AI + X Track "AI in Finance and Sustainable Investing"
Part I: AI in Financial Services

Organizer and this presentation : Dr. Patrick Hauf, Host: Prof. Dr. Schwendner
Patrick.Hauf@zhaw.ch

Agenda & Panel

14:00 – 14:15	Recent Trends In AI And Their Impact On Financial Services	**Patrick Hauf** (ZHAW)	
14:15 – 14:30	Getting the most out of LLMs in the long term while reducing risks	**Leonardo di Marchi** (Thomson Reuters)	
14.30 – 14:45	AI Factories and Community Models to Transform Financial Services?	**Jochen Papenbrock** (NVIDIA)	
14:45 – 14:55	New Frontiers in Investment Processes and Risk Management	**Josef Teichmann** (ETH)	
14:55 – 15:10	How did GenAI change the way we think AI	**Dennis Meier** (UBS)	
15:10 – 15:40	Panel – Deepening the insight, questions from the audience possible	*All of the above Moderation*: **Patrick Hauf, Peter Schwendner**	
15:45- 17:00	*PART II: AI Use Cases on Sustainable Investing*	*Chair: Tomasz Orpiszewski*	

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One of my missions – exploring AI "best practices" in Switzerland

Dr. Patrick Hauf, Senior Lecturer
@ZHAW School of Management & Law

Programme Director of the <u>CAS in AI Management & Strategy for Financial Services</u>

Core Team for the conference <u>"AI in Risk & Compliance"</u> (this year: 31.10.2024)

SwissRe

Fintechs like Aisot
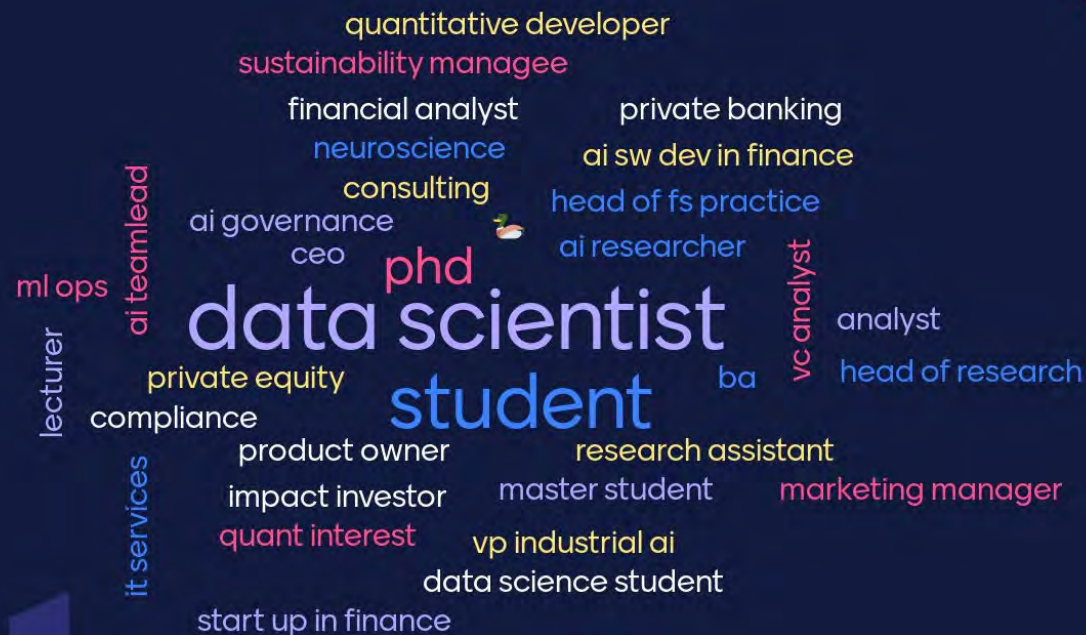
Raiffeisen Schweiz

VP Bank

Deloitte UBS

BearingPoint …and many more!

What role/job brought you here?

