POLAND

COUNTRY REPORT

Unlocking Poland's AI Ambitions in the Digital Decade

The European Commission's Digital Decade policy programme set bold targets to make Europe a digital leader by 2030, aiming for 75% of businesses to use artificial intelligence (AI) and an 80% digital proficiency among European citizens by 2030.

AWS shares this vision and commissioned independent consultancy Strand Partners to undertake a new study to understand the role that cloud computing and AI can play in unlocking Europe's digital ambitions.

This research, the first of its kind carried out since the boom in generative AI in 2023, shows a significant acceleration in the adoption of advanced digital technologies such as AI and cloud computing in Poland. Poland's businesses and citizens are increasingly excited about the potential of artificial intelligence (AI), and businesses are looking to accelerate their uptake of AI, as citizens are now, more than ever, recognising its transformative potential. However, the research also highlights a number of barriers that need to be overcome in order for Poland to meet the goals of the Digital Decade, with significant work to be done to close the digital skills gap.

This study, which builds on a 2022 report carried out by Public First, surveys 1,000 businesses and 1,000 citizens in Poland and notes that Polish businesses and government must work to invest in comprehensive digital skills training for both tech and non-tech employees and must seek to address citizen concerns surrounding AI.

Key Statistics

- 2023 was the 'year of AI' in Poland and across Europe, with the number of businesses adopting AI up by **22%** from 2022 in Poland and 32% in Europe.
- If Poland is able to maintain this level of digital adoption to 2030, it could add **576 billion PLN** to the Polish economy, an additional 85 billion PLN from last year's prediction.
- The benefits of AI are already being felt: for those Polish businesses that have integrated AI technologies, **94%** have increased revenues and **88%** report that it has stimulated innovation.
- There is strong belief in the transformative potential of AI: **93%** of Polish businesses believe that AI will transform their industry within the next five years.
- However, skills are not keeping pace with ambitions: **48%** of Polish businesses report that the digital skills most lacking in their organisation are basic digital skills and only **23%** of Polish businesses find it easy to find new hires with the necessary digital skills.

The Digital Landscape in Poland

Poland has clearly embraced the digital age, and businesses recognise the potential of digital technologies. **76%** of Polish businesses have expressed that without their digital technologies, they would struggle to operate, highlighting the country's increasing dependence on digital technology. Moreover, **90%** of Polish businesses report that digital technology is important for achieving their five-year growth plans - more than the European average (84%).

Polish enterprises aren't just recognising the power of digital; they're investing in it. Over the last year, Polish businesses have increased their financial commitments to digital tech by **51%**. This surge in spending will only continue, and businesses plan to boost their investments by another **50%** in the upcoming year, matching the ambitious European average.

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2023: a ‘year of AI’ driving an acceleration in economic growth

Polish businesses saw a large increase in the rate of adoption of AI technologies in 2023, with **22%** of businesses reporting adoption of the technology in September 2023, up from 18% in 2022. This represents a growth rate of **22%**. Furthermore **63%** of AI adopters are using large language models (LLMs) or generative AI. If this increase in digital adoption continues, Polish businesses will be on track to reach the Digital Decade target of 75% of businesses using AI by 2030.

The increased rate of adoption of advanced digital technologies, especially AI, could unlock 576 billion PLN for the Polish economy, an additional 85 billion PLN from 2022’s prediction of 491 billion PLN.

Polish businesses are embracing AI technology and the opportunities it offers. Adoption is strong among businesses already familiar with AI, although there is room for growth. Currently, **64%** of Polish businesses familiar with AI report that they are integrating AI technologies into their operations, slightly behind the European average (75%).

Polish enterprises employing AI technologies report its positive benefits at higher rates than European peers:

Most notably,

94%

of Polish businesses which have adopted AI reported increased revenues, higher than the European average of 75%.

88%

of Polish AI adopters cited improved innovation, compared to 75% across Europe.

Moreover,

81%

state that AI has streamlined business processes compared to 70% across Europe.

Polish businesses clearly understand AI’s transformative potential, with **74%** predicting that AI will either largely or completely transform their industries - a vision that outpaces the European average (63%).

Cloud Computing: a foundational technology

Cloud computing underpins Europe’s journey to becoming a digital leader and forms the foundation for the adoption of digital and AI technology. In particular, cloud underpins the foundation models which form the basis of generative AI.

