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LUXEMBOURG DIGITAL INNOVATION HUB
Member of EDIH European Digital Innovation Hubs Network

Survey results: Perspectives on AI and Generative AI in industry

The transformative potential of Artificial Intelligence (AI) and Generative AI (GenAI) is reshaping industries globally, and Luxembourg is no exception. To understand the specific impact and adoption patterns within industry, FEDIL, in collaboration with the Luxembourg Digital Innovation Hub (L-DIH) et Luxinnovation, conducted a comprehensive survey. This study sought to provide critical insights into the current landscape of AI and GenAI utilization, the existing levels of adoption, the barriers and opportunities encountered, and the essential training, upskilling, and funding requirements needed to enhance competitiveness and drive innovation. By gathering input from key stakeholders, this survey aimed to build a foundational understanding of how AI is shaping our industry, inform strategic advocacy, guide policy recommendations, and support the development of tailored resources for accelerated AI adoption in Luxembourg. The results presented herein offer a crucial perspective on the industry's journey towards AI integration, and highlight the collective effort required to drive innovation, advance workforce development, and shape policies that will ensure our industry's prosperity in the age of AI.

RESPONDANTS PROFILE

- The survey was conducted over a period of 6 weeks from 31 January 2025 to 14 March 2025.
- The total number of survey respondents is 114.
- The sectoral representation is distributed as follows:
  - 2,5% - Space & Defense
  - 3% - Energy & Green-Tech
  - 2% - Health & Wellbeing
  - 28% - Manufacturing Industry
  - 16% - Information & Communication Technologies
  - 13% - Construction and construction-related industries
  - 11% - Transport & Logistics
  - 9% - Consulting and Advisory services
  - 4,5% - Human Ressources services
  - 11% - Other service providers
- In terms of company size at the site(s) in Luxembourg, the distribution is as follows:
  - 19% - 1-10
  - 13% - 10-50
  - 22% - 50-100
  - 15% - 100-250
  - 23% - 50-1000
  - 8% - 1000+
- The functions that responded to the survey were primarily top management (58%), followed by middle management (31%), back office (10%), and front office (2%).

DEFINITIONS

The following definitions have been used to ensure a common understanding:

What is AI?
EU Artificial Intelligence Act's (AI Act) definition: *"an 'AI system' is defined as "a machine-based system that is designed to operate with varying levels of autonomy and that may exhibit adaptiveness after deployment, and that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments."*

What is Generative AI?
World Economic Forum's definition: "*Generative AI refers to a category of AI algorithms that generate new outputs including audio, code, images, text, simulations and videos, based on the data they have been trained on.*"

EXECUTIVE SUMMARY

Positive outlook

The survey results reveal a promising landscape for the adoption of Artificial Intelligence (AI) and Generative AI (GenAI) among companies:

- Respondents anticipate that AI will significantly enhance process optimization and control, while also driving financial gains. However, only a minority believe that AI will effectively address labor shortages. The expected benefits in cost savings and process efficiency are especially pronounced in the manufacturing sector, where 8 out of 10 companies expect tangible improvements.

- Most companies consider themselves relatively mature in their use of AI technologies. Notably, 27% of respondents have AI applications either in development or in production, while 23% are in the experimentation or proof-of-concept (POC) phase. In total, 63% of companies fall into the more advanced stages of AI maturity, reflecting a proactive approach to leveraging AI for business success.

- The manufacturing sector shows strong interest in AI, though with cautious execution. In contrast, technology-driven sectors such as Information and Communication Technologies (ICT) exhibit high levels of AI integration, underlining the importance of innovation in accelerating AI adoption.

- Generative AI is overwhelmingly seen as an opportunity by both companies and individual users. A majority of companies are embracing the GenAI revolution, recognizing its potential to boost productivity, improve customer service, and streamline internal processes. The survey highlights a strong trend toward using GenAI as a productivity enhancer and intelligent assistant for employees. Companies are applying GenAI in areas such as customer support, content creation, and internal chatbots. Widely used platforms like ChatGPT and Copilot reflect the expanding ecosystem of AI tools.

- Progress is also being made in the area of data and AI governance, with over half of companies taking a leading role. Implementing such governance policies helps ensure data integrity, regulatory compliance, and the mitigation of potential risks associated with AI deployment.

Challenges

Despite the optimistic outlook, several challenges continue to hinder widespread AI adoption:

- A key barrier is the difficulty of collecting reliable data, which is essential for fully leveraging AI's capabilities. This issue is particularly acute in sectors such as manufacturing, construction, and transport, where collecting field data presents practical challenges.

- Another major hurdle is the lack of internal expertise and difficulty in identifying high-impact use cases. Many companies also report that their current level of digital maturity is insufficient for effectively implementing AI solutions.

- There is a clear knowledge gap when it comes to understanding and applying AI, particularly in identifying relevant use cases. This gap is exacerbated by the uneven visibility of key players in the AI ecosystem, contributing to a lack of awareness and added operational pressure. Additionally, a mismatch between the supply and demand of AI training opportunities is limiting companies' ability to fully exploit AI technologies.

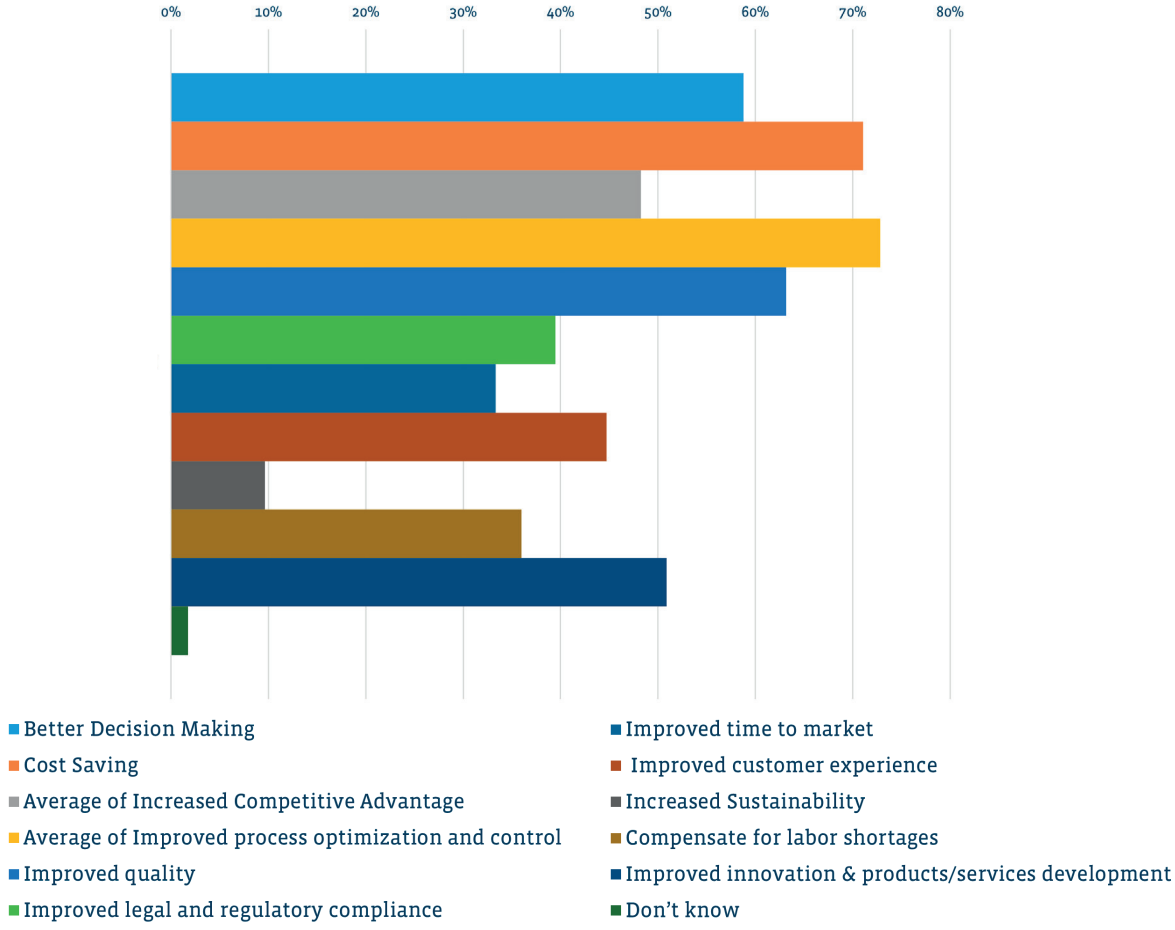
- A further concern is the low rate of local hosting for Generative AI, raising questions about data sovereignty and security. While some companies choose local hosting for these reasons, they remain in the minority. Furthermore, despite the presence of leading AI platforms, awareness of how these systems function remains limited. Many employees admit to using public GenAI tools for professional tasks, even in companies with established governance policies—highlighting a disconnect between policy and practice.

- Although over half of companies have adopted data and AI governance policies, indicating a strong commitment to responsible AI usage, many others have yet to follow suit. Broader adoption of such policies will be crucial for managing data quality, ensuring compliance, and addressing ethical and security concerns related to AI.

Conclusion

While companies are optimistic about AI's potential and are actively moving toward its adoption, key challenges must be addressed to ensure secure, effective, and widespread implementation. The survey underscores the urgent need for greater knowledge sharing, targeted training initiatives, and robust security and governance frameworks to support broader adoption of AI and GenAI technologies.

ASSESSMENT OF THE POTENTIAL BENEFITS BY ADOPTING AI TECHNOLOGY



Graphic 1

Companies expect to see the benefits of AI adoption at multiple levels

We began our survey by asking companies how they assess the potential benefits of AI in order to gain an overall view of market expectations.

The survey reveals a widespread expectation among businesses for AI to deliver multifaceted benefits.

Specifically, respondents anticipate that AI adoption will significantly enhance process optimization and control, while also driving financial gains. Furthermore, AI is expected to improve quality and facilitate better decision-making. However, it is noteworthy that only a minority of companies believe AI will effectively address labor shortages.

This data underscores a broad optimism regarding AI's potential to revolutionize various aspects of business operations, albeit with a recognition of its limitations in certain areas such as in sustainability. Indeed, it can be noted that AI is not yet perceived as contributing to increased sustainability.