Recap McKinsey's 2023 study: Tangible business benefits are expected, particularly through GenAI use cases

- Banking, high tech, and life sciences are among the industries that could see the biggest impact as a percentage of their revenues from generative AI
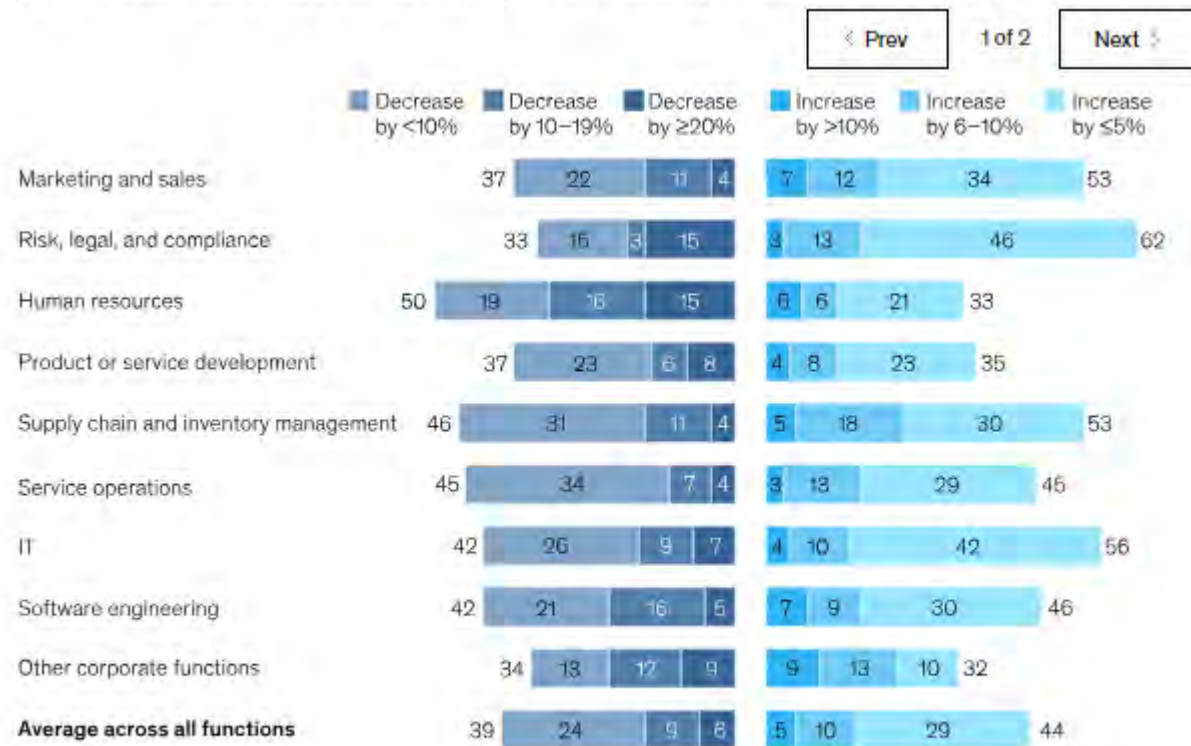
Using generative AI in just a few functions could drive most of the technology's impact across potential corporate use cases.
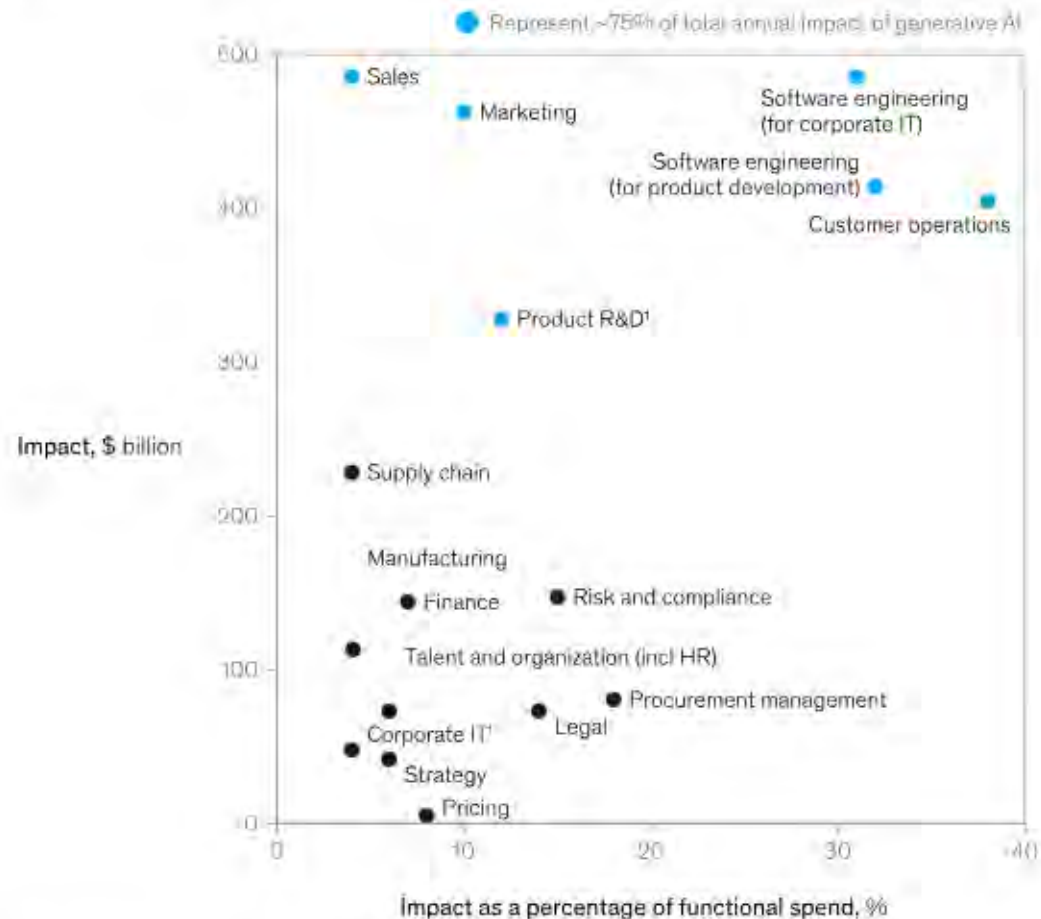
McKinsey & Company

