Charting the Future: Switzerland's Path to Generative AI Leadership in 2024 and Beyond

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This report sets out the findings of a proprietary survey on exposure, adoption, and attitudes towards usage and regulation of Artificial Intelligence (AI) and generative AI (GenAI) in Switzerland in 2024. It also shares the expert insights of our co-authors and leaders from business, academia, and the public sector captured at two dedicated workshops on disruptive technologies, including GenAI, in October and November 2023.

- Survey of 279 Swiss professionals led by IMD in November 2023[1].
- Digital Xchange Workshop on AI and Continuing Education workshop hosted by EPFL in October 2023[2].
- Digital Xchange Workshop on AI Framework workshop hosted by digitalswitzerland in November 2023[3].

Collectively, through our 2023 survey and expert-led workshops, we find that AI, and specifically GenAI, is already in widespread use in Swiss homes and organizations. While adoption and attitudes towards its potential benefits are largely positive, there are notable concerns regarding the various risks: privacy and data breaches, over-dependence on these technologies, and manipulation of algorithms being chief among these. Two key issues emerge from the data that we believe decision-makers must urgently address.

First, we find evidence that the demand for skills training is set to explode as new, transversal technologies such as GenAI drive a massive shift in the workplace. Government, organizations, and providers of continuing education must invest now in the resources to successfully meet this swelling demand.

Second, we find that Swiss professionals are broadly uninformed about official policy governing the use of GenAI. While around a third would welcome greater public regulation, a majority would like a balance between government-imposed and organizational self-regulation. Worryingly, while GenAI adoption is growing in Swiss organizations across functions, most still do not have clear company guidelines on its use. Swiss regulators and authorities must take immediate and decisive actions to inform and safeguard citizens and organizations, while supporting the growth and innovation opportunities that GenAI delivers. In 2023, our survey of Swiss organizations and employees found:

- 62% adoption of AI with 30.6% adoption across five or more business functions.
- 50% of respondents foresee a major shift in jobs and roles in the workplace within three to five years.
- 30% of respondents believe 50% of their workforce will need to be reskilled.
- 34% would welcome more government regulation of AI (57% are unaware of current policies).
- 71% want to see a mix of public and private or self-regulation of AI.
- 52% have no clear organizational policy or framework on AI in the workplace.

This report concludes with a series of high-level recommendations that we believe Swiss policymakers, business leaders, and providers of continuing education should consider. Principally, we believe decision-makers must:

- Act now to enact a robust and flexible educational and political framework to ensure that Switzerland disrupts – and is not disrupted by – GenAI. Besides country-level regulations, it is crucial for organizations to develop internal rules and guidelines for managing these technologies.
- Invest in the transformation of continuing education and the training of educators at all levels to meet growing and changing needs, leveraging GenAI technologies to enhance training capabilities.
- Prioritize the critical, judicious, and vigilant use of GenAI to harness opportunities while minimizing risk.

Generative AI: An opportunity for Swiss innovation, growth and competitive advantage.

As we go into 2024, generative AI (GenAI) has captured the attention and the imagination of organizations worldwide. Spearheading the shift from cataloguing to creating data is next-generation AI:; transformer-based deep neural network tools that are revolutionizing how human beings produce content, write code, perform tasks, invent new ideas and products, and solve complex problems. This is a revolution that is happening at unprecedented speed and scale, though GenAI is still in its infancy. McKinsey estimates that around a third of organizations globally already use GenAI technologies in at least one business function, while three quarters of IT leaders and executives fully expect to see GenAI "significantly reshape" their industry's competitive environment between now and 2026[4].

The meteoric rise of GenAI is fueled by the promise of productivity and revenue gains that come with adoption. Industries such as banking and retail could see additional revenue to the tune of $400bn or more per year[5], while research by Goldman Sachs suggests that the adoption of GenAI technologies could translate into a 7% (or almost $7tn) increase in global GDP over a 10-year period[6]. Yet even as industry welcomes the potential of GenAI, there is broad consternation about its concomitant risks. These risks include breaches of data privacy, manipulation of data, and uncertainty around the impact of intelligent automation on jobs. There is also concern around the multitudes of biases in the alogithms translating into suboptimal or discriminatory outcomes, as well as hallucinations – false or inaccurate information presented as fact. Then there's the speed of innovation itself.

As developments in GenAI race ahead, authorities have struggled to keep pace. Regulating GenAI, and reining in its dangers, is contingent on first fully understanding what those dangers are. In this sense, GenAI is something of a moving target. In this uncertain and fast-changing context, some nations are emerging as GenAI powerhouses. The US and China are leaders in GenAI investment and development and India and the African Union are forging ahead in terms of digital infrastructure – with the latter ramping up efforts to redress "Western bias" in AI training data[7]. Meanwhile, the US and the EU are stealing something of a march on regulation. Washington has published a blueprint for its new AI Bill of Rights[8], while in Europe, the EU AI Act seeks to ensure that the EU remains competitive in this shifting and uncertain environment. Sustaining growth and staying relevant in the global context will be contingent on leveraging the opportunities presented by GenAI while navigating the risks and regulatory complexities. Sustaining growth is one thing but leveraging innovation to secure competitive advantage will mean carefully balancing being fast and decisive with being ethical and safe. If Switzerland seeks to disrupt – and avoid being disrupted by GenAI – key questions must be answered:

- What are the skills and capabilities required by Swiss organizations and workers in a world where AI is changing the anatomy of work[9] and how can we continuously develop and adapt these capabilities?
- Which pathway should Swiss regulators and organizations follow to navigate risks while supporting Swiss growth and competitiveness on the global stage?

In this report, we leverage proprietary survey data and the expert perspectives shared in two workshops to shed light on where we are in GenAI in Switzerland today as well as the key challenges ahead of policymakers, business leaders, and providers on continuing education in 2024 and beyond.

AI in Switzerland: Where we are today

AI in Switzerland: Where we are today

1 AI is already widely adopted in Switzerland, despite concerns about its risks.

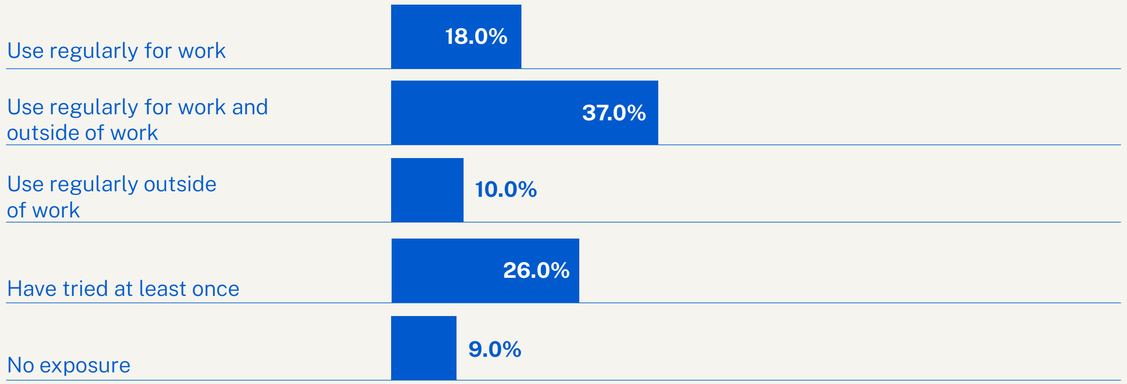
Our proprietary survey of households and organizations finds that AI is already in common use inside and outside of work in Switzerland, and most respondents believe it has the potential to deliver positive benefits to the world. While 65% of respondents report using AI regularly at home and work, just 9% said they have had no exposure as yet. And 62% of respondents indicate that their organizations have adopted AI and half of these say AI is being used in three or more functions. Meanwhile, 31% say AI is being deployed in five or more functions.

Just over three quarters of all respondents foresee major changes ensuing from AI adoption in the coming three to five years. While a clear majority are optimistic about AI in general, well over a third are concerned about the associated risks and potential for harm.