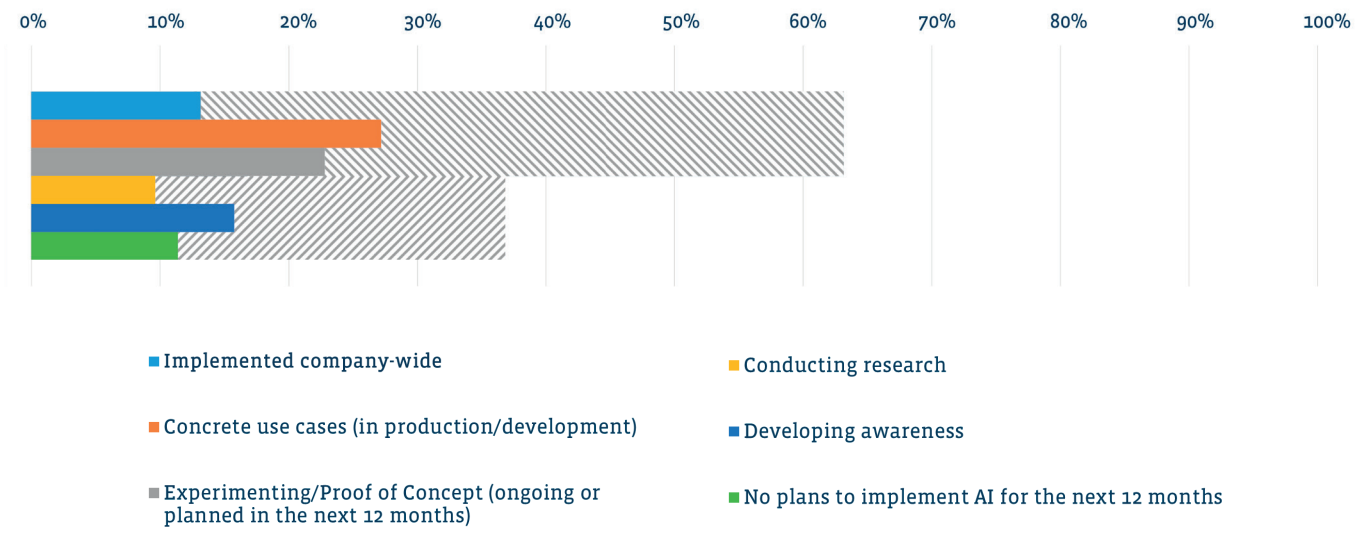
Only two organizations are not yet able to assess the potential benefits of AI.

Focus on the manufacturing sector

Looking more closely at the manufacturing sector, the overall trends observed in the total responses remain largely consistent. Cost saving, improved process optimization and control, and better decision-making continue to be the top three anticipated benefits.

However, the expected impact of cost saving and process optimization is particularly pronounced within this sector, with 8 out of 10 manufacturing companies expecting tangible gains in these areas.

MATURITY LEVEL REGARDING THE UTILISATION OF AI TECHNOLOGIES



Graphic 2

Companies consider they are mostly mature regarding the use of AI technologies.

The survey reveals a notable trend in AI adoption among businesses, with a significant portion already engaged in concrete AI use cases.

Specifically, 27% of respondents have AI applications in development or production, while 23% are in the experimentation and proof-of-concept (POC) demonstration phase. Furthermore, a substantial number of companies have successfully implemented AI at the company level, indicating a strong commitment to integrating these technologies.

Collectively, these more advanced companies, representing 63% of the survey participants, demonstrate a significant stride in AI utilization.

However, a contrasting segment of businesses (37%) is still in the nascent stages of AI adoption, exhibiting a lower maturity level. These companies are primarily focused on AI awareness initiatives, with 16% currently engaged in such efforts. This is particularly the case for the manufacturing sector, for which this figure stands at 23%. (Cf. graphic 3)

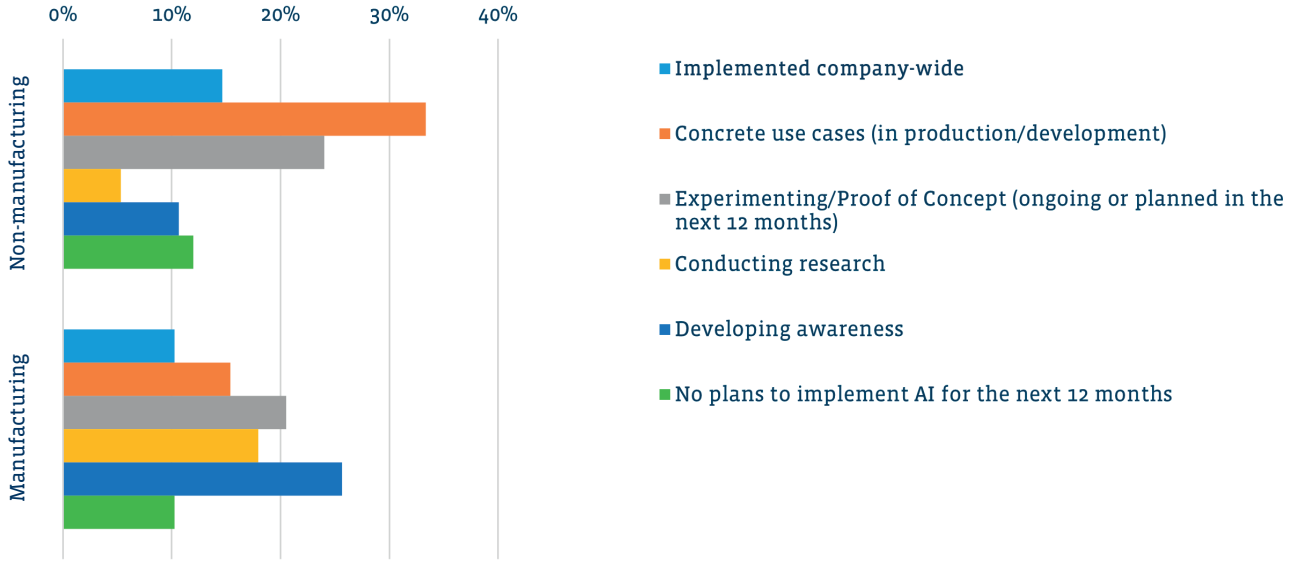
An important area for further exploration is how these companies plan to transition to practical AI adoption, including conducting studies and identifying applied use cases, and what support they require during this transition.

Interestingly, the survey also highlights a subset of respondents who do not plan to adopt AI technologies within the next 12 months. This raises pertinent questions about the reasons behind this decision, especially given the widespread adoption of AI across various maturity levels observed in the majority of participating companies.

We can conclude that if the levels “Implemented company-wide”, “Concrete use cases (in production/development)”, and “Experimenting/Proof of Concept (ongoing or planned in the next 12 months)” indicate a more advanced stage of AI maturity (63% in total) compared to “Conducting research”, “Developing awareness” and “No plans to implement AI for the next 12 months”, (37% in total), a trend towards predominantly mature organizations emerges.

Manufacturing sector, a strong interest but careful execution

In the manufacturing sector, the share of advanced companies is lower compared to the non-manufacturing sector. However, a significant number of companies are still in the exploration and learning phase, indicating strong interest in the topic. This is further supported by the fact that fewer manufacturing companies report having no AI implementation plan at all, compared to their non-manufacturing counterparts.



Graphic 3

Sectoral distribution

While the overall survey reveals a promising trend in AI adoption, a deeper dive into sector-specific data presents a more nuanced picture. Notably, the manufacturing sector lags behind, with less than half of the surveyed companies demonstrating AI maturity. Conversely, technology-driven sectors like Information and Communication Technologies (ICT) exhibit high levels of AI integration.

This sectoral disparity highlights a critical insight: AI adoption is predominantly propelled by industries at the forefront of technological innovation.

ASSESSMENT OF DATA AVAILABILITY AND READINESS FOR AI ADOPTION

Overcoming data collection challenges to unlock AI adoption

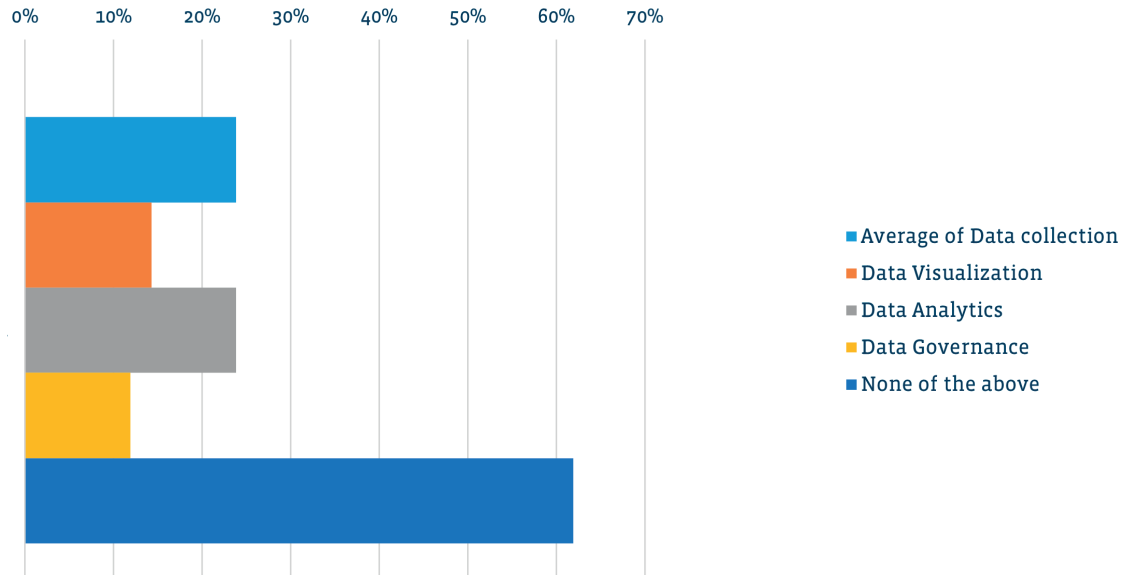
When specifically questioned about foundational data functions, a mere 24% of these companies, representing those with lower AI maturity (37% of respondents), reported having fully operational data collection capabilities. This highlights a critical impediment to their AI adoption, as data availability is a cornerstone of effective AI implementation.

Alarmingly, 62% of these companies reported a complete absence of basic data functions. This suggests a lack of understanding or effort in identifying and leveraging available or potential data sources. Consequently, the data foundation required for AI initiatives is severely lacking, hindering these companies' ability to progress in AI adoption.

A significant factor contributing to the slower adoption of AI in sectors such as manufacturing, construction, and transport is the inherent difficulty in collecting field data. Unlike industries where data is generated digitally by nature, these sectors often grapple with harsh operating environments and legacy equipment, making data acquisition a considerable challenge.

