Q4 Edition

EVIDEN

Swiss Tech Radar

Navigating the Future of Technology

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Author(s)

CTO Office Switzerland –

Vishal Chandnani, Benny Gaechter,
Evgeniy Ponomarev, Sergio Tocalini Joerg

Introduction

The Tech Radar for Swiss Customers is a comprehensive article published by practitioners in the Swiss market from Eviden AG. This report is based on a collective analysis of research reports, discussions with partners, and interactions with customer executives. The primary aim of this Tech Radar is to provide a clear and structured overview of the technological trends shaping the business landscape in Switzerland. By doing so, we aim to equip businesses with the insights needed to make strategic decisions about technology adoption and future investments. This is the second edition of our Tech Radar, which will be published every quarter to keep businesses updated on the latest trends and advancements. If you have any feedback or ideas for topics you would like to see in future editions, you can inform us here.

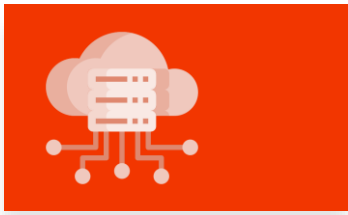
We have categorized technologies into three categories

Industries impacted: Few (1-2) | Some (3-4) | Most (>4)

Within Reach

SOVEREIGN CLOUD

Industries that most benefit

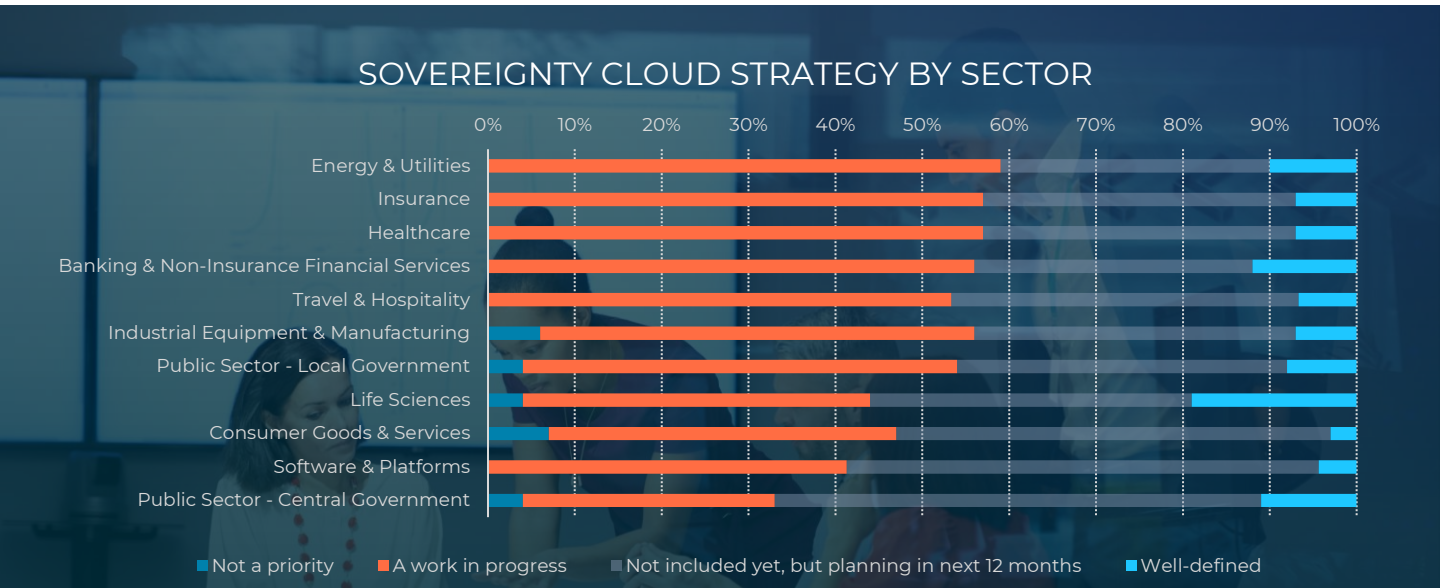


The concept of Sovereign Cloud has a direct impact on the current way of doing business in Switzerland. Especially if we consider the strict compliance regulations that are applied in the country, and how the organizations must manage their businesses within the boundaries of those regulations. As a result, Sovereign Cloud has emerged as a critical element for the public sector and industries handling sensitive data when designing effective data management strategies. Furthermore, it allows organizations to safeguard their data and ensure digital security and autonomy.

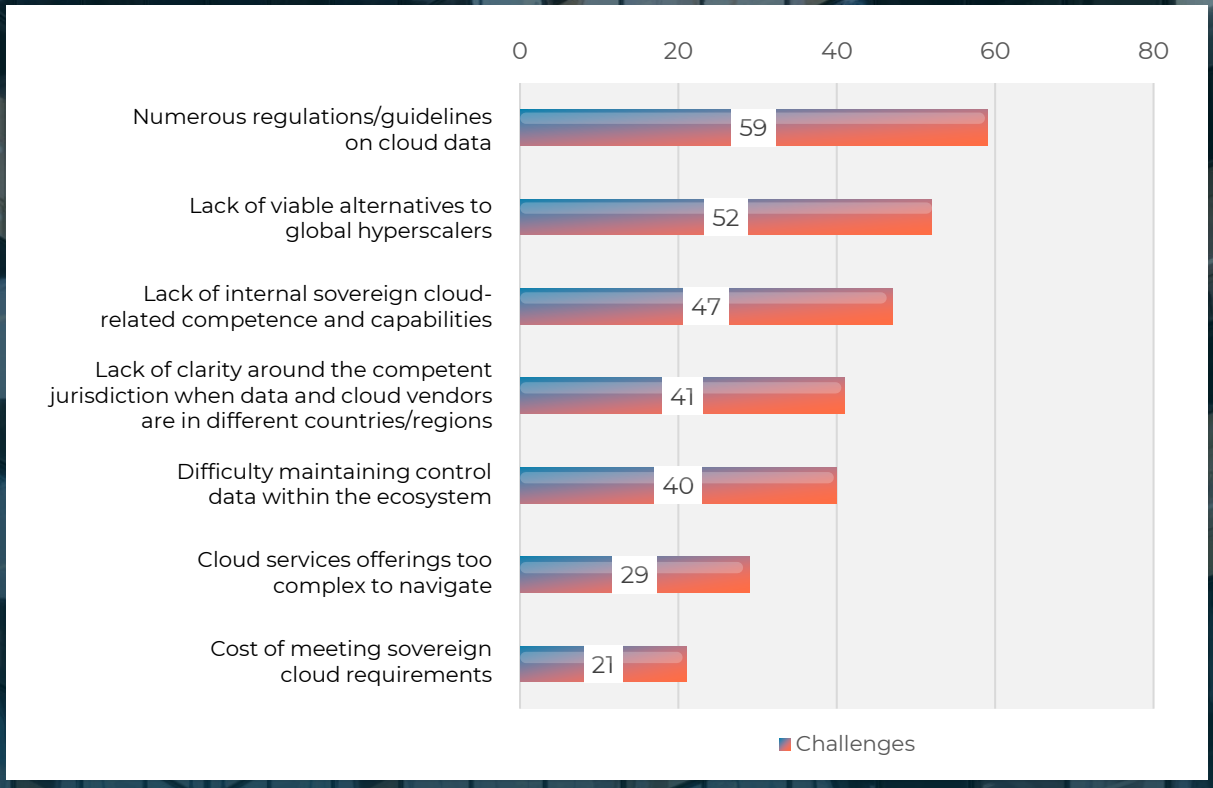
Going back to recent years, one of the first transformation challenges of this concept was about cloud computing services. This challenged how organizations do business and how they should adjust their cloud and data strategies to remain compliant with their cloud adoption journey.