McKinsey's (with data up to March 2024): AI starts to pay off in terms of *business value*!

Cost decrease and revenue increase from generative AI adoption in 2023, by function,[1] % of respondents

| | Prev | 1 of 2 | Next |

Function	Decrease by <10%	Decrease by 10–19%	Decrease by ≥20%		Increase by >10%	Increase by 6–10%	Increase by ≤5%
Marketing and sales	37	22	11	4	7	12	34	53
Risk, legal, and compliance	33	16	3	15	3	13	46	62
Human resources	50	19	16	15	6	6	21	33
Product or service development	37	23	6	8	4	8	23	35
Supply chain and inventory management	46	31	11	4	5	18	30	53
Service operations	45	34	7	4	3	13	29	45
IT	42	26	9	7	4	10	42	56
Software engineering	42	21	16	5	7	9	30	46
Other corporate functions	34	13	12	9	9	13	10	32
Average across all functions	39	24	9	6	5	10	29	44

[1]Questions were asked only of respondents who said their organizations have adopted AI in a given function. Respondents who said "cost increase," "no change," "not applicable," or "don't know" for the effects of generative AI (gen AI) on costs are not shown, and respondents who said "revenue decrease," "no change," "not applicable," or "don't know" for the effects of gen AI on revenues are not shown. Data for manufacturing and strategy and corporate finance are not shown, because the base sizes were too small to meet the reporting threshold.

Source: McKinsey Global Survey on AI, 1,363 participants at all levels of the organization, Feb 22–March 5, 2024.

26%
of financial service professionals regularly **use generative AI tools for work**

Source https://www.mckinsey.com/capabilities/quantumblack/our-insights/the-state-of-ai ; the 26%: 248 financial service professionals were surveyed.

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And leaders spread the word!*

- **Mentions of AI grow by 60%** (annual reports, press releases, and company LinkedIn posts) over the past year

- Some banks rapidly **extend their disclosed AI content** (volume and substance mentioning concrete AI use cases & initiatives) – NAB, Barclays, and Citigroup are the "banks to watch".