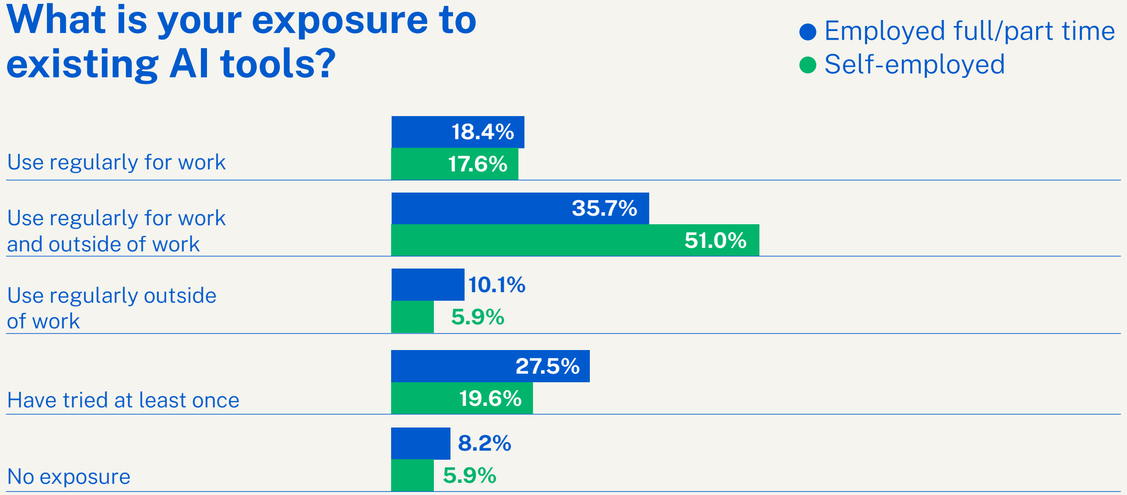
Across more than 13 industries and sectors, 65% of all respondents are regularly using AI.

The self-employed (75% of all self-employed) use AI more than those in full or part-time employment (64% of this demographic).

What is your exposure to existing AI tools?



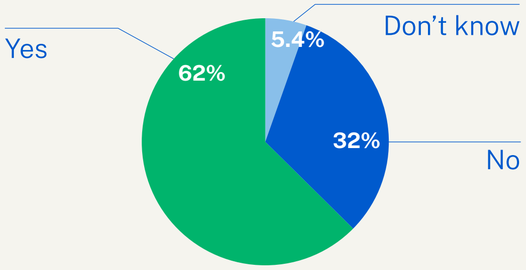
What is your exposure to existing AI tools?



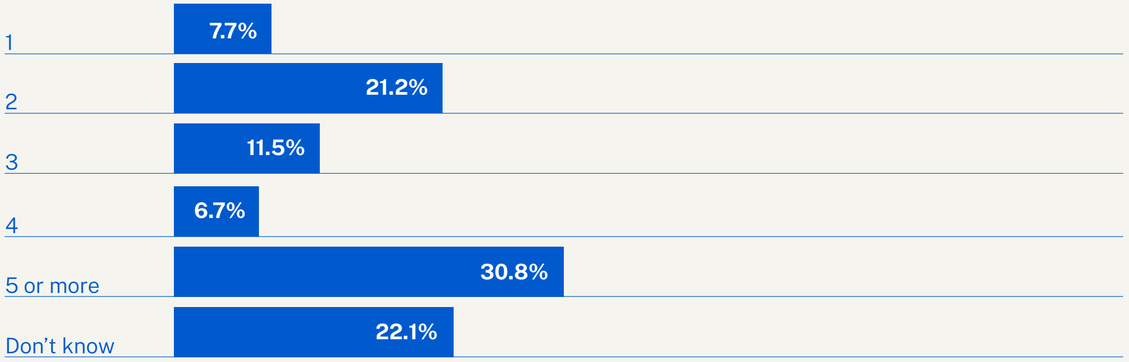
Across 13+ industries and sectors, 62% of respondents say that AI has been adopted by their organization.

Of these, more than half say it is used in three or more functions. 30.6% say AI is used in five or more functions.

Has your organization adopted AI in any of its business functions?



How many business functions in your organization have adopted AI?

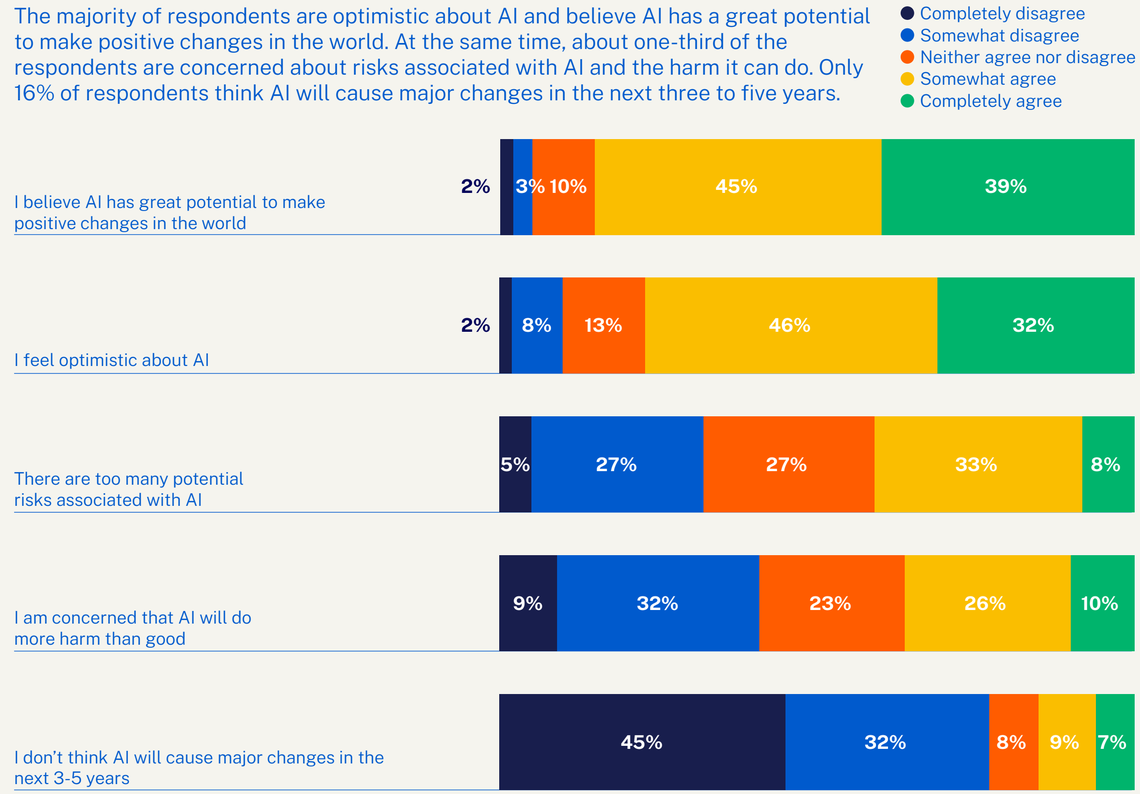


Attitudes towards AI are positive among survey respondents. Around 84% believe AI can drive positive impact, while 78% are "optimistic" about AI. 77% foresee AI driving major changes in the immediate future.

Nonetheless, 32% believe that the potential risks are too high. And 41% are concerned that AI could do more harm than good.

To what extent do you agree or disagree with the following statements

The majority of respondents are optimistic about AI and believe AI has a great potential to make positive changes in the world. At the same time, about one-third of the respondents are concerned about risks associated with AI and the harm it can do. Only 16% of respondents think AI will cause major changes in the next three to five years.



Is there a ‘trust gap’ on AI in Switzerland?

The digitalswitzerland Foundation hosted a Digital Xchange workshop on AI framework conditions (AI framework workshop) in Zurich in November 2023 to look at the kinds of regulatory conditions that could favor AI innovation and establish Switzerland as a trusted hub. Among the key takeaways from our workshop are concerns that the Swiss public in general remains largely skeptical about AI. While our survey points to cautious optimism around its potential for good, digitalswitzerland experts warn of a growing “trust gap” in civil society that is partly driven by imbalanced press and media coverage. To bridge this trust gap and fuel measured and informed uptake and adoption, our workshop recommends that Swiss authorities redouble efforts to reduce disinformation. This could include ramping up official communication on the benefits of AI for the Swiss population and overseeing more regulation of platforms. The Swiss government should also prioritize greater AI expertise across federal, cantonal, and local authorities, say our experts.

> “A critical first step is to articulate clear guiding principles for AI innovations. Key to these principles is striving for transparency and explainability at every level. Per the findings from the World Economic Forum[10] earlier this year, mindsets in Switzerland must shift to embrace the fact that every job is an IT job. What this means is that building and using AI ethically is now a universal responsibility and priority.”
>
> **Sarah Toms, IMD**

> “A clear vision, role models, and leadership are crucial to bringing AI to the center of society and the economy, close the trust gap, and foster dialogue among all stakeholders. The Swiss Government should take a clear position and play a coordinating role. Similar to the DLT regulation[11], members of the Federal Council or the Federal Chancellery could emphasize the importance of AI and make the issue a key priority at the political level. To make Switzerland a champion of AI, Switzerland needs “AI champions” from the public sector and from the political arena.”
>
> **Mattia Balsiger, digitalswitzerland**

> “Most of the population don’t know anything about AI. In my view, we should have a global communication in Switzerland to outline the benefits and risks of AI, and soon.”
>
> **Survey respondent**

2 Swiss professionals foresee clear opportunities and benefits, but remain wary of risks to privacy, over-reliance, and data manipulation.