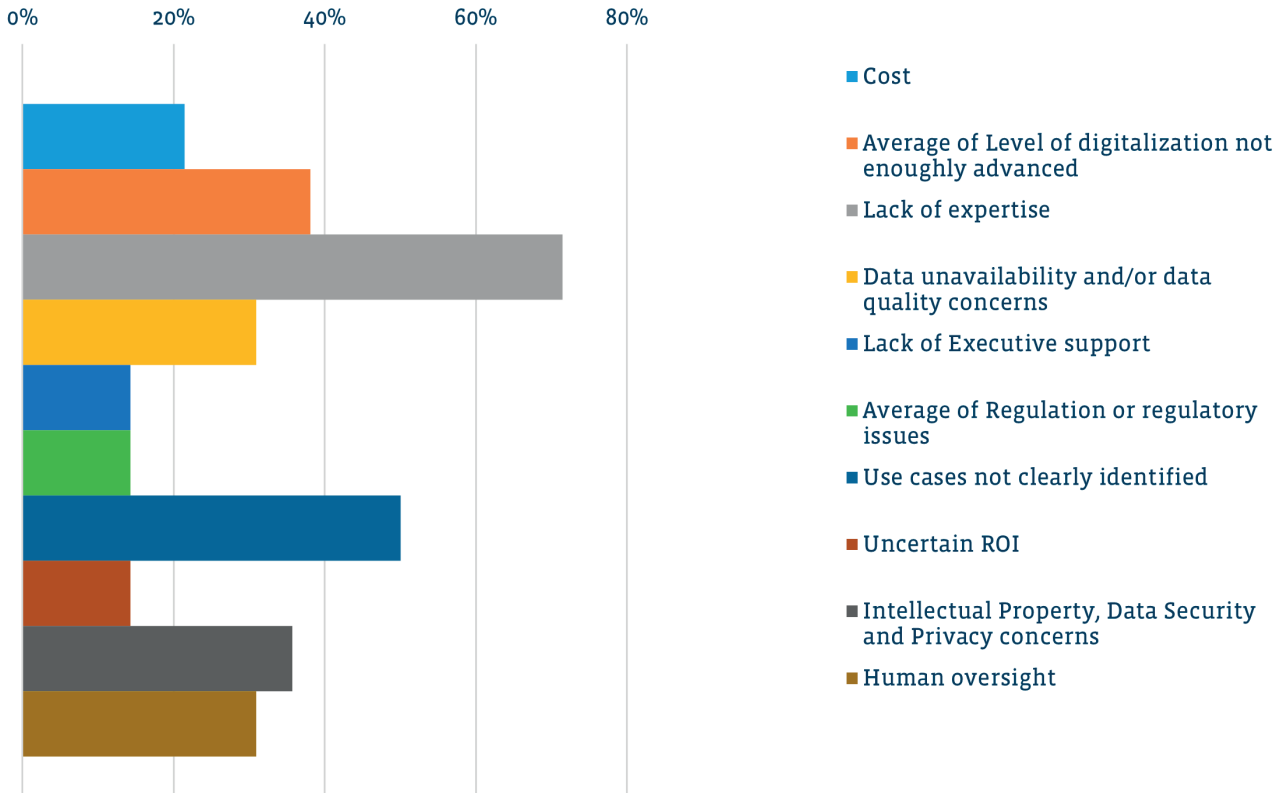
Furthermore, capturing the necessary data frequently requires significant investment in deploying appropriate sensors if they are not already in place. Even connecting existing machinery can be complex, often necessitating specialist expertise and disruptive production stoppages. These practical and financial barriers explain why these traditionally physical industries often lag behind their digitally native counterparts in establishing fundamental data functions.

This observation is directly corroborated by responses to a subsequent question in our survey, which identified data availability and quality as one of the top three roadblocks hindering AI implementation across all sectors. The specific challenges faced by manufacturing, construction, and transport in data collection underscore the critical need for tailored strategies and solutions to overcome these hurdles and unlock the potential of AI within these vital industries.



Graphic 4

TOP CHALLENGES TO BE OVERCOME FOR ADOPTING AI



Graphic 5

Top AI adoption challenges: expertise and use case identification

For a significant portion of companies with lower AI maturity, a critical obstacle to AI adoption is the lack of internal expertise. Compounding this challenge is the absence of clearly defined use cases.

This raises the question of whether this is due to a lack of preliminary work or an inherent difficulty in identifying relevant use cases, suggesting a potential need for external support.

This finding directly connects with the responses to our previous question regarding data collection and visualization capabilities which is as well identified as a challenge for AI adoption. As those results indicated a deficiency in fundamental data collection and visualization features, it naturally raises concerns about the potential for leveraging the available data. Without robust mechanisms for gathering and effectively presenting information, it becomes challenging, if not impossible, to fully explore its insights and derive meaningful conclusions. This foundational gap underscores a critical area for improvement to unlock the true value of the data assets.

Interestingly, our survey results reveal that cost does not rank within the top five obstacles hindering the adoption of AI. This suggests that while financial considerations are undoubtedly a factor, other challenges are perceived as more significant deterrents. This insight warrants further exploration to understand the primary hurdles that organizations face in embracing Artificial Intelligence.

By identifying these key barriers, companies can better focus their efforts on developing targeted strategies to facilitate wider AI adoption.

There is a clear need for targeted interventions to bridge the expertise and digitalization gaps, ensuring that companies of all maturity levels can effectively integrate AI technologies. disruptive production stoppages. These practical and financial barriers explain why these traditionally physical industries often lag behind their digitally native counterparts in establishing fundamental data functions.

Focus on the manufacturing sector

Focusing on the manufacturing sector, our findings indicate comparable trends in the perceived barriers and challenges to AI adoption, mirroring the broader survey results with a prominent concern being the lack of internal expertise.

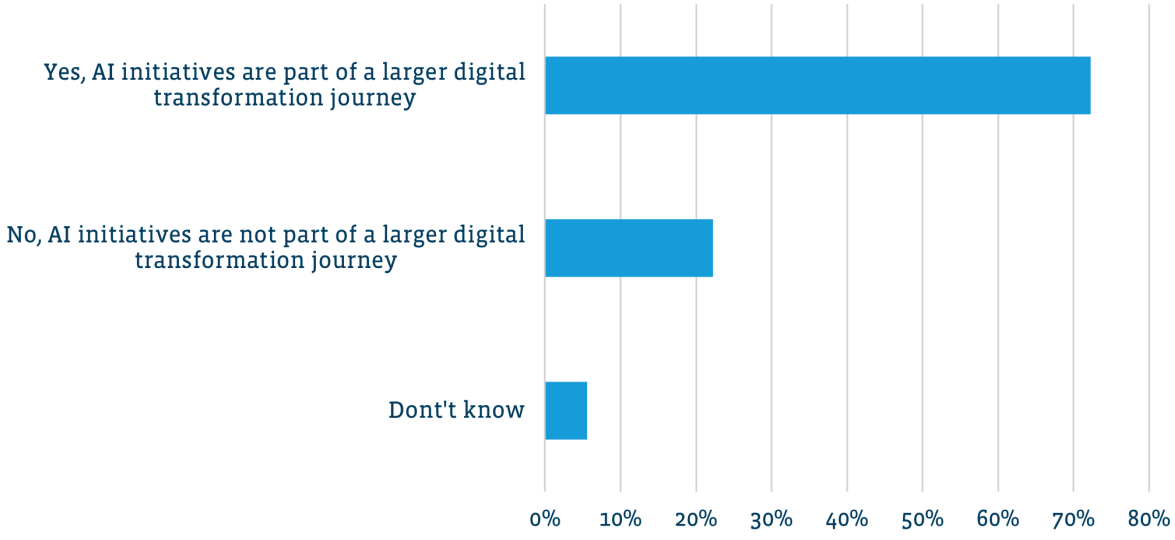
However, a noteworthy distinction emerges within this sector: a significantly higher percentage of respondents believe that their current level of digitalization is not sufficiently mature to effectively implement AI solutions.

In an era of increasing economic digitalization, it is imperative to continue supporting industry companies in their digitalization efforts and processes. This support is crucial to accelerate their AI adoption journey, enabling them to fully leverage the benefits of AI and maintain competitiveness.

This highlights a crucial prerequisite for AI adoption in manufacturing – a foundational level of digital infrastructure and maturity.

Addressing both the expertise gap and the perceived lack of digital readiness will be essential for facilitating the successful integration of AI within this industry. This also reinforces our earlier point about the fundamental need for data collection and visualization capabilities, as a low level of digitalization often implies shortcomings in these areas.

INTEGRATING AI INITIATIVES INTO THE DIGITAL TRANSFORMATION JOURNEY



Graphic 6

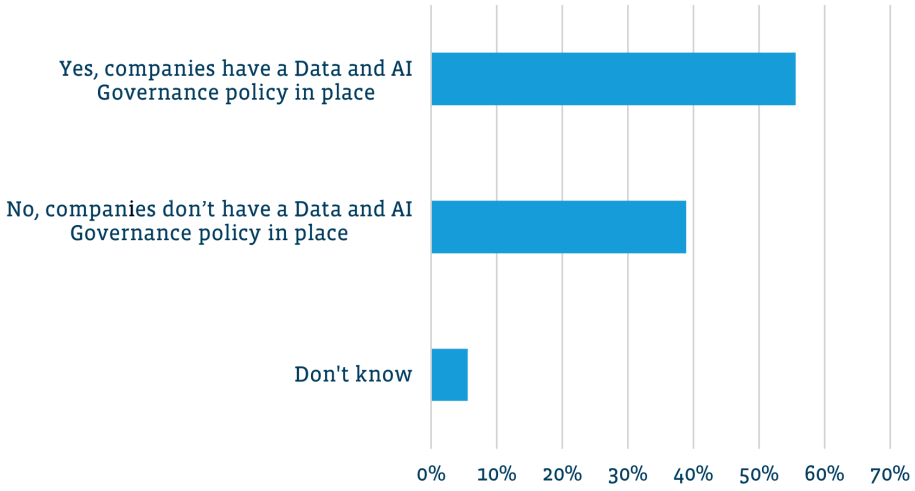
Mature companies integrate AI into digital transformation

Companies with a higher AI maturity level (63% of respondants) were specifically targeted with a set of focused questions.

Encouragingly, the vast majority of these companies have integrated their AI initiatives into a comprehensive corporate digitalization strategy. This indicates a strategic alignment of AI adoption with broader organizational digital transformation efforts.

This integration highlights a proactive approach among mature companies, where AI is not viewed as an isolated technology but rather as an integral component of their overall digital evolution.