- >50% of **C-level leaders** talk about their specific AI actions

Citigroup Employees Have Pitched 350 Use Cases for Generative AI

BY **PYMNTS** | OCTOBER 27, 2023

8

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Double strike for Klarna - creating business value in separate areas through AI
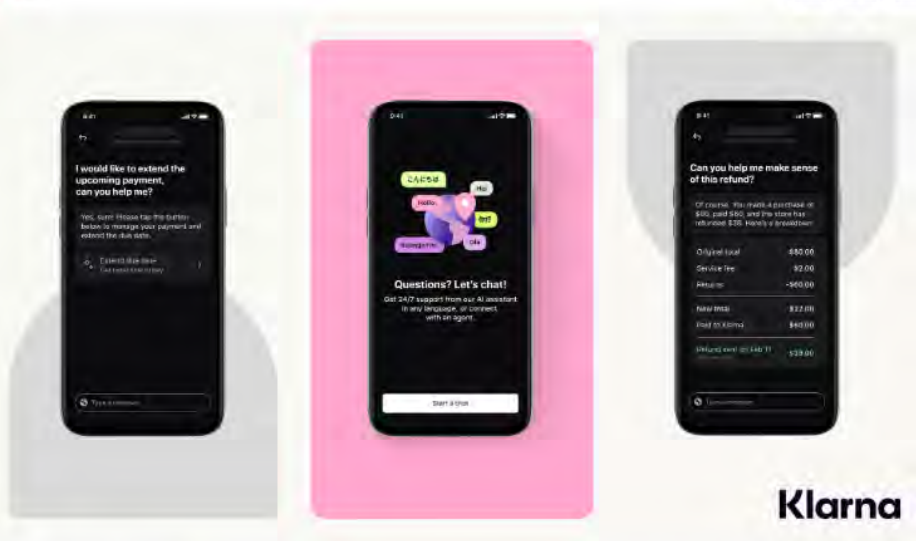
February 27, 2024

3 months

May 28, 2024

Klarna AI assistant handles two-thirds of customer service chats in its first month

February 27, 2024

New York, NY – February 27, 2024 – Klarna today announced its AI assistant powered by OpenAI. Now live globally for 1 month, the numbers speak for themselves:

- The AI assistant has had **2.3 million conversations, two-thirds of Klarna's customer service chats**
- It is doing the equivalent work of **700 full-time agents**

AI helps Klarna cut marketing agency spend by 25% and run more campaigns

May 28, 2024

Stockholm, 28 May, 2024 – Klarna, the AI powered global payments network and shopping assistant, has cut its sales and marketing spend by 11% in Q1 2024 while increasing the number of campaigns and updating marketing collateral more frequently. AI is responsible for 37% of the cost savings, or about $10 million on an annualized basis.

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Not just Klarna, not just Stockholm: UBS, Pictet, LGT

SWI swissinfo.ch — Swiss perspectives in 10 languages

UBS Has an AI Tool That Can Scan 300,000 Firms in 20 Seconds

September 10, 2024 - 16:12   1 minute

(Bloomberg) — UBS Group AG has developed an artificial intelligence tool to help it offer clients potential M&A deals, able to analyze a database of over 300,000 companies in less than half a minute.

Microsoft | Home   About Microsoft ∨

Top Swiss Banks Embrace GenAI Transformation with Unique FinanceGPT

20/12/2023

Swiss-based AI-driven FinanceGPT company, Unique AG, announced an official go-live with their client Pictet Group. This rollout enables over 5,000 employees to experience the power of One.Chat, a platform co-developed by Unique and Pictet and based on Microsoft Azure OpenAI Service, that allows easy access to all internal information.