Nowadays, Generative AI technologies have introduced new layers of complexity, particularly in ensuring data privacy and compliance with Switzerland's strict legal and regulatory frameworks.

For these reasons, the Sovereign Cloud has become a key pillar in driving innovation and cloud adoption. By keeping critical services and sensitive data under the control of local authorities, it provides digital autonomy and empowers the Swiss government to secure a sovereign digital future. Moreover, the Sovereign Cloud not only optimizes operational efficiency but also ensures business continuity, guaranteeing that essential government services remain resilient in the face of cyberattacks or natural disasters.



WHAT ARE THE KEY CHALLENGES RELATED TO SOVEREIGN CLOUD ADOPTION THAT YOUR COMPANY IS FACING?



SOURCES

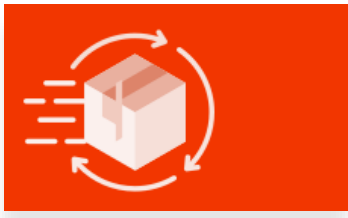
https://cloud.google.com/sovereign-cloud

https://www.microsoft.com/en-us/industry/sovereignty/cloud

https://www.accenture.com/ch-en/insights/cloud/sovereign-cloud

CI/CD OBSERVABILITY

Industries that most benefit



Continuous Integration and Continuous Deployment (CI/CD) are crucial in modern software development, enabling faster and more reliable code delivery. This technique is the foundation for every company that strives to streamline and automate their software lifecycle. With the rise of “Everything as Code” these pipelines grow in complexity and disciplines other than software engineering are getting increasingly exposed to the intricacies of CI/CD Pipelines. This calls for another well establish pattern: “Observability”.

CI/CD OBSERVABILITY (Contd.)

Observability involves gathering and analyzing data—such as logs, metrics, and traces—to gain insights into a system's internal state. In the context of CI/CD, observability is vital for monitoring pipeline performance, identifying bottlenecks, and diagnosing failures. Tools like Grafana and OpenTelemetry are becoming increasingly popular, with 34% of developers reportedly incorporating them into their pipelines by early 2024. These tools help detect regressions, catch bugs early, and reduce time to market (TTM) while maintaining fast development cycles and short feedback loops, ultimately enhancing the efficiency and reliability of the delivery process.

Globally, the cost of software failures in large organizations is substantial. For example, Global 2000 companies face an estimated $400 billion in annual losses due to unplanned downtime, with debugging alone costing around $61 billion annually. Given Switzerland's advanced economy and significant reliance on high-tech industries such as finance, pharmaceuticals, and manufacturing, industries all heavily dependent on software systems, the country likely bears a substantial share of these global costs.

Switzerland's financial services sector, which contributes about 8.9% of the national GDP, and the life sciences sector, which accounts for 39% of exports, are particularly vulnerable to software failures. Given the critical role these industries play in the Swiss economy, it's plausible that software failures could cost Swiss companies hundreds of millions of Swiss Francs annually, particularly in direct revenue loss, regulatory fines, and costs related to reduced productivity.

The adoption of CI/CD observability offers a significant opportunity to mitigate these risks. Its implementation has led to a 20% reduction in development costs for software companies. It's not just software companies which can benefit, however. According to Puppet's State of DevOps report, companies that implement CI/CD observability experience 50% fewer change failures and up to 75% faster recovery times. This level of operational efficiency can be a game-changer for Swiss companies, ensuring resilience and reducing costly downtime.