Our survey reveals that respondents see customer service, healthcare, and enhanced decision-making as the greatest potential beneficiaries of generative AI adoption. A high proportion anticipates opportunities in the use of chatbots and content creation as well as benefits accruing from precision medicine, medical diagnostics, and robotics. Conversely, many respondents are concerned about risks which include, but are not limited to, threats to privacy and cybersecurity, overdependence on the technology itself, and manipulation of algorithms. While these concerns are common to employees and entrepreneurs alike, the survey shows that organizations are more focused on the potential loss of control and intellectual property infringement, while entrepreneurs cite transparency, accountability, and ethical risks as key challenges.

How do we navigate risks to harness opportunities?

Our AI framework workshop also highlighted risks around privacy and data protection, flagging a lack of broad and coherent standards within the Swiss Federal Act of Data Protection and warning that the deletion of data as a function of data privacy can lead to breaks in the learning effect in GenAI. Our experts also stress the risks of unchecked adoption, particularly among younger, "digitally native" generations, which is fast outpacing regulation in Switzerland. And that's not all.

Swiss innovation and competitiveness in GenAI are at risk of stalling due to a lack of data. Because Switzerland is a relatively small country, producing relatively small amounts of training data, our reliance on foreign GenAI platforms is relatively high. Regulation is needed, say our experts, along with incentive systems for data sharing, so that global viewpoints and culture differences like those of Switzerland are fully and appropriately represented in AI. What could this regulation look like? One possibility could be to forge a Swiss Data Act. Another could be to align Swiss regulatory measures to the EU AI Act, bringing Swiss influence to bear on US influence. Above all, say our experts, regulating transversal technologies – and GenAI in particular – Switzerland must occupy a "sweet spot" that safeguards innovation without stifling it. (We will look at the topic of regulation in greater detail in Section 4 of this report.)

Our AI framework workshop also looked in detail at the issue of bias and hallucination in GenAI in particular: the risks of producing discriminatory, culturally inappropriate, or inaccurate outputs because of biased input or flawed pattern detection by GenAI. Here, our experts highlighted the "dual relationship" between AI and human-generated input data. While bias and discrimination in AI-generated output is a critical concern, they stress the potential for "neutral" GenAI itself to become a corrective tool that can uncover, adjust for, and rectify human biases.

Understanding the risks, benefits, and potential of GenAI to rectify its own shortcomings is perhaps contingent above all on remaining educated and vigilant about its evolving capabilities. Our experts stress the need for organizations and educators to be proactive in developing their understanding and skillset in tandem with innovation and to exercise critical thinking and common sense as we navigate risks today – and tomorrow.

> "Bias in AI comes from algorithms producing results that may have a prejudice against a given population and are the result of a certain polarization of content creation. By bringing human critical thinking and judgment, we can train the AI on its biases and allow it to improve. Doing so will allow AI to correct a natural bias in humans, enhance processes, and, eventually, decision-making."
>
> **Anthony Corbaz, digitalswitzerland**

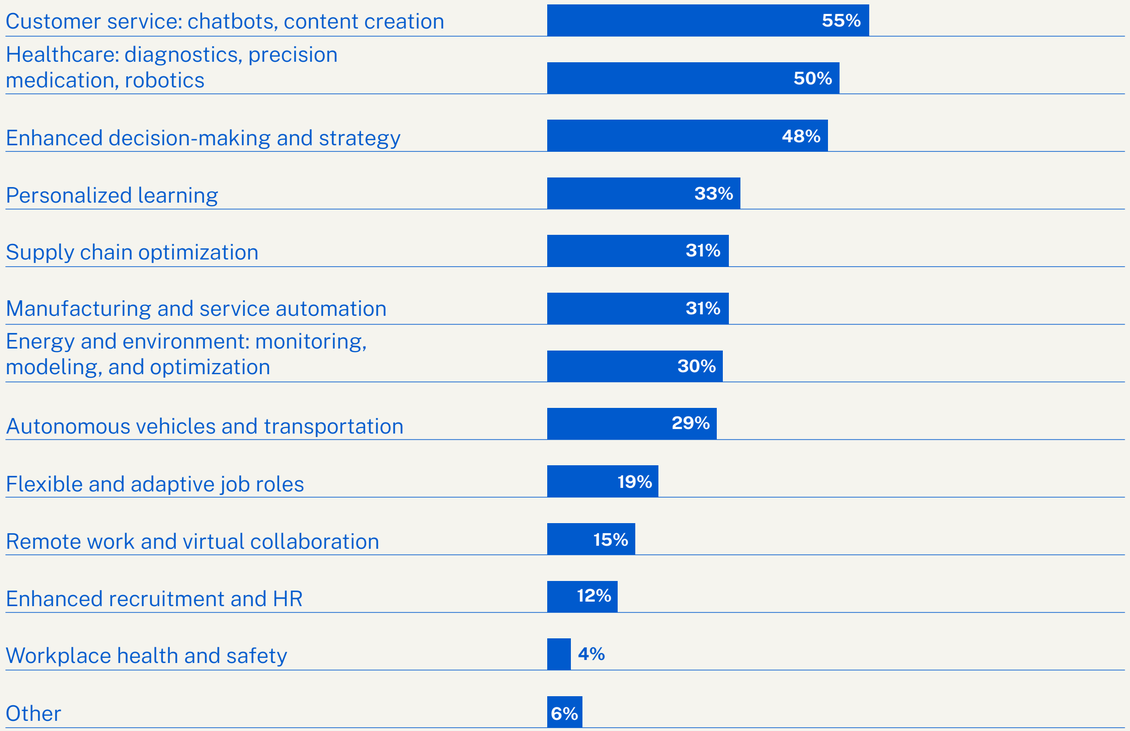
> "AI and new technologies are not a finality or a fatality; people need to manage the technology and make the best use of it. For continuing education instructors, this means acquiring new skills and the opportunity to add more value."
>
> **Ofra Hazanov, EPFL**

Our survey shows that around 50% of respondents see opportunities in areas like customer services, healthcare, and decision-making and strategy.

At the same time, more than 50% cite concerns about privacy and security risks, while 41% cite the threat of algorithmic manipulation.

Where do you see the greatest opportunities for AI-enabled innovation in general?

(Respondents selected up to five options.)



* Numbers do not add up to 100% as five answer options were selected

What are the greatest risks of AI-enabled innovation in general?

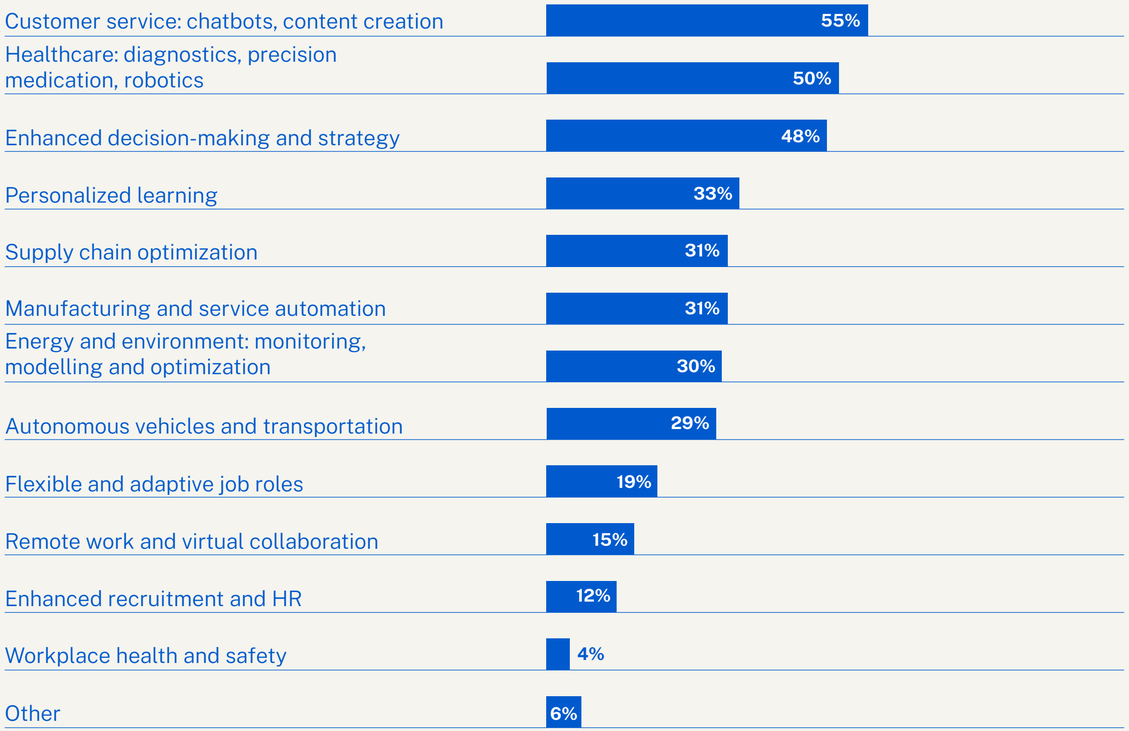
(Respondents selected up to five options.)