LGT Private Banking have also experienced the power of Unique FinanceGPT and its capabilities that extend far beyond task optimization.
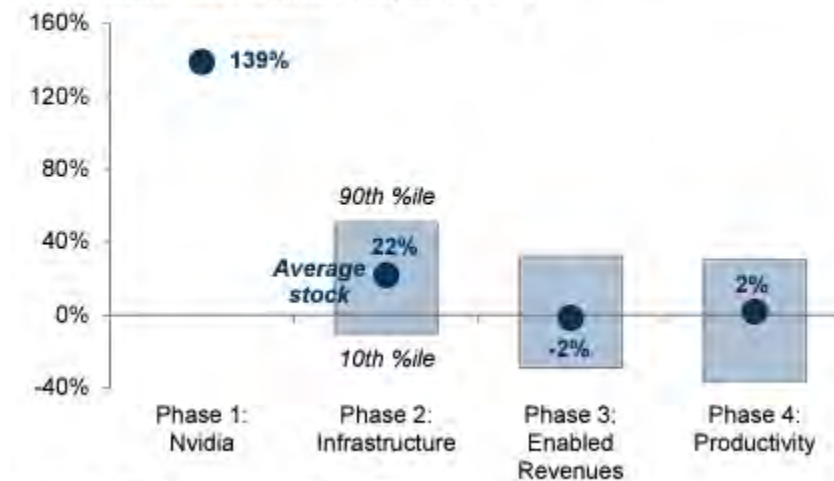
Sources: https://www.swissinfo.ch/eng/ubs-has-an-ai-tool-that-can-scan-300,000-firms-in-20-seconds/87524741, https://news.microsoft.com/de-ch/2023/12/20/top-swiss-banks-embrace-genai-transformation-with-unique-financegpt/

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So far, mostly tech companies have benefited in terms of *shareholder value*

– *"Phase 1"* kicked off in early 2023, focusing on **Nvidia as near-term beneficiary**

– *"Phase 2"* focuses **on AI infrastructure**, including semiconductor firms, cloud providers such as Microsoft or Amazon, hardware and equipment companies, and security software stock.

– *"Phase 3":* AI-driven sales benefiting Meta, Salesforce, Uber and others.

– *"Phase 4":* **companies leveraging AI** to enhance productivity across various industries, with the **greatest potential expected in labor-intensive sectors**.

Phase 1 is well underway, with Phase 2 companies now reflecting more signs of AI optimism
Distribution of stock returns YTD by AI phase, %

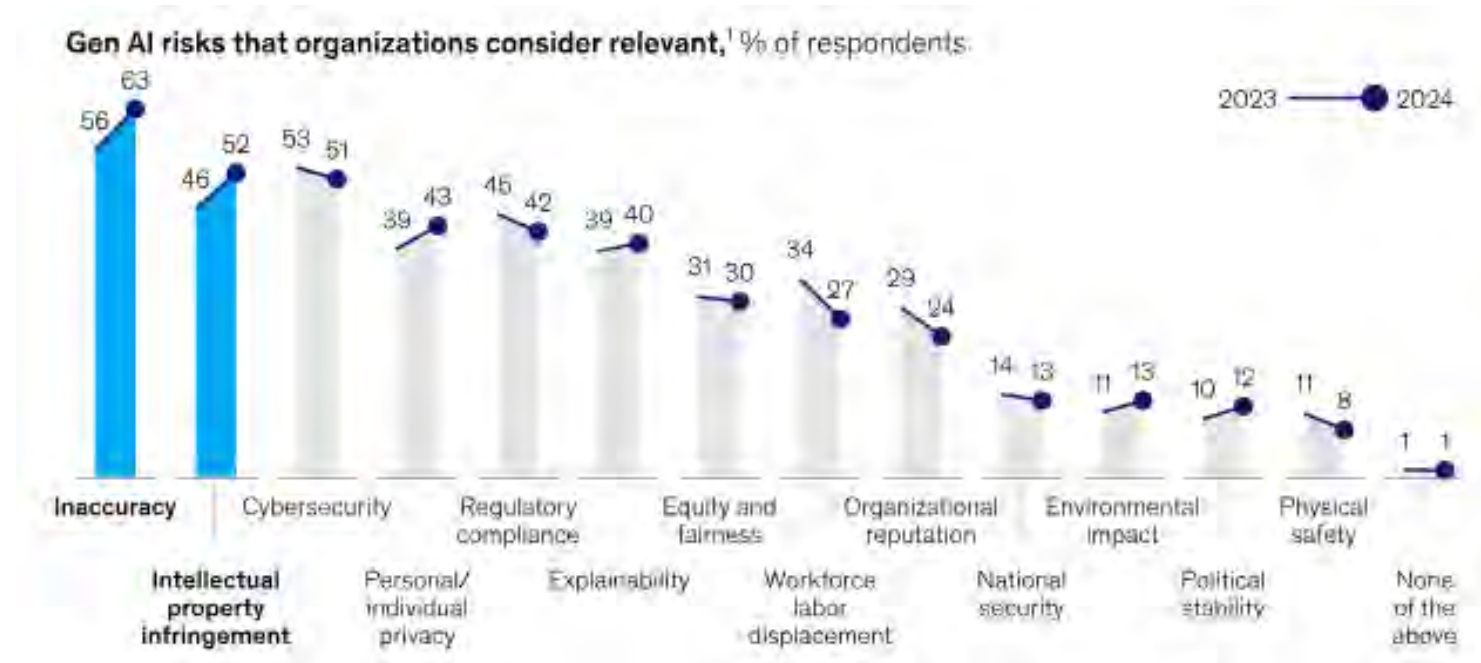Source: FactSet, Goldman Sachs GIR.

