data from 18 different systems, using various AWS solutions to improve data management and decision-making.

In the field of artificial intelligence, Naturgy is leveraging multiple AWS technologies to revolutionise its customer service and optimise its operations. For example, with Amazon SageMaker they develop machine learning models that predict energy consumption and detect behavior patterns, while Amazon Connect has allowed them to implement an innovative contact center system that incorporates generative artificial intelligence to resolve customer requests and analyse call sentiment, processing more than 22,000 daily interactions.

Spain's digital skills challenge

The lack of AI and digital skills is one of the most urgent and widespread challenges facing Spanish businesses today for their ability to adopt, scale, and innovate with AI. Despite growing enthusiasm for AI, only **33%** of companies report having a strong internal AI skillset, and **41%** say they struggle to find local talent with the expertise needed to implement and manage AI solutions.

The skills gap is increasing costs and stifling innovation. Well over half (**60%**) of businesses say a lack of AI skills is hindering innovation, and **54%** report rising operational costs as a result.

With AI literacy expected to be required in **50%** of new jobs within three years, bridging this gap is critical for Spain's economic future. Recognising the urgency, Spanish businesses are actively addressing the skills gap through training and investment:

- Companies are upskilling their workforce—**50%** have already implemented AI-specific training programs, and on average, 42 of employees have undergone digital training in the past year.
- This investment in upskilling is beginning to pay off: **50%** of businesses say that broader AI training initiatives are helping to accelerate AI adoption, making the technology more accessible across sectors.
- To attract top talent, businesses are offering an average **45%** salary premium for candidates with strong digital skills, one of the highest premiums in Europe and a clear signal of the growing value placed on technical expertise in the job market.

Public-private collaboration is playing a crucial role in strengthening Spain's AI workforce. For example, [Amazon and AWS signed an agreement with the Ministry of Education, Vocational Training, and Sports](#) to help reduce the digital skills gap and promote STEAM education in Spain. AWS and Amazon are committed to supporting training for half a million students in Spain with technological and digital skills by 2027.

To boost public-private collaboration, in 2023, AWS launched the [AWS Spain Tech Alliance](#), a coalition of more than 50 companies, AWS partners and customers, government agencies, and over 600 educational institutions, advocating and working to equip students with the most in-demand technological knowledge in the Cloud field, and addressing the technology skills gap in technical school and university curricula.

To this end, AWS additionally offers programmes in Spain for different audiences, such as [AWS Academy](#), aimed at higher education institutions to prepare students for industry-recognised cloud certifications and careers; [AWS Educate](#), for students seeking to learn about cloud computing technologies at their own pace. Finally, [AWS re/Start](#), a skills development and job training programme, is offered to communities in Spain. re/Start aims to build local talent by providing AWS Cloud skills development and job opportunities at no cost to learners from unemployed, underemployed, and under-represented members of Spanish communities.

Case study: Community of Madrid



In 2024, the Community of Madrid launched Cuenta Digital (Digital Account), an application based on AWS cloud services that is available to 7 million inhabitants. Cuenta Digital centralises access to public services in a single platform and has revolutionised the way citizens and businesses interact with Madrid's public administration, concentrating access to 140 simplified services in a single space accessible from any electronic device. Among other functions, it facilitates the management of procedures, the application for aid, and allows obtaining official documents electronically in a single space. Cuenta Digital incorporates AWS artificial intelligence services to improve and personalise the user experience, as well as offer recommendations for procedures based on the user's previous requests, thus anticipating their needs.

Key barriers are preventing Spanish businesses from fully leveraging AI

Four key challenges continue to hinder businesses from embracing AI and, even when adopted, from driving successful innovation. If left unaddressed, these obstacles risk slowing Spain's progress.

1. Skills

As outlined, the digital skills gap is the biggest barrier identified by Spanish businesses. Four-in-ten (**42%**) of Spanish businesses identify skills as a barrier to deeper AI adoption, and **60%** say that a lack of skills is hindering innovation. With AI literacy expected to be required in **50%** of new jobs in Spain in the next three years, bridging this gap will be especially important.

2. Compliance

Spanish businesses face high compliance costs, estimating that €42 out of every €100 they spend on tech goes towards compliance-related costs. This is in line with the EU average of €40.

- **81%** of businesses expect these compliance costs to increase further in the next 12 months.