* Numbers do not add up to 100% as five answer options were selected

Around 50% of respondents see automated customer services, healthcare and diagnostics, and strategic decision-making as areas of potential opportunity for Swiss industry.

Where do you see the greatest opportunities for AI-enabled innovation in general?

(Respondents selected up to five options.)



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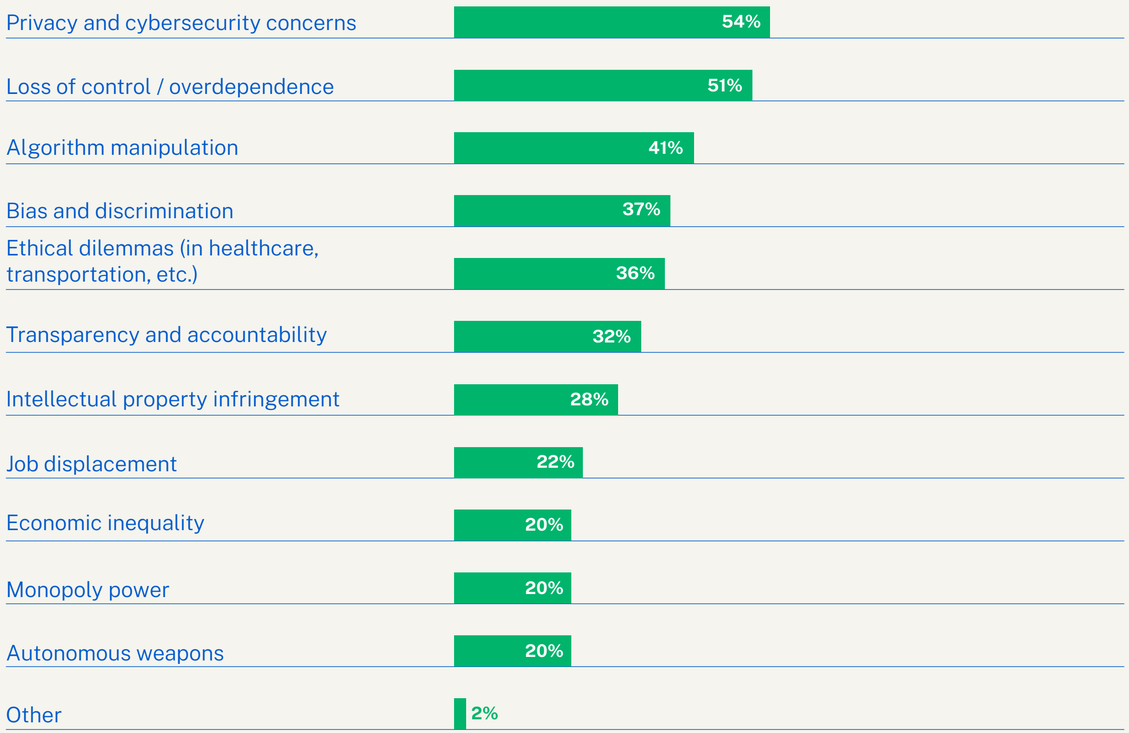
Other opportunities:

- All areas
- Content generation, digital asset development, knowledge management and deployment, acceleration of economic cycles (within industries, micro and macro level)
- Marketing
- Product development across all fields
- Product development, innovation
- Improved productivity in jobs
- Smart assistants for many different jobs/roles at work
- Personal assistance
- Day-to-day personal efficiency
- Insurance
- Large-scale datasets analysis
- Innovation
- Scientific modeling
- New knowledge that we haven’t identified yet
- Social AI i.e., bridging the ‘user interface gap’ by AI, making services available in various contexts with minimum human effort

The biggest risks of AI are expected to be privacy and cybersecurity, overdependence, and manipulation of algorithms.

What are the greatest risks of AI-enabled innovation in general?

(Respondents selected up to five options.)



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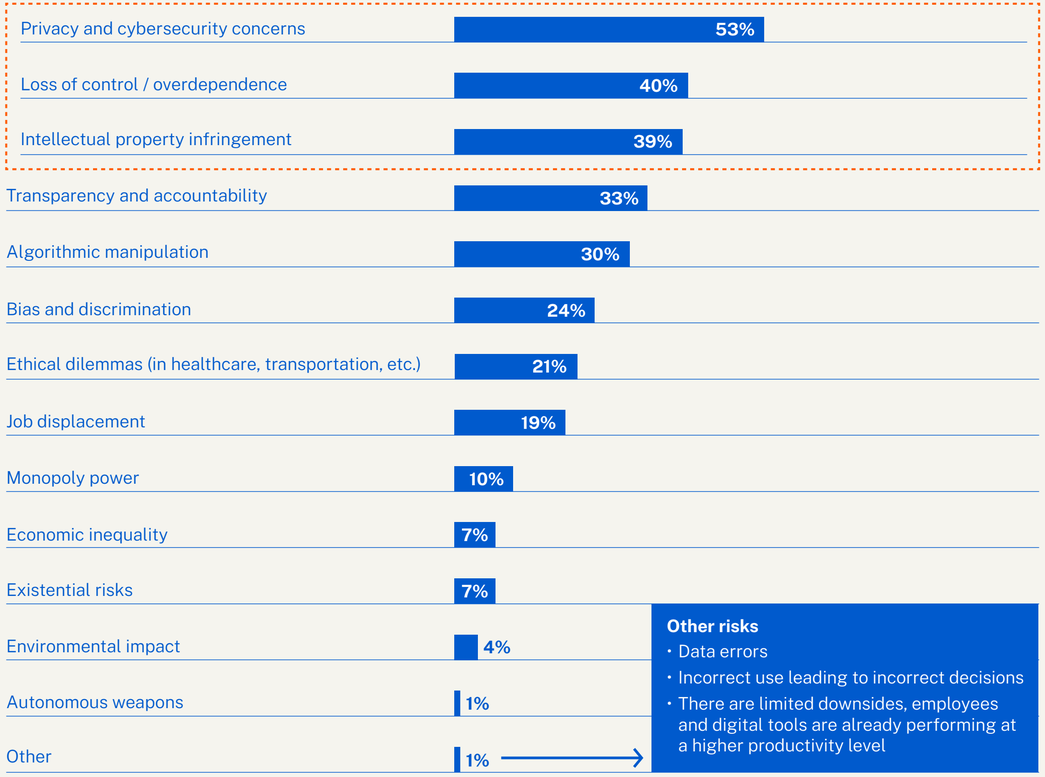
Other risks:

- Companies not being ready at management level to anticipate and adopt change early enough
- Misinformation and disinformation and AI “hallucinations” becoming more prevalent and compelling, influencing public behaviour
- Stock market manipulation
- Data errors
- Being in the wrong human hands
- Crime

Privacy is the major concern for organizations and entrepreneurs. Organizations are also worried about overdependence and intellectual property infringement. For entrepreneurs, transparency, accountability, and ethics are major concerns.

What are the greatest risks of AI-enabled innovation for your organization? (Full- or part-time employed)

(Respondents selected up to five options.)



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What are the greatest risks of AI-enabled innovation in your work? (Self-employed)

(Respondents selected up to five options.)

* Numbers do not add up to 100% as five answer options were selected

3 AI will reshape jobs and roles of the future. As such, there will be a massive need to upskill Swiss workers in the next 3-5 years.

There is no way to escape the "significant changes" that will be triggered in the labor market by the advent of GenAI technologies, say our experts. The coming reconfiguration of our workplace will require expert guidance and support to be successful.

EPFL took the lead in hosting representatives from continuing education and the public sector at our **AI and Continuing Education workshop** in Bern in October 2023. Together, our delegates explored the future for continuing education in the age of transversal technologies and GenAI, concluding that demand for training will increase exponentially in line with adoption. Policymakers, organizations, and providers of continuous education will need to brace themselves to manage that demand. At the same time, education will need to evolve at the human-machine interface to bridge the gap between what organizations need and what continuing education currently supplies. As talent needs change and the demand for new capabilities (and new roles) increases, continuing education must become more responsive and demand-driven as well as more learner-centric. This will inevitably mean deploying GenAI itself to help in the development and delivery of personalized curricula and content – and developing what our experts call stackable skills. How will we do this? By educating our educators.

> "The shift in continuing education is already happening and there is an overall move from ex-cathedra teachers to guides, shorter courses, and GenAI chatbots as tutors, guides, and peers. Evolving learning will be more person-centric, especially when dealing with reskilling of the workforce, and there is no doubt that Swiss trainers and lecturers will need to be trained as we make this shift."
>
> **Martin Rajman, EPFL**

> "The days of getting your degree and being done with education are well and truly over. Going forward, learners and organizations will need to continuously update their knowledge and build the transversal skills to connect the dots as our capabilities, our work, and our world change. In a sense, skill acquisition will need to become stackable, and the challenge ahead of us as providers of continuing education is to be ready to meet these new demands and necessities."
>
> **Amit Joshi, IMD**

How do our survey respondents foresee the future of work in Switzerland in the coming three to five years?