Sources: Goldman Sachs, 2024, Top of mind, issue 129: https://medium.com/@nassif.co.uk/goldman-sachs-expects-four-stages-in-the-ai-boom-with-nvidias-success-as-just-the-beginning-302ce4597ab9

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What hindering Phase 4 companies to take off?

- Gen AI risks can be managed
- **Inaccuracy, cybersecurity**, and **regulatory compliance** are the ones most worked on mitigating

Gen AI risks that organizations consider relevant,¹ % of respondents

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AI risk exposure differs across industries

- **Analysis of risks associated with AI will differ by time and industry** (SwissRe, 2024a, SwissRe 2024b)*

- AI risks are derived from **past AI incidents** and **forward-looking patent** data.

- Financial services risks are estimated to be lower than that of many other industries such as the IT or healthcare sector
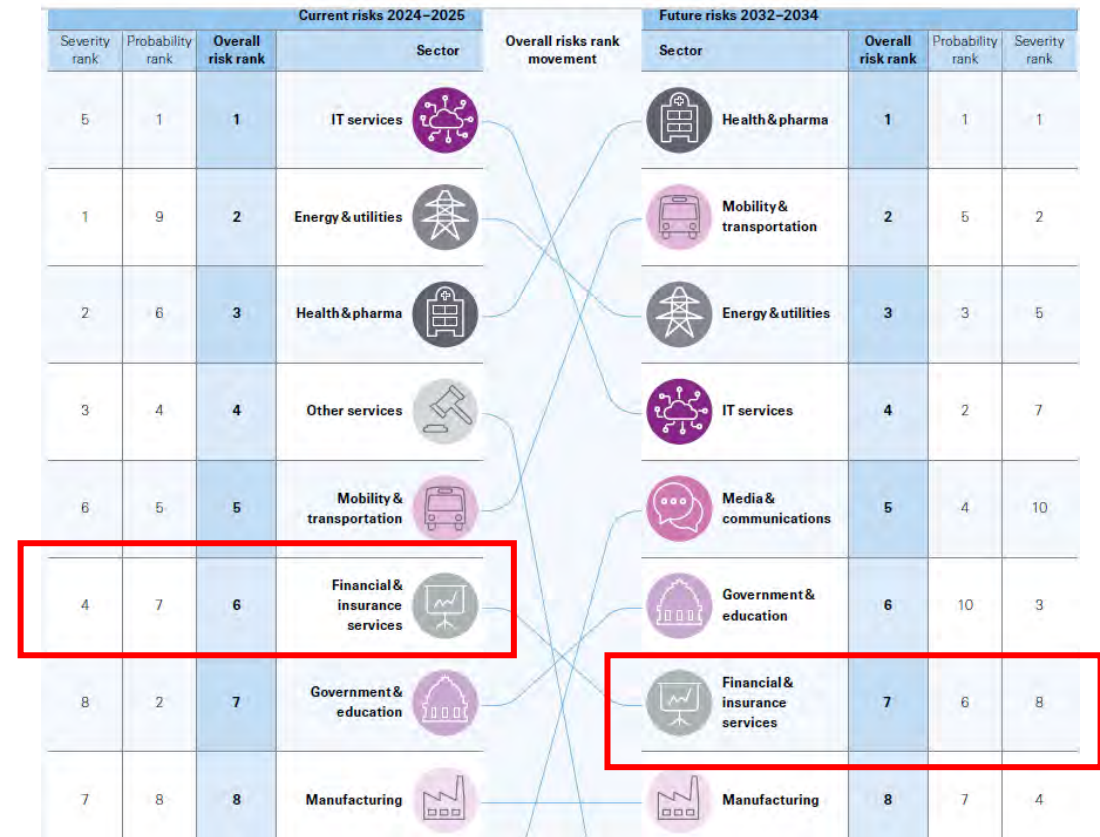
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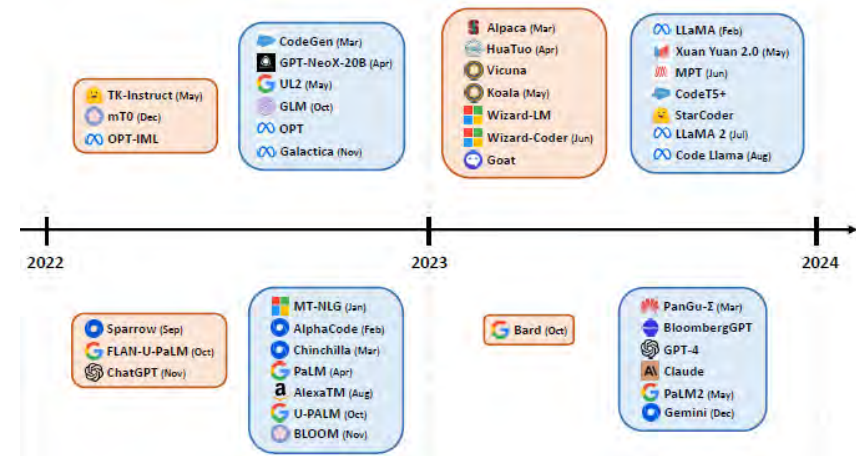# Another challenge: evolving regulation and rapid technology updates

Open letter: For uniform AI regulation in the EU

Meta, SAP, Klarna and numerous companies have signed an open letter. It is about the regulation of AI.

