The Path to a Data-Driven Future:

Analysis of AI adoption in Swiss companies

Advances in Artificial Intelligence technology are everywhere to be seen in the media landscape. The opportunities and risks of AI are the subject of debate among academics, governments, and businesses around the globe. Organizations are moving to adopt AI and other technologies that enable them to leverage increasingly large volumes of data to improve decision making.

Like the technology itself, AI adoption research is on the rise, but there is no clear picture of what AI related technologies have been implemented and how they are used in Switzerland. To gain insight into how Swiss organizations are approaching AI, a survey of the Swiss market was conducted to shed light on the state of adoption in the following three areas: data analytics, machine learning, and artificial intelligence.

Institutions:
Hochschule für Wirtschaft Zürich (HWZ)
Swisscom (Schweiz) AG, Data & AI Consulting

Goals:
To conduct research on Swiss marketplace to better understand the drivers and barriers to AI, machine learning, and data analytics.

Method:
Survey comprised of an online questionnaire and personal interviews conducted on the German speaking region.

Duration:
Online questionnaire conducted Sep/Oct 24.
Personal interviews conducted Oct/Nov 24.

Sample Size:
123 SMEs and 5 large cap companies completed the online questionnaire. Personal interviews were conducted with seven people in senior IT roles (three large cap and four SME).

Contact:
Chandler Robinson (Autor)
Chandler.Robinson@student.fh-hwz.ch

Prof. Dr. Evangelos Xevelonakis (HWZ):
Evangelos.Xevelonakis@fh-hwz.ch
www.fh-hwz.ch

Matthias Mohler (Swisscom):
Matthias.Mohler@swisscom.com
www.swisscom.ch/ai

Adoption rate

Generative AI and data analytics show the highest adoption rates (38% and 35% respectively) with Swiss SMEs that have already adopted or actively exploring adoption. The most common use cases amongst respondents are content creation (generate/edit text), marketing, and process automation.

Machine learning

Machine learning shows the lowest adoption rate in the three areas with only 12% of SME's that have actively adopted or are exploring adoption. Survey participants indicate they do not understand machine learning›s potential or feel it is not needed.

Skills shortage

For all three areas (data analytics, machine learning, and generative AI), firms often cite shortage of skills and a lack of understanding of the technologies' and methods› potential as key barriers to adoption. Many SMEs may lack dedicated data science or IT departments to identify use-cases and demonstrate the potential benefits of these technologies.

Regulatory complexity

Among interview participants, regulatory complexity ranked as one of the biggest concerns. Firms are looking at how to adopt AI while remaining compliant with the relevant data protection regulations (CH and EU). There is concern this could put SMEs at a competitive disadvantage.

Transparency

Industry leaders noted that model accuracy and transparency are also key concerns with AI adoption. Respondents expressed uncertainty about how to validate AI model output and the liability questions that go along with using AI model output.

Status of Data Analytics Adoption by Sector
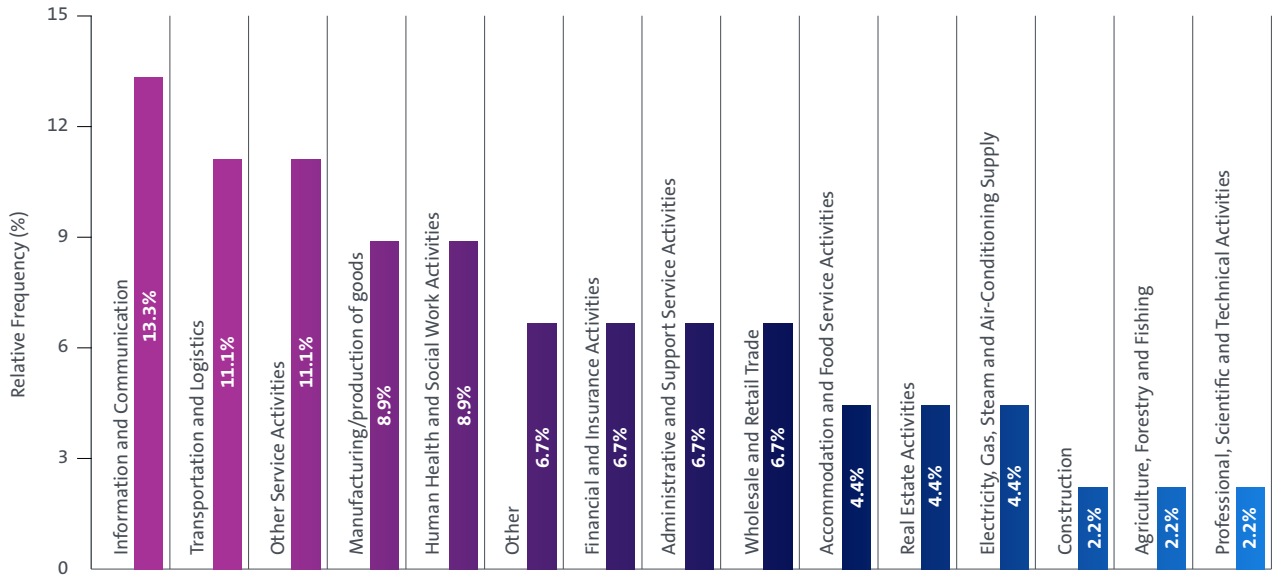
Nearly half of the firms that have adopted or are currently exploring data analytics are in the technology, transportation and logistics, service, or manufacturing sectors, while the utilities, agriculture, and scientific sectors showed the lowest level of adoption.