There is a broad familiarity with cloud computing in Poland, in line with most other European countries. **88%** of Polish businesses have a general awareness of it, compared to 85% across Europe. Notably, **44%** of Polish businesses declare a deep understanding of cloud computing, more than any other European country.

Businesses which have adopted the technology know its potential and report a range of benefits. **More than half (60%)** of these businesses cite the primary benefit of the technology as its support with remote or flexible working practices. **40%** reported that cloud computing had improved their online security, and **40%** that it had enabled the digitalisation of paper systems.

Overcoming Barriers to Digital Adoption

Poland has demonstrated strong adoption of digital technology, especially AI, in 2023. However, Polish businesses have faced several critical barriers to embracing the technology that must be addressed: most notably, a gap between digital ambitions and capabilities.

The Digital Skills Gap: skills lagging behind aspirations

Though Polish businesses recognise the potential of digital, there is a clear divergence between digital aspirations and current digital skills. The Digital Decade target is for 80% of individuals to have basic digital proficiency by 2030, but in 2023 48% of Polish businesses reported that they are lacking in basic digital skills such as backing up data, using documents or spreadsheets, or researching a topic online.

Similarly, only 20% of Polish businesses reported that it is easy to find new hires with the necessary digital skills in recruitment processes, and just 25% of Polish businesses find it easy to adequately train existing employees with good digital skills.

This skills gap is hurting firms: 25% of Polish companies report that a lack of necessary skills within their business is a barrier to increased AI uptake, and 50% of the businesses believe that the difficulty sourcing new employees is negatively affecting their operations.

Polish citizens themselves are concerned about their lack of digital skills: 39% report that digital skills weaknesses are limiting their job opportunities, while 29% think this decreases their productivity at work.

To overcome this issue, Polish businesses are seeking to improve their employees' digital skills. Although an impressive 93% of Polish businesses report that they are offering some form of digital training to their employees (surpassing the 86% European average), only 26% are regularly implementing comprehensive digital training programmes for all employees.

Further investment in regular and comprehensive digital training for both technical and non-technical employees will be crucial, especially as businesses increasingly recognise the importance of digital skills. 72% of Polish firms report that digital skills will surpass university qualifications in hiring importance within the next five years.

48% report that they are lacking in basic digital skills such as sending emails or editing documents

Only 20% find it straightforward to hire new staff possessing strong digital skills

93% of Polish businesses report that they are offering some form of digital training to their employees

Polish businesses require flexibility in order to adopt AI

Greater flexibility of choice between AI providers would help a significant number of Polish businesses to increase their adoption of AI technology. **44%** of Polish businesses cited lack of choice between AI providers as a barrier to their adoption of AI technologies (above the European average of 39%), while **37%** cited a lack of ability to switch between AI providers.

In December 2023, the EU reached a provisional agreement on the AI Act, forming a broad legal framework for regulating the use of artificial intelligence. AWS supports government efforts to put in place effective risk-based legislation for AI that protects citizens and their rights, whilst also encouraging trust and allowing for continued innovation and practical application.

This research encourages policymakers to continue pursuing an innovation-friendly and internationally coordinated approach. AWS is committed to collaborating with the EU and industry to support the safe, secure, and responsible development of AI technology.

Citizens share excitement, but anxiety remains

Polish citizens believe AI has transformative potential for society, with **over half (54%)** of Polish citizens predicting that AI will leave a notable imprint on their lives within the next three years, slightly higher than the European average. They also anticipate wide-ranging impacts, foreseeing pivotal shifts across **healthcare (64%), education (64%), and transportation (64%)** in the next five years.

However, there is also concern in Poland about the development of AI, with **75%** of citizens reporting they feel at least a little concerned about AI. Much of this is driven by concerns about AI causing job losses - an issue which **46%** of citizens are worried about.

However, emerging research suggests that these fears are overstated. The World Economic Forum estimates that the impact of digital technologies on jobs is expected to be a net positive over the next five years, with AI expected to have a 25.6% net positive effect on job growth.[1] The key to unlocking a smooth transition within the workforce is ensuring that all are equipped with the right digital skills to be a part of the digital economy.

Conclusion

This study shows that there is clear potential for Poland to meet the European Commission's targets for AI adoption by 2030, if increased rates of adoption are maintained by Polish businesses. Polish businesses and citizens demonstrate clear excitement about AI's transformative potential and are looking to realise the benefits of new technologies. There is a clear recognition by businesses of the importance of investment in new technologies needed to deliver operational benefits.