Sep 19, 2024 at 11:35 am CEST   3 min. read

By Eva-Maria Weiß

The EU risks missing out on the era of artificial intelligence, according to an open letter signed by numerous companies and researchers who work in the EU and develop and provide AI services. The issue at stake is which data may be used for

Sources: https://www.heise.de/en/news/Open-letter-For-uniform-AI-regulation-in-the-EU-9907188.html, right: Naveed, H., Khan, A. U., Qiu, S., Saqib, M., Anwar, S., Usman, M., ... & Mian, A. (2023). A comprehensive overview of large language models. arXiv preprint arXiv:2307.06435.

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Time is precious…more resources for you!

Great resources to approach when interested in AI in Financial Services:

- <u>Evident</u> and the replays of this year's <u>symposium</u> (focus on banks)
- Goldman Sachs AI <u>publications</u> (focus on investors)
- Consulting companies (e.g., McKinsey has published rather recent <u>content</u> on AI with a sector focus)
- <u>Our blog</u> "Artificial Intelligence in Finance" with more local and also scientific content and the newsletter of our institute

Newsletter
https://bit.ly/anmeldung-infoletter

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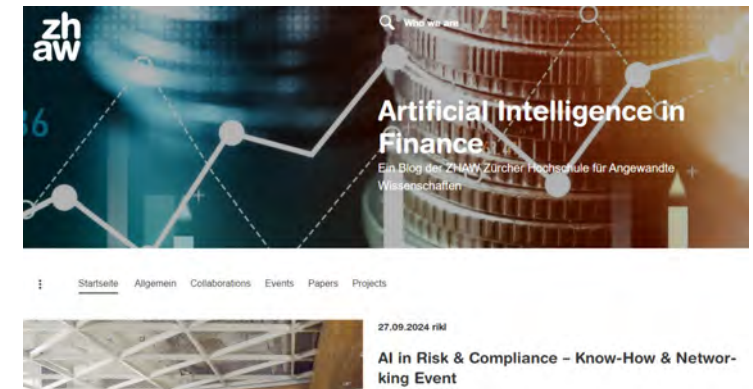
Panel with Q&A