3. Regulatory uncertainty

65% of Spanish businesses do not understand their roles and responsibilities under the EU AI Act. **38%** of Spanish businesses view regulatory uncertainty as a key barrier. **76%** of Spanish startups say that regulatory uncertainty has delayed or altered their AI and technology strategies, showing that overly restrictive measures can hamper economic growth and technological innovation rather than fostering innovation.

4. Perceived Costs

36% of Spanish businesses cite perceived upfront costs as a key barrier to AI adoption. Interestingly, **20%** of businesses say they need a clearer understanding of AI's return on investment, yet **96%** of Spanish businesses have seen a significant increase in revenue from AI, with an average **34%** revenue growth attributed to AI.

The impact of these barriers can act as a handbrake on the speed of digital transformation and innovation across Spain.



Accelerating AI adoption through a three-point plan

It is clear that Spain has all of the right tools to succeed and excel as a leader in the AI space. Steps such as the [subsidies](#) to encourage AI adoption and integration in businesses are helping to drive the nation's growth and productivity. AWS encourages Spanish 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. Accelerate digital transformation across industries through skills efforts

To accelerate private sector digital adoption, Spain needs to establish a virtuous cycle of investment and growth, centred around digital transformation and a skilled workforce. A renewed emphasis on updating business processes, applying innovations commercially, and investing in R&D can help European companies recapture their start-up zeal and drive European competitiveness globally.

The [Digital Spain Agenda 2026](#) prioritises the acquisition of digital skills to secure access to the jobs of the future and the digital inclusion of all citizens, and ensuring the protection of individual rights in the digital environment. Delivery on these commitments will be key to supporting a digitally-intensive workforce equipped with the skills and confidence to take on an AI-driven innovation transformation.

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

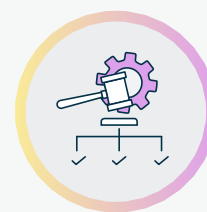
By addressing Spanish businesses' concerns about the cost and compliance complexity associated with new regulations, Spain can overcome a key barrier to digital transformation:



Clearer regulatory frameworks can support faster AI adoption while ensuring safety and ethical considerations are met.



65% of Spanish businesses do not understand their roles and responsibilities under the EU AI Act. Spain should carefully consider the transposition of the EU AI Act into Spanish law to avoid divergences that could negatively impact Spain's market competitiveness compared to other EU member states.



Regulation of AI can foster innovation in Spain without creating unnecessary barriers to AI deployment, as overly restrictive measures could hamper our economic growth and technological advancement.

3. 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, Spain 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.
- 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).

AWS is committed to supporting businesses of all sizes and sectors, through initiatives such as the [AWS Generative AI Accelerator](#), which helps some of the most promising startup companies to get their ideas off the ground. It provides access to impactful AI models and tools, mentorship, and up to \$1 million in AWS credits. The 2024 cohort included 18 startups across EMEA. This was part of AWS's \$230 million commitment to accelerate generative AI development globally. This initiative has already supported innovative companies in Spain, such as Multiverse Computing, which applies sophisticated quantum algorithms to its technology solutions to improve energy efficiency, sustainability, and costs of generative AI.

Another example is AWS investing \$100 million in the [AWS Generative AI Innovation Center](#), which helps customers successfully build and deploy generative AI solutions. The aim of this programme is to connect AWS AI and machine learning (ML) experts with customers and partners worldwide, to help them envision, design and launch new generative AI products, services, and processes.

Spanish businesses that have embraced AI are already seeing significant benefits, from increased productivity to revenue growth. With adoption accelerating rapidly, AI is poised to be a key driver of Spain's digital transformation and economic competitiveness. However, to fully capitalise on this momentum, businesses must move beyond experimentation and integrate AI strategically. By addressing key barriers such as skills gaps, regulatory uncertainty, and investment needs, Spain can unlock AI's full potential and solidify its place as a leader in the AI-driven 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 Spain:

- We surveyed 1,000 members of the Spanish public, ensuring representation based on age, gender, and NUTS 1 region.
- Additionally, we surveyed 1,000 businesses, 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 highest annual increase in global mobile phone adoption occurred between 2007 and 2008. In this period the growth rate in the number of mobile subscribers was 18%. Source: https://stats.areppim.com/stats/stats_mobilexpenetr.htm
2. Calculated based on publicly available number of companies in Spain, estimated at around 3.2 million in 2023. Source: <https://www.ceicdata.com/en/spain/number-of-companies-by-region/no-of-companies>
3. 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.
4. A large enterprise (also referred to as a large business) is a business with 500 or more employees, founded 10 years ago or more.