Our findings show that AI and machine learning specialists, data engineers, and cybersecurity experts are expected to be the most critical jobs in Switzerland over the next three years, as GenAI, as a transversal technology, changes the very anatomy of work. New roles such as human-AI collaboration specialists and bias auditors are also seen to be among the most critical. In tandem with these anticipated changes, around one third of Swiss professionals believe that more than half of their employees will require reskilling. Interestingly, there is no clear consensus around whether GenAI will lead to more or fewer jobs. Around 20% of respondents foresee job creation of more than 10%, particularly in the areas of IT, risk management, and product development. Meanwhile, 15% expect to see a 10% loss of jobs, mainly in functions such as service operations, corporate finance, supply chain management, and HR. Almost a third of respondents envision little or no change to the overall number of employees in their organization.

Around 50% of all respondents see the roles of AI specialists, data engineers and analysts, and cybersecurity experts increasing in prominence both in their organizations and in Switzerland in general.

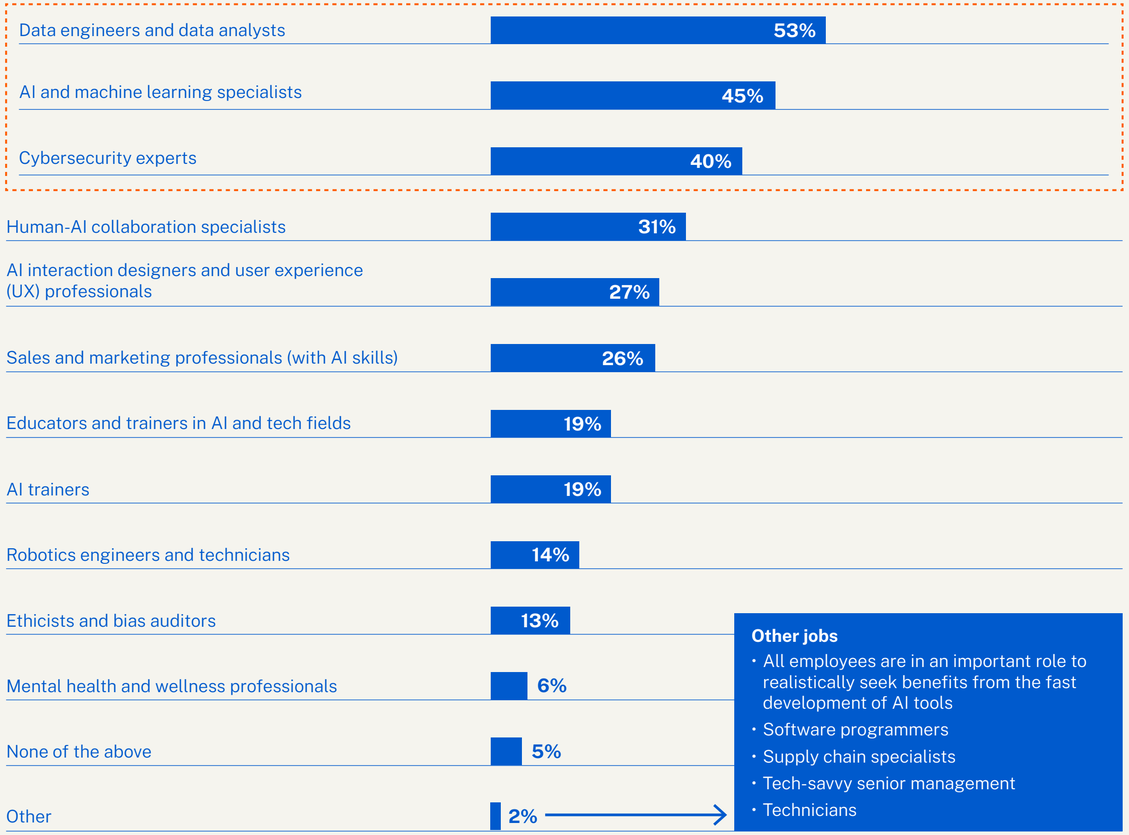
Which jobs do you think will be most critical in the next three years in general?

(Respondents selected up to five options.)

* Numbers do not add up to 100% as five answer options were selected

Which jobs will be most critical for your organization in the next three years? (Full- or part-time employed)

(Respondents selected up to five options.)



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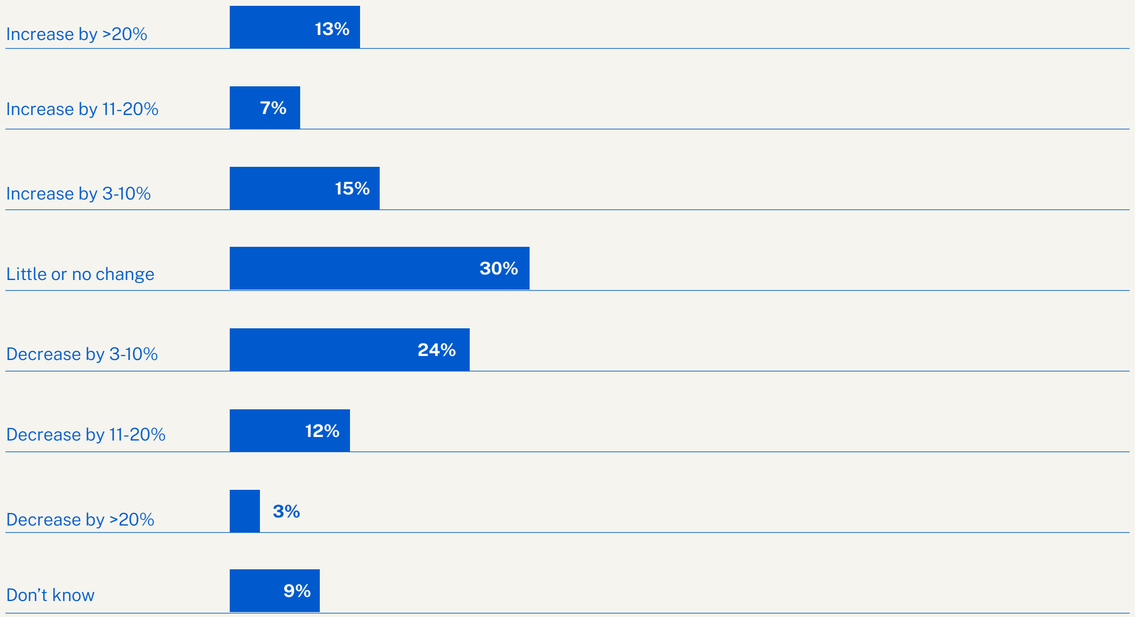
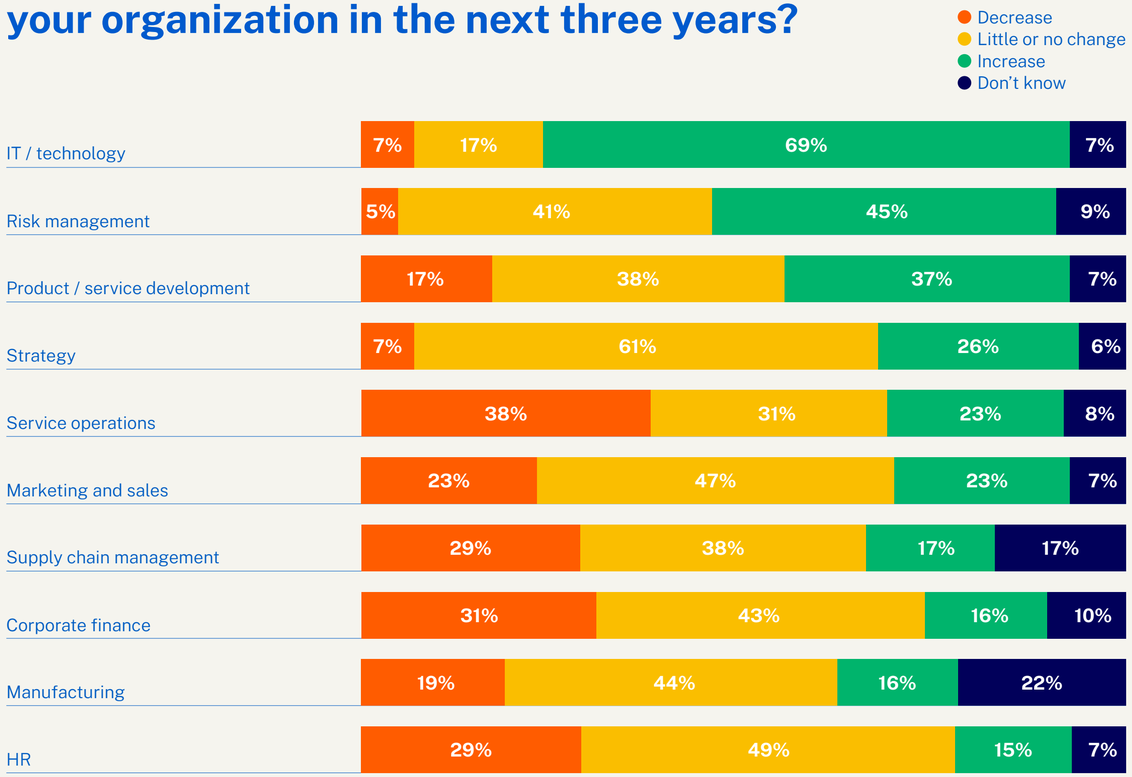
As the result of AI adoption, the number of jobs in IT, risk management, and product or service development is expected to grow, while roles in service operations, corporate finance, supply chain management, and HR are expected to decrease.