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Moderation: Patrick Hauf & Peter Schwendner (ZHAW)

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Panel with Q&A – 1/3

Questions the panelists should discuss.....

Is it conceivable for UBS to bring AI use cases (self-service) directly to customers

what is necessary to get to novel trading strategies, given that LLMs are built on historical data? Alpha Go adaptation?

To UBS: with accelerating development timelines and many more AI tools coming, how do you maintain potentially 100s of projects long-term? Do you prefer outsourcing or insourcing?

What are the major decision criteria for enterprises when it comes to build vs buy?

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Getting AI expertise on a non-technical level:
The CAS in AI Management and Strategy for Financial Services

Modul 1
Datengetriebene Geschäftsmodelle verstehen (6 ECTS)

Wertschöpfung durch Datenkompetenz

- Charakteristiken datengetriebener Geschäftsmodelle
- Typische Datenquellen und -flüsse im Finanzsektor
- Daten als Asset und Datenmanagement

Use Cases im Finanzsektor kennen & entwickeln

- Methodenüberblick Machine Learning
- Use Cases Banking (z.B. Risikomanagement / Compliance, Customer Analytics, Assetselektion)
- Use Cases Insurance (z.B. Versicherungsbetrug)
- Eigene Use Cases aus realen Problemstellungen ableiten und Anwendung automatisierter ML-Tools

KI-Transformation & Strategie

- KI-Strategie und ihre Operationalisierung

Leistungsnachweis: Präsentation und Diskussion KI-Strategie

Modul 2
KI/ML-basierte Produkte & Services entwickeln (6 ECTS)

Data Science Workflow

- Data-Science-Terminologie
- Ressourcenbedarf (Strukturen & Prozesse, Menschen und Kompetenzen, Daten und Systeme)
- Cloud-Plattformen und kritische Infrastrukturkomponenten

KI/ML-Projekte verstehen & konzipieren

- Grundlagen Softwareentwicklung
- Projektinitiierung und Teamkomposition
- FinTechs und Partnerschaftsmodelle
- Rahmenbedingungen, Regulierung und Förderung

Forschungstrends

- Explainable AI, Reinforcement Learning & Co.
- Unbiasedness und ethische Gesichtspunkte

Leistungsnachweis: Projektskizze erstellen und präsentieren

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Getting AI to practice is not always easy – ZHAW insights

➢ **Conferences** like this one

➢ **Professional education** (https://www.zhaw.ch/de/sml/weiterbildung/detail/kurs/cas-ai-management-strategy-for-financial-services/)

➢ **Innovation projects with industry and own research** (see, e.g., https://www.zhaw.ch/en/research/research-database/project-detailview/projektid/5922/, and right-hand side)

ORIGINAL RESEARCH article
Front. Artif. Intell., 21 December 2021   This article is part of the Research Topic
Sec.Artificial Intelligence in Finance   Explainable, Trustworthy, and Responsible AI for the Financial Service Industry
https://doi.org/10.3389/frai.2021.794996   View all 7 Articles

Audience-Dependent Explanations for AI-Based Risk Management Tools: A Survey

Branka Hadji Misheva[1]*,   David Jaggi[2],   Jan-Alexander Posth[2],   Thomas Gramespacher[2] and

Joerg Osterrieder[1]

[1] ZHAW, School of Engineering, Institute of Data Analysis and Process Design, Winterthur, Switzerland
[2] ZHAW, School of Management and Law, Department Banking and Finance, Winterthur, Switzerland

Complex theory

Acceptability & benefit

Theory vs. application

Challenges

Resources vs. benefit

Applicability & implementation

Data vs. noise

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Thank you!

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