SOURCES

https://www.splunk.com/en_us/newsroom/press-releases/2024/conf24-splunk-report-shows-downtime-costs-global-2000-companies-400-billion-annually.html

https://raygun.com/blog/cost-of-software-errors/

https://finance.swiss/en/news-and-events/updated-figures-on-the-swiss-financial-centre-2023/

https://www.swissbiotech.org/listing/biotech-report-2023-the-life-sciences-sector-as-a-solid-foundation-of-the-swiss-economy/

https://devops.com/report-debugging-efforts-cost-companies-61b-annually/

https://grafana.com/blog/2024/01/08/observability-trends-and-predictions-for-2024-ci/cd-observability-is-in.-spiking-costs-are-out./

https://thenewstack.io/ci-cd-observability-a-rich-new-opportunity-for-opentelemetry/

https://grafana.com/blog/2024/03/26/ci/cd-observability-extracting-dora-metrics-from-a-cd-pipeline/

On the Horizon

PLATFORM ENGINEERING

Industries that most benefit

This concept emerged as the next generation to deliver applications in a secure and controlled way in organizations. Enabling them to quickly prototype new businesses and improving the developer's experiences.

Platform engineering is increasingly influencing businesses by enhancing productivity, reducing operational complexity, and fostering innovation.

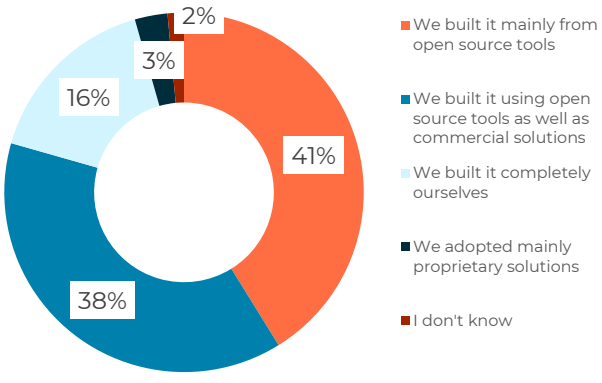
Platform engineering enables the creation of internal platforms that abstract away much of the complexity involved in building, deploying, and scaling software. By providing developers with self-service tools and environments, platform engineering allows them to focus on writing code and delivering features, rather than managing infrastructure. A Gartner report estimates that developer productivity can increase by 30% to 40% when leveraging internal development platforms.

With platform engineering, the tools, practices, and environments developers use can be centralized and standardized. This reduces duplication of effort and ensures consistency across teams. Incorporating Platform Engineering daily, enhances creativity, improves efficiency, and enables the organization to focus on customer needs. Automating repetitive tasks such as infrastructure provisioning, monitoring, and compliance checks can significantly reduce operational costs. McKinsey reports that companies adopting platform engineering can reduce cloud and infrastructure costs by up to 40% through better resource allocation and infrastructure optimization.

A well-structured platform engineering approach enhances the developer experience by minimizing frustrations related to manual infrastructure management, debugging, or deployment. By automating these tasks and ensuring adherence to company regulations and compliance, platform engineering not only improves operational efficiency but also contributes to the professional growth and maturity of engineers. This approach accelerates time to market, giving companies a competitive edge while simultaneously boosting job satisfaction.

Studies indicate that 55% of developers say a poor developer experience negatively impacts their work, while a platform approach significantly improves it.

HOW DID YOU BUILD YOUR INTERNAL DEVELOPER PLATFORM?



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SOURCES

https://devops.com/report-debugging-efforts-cost-companies-61b-annually/

https://finance.swiss/en/news-and-events/updated-figures-on-the-swiss-financial-centre-2023/