About 20% of employees believe that AI adoption will see a 10% increase in the number of employees. Meanwhile, 15% expect a decrease of over 10% in the next three years, and 30% expect little or no change.

What will be the impact of AI adoption on the number of employees in your organization in the next three years?



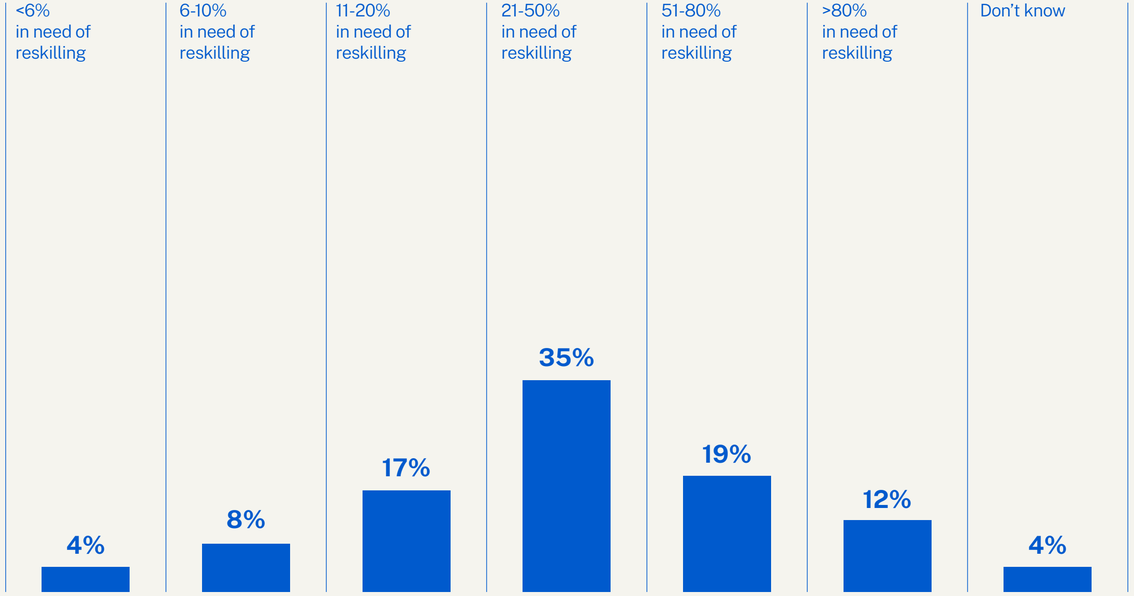
What will be the impact of AI adoption on the number of employees by business function in your organization in the next three years?



What about training and education needs?

More than one third of respondents believe that more than 50% of employees in their organizations will need to be reskilled in the next 3 years.

What proportion of employees will need to be reskilled as a result of AI adoption in your organization in the next three years?



One third of full/part time respondents believe that more than 50% of employees in their organization will need reskilling in the next three years

> "I believe AI will enable us to increase our capacity and revenues without increasing our headcount. We're also using AI to increase productivity and for new product development."
>
> **Survey respondent**

> "As with most technological leaps, this will not put jobs in jeopardy; it will simply intensify the playing field, markets, and the environments in which companies compete. It will separate those with the ability to innovate (winners) from those whose structures are rigid (losers)."
>
> **Survey respondent**

GenAI-enabled continuing education for a GenAI-enabled future? Proceed, with caution.

IMD and EPFL are leading research efforts to determine how we take continuing education beyond the classroom and move from teacher-centric to learner-centric, demand-driven continuing education design. A core piece of this work is to determine how best to leverage GenAI to reskill and upskill our workforce while remaining cognizant of its risks and limitations. Our AI and Continuing Education workshop explored these issues and pinpointed two key threats. Blackbox is the phenomenon of acquiring content or knowledge without fully understanding how that content or knowledge is created. Advances in GenAI mean it is capable of deep learning that outpaces the human mind by hundreds of thousands, if not millions, of times. We cannot hope to keep up with its processes, which leads to a second threat: as we turn to the machine for our knowledge and skills needs, will human beings simply stop thinking for themselves?

These risks are real, and educators must navigate them with great caution – both as users of Gen AI as a transversal technology and as trainers of other users. Certainly, GenAI has considerable potential to transform continuing education, giving us the tools to personalize curricula to individual or organizational needs at scale – curricula that is adaptive and accessible both in content and delivery. GenAI, as a transversal technology, can also help us to create pedagogical dynamics that are more engaging, interactive, and peer-like, while producing real-time analytics on progress, performance, and even anticipating new needs. Unlocking this potential to meet real-world learning needs even as they evolve, however, is absolutely contingent on treading with great care. Educators must be hyper-aware of the inherent risks and exercise caution and critical thinking, warn our experts. We need to be on the continuous lookout for bias and hallucinations while guarding ourselves from blackbox apathy or complacency in learning or doing as machines increasingly automate our processes. How do we do this? By being in the room, say our experts. We cannot hand the job of training over to GenAI. Human experts – not just chatbots – need to be guiding the upskilling of our workforce, meaning that human experts – lecturers, trainers and tutors – will also need to be continuously educated on the usage, potential, and the risks and rewards of GenAI-enabled education. The imperative is this: transform education for a fast-evolving future, yes – but proceed with caution and be sure to teach educators as well as learners.

> “GenAI is not an end in itself. Nor is it something that can replace human educators. GenAI is a tool that educators need to be able to manage and to learn how to optimize for continuing education and the ongoing upskilling of our workforce. Managing it and optimizing it will require both educators and learners to be critical in their thinking and cognizant of the risks of GenAI. To put that another way: the onus is on us as educators to exercise and teach critical thinking in the use of transversal technologies and GenAI.”
>
> **Martin Rajman, EPFL**

> “Continuing education has been static as the world around us has changed, and we need to address that to meet new needs. We need to be in a position to deliver a continuous supply of new and changing skills and GenAI can help us do that. But educators, learners, and practitioners alike need to be hypervigilant about what GenAI produces, both in the classroom and the workplace. We all need to scrutinize the outputs for bias and hallucinations. Putting it simply: technology should be enhancing what humans do, not replacing them.”
>
> **Amit Joshi, IMD**

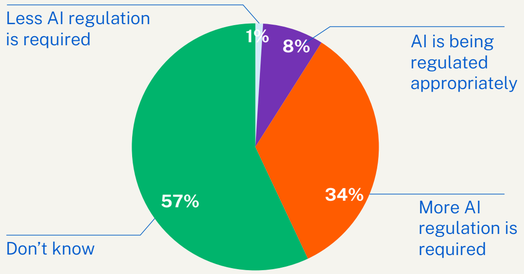
4 Greater regulation is a priority and should be jointly enacted by the government and the private sector. More than half of Swiss organizations still have no clear policy on AI.

Our survey reveals that 34% of respondents believe there should be more government regulation of AI in general in Switzerland although there is widespread lack of awareness of current policies: as we go into 2024, more than half our respondents say they do not know about government regulation. 71% would welcome a mixture of government policy and self-regulation by organizations themselves. This would constitute a challenge to Swiss firms as 52% of respondents say that their organization currently has no clear policy on the use of AI in the workplace. Taking these insights together suggests that more is needed in terms of guidance frameworks and communication both from public authorities and business leaders.

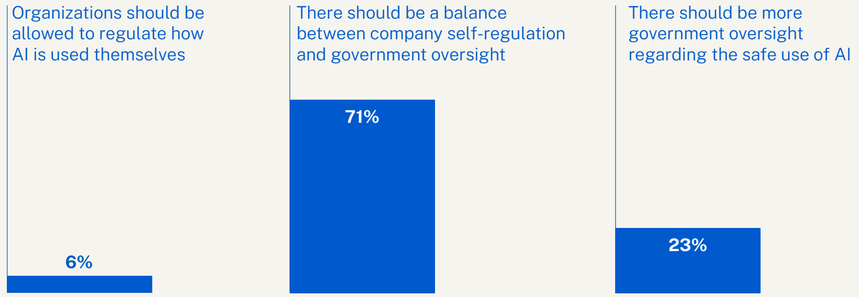
Some 34% or respondents believe that more AI regulation is required in Switzerland, though 71% would like to see a balance between organizational self-regulation and government-imposed policy. More than half of all respondents are ignorant about current Swiss policy.