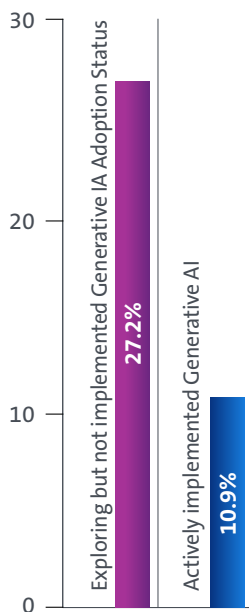## Status of Generative AI Adoption by Sector
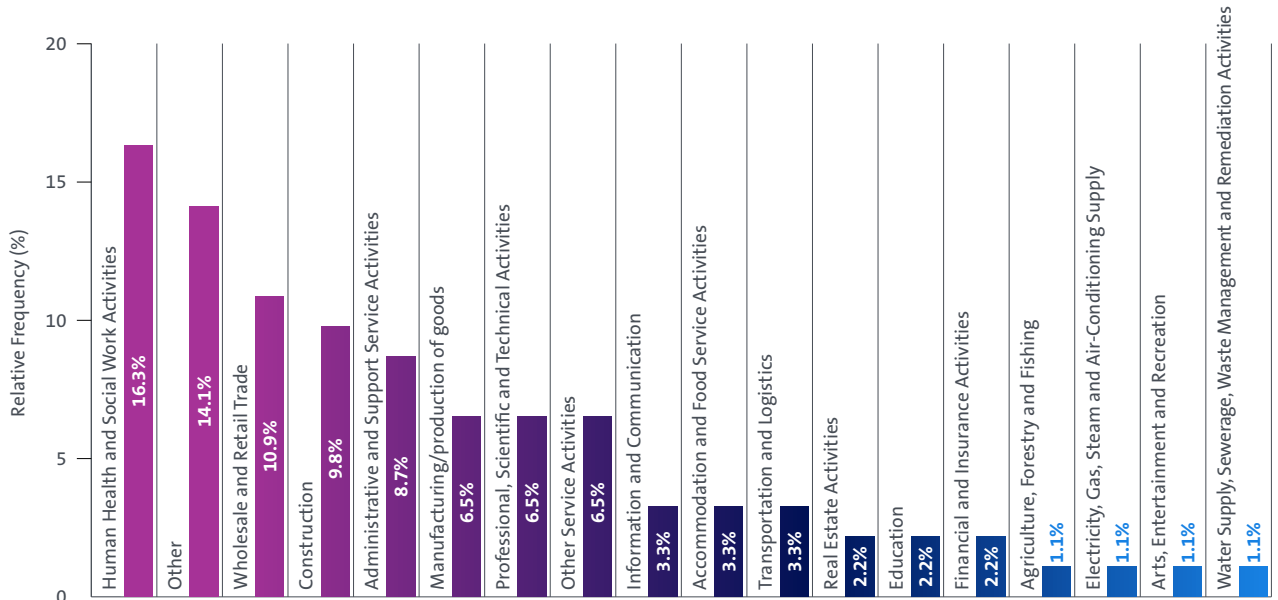
Five sectors represent 60% of the firms that have adopted genAI or are exploring adoption: medical and social services, retail, construction, administration and support services, with agriculture, utilities, and arts and entertainment showing lowest levels of adoption.
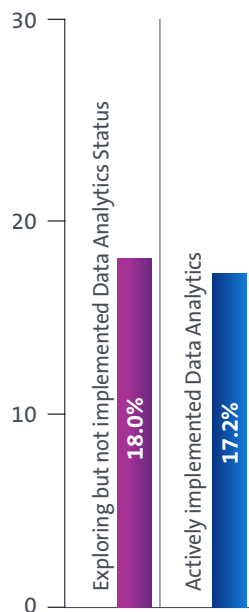
	Data processing	Data analysis and visualisation	Machine Learning & AI	Data management
1	Other	Microsoft Power BI	Other	Other
2	Microsoft	Other	Microsoft	Microsoft SQL
3	SAP BI	SAP BI	Google Vertex AI	Microsoft Azure
4	Google Cloud Data Flow	Qlikview/Qliksense	Phyton	SAP BI