https://humanitec.com/thank-you/state-of-platform-engineering-vol-2

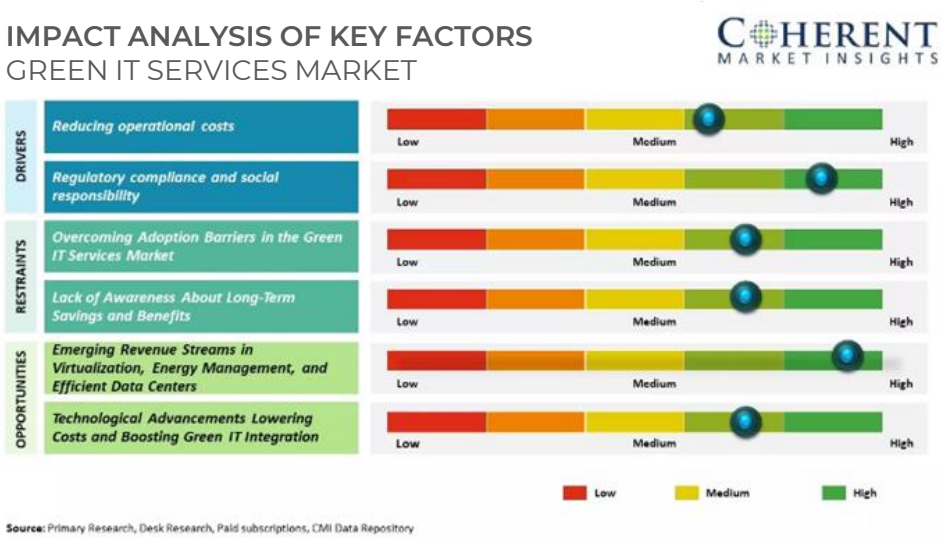
Green IT

Industries which most benefit

Green IT has evolved beyond sustainable hardware to encompass software engineering, fundamentally reshaping how companies approach their digital infrastructure. In Switzerland, businesses are spearheading the development of energy-efficient software that meets high-performance standards while reducing environmental impact.

Green IT Services Market Size and Trends

The Global Green IT services market is estimated to be valued at **USD 26.83 Bn in 2024** and expected to reach **USD 84.71 Bn by 2031**, exhibiting a compound annual growth rate **(CAGR) of 17.8% from 2024 to 2031**.



Key strategies driving this transformation include optimizing algorithms to reduce processing times and minimize hardware use, conserving energy in industries like finance and telecom, where massive data processing demands lead to significant energy consumption. As companies in sectors like pharmaceuticals and manufacturing increasingly migrate to the cloud, developers are prioritizing energy-efficient cloud-native applications. By optimizing software to better manage cloud resources, organizations can reduce their carbon footprint while still benefiting from scalable infrastructure.

GREEN IT IN SOFTWARE ENGINEERING

Measuring software efficiency is now integral, with companies tracking metrics like CPU usage and bandwidth consumption to ensure sustainability is built into the software from the start. Another major shift is in software architecture, with approaches like microservices and serverless computing widely adopted in finance and e-commerce sectors. These architectural models enable more efficient, dynamic resource allocation, further reducing energy usage.

Remote work tools are also contributing to Green IT by lowering the energy consumption associated with physical office spaces and commuting. Optimized collaboration software allows IT and consulting firms to reduce their carbon footprint, adding yet another layer to Green IT's influence across industries.

The impact of Green IT extends across multiple sectors in Switzerland. Financial institutions are optimizing data centers and creating energy-efficient trading systems to align with regulatory requirements and sustainability goals. Pharmaceutical giants in Switzerland are integrating Green IT into global operations by focusing on energy-efficient data management systems for clinical trials and research. In telecom sector, Swiss companies are leading efforts to build energy-efficient networks, which also translate into greener consumer applications. Hospitals and medical research centers are adopting Green IT to meet growing data storage and processing needs in a sustainable way. Retail and e-commerce companies are using optimized software to manage logistics, inventory, and customer experiences more efficiently, while minimizing energy consumption in an increasingly sustainability-conscious market.

The finance and telecom sectors are experiencing the most significant transformation due to their large-scale data processing needs and reliance on cloud computing. Both industries are also under regulatory pressure to adopt Green IT solutions. Healthcare and pharmaceuticals follow closely, benefiting from more efficient data management in research and patient care systems. The retail, e-commerce, logistics, and manufacturing sectors are also adopting Green IT to streamline operations, reduce energy consumption, and enhance supply chain efficiency.

