

Success Story

Revamp Learning Management System using Cloud Native Architecture (Serverless)

to achieve high performance system,
yet reduce overall TCO



PT. Ecomindo Saranacipta

Customer

Leading Private Education
Provider in Indonesia

Partner

Ecomindo

Products & Services

Azure Function
Azure Cosmos DB
Azure API Management

Customer


50,000+

Students


10+

Locations across Indonesia

 World-Class
Knowledge
Institution 

In the world

Our customer is one of the leading education institution in Indonesia with more than 50,000+ students and 10+ locations across Indonesia, and has a dream to become a World-Class Knowledge Institution. To reach their dream, they need to be supported by a reliable application platform and infrastructure that can scale with the business innovation and the growing number of students.

Challenge

Currently our customer has multiple Learning Management System (LMS) for each of the program of study that they have and along with the incremental number of active students that is using the system, capacity of the system has reached its limit and needs to be rearchitected properly to accommodate current and future needs.

Having monolithic architecture as de facto architecture for most of the system that have been built, brings another challenge for internal development team to keep up with the latest modern architecture if they would like to migrate to cloud native application/platform

...

...

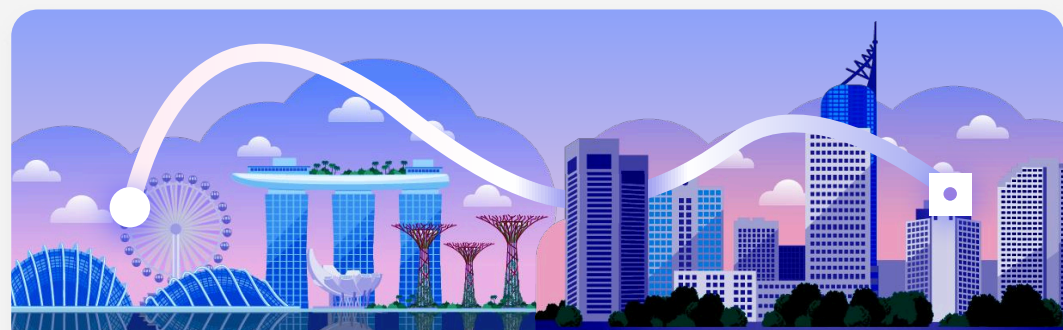
There are a few other challenges that needs to be addressed as well, like

- 1 Architecture. "Microservice are complex and hard to integrate"
- 2 High availability and scalability.
- 3 Cost optimize. Choose the right component that will bring all the benefit while optimizing cost.
- 4 Consolidating LMS into a single platform for multiple program of study.
- 5 Fix-scope mindset. Building a platform with functional and technical challenges in a long term development time, required agile mindset to adapt and align with user and business needs.

Solution

As part of the grand strategy for the architecture of LMS are microservice (to achieve agility and scalability) and event driven architecture (to ensure real-time data integration and eventual consistency across microservices).

The new LMS is built with microservice architecture using serverless framework (Azure Function) so they can be sure that the platform is scalable to handle thousands of concurrent users and NoSQL (Azure Cosmos DB) to handle this massive workload, which only Azure Cosmos DB can achieve with performance guarantee (responsive within millisecond).



We also use

Azure Media Service & CDN

to ensure optimum user experience in Indonesia since the nearest region of datacentre is located in Singapore.

Result

The new LMS bring several benefits for the organization, like:



Scalability

Using Azure Function, we can be sure that the infrastructure in place is sufficient for the peak season that will be happened in the future.



Agility

By having microservice architecture, development team no longer has to mastery all of the one giant code base that usually exist in monolithic architecture. Instead they can focus on small part of services/building block of LMS, and expanding further as needed.



Cost Optimize

Having serverless architecture means we can be sure the cost is highly optimized and minimum fix-cost that needs to be reserved for resources.



Fully PaaS

No more maintenance of the host infrastructure that needs to be done, all the energy can be directed on developing new. content / benefit for the organization

Technologies



Azure Function



Azure Cosmos DB



Azure API Management



Azure Event Hub



Azure Event Grid



Azure Media Service



Azure Content Delivery Network



Azure Data Factory



Azure Active Directory



Azure Storage



Azure Cache for Redis



Azure DevOps



Firebase



React Native



React JS



About Ecomindo

Ecomindo is a focused software company with more than 25+ years' experience serving various industry in Indonesia building their core and critical system. Ecomindo is a Microsoft Partner specializing in Apps and Digital Innovation - Data and AI.



25+
Years of
Innovation

Years in Business



150+

Team Member