Meanwhile, 52% say that their organizations currently have no clear policy on AI. And it's a problem.

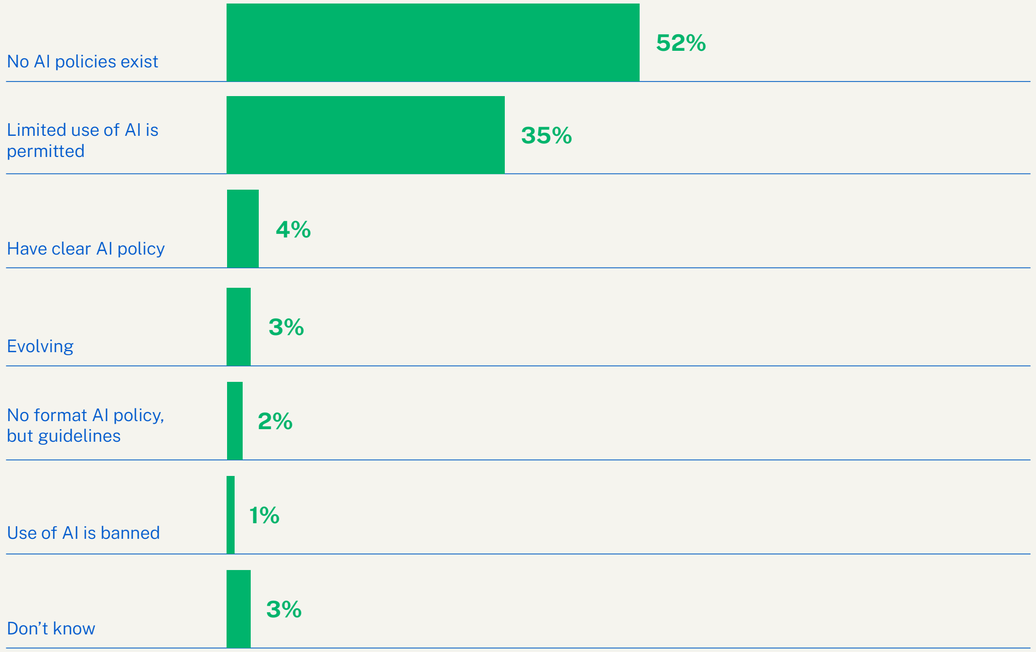
What do you think about the current state of AI regulation in Switzerland?



Which statement about AI regulation best matches your beliefs?



What is the AI policy in your organization? (Full- or part-time employed)



34% or respondents report that more AI regulation is required in Switzerland.

Nevertheless, 71% of respondents believe there should be a balance between company self-regulation and government oversight in AI regulation.

52% of full/part time employed respondents state that their companies do not have clear AI policy.

Regulators must act swiftly and decisively.

Our experts find that regulation is a critical priority in Switzerland and elsewhere if the goal is to build trust among users and the public and leverage the opportunities GenAI affords while minimizing risks. How countries and authorities approach regulation will be key. Our experts concur that, as a rule, regulation should be technology-neutral and principles-based. It is of paramount importance that regulation supports and does not inhibit innovation.

Looking at Switzerland in particular, Swiss authorities will need to factor in our size. As a small country, Switzerland is not a high priority for data and platform producers, despite being an advanced digital nation and a knowledge economy with significant data access needs. The Swiss government will need to be cognizant of this.

To brace against risk and optimize the promise of GenAI for Switzerland, we believe that there are some key areas that regulators must prioritize as they create or adapt existing legal frameworks:

- Competition and access to data: Switzerland currently relies heavily on foreign AI platforms. To balance low production of data against high needs, should we be looking at creating Swiss AI or Data Acts that incentivize data sharing so that Switzerland is not left behind?
- Infrastructure: Switzerland already has large scale data centers which are not adequately regulated. Going forward, we believe there will be a need for greater balance between Swiss and foreign infrastructure to avoid overdependence on either.
- Government dilemma: a balancing act between securing trust and ensuring sovereignty and innovation by investing in AI platforms.
- Over-arching digital framework: while it is imperative that Swiss authorities create a policy framework, we would caution that state-backed AI is not the optimal approach. Ultimately, we believe it is likely that the EU AI Act will form part of what Swiss authorities go on to adopt given our geopolitical proximity and economic ties.

There is also a clear opportunity ahead of Switzerland to leverage its small size; to bring flexibility and consensus to a bespoke approach that respects the regulatory frameworks of our core trading partners, while preserving a free economy orientation that favors competitiveness and growth.

2024 marks an inflection point for Swiss policymakers. Switzerland once again ranks among the top five countries worldwide in the IMD World Digital Competitiveness Ranking, making it a leading "digital nation;" one with the capabilities to facilitate full adoption of digital technologies, including GenAI. The opportunity to leverage Swiss future-readiness and forge a unique regulatory pathway for our nation, organizations, and citizens should not be missed.

> "So far, our approach has been relatively hands-off. We are now ahead of a massive opportunity to do things differently: protect privacy and create the framework conditions to promote innovation and foster adoption by our population. Can Switzerland punch above its weight in GenAI, just as we have done in banking and other sectors? This should be our ambition."
>
> **Anthony Corbaz, digitalswitzerland**

Meanwhile, organizations must not wait to create their own guidelines.

Our survey finds that more than half of Swiss organizations still have no clear policy framework on the use of AI, and this is a "huge problem," says IMD Professor of AI, Analytics, and Marketing Strategy Amit Joshi. First, organizations need to understand that their employees are using GenAI at work, whether they want them to or not. Unchecked the potential for harm is enormous, warns Joshi. "All it takes is one mistake, one erroneous, false, or discriminatory message to make its way from your organization to your customer base, and the damage can be incalculable." Organizations must not wait for authorities to issue regulatory frameworks and instead start implementing common-sense policies now, says Joshi. These should include continuous checking of the quality of data and broad-scale, cross-functional training on the limitations and risks of GenAI; above all, on the need to check outputs for coherence, accuracy, and brand alignment. GenAI is not yet ready to be used unchecked in any customer-facing sense, he stresses. Instead, he advises organizations to limit its use to enhance productivity. GenAI is a tool that can help marketers experiment and ideate, says Joshi, and not a replacement mechanism that can be left to churn out customer-facing content. The onus is on leaders to ensure that their organizations understand how to use this technology safely and to encourage its use and the sharing of benefits – the organizational learning it can help engender – while being clear and emphatic on rules and limitations. Neither knee-jerk banning nor indiscriminatory use of GenAI are options, says Joshi, and organizations need to get ahead of this fact today.

Generative AI in Switzerland: Where we want to be tomorrow

Generative AI in Switzerland: Where we want to be tomorrow

GenAI is here to stay and innovation will accelerate exponentially in the coming years. As adoption races ahead, and with regulation struggling to keep pace, there is an imperative for educators, businesses, and nations to step up their efforts to prepare for the massive shifts that are coming; to build the frameworks, policies, strategies, and organizational capabilities as well as the continuous upskilling and reskilling capacities to drive innovation and optimize positive impact – all while safeguarding privacy, data, and judicious use of GenAI in our organizations, institutions, and communities. For Switzerland, this imperative is real and immediate. We can act now and be a guiding voice in how the AI revolution is shaped, or we can wait to be disrupted.

Our survey and workshop findings unveil some critical realities around the attitudes, concerns, and use of GenAI in Switzerland in 2023/4. First, we find that adoption is already widespread at home and in the workplace. Almost one third of our respondents tell us that AI is being used in five or more functions. At the same time, more than half of Swiss organizations have not yet implemented clear guidelines or policy on its use. This must be addressed urgently. Further, both our survey respondents and experts foresee a major shift in roles in the workplace that will, in turn, drive a massive upswing in demand for reskilling. Swiss policymakers, business leaders, and providers of continuing education must now brace themselves to meet that demand.

We believe that continuing education must transform to ensure that emerging and evolving skills needs are met at both organizational and individual levels. Institutions must find ways to shift from static, ex-cathedra or faculty-centric approaches to models that are demand-driven and human-centric – personalized to learners' needs and styles of learning to be efficient and engaging, and customized in content as that need continues to develop and change. GenAI has a clear role to play in enabling continuing education to make this shift. Leveraging these technologies successfully will mean being cautious, vigilant, and judicious in their use. Educators will need to exercise and teach critical thinking around the way we exploit GenAI in the future, both as a tool for learning and for work. As we reskill the Swiss labor force, we will also need to reskill providers of continuing education. This will likely mean significant investment on the part of policymakers, organizations, and institutions alike.