DATA AND AI GOVERNANCE POLICY



Graphic 7

Governance in Data and AI: over half the companies lead, room for more to follow

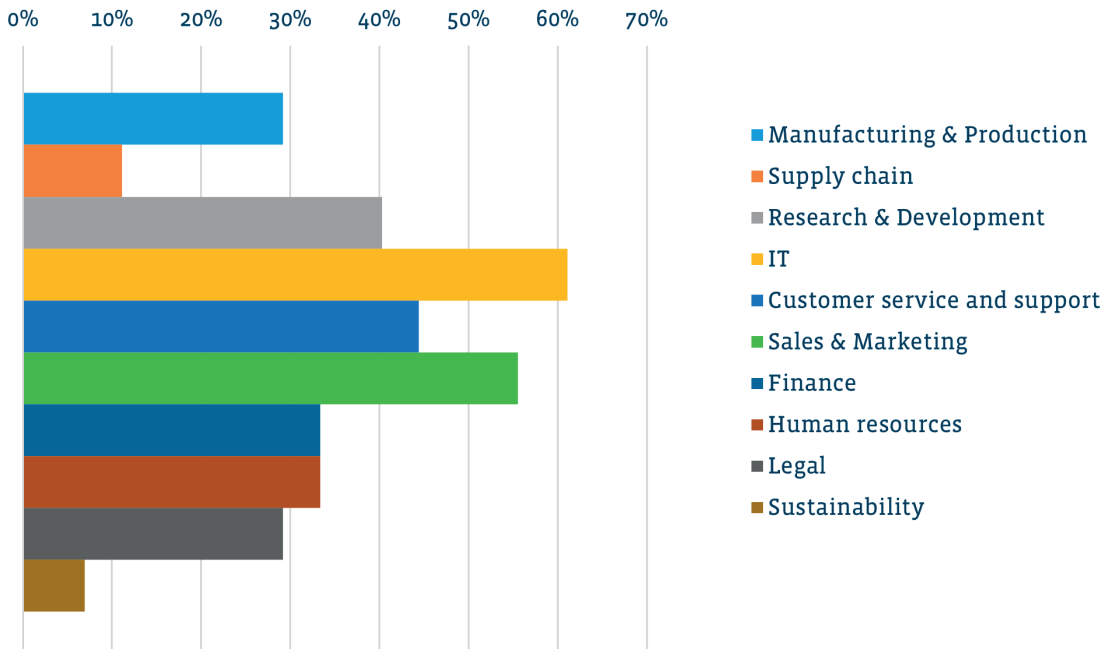
The survey results reveal that a commendable 56% of organizations have already established a data and AI governance policy, showcasing their commitment to responsible AI integration. This is a promising indicator of the growing recognition of the importance of governance in AI initiatives.

However, there is still an opportunity for improvement, as 45% of companies have yet to implement such policies. This presents a valuable chance for these organizations to enhance their digitalization strategies by developing comprehensive data and AI governance frameworks. By doing so, they can ensure the long-term sustainability and ethical implications of their AI initiatives are well-managed.

The findings emphasize the importance for companies to prioritize the creation and implementation of robust governance policies. This will not only align with their advanced AI integration but also support their overall digitalization efforts. Embracing these policies will help organizations manage data integrity, ensure compliance, and mitigate potential risks associated with AI deployment.

In conclusion, while many companies are on the right track, there is a significant opportunity for others to strengthen their strategic approach by adopting and enforcing data and AI governance policies. This will ensure the responsible and ethical use of AI technologies within their organizations, ultimately contributing to a more robust and sustainable digital future.

CORPORATE FUNCTIONS ADOPTING AI



Graphic 8

The AI adoption frontline: IT, sales, and customer service lead the way

For companies at the forefront of AI adoption, it is insightful to examine which corporate functions are leading the change in AI integration.

The survey reveals that IT department is the primary drivers of AI utilization. Sales and Marketing functions also demonstrate significant AI adoption, likely leveraging it for marketing content creation and sales argumentation. Customer service and support are other areas where AI is employed, notably through the implementation of chatbots. However, Manufacturing and Production functions exhibit comparatively lower AI adoption rates.

This data highlights a clear trend: AI deployment is heavily concentrated in technology-centric and customer-facing departments. The relatively slower adoption in manufacturing and production suggests potential areas for future growth and exploration in AI application within these sectors.

AI USE CASES: EMERGING TRENDS AND INSIGHTS

We asked more mature companies to share some used cases. The submitted examples paint a vibrant picture of the current landscape of AI adoption across various sectors.

Several key trends emerge, highlighting both the immediate applications and the future direction of AI integration within organizations:

1. **Focus on efficiency and automation:** A significant portion of the use cases centers around enhancing operational efficiency and automating routine tasks.
2. **Enhancement of human capabilities:** AI is increasingly being seen as a tool to augment human skills and productivity, rather than replace them entirely.
3. **Customer and employee experience improvement:** Several applications directly target enhancing interactions and experiences for both customers and employees.
4. **Industry-specific applications:** While many use cases are cross-industry, some examples highlight the tailored application of AI within specific sectors, namely manufacturing, HR and recruitment, legal and IT.
5. **Exploration of Generative AI:** The increasing mention of "GenAI" and tools like Microsoft Copilot indicates a growing interest in leveraging generative models for a wider range of tasks, from text generation and image creation to more complex problem-solving.

Key takeways:

The provided uses cases paint a picture of an evolving AI landscape characterized by widespread adoption, a pragmatic focus on return on investment, the empowering potential of augmentation, the disruptive force of GenAI, and a growing trend towards strategic integration. These key takeaways highlight a significant shift in how organizations are approaching and leveraging AI, signaling a future where this technology plays an increasingly central and transformative role in driving business success.

TANGIBLE AND PERCEIVED BENEFITS OF AI ADOPTION IN COMPANIES - TRENDS AND INSIGHTS

We asked respondents to explain the benefits that AI has brought to their companies when implemented.

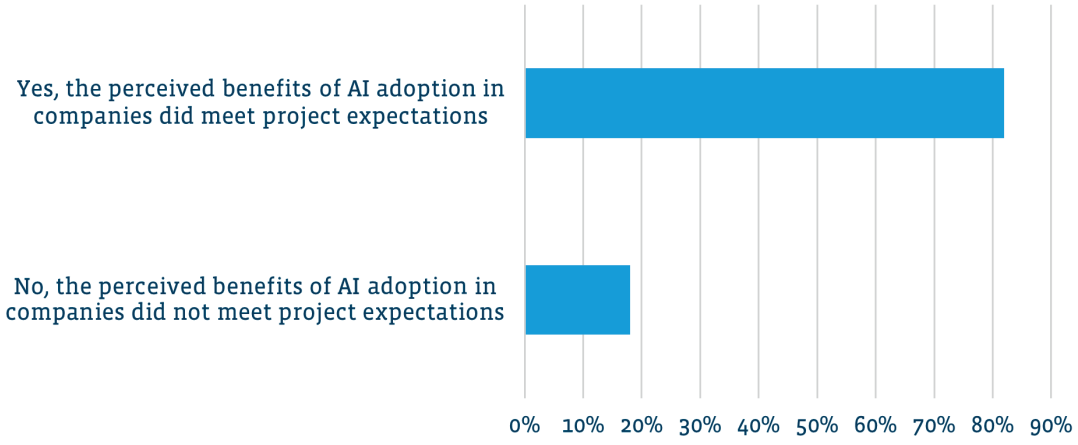
The responses overwhelmingly highlight a range of tangible benefits that companies are already experiencing or anticipate from their AI initiatives. The key trends emerging from these examples include:

1. **Significant gains in efficiency and productivity:** This is the most frequently cited benefit, manifesting in various ways such as process automation, time optimization and faster response times.
2. **Enhanced decision-making and insights:** AI is contributing to more informed and data-driven decision-making including improved data analysis and anticipating future trends.
3. **Improvement in quality and accuracy:** AI is contributing to higher quality outputs and reduced errors.
4. **Acceleration of innovation and development:** AI is speeding up crucial innovation cycles such as product development.
5. **Enhanced customer and employee experience:** AI is positively impacting both external and internal stakeholders.
6. **Cost reduction and resource optimization:** While not always the primary driver, cost savings are a significant outcome of AI adoption.
7. **Competitive advantage and new business opportunities:** AI is enabling organizations to differentiate themselves and explore new revenue streams, gaining a competitive edge or developing new business lines.

Key takeways:

The replies show a strong positive perceptions of AI benefits, particularly in terms of efficiency, productivity, and decision-making. It's also important to acknowledge the ongoing development and the need for strategic implementation, data quality, and internal expertise to fully realize the potential of AI. The increasing number of concrete examples demonstrates a shift from theoretical discussions to practical application and measurable results.

AI PROJECT SUCCESS IN COMPANIES



Graphic 9

AI delivers, but knowledge gaps persist: bridging the use case divide

One of the key takeaways from our survey is the positive impact of AI implementation when executed effectively. The data confirms that AI solutions are delivering on their promises, showcasing tangible benefits across various business applications.

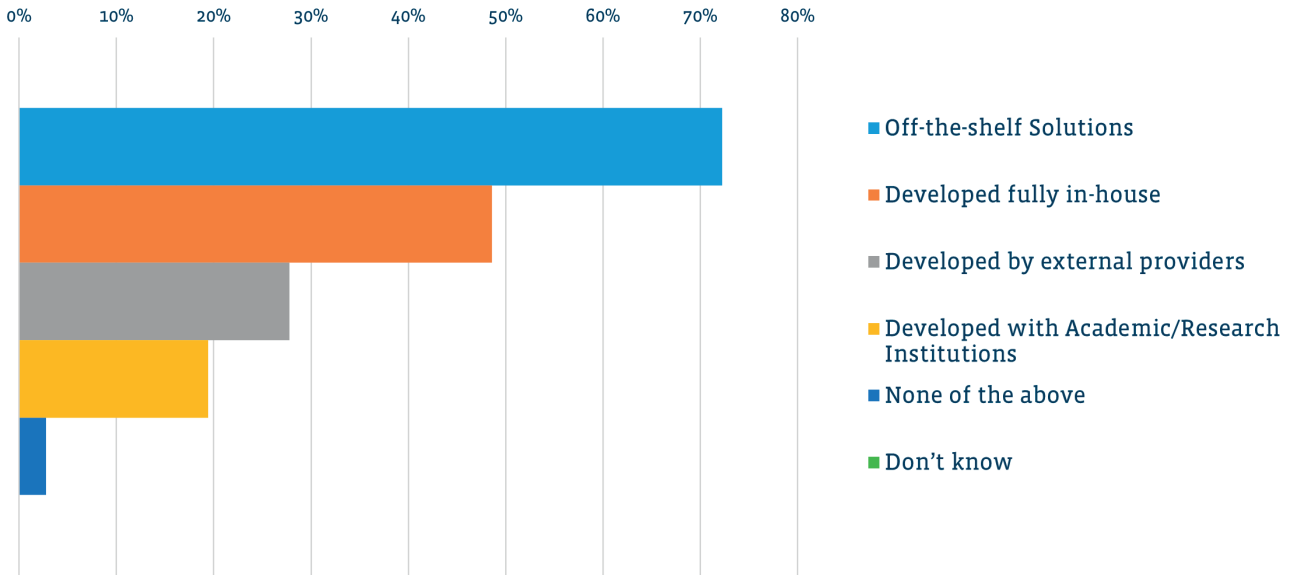
This success, however, is juxtaposed with the finding that 30% of respondents to graphic 5. reported a lack of identified AI use cases.

This discrepancy emphasizes the critical need for enhanced knowledge sharing and dissemination of best practices. By showcasing successful AI implementations, we can bridge this gap and accelerate the adoption of AI across all sectors.

*The **FEDIL AI Forum** is a dedicated platform launched in early 2024 by FEDIL to bring together its members around the topic of artificial intelligence. Open to AI users, developers, and integrators, the forum meets three times a year and serves as a collaborative space to share best practices, explore use cases, and discuss regulatory developments such as the EU AI Act. It also acts as a channel for collecting concerns and insights from companies, which FEDIL relays to national and European policymakers to help shape a supportive framework for AI innovation and adoption.*

For further information, contact Céline Tarraube, Adviser Digital & Innovation at FEDIL (celine.tarraube@fedil.lu).