Green IT has become a business imperative, particularly in software engineering. As Swiss industries such as finance, healthcare, and telecom seek to balance innovation with sustainability, energy-efficient software will be essential in reducing environmental impact. This approach not only meets regulatory and reputational demands but also provides significant cost savings and competitive advantages. Sustainability in software development is no longer just a technical challenge—it is a strategic necessity that will shape the future of IT in Switzerland.

In the Stars

GenAI INDUSTRIALIZATION

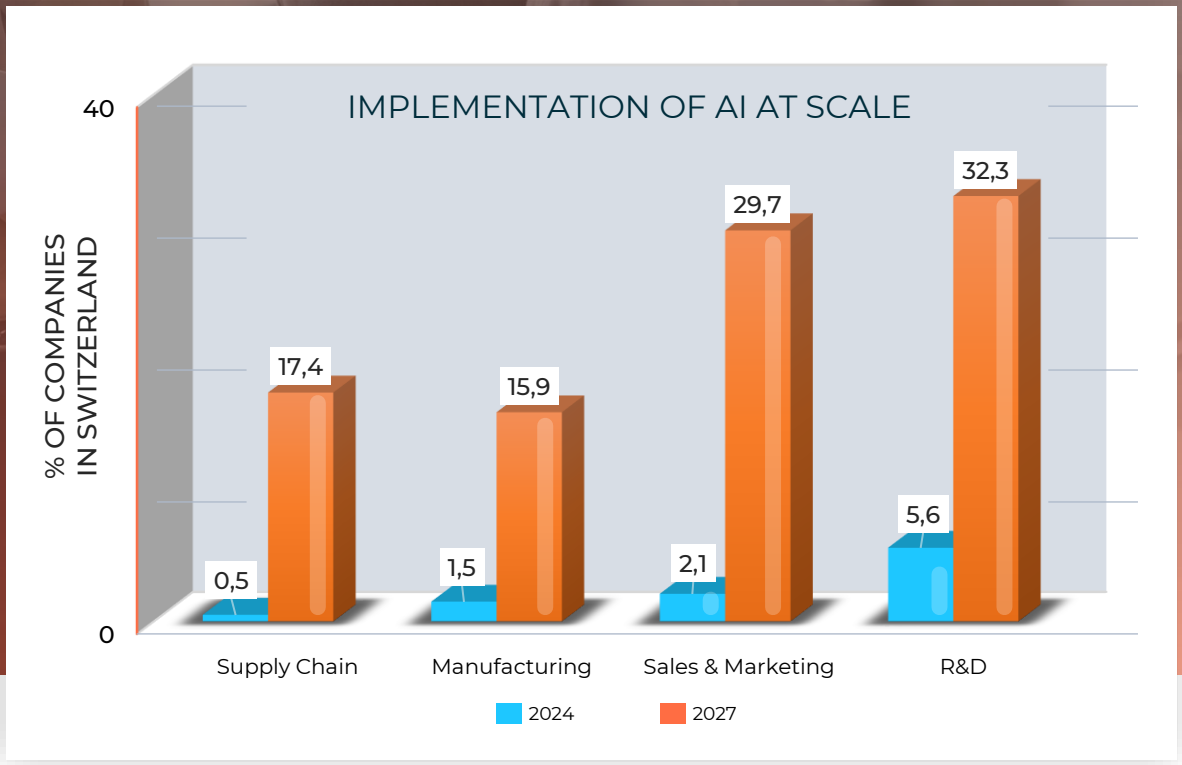
Industries which most benefit

The size of the GenAI market in Switzerland is estimated to grow significantly from today's 550 million CHF to 5 billion CHF by 2030. Achieving this almost 10-fold growth, however, will be challenging without bringing GenAI use cases from experimentation to production. Struggling to move from proof-of-concept (PoC) projects to fully-fledged industrialization is a known global hurdle in the GenAI community. This issue is largely rooted in the specificity of GenAI which is crucial to understand for all involved parties.