On the technology front, the global technology firms are dominant. For ETL/data pipeline, frontend/business intelligence, and backend/data platform systems, Microsoft and SAP were the most prevalent, aside from proprietary systems represented in the "other" category. Google, Microsoft, and Python were the most common machine learning and artificial intelligence tools used by respondents' firms, along with Matlab and proprietary solutions in the "other" category.

Status of Generative AI Adoption

Status of Data Analytics Adoption

Regulations – Interview participants are concerned with the liability implications, particularly around data protection laws, of AI use. The Swiss government should move quickly to establish laws ensuring transparent, safe, and ethical AI use. Formalizing the governance framework will facilitate adoption by giving Swiss organizations clearer paths to the adoption of AI.

Education – Industry leaders feel that there is still a shortage of data science and AI related skill sets in the market. More education is needed for the Swiss market, particularly SMEs, to understand AI's potential and identify compelling use cases for their businesses.

Quick wins – Among all the hype and uncertainty around AI, interview participants suggested that firms focus first on simpler use cases that will add immediate value. Businesses may need to re-work legacy IT infrastructures and processes to implement more complex AI projects.

Accuracy and Compliance – Nearly everyone intervie-wed noted the need for strict controls on AI related processes. This includes the need for cleaning data for input and training to ensure compliance with data protection needs, and the output of AI models to confirm the results are accurate.

Qualitative Findings:

Awareness – Swiss market is already taking first steps to leverage AI, data analytics, and machine learning. However, many SMEs are not aware of the potential these technologies have to improve their businesses. More support from both the public and private sectors is needed for firms to increase adoption.

"The results show that generative AI and data analytics currently have the highest adoption rate, while machine learning is lagging behind. This could be due to the more complex implementation requirements and the lack of expertise in companies.

A key hurdle for all three areas is the lack of skilled labour and an insufficient understanding of their potential. In addition, regulatory requirements are making implementation more difficult, which is a growing problem, particularly in the area of AI. Concerns about modelling accuracy and transparency also highlight the need to create trust in AI solutions.

Companies should therefore make targeted investments in employee training, the creation of transparent processes and the development of partnerships in order to overcome both technical and regulatory challenges in the long term and drive innovation.

The results make it clear that, in addition to technological aspects, human and organisational factors are crucial for successful implementation."

Prof. Dr. Evangelos Xevelonakis
Head of Center for Data Science & Technology, HWZ

"We see interesting results in this study that confirm that Swiss companies view the topic of AI from different perspectives.

On the one hand, the adoption of generally available generative AI services such as ChatGPT already appears to be reasonably advanced, while on the other hand we see few process- and company-specific AI solutions based on self-trained machine learning models with their own data.

We conclude from the results that although the latter undoubtedly has potential, SMEs often lack the specific knowledge to implement these applications operationally. Another influencing factor that we see in practice is the quantity and quality of company data.

In addition, there is often a lack of ability to calculate business cases based on these models in order to justify an investment. Machine learning models are often associated with uncertainties and companies have to work with scenarios in which they can demonstrate the ROI of such a solution.

The adoption rate of classic data analytics & reporting solutions, on the other hand, is very positive and shows that Swiss companies attach great importance to data-driven corporate management."

Matthias Mohler
Head of Data & AI Consulting, Swisscom