SOURCES OF AI SOLUTIONS IN COMPANIES



Graphic 10

The multifaceted landscape of companies' AI solutions

To gain a deeper understanding of AI implementation within companies, it is crucial to examine the sources of AI tools and systems being utilized.

The survey findings reveal that a large majority of companies rely on commercially available AI solutions and tools. However, a significant portion of enterprises also engage in in-house development, suggesting the presence of substantial internal resources and expertise.

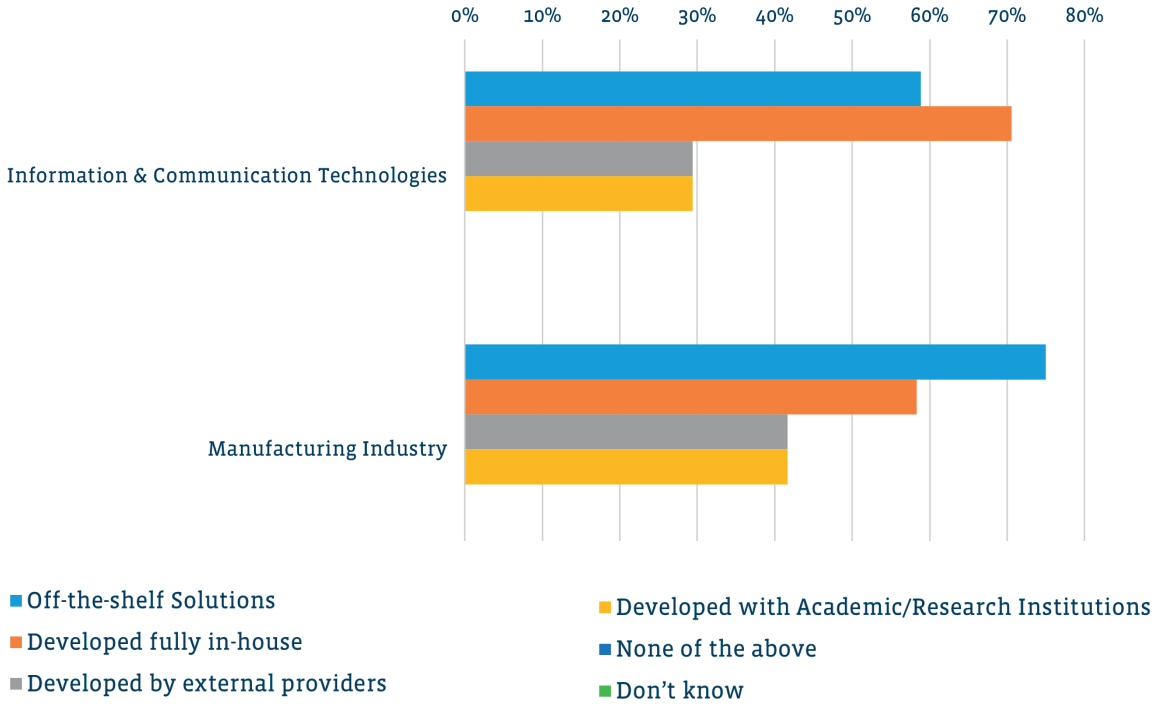
Intriguingly, a low percentage of AI software and solutions are developed in partnership with academic institutions and public research entities.

These results indicate a diverse landscape of AI sourcing, with a blend of off-the-shelf solutions, internal development, and collaborative research efforts. This diversity underlines the multifaceted nature of AI solutions and the varied pathways companies are taking to integrate AI into their operations.

Focus on manufacturing and ICT sectors

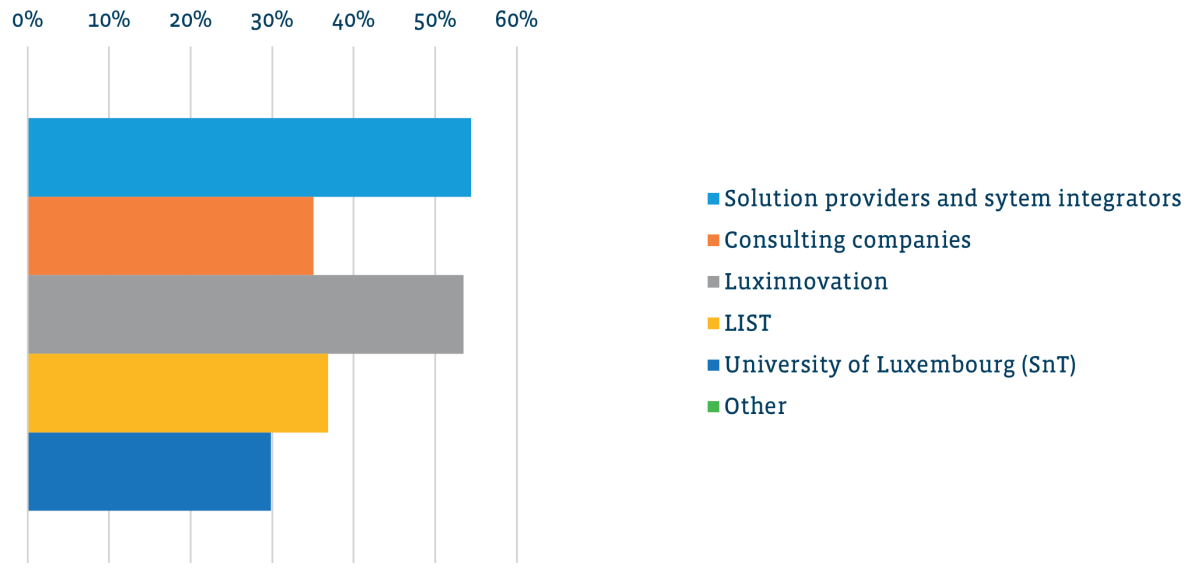
Our findings reveal a significant reliance on off-the-shelf AI solutions within the manufacturing sector. This preference directly correlates with the sector's identified challenge of lacking in-house AI expertise, as highlighted in graphic 5. This suggests that manufacturers are opting for readily available tools as a practical approach to AI integration, given their current skill gap. However, this strategy may limit their ability to leverage AI for highly customized or innovative applications.

In opposite, the ICT sector rely more on in house developed solutions. This is also the sector where the lack of expertise is not seen as a roadblock for AI implementation. Interestingly, the use of academics and external providers is similar in ICT and manufacturing.



Graphic 11

AI ECOSYSTEM IN LUXEMBOURG



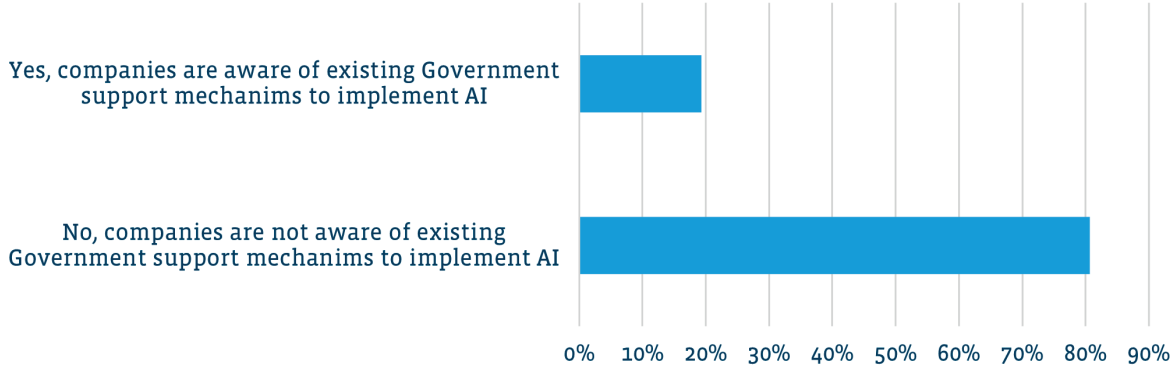
Graphic 12

Uneven spotlight: visibility gaps among key players in the AI landscape

Our survey reveals a notable disparity in the recognition of key players within the AI landscape. While solution providers, system integrators, and Luxinnovation enjoy a relatively high level of awareness at 54% each, consultants and public research institutions remain less visible.

This finding aligns with our observation from the previous question, which indicated limited collaboration between the public/academic research sector and the development of AI systems and solutions. This suggests a potential gap in awareness or engagement, highlighting an opportunity to strengthen connections between these sectors to foster greater AI innovation.

AWARENESS OF GOVERNMENT SUPPORT



Graphic 13

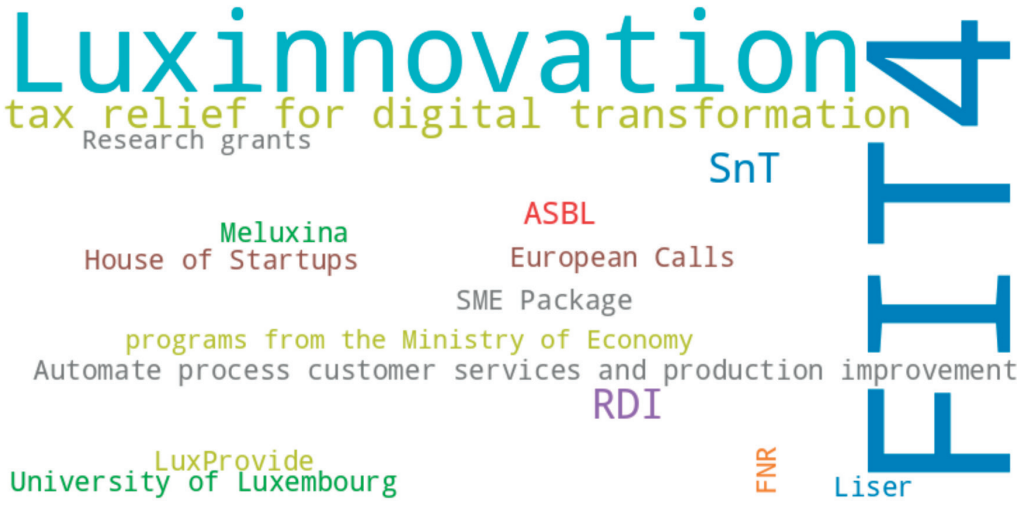
Connecting resources with reality: overcoming awareness and operational pressures in AI

A concerning trend emerging from our survey highlights a significant challenge in the dissemination of government-backed AI support mechanisms. Despite recent launches for some of these programs, the findings indicate that they are not effectively reaching their intended beneficiaries. This points to a critical communication gap that urgently requires attention. There is a clear need to reassess and enhance outreach strategies to ensure businesses are well-informed about the available resources designed to facilitate their AI journey (as a reminder, the survey has been conducted before large communication on Fit4AI tool).

However, we cannot ignore the daily reality within many companies, particularly in the manufacturing sector and among small and medium-sized enterprises (SMEs). Often, management teams are deeply absorbed in day-to-day operations, leaving limited time for strategic reflection. This lack of dedicated time to step back and consider long-term company evolution and external trends, including AI advancements, represents a considerable hurdle. This reality underscores the importance of change management and understanding how human behavior can significantly impact the success of digital transformation projects.