The emergence of widely accessible large language models has made experimentation with AI easier and faster. It has reduced the time required to build a pilot project from a few weeks down to a few days. Naturally, companies have started to test tens or hundreds of use cases from their backlogs with LLM capabilities and have failed to go beyond the PoC phase in most cases. The principal flaw of this approach is that such massive and scattered LLM experimentations do not test specific business cases. Typically, these short-living pilot projects rather verify the capabilities of LLMs in the context of a business case instead of proving the use case itself. Hence, a global shift in the way GenAI PoCs is thought of and planned is required.

The good news is that here there is nothing exotic – GenAI application developers should largely rely on experience and best practices of the classical 'deterministic' IT community. That includes planning GenAI PoCs with a clear return on investment (ROI) and core business KPIs in mind, focusing on efficiency, cost reduction opportunities, and new revenue stream generation. Another important aspect hindering massive GenAI industrialization is the need for sophisticated evaluation of LLM-powered applications. Unlike classical software development - where the same input always leads to the same output - GenAI-powered applications can generate different outputs for the same queries. It can happen, for example, due to unannounced changes in third-party LLM models or because of notorious hallucinations and various models' biases.

Switzerland is no exception to the global struggle with industrializing GenAI use cases. According to the latest survey, only 28% of companies in Switzerland have specific AI strategies in place. The fraction of companies with the implementation of AI at scale ranges from a mere 0.5% in supply change management to 5.6% in the R&D departments. Despite such humble current numbers, in 3 years the fraction of companies with complete AI industrialization is expected to grow to 32%.



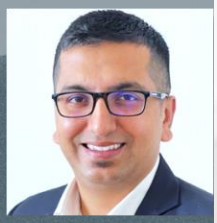
SOURCES

https://www.statista.com/outlook/tmo/artificial-intelligence/generative-ai/switzerland?currency=CHF

https://www.research-collection.ethz.ch/handle/20.500.11850/678173

Authors

CTO OFFICE EVIDEN SWITZERLAND



Vishal Chandnani

Chief Technology Officer

Vishal is an experienced technology leader and practitioner with a proven track record in building and delivering innovative solutions and driving business growth, specializing in leveraging digital technologies and cloud solutions. His expertise lies in analyzing client needs, crafting tailored strategies, and leading successful implementations to ensure organizations are future-ready.

Vishal Chandnani | LinkedIn | vishal.chandnani@eviden.com

Benny Gaechter

Regional Discipline Lead

Benny is a tech lead with over a decade of experience in cloud solutions. As Regional Discipline Lead, he manages technical teams, conducts workshops, and drives pre-sales efforts. Passionate about distributed systems and data platforms, he holds multiple certifications in cloud technologies and enjoys solving complex cloud challenges.

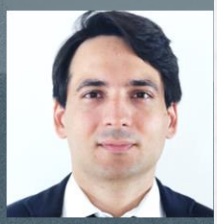
Benny Gaechter | LinkedIn

Evgeniy Ponomarev

Data Scientist & AI expert

Evgeniy is a data scientist and AI lead with extensive experience in AI/ML products. He leads projects in areas like time series anomaly detection and federated learning. Passionate about applying AI to real-world problems, Evgeniy advances deep learning innovation.

Evgeniy Ponomarev | LinkedIn | evgeniy.ponomarev@eviden.com



Sergio Tocalini Joerg

Senior Cloud Advisor

Sergio has over 15 years of experience in multiple countries, advising C-level executives on transformation programs. He crafts Cloud Strategies to align with business goals, maximizing value and revenue. Sergio also leads sales and delivery teams, managing and motivating them to exceed expectations.

https://www.linkedin.com/in/sergiotocalinijoerg/ | sergio.tocalini@eviden.com

Thank you