

# Hyperscalers in comparative review

Degree programme : MAS Information Technology

Driven by an accelerated pace of innovation in digital services, the trend of transitioning toward cloud services continues unabated. But how do the biggest hyperscalers compare against each other? What hyperscale strategies have or will be adopted by Swiss fintech companies? And which cloud-related regulatory requirements apply to fintechs that are subject to authorisation by the Swiss Financial Market Supervisory Authority FINMA?

## Introduction

More and more organisations that are embracing digital transformation look to resource-efficient, cost-effective solutions, which facilitate agility and scalability, as a key enabler for value creation in business models, operational processes, and customer experience. The use of clouds has been on the rise in the past few years because they are considered a flexible approach to meet such requirements.

Cloud hyperscalers refer to large cloud providers with a scalable architecture, which is designed to efficiently handle changing workloads and performance requirements by seamlessly adapting compute, memory, storage, and/or network resources.

The global hyperscale cloud market was valued at USD 191.15 bn in 2021 - dominated by Amazon Web Services, followed by Microsoft Azure, Google Cloud, and Alibaba Cloud - and is expected to grow to USD 693.49 bn by 2026.

In 2021, the number of active fintech companies in Switzerland totalled 382 and a steady, continued increase in Swiss fintechs that are applying technology from the area of analytics, big data, and artificial intelligence can be observed since 2015.

## Objectives

The main objective of the master thesis is to comparatively review hyperscale providers such that the analysis and results can serve as a selection guide for Swiss fintech startups. The second objective is to provide an overview of regulatory aspects in relation to the use of hyperscalers by financial institutions, which are subject to FINMA authorisation. The third and final objective is to explore the hyperscale usage of fintech startups in Switzerland.

## Methods

As a first step, the three leading hyperscalers were assessed as well as ranked with respect to 18 product categories (artificial intelligence/machine learning, analytics, application programming interface, compute, containers, databases, developer tools, hybrid and multicloud, internet of things, management tools, media, migration, mobile, networking, security/identity, serverless, storage, and web) and 5 other aspects (compliance assurance, data residency, service level agreements, startups/fintechs, and support levels) based on the scope and pertinence of information provided on their respective websites. Subsequently, what types of financial institutions and fintech companies require authorisation from FINMA as well as which regulations applicable to them (when using third-party cloud providers) were identified. Lastly, a survey was compiled and sent to Swiss fintech startups, containing questions about their hyperscale strategy, provider and use scope, among others.

## Results

Amazon Web Services scored best in the comparative review. On the regulatory side, FINMA Circulars 2018/3 „Outsourcing – banks and insurers“ and „Operational risks and resilience – banks“ (expected to take effect on 1 January 2023) contain key provisions for some financial institutions. The responses from 26 survey participants (out of 358 survey recipients) showed that only 5 Swiss fintech startups are currently using hyperscalers (most named provider: Amazon Web Services; highest use cases: databases and security), while 5 companies might adopt hyperscale cloud (most named provider: Google Cloud; highest use cases: artificial intelligence/machine learning, analytics, and databases), whereas 8 fintechs indicated that they will not leverage hyperscale due to a lack of need, and another 8 startups did not know whether they would do so in the future.



Susan Liu  
[susan.liu.ch@gmail.com](mailto:susan.liu.ch@gmail.com)