Addressing both the external challenge of awareness and the internal constraint of time for strategic thinking is essential to unlock the full potential of AI adoption across all sectors.

WIDELY RECOGNIZED SUPPORT MECHANISMS



Graphic 14

Unseen support: low awareness of AI mechanisms despite prominent players

Findings from the preceding question indicate a low level of awareness regarding available support mechanisms, with only 20% of respondents being knowledgeable about them. Furthermore, not all of this small group could actually identify a specific support mechanism.

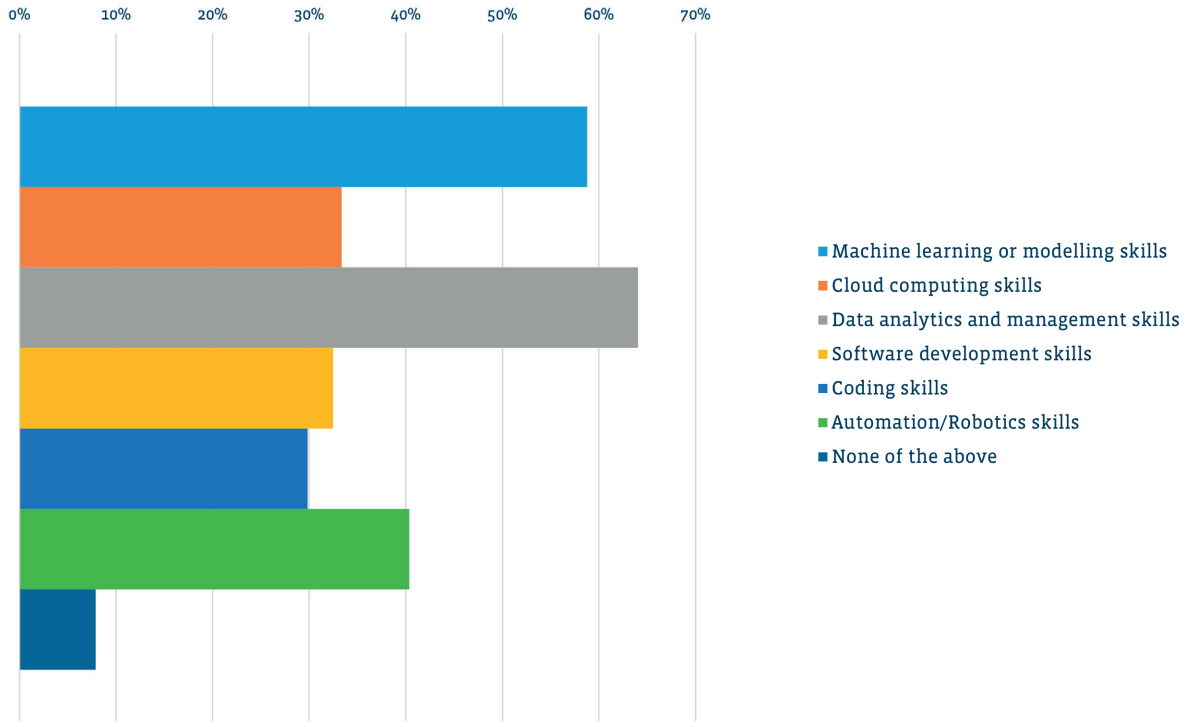
The word cloud provides a visual representation of the most frequently referenced initiatives and organizations. The terms **"FIT4"** and **"Luxinnovation"** appear most prominently, reflecting their high frequency of occurrence in the dataset. Other notable entries include **"tax relief for digital transformation"**, **"RDI"**, and **"SnT"**, suggesting their relevance within the context analyzed. Additional mentions such as **"University of Luxembourg"**, **"FNR"**, and **"House of Startups"** indicate a broader network of stakeholders, though with comparatively lower visibility. This visualization effectively highlights the dominant themes and key players.

For detailed information on AI support mechanisms, visit the Luxinnovation website at luxinnovation.lu or contact the team directly. They offer comprehensive guidance and a wide range of resources.

If you're a manufacturer, it's worth connecting with the Luxembourg Digital Innovation Hub (L-DIH) via dih.lu, which provides tailored support to help manufacturers innovate and grow.

For personalized assistance, don't hesitate to reach out to Luxinnovation — they can offer the specific insights and support you need.

REQUIRED AI SKILLS



Graphic 15

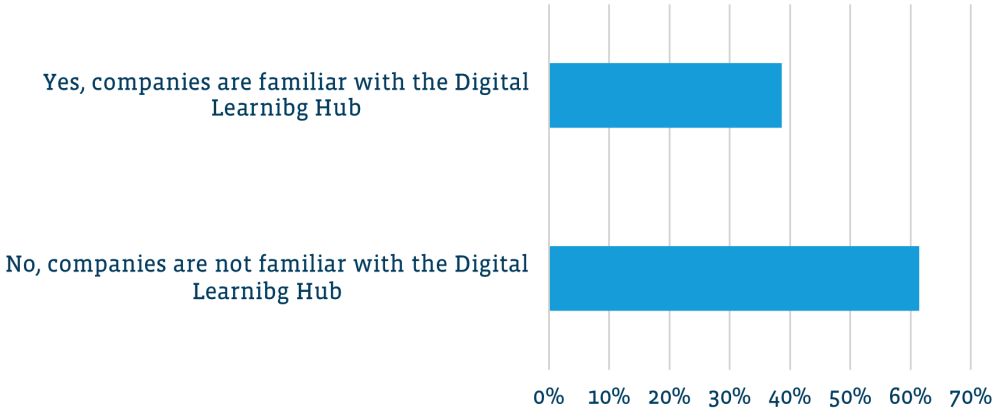
AI is shifting the skills that organizations need

A key finding of the survey highlights a significant lack of internal expertise as a major impediment to AI adoption, particularly among companies with lower AI maturity levels.

Specifically, most of these companies identified Data Analytics and Management Skills as the most crucial, closely followed by Machine Learning or Modeling Skills.

This data underscores the critical need for targeted training and development initiatives. Addressing this expertise gap is essential to facilitate AI adoption and ensure that companies with lower maturity levels can effectively leverage AI technologies.

DIGITAL LEARNING HUB OUTREACH



Graphic 16

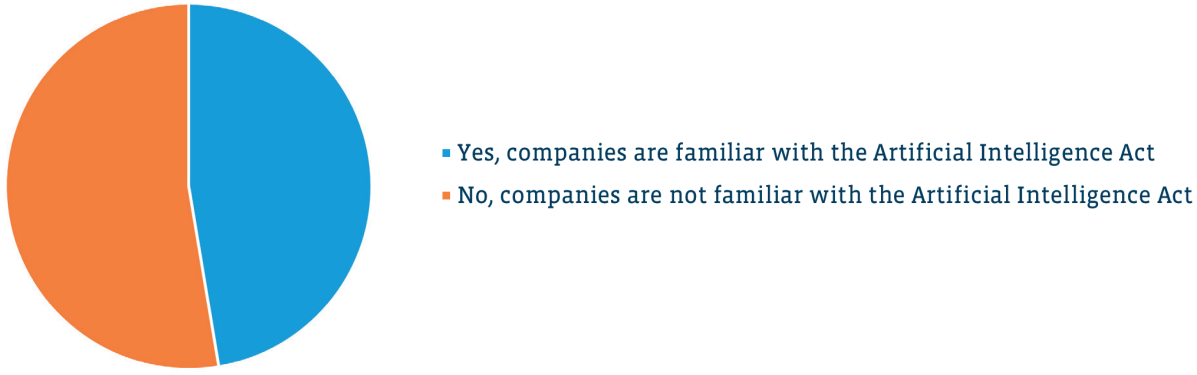
Supply vs. demand: the mismatch in AI training awareness

Our survey reveals a critical mismatch between the availability of AI training ressources and their utilization by businesses. While the Digital Learning Hub (DLH) possesses the capacity to address the majority of AI competence needs across various sectors, a substantial 61% of companies are unaware of its offerings. This disconnect between the supply of and demand for AI training is a critical finding.

Despite the DLH providing valuable AI training programs, its low visibility is impeding its potential impact. This is particularly concerning considering that a 'lack of expertise' emerged as the primary barrier to AI adoption in our earlier findings (graphic 5).

To effectively address this obstacle and facilitate broader AI adoption, the DLH must prioritize the development and implementation of enhanced communication strategies aimed at increasing awareness of its training programs and connecting with the businesses that could greatly benefit from them.

KNOWLEDGE LEVEL OF THE ARTIFICIAL INTELLIGENCE ACT (AI ACT)



Graphic 17

The AI Act: still under the radar for many companies

Our survey indicates a relatively low level of awareness regarding the European Union's AI Act among the surveyed organizations. This limited recognition is likely attributable to the regulation's recent enactment and its ongoing, phased implementation schedule. As the AI Act is still in its early stages of application, it is understandable that its provisions and implications have yet to become widely known and fully understood across the business landscape. As the Act's various stages come into effect, we anticipate a corresponding increase in awareness and understanding among organizations navigating the evolving regulatory environment for artificial intelligence.

Highlights:

The Information & Communication Technologies sector stands out with the highest combined percentage of familiarity and expertise (13%), indicating a strong understanding of the AI Act within this sector.

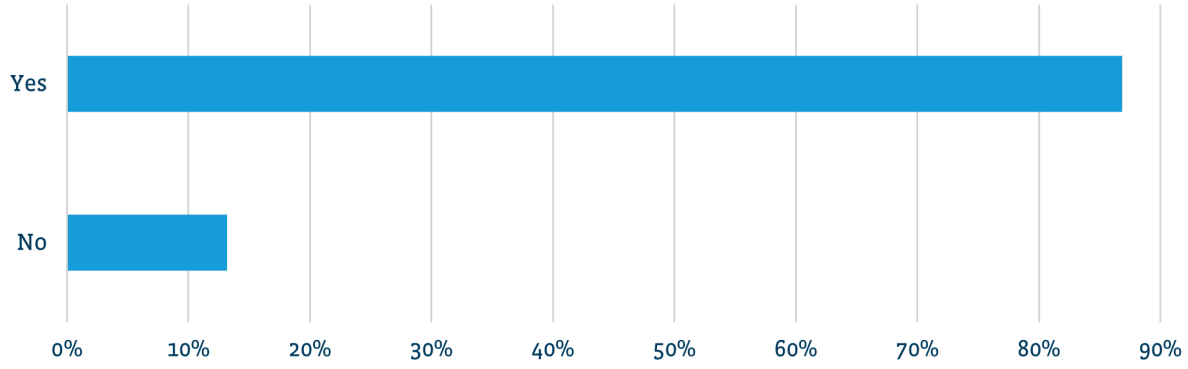
The Manufacturing Industry has the highest percentage of respondents who are not really familiar with the AI Act (75.86%), suggesting a need for increased awareness and education in this sector.