Clear obstacles to digital adoption remain, most notably a lack of digital skills and citizens' concerns about possible job losses caused by AI. This study outlines some key recommendations to overcome these barriers and achieve the economic growth offered by digital adoption, giving businesses the opportunity to recognise the vast transformative potential promised by AI.

References:

1. The World Economic Forum (2023) 'Future of Jobs Report 2023'. Available at: https://www.weforum.org/reports/the-future-of-jobs-report-2023/

CASE STUDY
Cardiomatics

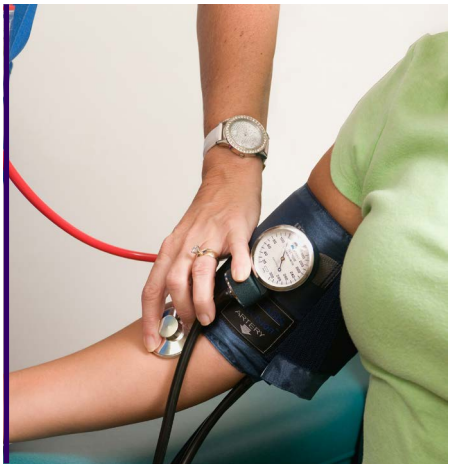
Cardiomatics: Transforming patient care with Cloud, AI, and Machine Learning

- 46% of citizens think that AI will have a positive impact on healthcare.
- 8 in 10 (80%) of businesses think that AI will transform healthcare in the next five years.

Cardiomatics is a Polish healthcare startup that uses cloud-based AI technology to analyse ECG signals with greater speed and accuracy than cardiologists. By transforming diagnosis with machine learning and AI, Cardiomatics can revolutionise patient access to healthcare.

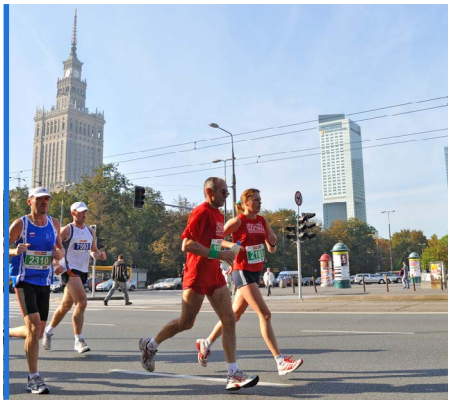
Core Features:

- **Accurate and Fast:** Cardiomatics is certified as Medical Device Class IIa (through Medical Device Regulation - MDR) and possesses certification so that professionals can use it for high precision diagnostics, and quickly: the diagnosis time went down by up to 80% compared to manual methods.
- **Secure:** Cardiomatics employs secure cloud technology to safeguard patient data and diagnostic information. This data security enhances patient confidentiality and ensures the privacy of sensitive healthcare information.
- **Powered by AI:** Cardiomatics uses AI algorithms, and has processed an extensive dataset of over 6 million hours of ECG recordings.



Key Advantages:

- **Accuracy:** Cardiomatics is classified as a CE-marked medical device, harnessing algorithms that have analysed large datasets. The effectiveness of Cardiomatics algorithms has been validated in clinical trials and ensures high accuracy.
- **Fast ECG Analysis:** Cardiomatics reduces the time of ECG analysis by up to 80% and facilitates diagnostics of more patients. Its speed outpaces manual analysis and offers a cost-effective solution.
- **User-Friendly:** The Cardiomatics software was specifically developed with digital technology to offer an intuitive interface and easy-to-read ECG reports. Thanks to Cloud connectivity, Cardiomatics is accessible anytime and anywhere with a web browser. As a hardware-agnostic platform for arrhythmia diagnostics, the technology is compatible with more than 25 common ECG recording devices enabling further accessibility.



How AI technology has helped Cardiomatics raise its business ambitions:

- AI technology has provided Cardiomatics with a new and unique model to disrupt the traditional cardiology healthcare methods. They are the only company that deploys this type of software in clinics with ECG experts.
- Cardiomatics has provided support to clinicians by increasing the flow of information, and increasing the speed and quality of the diagnostic process. This gives them the tools to provide high-quality healthcare to their patients.
- Cloud computing enables high levels of data security and privacy which means Cardiometrics can offer their products to support healthcare institutions.

Medical Device Regulation applies to any instrument, apparatus, appliance, software, implant, reagent, material or other article intended by the manufacturer to be used, alone or in combination, for human beings for a specific medical purpose. Further information: https://www.medical-device-regulation. eu/2019/07/10/mdr-article-2-definitions/