Regulating GenAI is a real and immediate need, both at the organizational and the state levels. Our citizens and workforce already use these technologies at home and at work. Swiss policymakers must take a proactive approach to regulation to get ahead of the risks, while ensuring that adoption and innovation are encouraged and protected. Switzerland is ahead of a unique opportunity to forge our own path in regulation, one that respects and aligns with our key trading partners while leveraging our size, agility, and considerable digital readiness as a small but highly advanced nation. The IMD Digital Competitiveness Ranking places Switzerland in the top five countries worldwide, and first for knowledge. To capitalize on our extraordinary capabilities – to punch above our weight as we have in banking and other sectors – we need to act now on regulation. We need to double down on efforts to safeguard our organizations and citizens, to provide clear frameworks on data and technology usage, and to inform our population around the benefits, as well as the risks, and to ensure that our workforce is empowered with the future-facing skills we will need to drive growth and competitiveness.

At the same time, Swiss companies cannot wait for authorities to act on regulation. Our workforce is already engaging with GenAI at a cross-functional level. Leaders must act now to ensure their organizations are fully cognizant of the risks as well as the benefits and develop their own common-sense policies and guidelines for usage – again without stifling innovation. Swiss businesses will also need to prioritize investment and support for continuous and continuing upskilling as

we build the capabilities and the resilience to navigate the exciting times ahead.

Below we have assembled a series of high-level recommendations for Swiss policymakers, business leaders, and providers of continuing education. It is not our aim to provide granular instructions, but rather to provide useful and evidence-backed guidelines that will empower senior decision-makers to chart the course ahead of us, and position Switzerland where we need to be for our digital future.

Recommendations for Swiss policymakers

- Now is the time to act. Switzerland cannot squander the opportunity to take a lead on legislating for GenAI in ways that support innovation, growth, and competitiveness while safeguarding privacy and other risks.
- Now is also the time to brace ourselves for an explosion in demand for new skills along with the massive shift in education and training that will ensue. Policymakers must grasp that education can no longer be static and that constant and continuous upskilling is set to become a way of life going forward. As legacy qualifications become increasingly obsolete, policymakers must work in tandem with educators to reformulate assessment and to shift focus away from knowledge acquisition to the skill of learning itself: how we teach our people to learn. Thought must be given to the societal and psychological impact on people that these changes are likely to have.
- Switzerland has the duty and obligation to forge ahead in the ethical adoption and use of GenAI as we foster innovation. We believe that Switzerland could have a leading role to play on the global stage.

Recommendations for Swiss providers of continuing education

- Demand for continuing education across sectors, especially in the areas of AI, digital, and critical thinking, is set to increase dramatically. Providers of continuing education must evolve rapidly to meet this demand. Major shifts in the labor market and society brought on by GenAI technologies are inevitable. To be successful, the associated labor market transformation and required adoption by the population at large will require new forms of training, awareness raising, and support.
- There is a pressing need to adapt the teaching practices of continuing education and academia. It is also vital to preserve the specificity and credibility of any proposed educational content. For educators, this will require the acquisition of new skills and competencies, and represents an opportunity to provide more added value.
- New forms of personalized learning that speak to individual needs, interests, speeds, skills, and motivations will be enabled by GenAI and will become a priority for continuing education providers in terms of investment and delivery. GenAI is a tool that will be an enabler to do so, however it is not an end in itself. Educators and administrators must embrace the fact that GenAI is a reality and adapt learning journeys to incorporate modern approaches to its usage where AI-human collaboration is hugely beneficial.
- Reinforcing critical thinking and providing holistic delivery of training around biases and truth are all crucial to mitigate the associated risks of using GenAI.
- Educators should also explore the use of GenAI as they reimagine learning journeys. A goal should be ongoing access to learning materials beyond the classroom and even after courses or classes conclude. There are opportunities to keep learners connected to apps that provide updated knowledge as a function of continuing and lifelong learning.

> “Critical thinking capabilities have always been at the core of what we teach as educators, and GenAI won’t change that. If anything, as we adapt to these new technologies, and we teach and work with them, that ability to think critically about what they can do for us and what we can expect from them becomes even more important.”
>
> **Martin Rajman, EPFL**

> “To ensure Switzerland remains competitive, there needs to be a universal plan for bringing more awareness into the workforce about how to properly and effectively leverage GenAI. In doing so, there will be universal advantages for the Swiss economy and society such as new innovations, entrepreneurial ventures, and productivity gains. We have a responsibility to make sure no one gets left out or left behind.”
>
> **Sarah Toms, IMD**

Recommendations for Swiss organizations

- Organizations should create guidelines and policies now that encourage workers to use GenAI safely for innovation and productivity gains. Banning GenAI or failing to regulate its use in the workplace are not viable options.
- Leaders have a responsibility to be clear in their communication about the risks of GenAI and to model and demand caution in its use. GenAI should be used as tool to enhance productivity and its usage should not be customer-facing. At the same time, leaders should be proactive in creating mechanisms and incentives to share knowledge and value creation across organizations.
- There is a clear imperative for IT functions to ensure that data remains clean and of high quality across organizations.

> “The organizations that will win in our new GenAI-enabled world are those that do the boring things right: those that have the regulations in place, that encourage critical and cautious use of technology, that build capabilities at scale, and that ensure their data is clean. When we think about GenAI, there’s temptation to think about the *Terminator* movies and sci-fi. The reality is that winning this game is about getting the boring things done properly.”
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> **Amit Joshi, IMD**

About the authors

IMD has been at the forefront of developing leaders who transform organizations and contribute to society for more than 75 years. With campuses in Lausanne and Singapore, IMD is a leader in executive education and degree programs, consistently ranked among the world's best.

Amit Joshi is Professor of AI, Analytics, and Marketing Strategy at IMD. An expert in helping organizations to use artificial intelligence and develop their big data, analytics, and AI capabilities, he has extensive experience of AI and analytics-driven transformations in industries such as banking, fintech, retail, automotive, telecoms, and pharma.

Sarah Toms is Chief Learning Innovation Officer at IMD, where she leads the AI Initiative. A pioneer in the use of radically new forms of game-based learning for learner engagement, she is one of the first 10 AWS Education Champion, and is co-author of *The Customer Centricity Playbook*, winner of the Digital Book Awards 2019 Business Book.

digitalswitzerland is a Swiss-wide, cross-industry initiative that aims to transform Switzerland into a leading digital nation. Along with our network of 200+ association members and non-political partners, including more than 1,000 top executives, we're engaged in over 25 projects to inspire, initiate, co-create, and lead digital change in Switzerland.

Anthony Corbaz is the Head of Western Switzerland and of the Digital Competitiveness Forum with digitalswitzerland.

EPFL is one of Europe's most vibrant and cosmopolitan science and technology institutions, welcoming students, professors and collaborators of more than 120 nationalities. EPFL has both a Swiss and international vocation and focuses on three missions: teaching, research, and innovation.

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Endnotes

1 The survey garnered responses on exposure, adoption, and attitudes towards AI, as well as expected workplace impact, training, and regulation needs from 279 professionals in Switzerland in 2023. Of these, 74% were senior executives. Respondents represented 13+ industry sectors.

2 EPFL hosted a workshop on AI and continuing education which was held in October 2023, bringing together perspectives from EPFL, IMD, Cisco, Manpower, Ecole 42, FSEA/SVEB, HES-SO and UNIGE. We refer to this workshop as our AI and continuing education workshop in this report.

3 The digitalswitzerland Foundation is a politically neutral entity that is part of the digitalswitzerland initiative and ecosystem aiming to anchor Switzerland as a leading global hub for digital innovation. The digitalswitzerland Foundation hosted a Digital Xchange Workshop on AI framework conditions in November 2023 to look at the kinds of regulatory conditions that could favor AI innovation and establish Switzerland as a trusted hub. We refer to this workshop as our AI Framework workshop in this report.

4 https://www.mckinsey.com/capabilities/quantumblack/our-insights/the-state-of-ai-in-2023-generative-ais-breakout-year

5 https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/the-economic-potential-of-generative-ai-the-next-productivity-frontier

6 https://www.goldmansachs.com/intelligence/pages/generative-ai-could-raise-global-gdp-by-7-percent.html

7 https://links.newsletter.fortune.com/e/evib?_t=5c2d888702774d17aa3d0350287b6d73&_m=1c67862b6c13407baa295ea33f6aa4cf&_e=oecR544yKpgz_wEG2P14O3Rt97g1zkpZKz9b3l_Gtv9Ksj6nDUAPzdNVvXuACg_X

8 https://www.whitehouse.gov/ostp/ai-bill-of-rights/

9 https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/the-economic-potential-of-generative-ai-the-next-productivity-frontier

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11 https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32022R0858

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