The Consulting and Advisory services sector shows a balanced distribution with a notable percentage of experts (44.44%), highlighting the sector's depth of knowledge and expertise in the AI Act.

The EU Artificial Intelligence Act

The EU AI Act is the world's first comprehensive regulation on Artificial Intelligence. Its aim is to ensure that AI systems used in the EU are safe, respect fundamental rights, and foster trust in innovation. It establishes a risk-based approach, classifying AI systems based on their potential harm into four levels of risk - unacceptable, high, limited, and minimal - and imposes stricter requirements for high-risk applications. This regulation aims to foster trustworthy AI, ensuring safety and respect for fundamental rights, while also promoting innovation within the European AI ecosystem.

USE OF GENERATIVE AI PUBLIC TOOLS AMONG EMPLOYEES



Graphic 18

Employees in organizations admit to using public GenAI tools for professional purposes

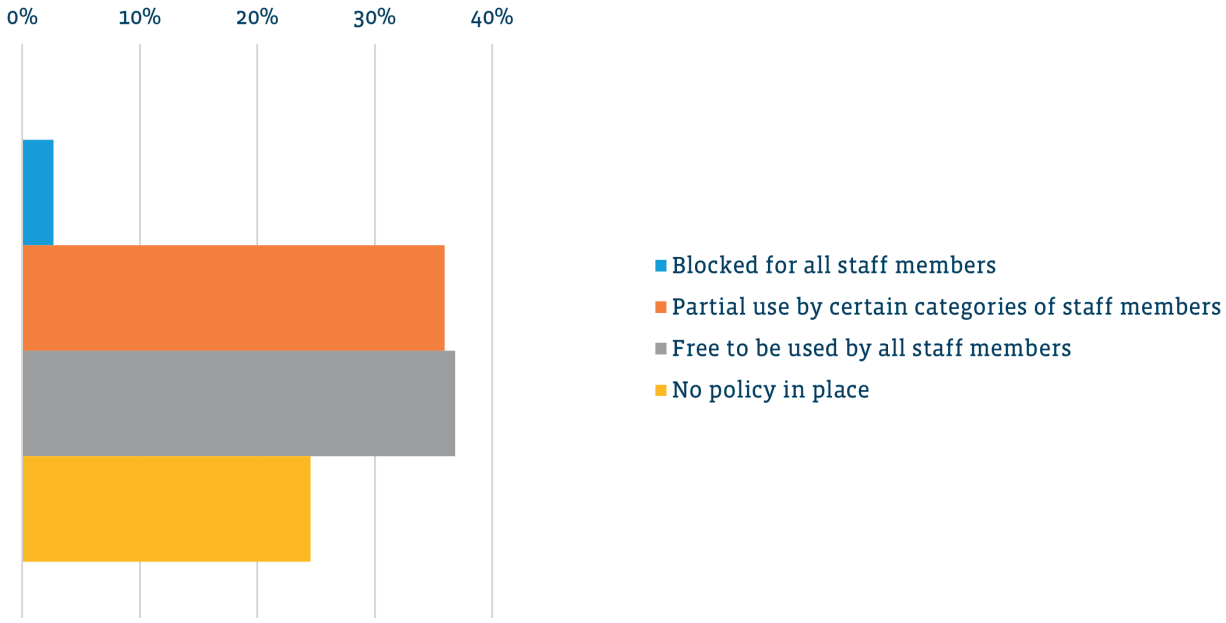
A striking finding from our survey reveals that a large majority, 87% of respondents, are utilizing public GenAI tools for professional tasks.

While the accessibility and utility of these tools are evident, this widespread adoption raises significant concerns regarding the handling of sensitive organizational data. Public GenAI platforms typically leverage user-inputted information to refine their models, creating a potential pathway for confidential data to be exposed or utilized in unintended ways. The ramifications of such data leaks could be severe, leading to substantial financial losses, damage to reputation, and breaches of regulatory compliance. This prevalence of public GenAI tool usage underscores an urgent need for comprehensive employee education initiatives. Organizations must prioritize training their staff on the appropriate and secure use of these technologies, clearly outlining the inherent risks associated with sharing sensitive information and establishing clear guidelines for their application in a professional environment.

However, contrary to popular belief on this subject, it shows that employees are not averse to using digital tools in their day-to-day professional tasks to improve their productivity.

These survey results underscore the critical need for companies to catch up with the rapid adoption of GenAI tools by their employees.

CORPORATE POLICIES REGARDING GENERATIVE AI



Graphic 19

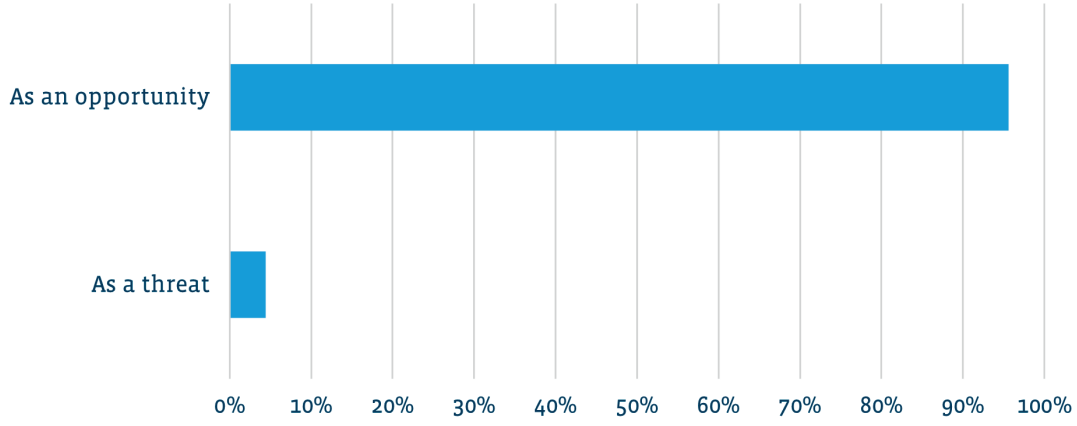
Policy vs. practice: public GenAI use thrives even where governance exists

Our survey reveals a potentially significant disconnect between stated data and AI governance policies and the actual usage of public GenAI tools within organizations. Surprisingly, a third of companies claiming not to have a data and AI governance policy in place still permit their staff to use public GenAI without any formal guidelines.

Even more noteworthy is that over 50% of companies that do claim to have a data and AI governance policy in place also allow their staff to utilize public GenAI tools. This high rate of usage among organizations with established policies raises questions about the comprehensiveness and enforcement of these guidelines. It begs the question: are these policies truly robust, or are companies primarily relying on the assumed caution and digital literacy of their employees, perhaps without specific training on the risks associated with public GenAI?

In stark contrast, only a mere 3% of surveyed companies have actively blocked the usage of public GenAI tools. This minimal level of restriction should be considered alongside our earlier finding that a significant portion of companies either lack a data and AI governance policy altogether (56% of AI-implementing companies and 12% of non-AI-implementing companies). The widespread allowance of public GenAI, even within companies claiming to have governance, suggests a potential underestimation of the associated risks or a significant gap between policy and its practical implementation.

PERCEPTION ON GENERATIVE AI

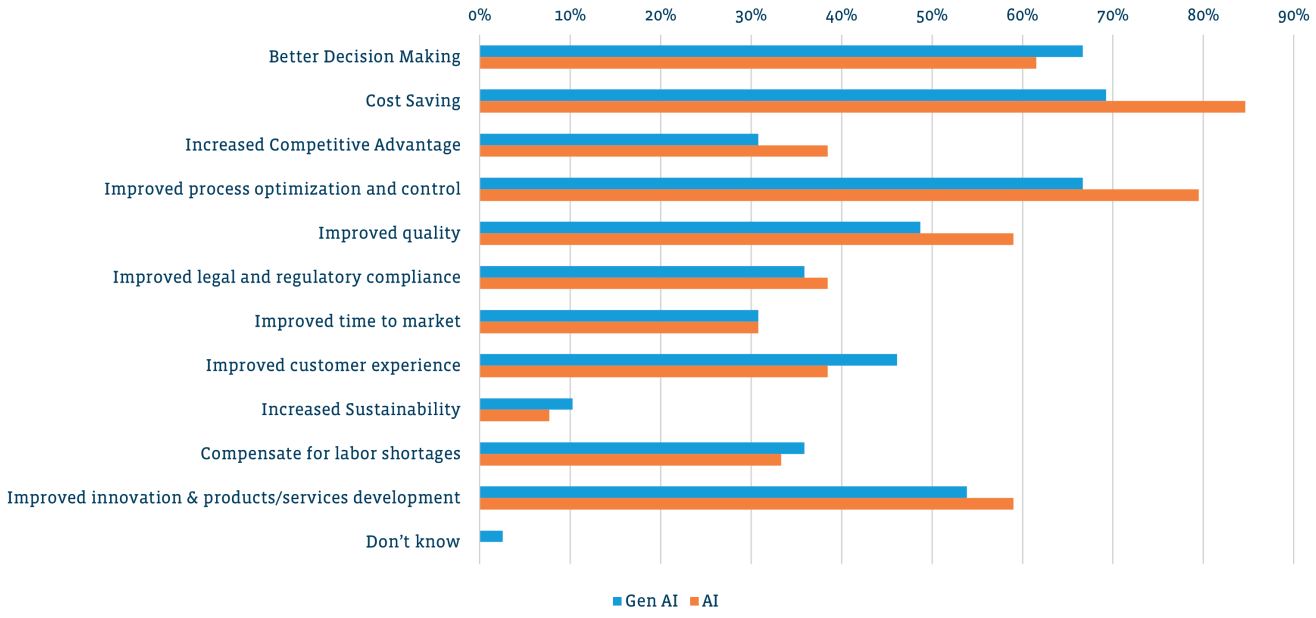


Graphic 20

GenAI: opportunity wins over threat in companies and user perceptions

A significant finding from our recent survey underscores the generally positive sentiment surrounding GenAI. Contrary to potential concerns about disruption or negative impact on jobs, our data indicates that GenAI is overwhelmingly perceived as an opportunity by both companies and individual users. This unified perspective suggests a readiness to explore and leverage the potential benefits of this technology across various applications. This positive framing is crucial for fostering innovation and encouraging the adoption of GenAI solutions, indicating a receptive environment for its continued development and integration into business processes and daily life.

ASSESSEMENT OF POTENTIAL BENEFITS OF GENERATIVE AI



Graphic 21

GenAI's expected gains: mirroring AI benefits, but a customer experience question mark

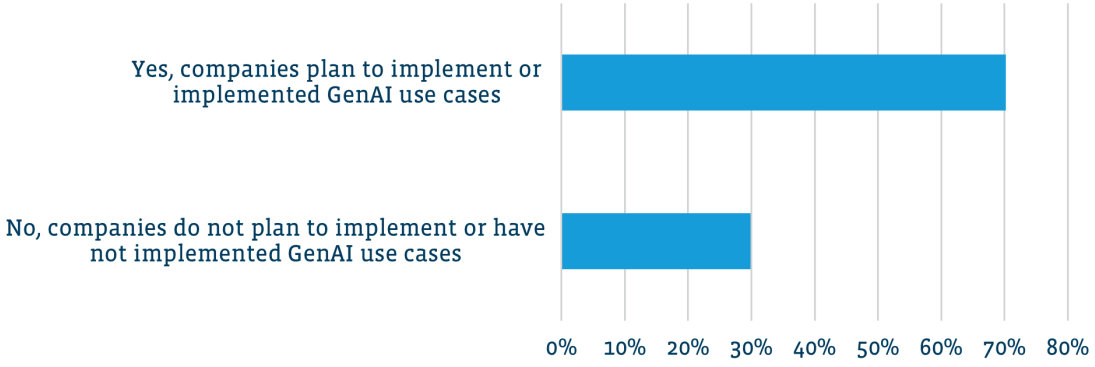
To gain a more focused understanding of the perceived impact of GenAI, we posed a question mirroring our earlier inquiry on general AI benefits, this time specifically targeting GenAI applications.

Interestingly, the trends in the anticipated advantages of GenAI are noticeably similar to the broader expectations surrounding AI. Respondents foresee similar gains in areas such as improved process optimization and control, cost saving, and better decision making.

However, one might have anticipated a more significant emphasis on "improved customer experience" as a key expected benefit of GenAI. Given the proliferation of GenAI tools designed for customer interaction, personalization, and support currently available, this area appears to be less prominently featured in the initial expectations of our respondents. This suggests perhaps a current focus on internal efficiency gains before broader customer experience applications are fully embraced.

Further investigation into the specific GenAI tools are being considered and the strategic priorities of these organizations could shed more light on this finding.

PLANS TO IMPLEMENT OR IMPLEMENTED GENERATIVE AI USE CASES



Graphic 22

The GenAI revolution: a majority of companies are on board

A significant majority (70%) of participating companies indicate a strong trend towards the adoption of Generative AI (GenAI). This substantial figure reveals that a considerable proportion of organizations have either already integrated GenAI use cases into their operations or have concrete plans to do so in the near future. This high level of current and planned GenAI implementation underscores the growing recognition of its potential value across various business functions and suggests a rapid acceleration in the integration of this technology within the surveyed companies. This widespread interest signals a pivotal shift towards leveraging the capabilities of GenAI to drive innovation, efficiency, and potentially new business models.

We asked the 30% of respondent organizations that do not plan to implement GenAI use cases to explain their reason(s) for this.

Key takeways:

The primary reasons for non-adoption of GenAI among the 30% of respondents are the prioritization of other strategic projects and a lack of clearly identified and relevant use cases. Concerns around data readiness and security/confidentiality also play a significant role. Furthermore, a lack of awareness or understanding of GenAI's potential is a contributing factor for some. This suggests that while there is considerable enthusiasm for GenAI among the majority, a significant portion of organizations are either focused on other priorities, need more clarity on how GenAI can benefit them, or have concerns that need to be addressed before considering implementation. This highlights the ongoing need for education, successful case studies, and robust security frameworks to encourage broader adoption.

MAIN GENERATIVE AI USE CASES

The responses from organizations already implementing or planning to implement GenAI (70%) reveal a diverse range of applications, with several key trends emerging:

1. **Enhancing productivity and workflow with AI assistants:** A significant number of respondents are leveraging or planning to leverage GenAI as a personal or team assistant, often through tools like Microsoft Copilot and internal chatbots.
2. **Improving customer service and support:** Several organizations are focusing on using GenAI to enhance their customer interactions with AI Chatbots for customer support, i.e. providing documentation, services, and general assistance to clients or by improving the quality of customer deliverables, i.e. using GenAI to generate higher-quality content for customers.
3. **Automating internal processes:** GenAI is being explored for automating various internal.
4. **Supporting research and revelopment (R&D):** GenAI is seen as a valuable tool for innovation in technology scouting or generating ideas and solutions.
5. **Facilitating communication and content creation:** GenAI is being used to improve both internal and external communication.
6. **Industry-specific applications:** Some use cases highlight tailored applications within specific sectors including legal, HR and manufacturing.
7. **Exploration and experimentation:** Several organizations are still in the testing and evaluation phases, indicating a cautious yet active approach to identifying further applications of GenAI.

Key takeways:

We can emphasize the strong trend towards using GenAI as a productivity enhancer and intelligent assistant for employees. The focus on improving customer service and automating internal processes also stands out. While still in the early stages for some, the exploration of GenAI in R&D and content creation highlights its potential for innovation and communication. The presence of industry-specific applications suggests a growing understanding of how GenAI can address unique business needs. Overall, the responses indicate a broad interest in leveraging GenAI to improve efficiency, enhance user experience, and drive innovation across various organizational functions.

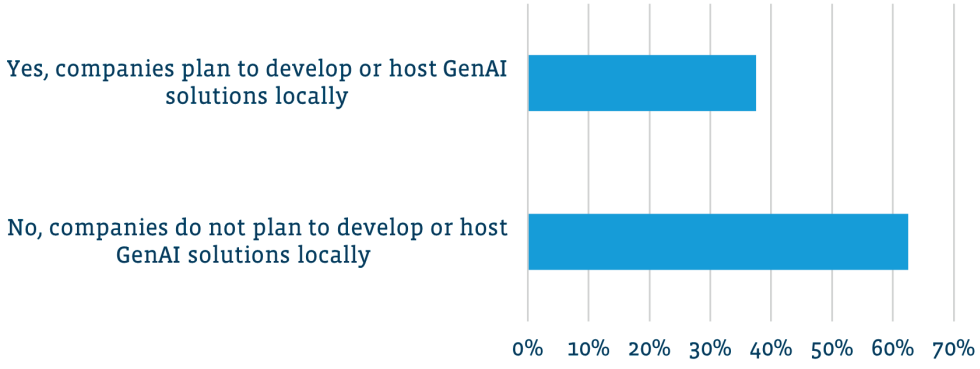
ANALYSIS OF POPULAR GENERATIVE AI PLATFORMS AND PROVIDERS: KEY TRENDS

The responses clearly indicate a concentration around a few dominant platforms and providers in the GenAI landscape:

1. **Dominance of ChatGPT:** ChatGPT emerged as the most frequently mentioned platform, with companies leveraging its capabilities for various applications, including customer support, content generation, and internal chatbots.
2. **Popularity of Copilot:** Copilot is another widely used tool, mentioned multiple times in the survey. Companies are utilizing Copilot for coding assistance, project planning, meeting management, and more.
3. **Azure OpenAI and Microsoft Azure:** Azure OpenAI and Microsoft Azure are prominent platforms for accessing GenAI solutions. These platforms provide robust infrastructure and advanced AI capabilities, enabling companies to develop and deploy AI-powered applications.
4. **Experimentation and evaluation:** Several companies are in the experimentation phase, testing different AI tools and evaluating their potential use cases. This trend indicates a cautious approach to AI adoption, with companies seeking to understand the benefits and challenges before fully integrating AI solutions into their operations.
5. **Internal and custom solutions:** Some companies have developed internal AI engines and dedicated tools for specific functions. These custom solutions are tailored to meet the unique needs of the organization, providing flexibility and control over AI implementation.
6. **Security and confidentiality concerns:** Security and confidentiality remain critical considerations for companies when adopting AI solutions. Concerns about data privacy, intellectual property protection, and compliance with regulations influence the choice of AI platforms and providers.
7. **Diverse range of providers:** The survey revealed a diverse range of AI providers, including Google AI Studio, IBM, OpenAI, and various in-house solutions. This diversity reflects the growing ecosystem of AI technologies and the availability of multiple options for companies to choose from.
8. **Future plans and integration:** Companies are planning to implement AI modules from providers like SAP and collaborate with AI providers to develop market solutions. These future plans highlight the ongoing efforts to integrate AI into business processes and enhance operational performance.

These findings highlight the transformative potential of generative AI in various sectors, driving efficiency, innovation, and improved customer experiences. As companies continue to explore and implement AI solutions, the impact on productivity and operational performance is expected to grow.

DEVELOPING AND HOSTING GENERATIVE AI LOCALLY



Graphic 23

Sovereignty and security at stake? The low local hosting rate for GenAI

Our recent survey of companies exploring GenAI has revealed a potentially concerning trend regarding data control and sovereignty. We found that only 38% of respondents indicated plans to develop or host their generative AI solutions locally. This figure is surprisingly low when one considers the increasing importance and debate surrounding data sovereignty. The preference for external hosting options, while potentially offering scalability and cost benefits, raises questions about the control and security of sensitive data, as well as adherence to local regulations. Further analysis is needed to understand the driving factors behind this preference and the strategies companies are employing to mitigate potential sovereignty risks.

The sovereignty and security-focused minority: why some choose local GenAI hosting.

Interestingly, when we delved deeper into the motivations of the 38% of companies planning local development or hosting, the primary drivers cited were data security and sovereignty. These factors clearly hold significant weight for this segment of the market. This response suggests a distinct awareness among these businesses regarding the critical importance of maintaining control over their data, particularly in the context of advanced AI technologies. While the majority currently lean towards external solutions, the emphasis placed on security and sovereignty by the minority indicates a growing understanding of the potential risks and implications associated with off-premise generative AI deployments. This divergence in approach highlights the complex considerations businesses are navigating as they integrate generative AI into their operations, balancing the benefits of scalability and cost-efficiency with the crucial need for data control and regulatory compliance.

About FEDIL

Founded in 1918, FEDIL is a multisectoral business federation giving a voice to industrialists and entrepreneurs, fostering Luxembourg's economy. Today FEDIL represents more than 750 members, 37 sectors of activity and 22 sectoral associations. Regarding Luxembourg's ecosystem, the federation's members stand for 95% of industrial manufacturing, 75% of private research activity, 25% of employment and 35% of GDP. FEDIL is a member of Union des Entreprises Luxembourgeoises (UEL) and of BusinessEurope. www.fedil.lu

About Luxinnovation

Luxinnovation is Luxembourg's national innovation agency. Its mission is to raise companies' awareness of innovation and support them in their innovation projects, as well as to attract new foreign innovative companies to Luxembourg. It also contributes to the development of the economy as a whole by identifying innovation opportunities and promoting collaborative innovation projects that stimulate the development of a sustainable, competitive and digital economy. Luxinnovation is a public-private partnership acting under the aegis of the Ministry of the Economy in collaboration with the Ministry of Research, the Ministry of Foreign Affairs, the Chamber of Commerce, the Chamber of Skilled Crafts and FEDIL - The Voice of Luxembourg's Industry. www.luxinnovation.lu

About L-DIH

The Luxembourg Digital Innovation Hub (L-DIH), managed by Luxinnovation, helps by addressing the digital transformation of the Luxembourg industry with networking, innovation skills and trainings, "test before invest" services and support to find investment at local and European levels. L-DIH have unique competences in high performance computing, cybersecurity and artificial intelligence. www.dih.lu

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