



Global Education Pioneer Conquers Liabilities of Single-Tenant Application with a Scalable, Cloud-Based SaaS Powered by GenAI





Challenges

- The **single-tenant** solution faced challenges in delivering tailored features to different users
- High operational costs were impacting overall business expenditure
- Monolithic system architecture created complexities
- Managing multiple applications became a challenging task
- Lack of intelligent automation slowed down development workflows and QA processes

Solution

- Aspire Systems created and implemented a tech roadmap to modernize the architecture
- Built a multi-tenant, cloud-native, **GenAI**-powered Unified Integrated Platform
- Integrated **GenAI** to automate key development and testing workflows
- Delivered a scalable platform with microservices for faster release cycles

About the Customer

Our client is one of the leading education institutions, operating multiple schools across the globe. As one of the largest private K-12 education providers in the world, they maintain an unparalleled track record in offering diverse curricula and educational opportunities to students of all socio-economic backgrounds. With a presence across the Middle East, North Africa, Asia, Europe, and North America, their mission is to deliver scalable, high-quality education.

The Need

The client operated a single-tenant Learning Management System deployed on the cloud. They aimed to address the limitations of this solution and implement a robust, scalable, and intelligent system capable of catering to the evolving demands of educational institutions worldwide.

Their goal was to build a comprehensive, cloud-based multi-tenant web and mobile application to efficiently manage all aspects of K-12 education. Recognizing the growing role of **GenAI** in software innovation, they also wanted to leverage AI to improve development efficiency and accelerate release cycles.

The Challenge

Business Challenges:

- The current solution was single-tenant, and delivering tenant-specific features to different schools was a challenge
- Onboarding new schools was time-consuming and cumbersome
- The cost of running the business was high due to licensing, infrastructure, and human-intensive workflows



Results

- Unified Platform consolidates **~40** applications
- Built on scalable cloud-based microservices for faster release cycles
- Master data setup time reduced from **5 days to 1 day**
- **65%** savings on licensing, training, and maintenance
- Intuitive and customizable UI for all age groups
- **95%+** parent satisfaction due to real-time communication
- **20-25%** reduction in overall development effort with **GenAI**
- **40-50%** reduction in unit test creation effort through **GenAI**-powered automation

- Usability challenges were prevalent across channels
- A need emerged to adopt intelligent automation to reduce manual development effort and shorten time-to-market

Technical Challenges:

- The existing system architecture was monolithic
- Maintaining multiple applications became increasingly complex
- Difficulty in managing multiple codebases for various schools and channels
- The technology stack was outdated and lacked AI integration capabilities
- Manual development and testing processes extended the release cycle

Aspire's Solution

Aspire Systems stepped in as a trusted technology partner to address the client's business and technical challenges. Through a well-defined technology roadmap and a **GenAI**-driven modernization strategy, Aspire helped the client transform their single-tenant LMS into a scalable, intelligent SaaS platform.

A Unified Integrated Platform was designed, offering modules such as:

- » Customer Management
- » Academics Management
- » Non-Academics Management
- » Learning Management



- » Back-office Management
- » HSE & Child Safeguarding
- » Data & Business Analytics

A modern architecture design that offers:

- » Multi-tenancy
- » SaaS
- » Microservices
- » Domain-driven
- » Micro-frontend
- » Cloud-first
- » Event-based integration
- » **GenAI-infused development and QA processes**

Where **GenAI** Made the Difference

Aspire integrated **GenAI** capabilities across the software development lifecycle:

- Used **GenAI** assistants to auto-generate boilerplate code, reducing repetitive development effort
- Leveraged **GenAI**-based test script generation tools to automate unit testing across microservices
- Enabled developers to shift-left on QA with AI-driven insights during early stages of build
- Reduced human dependency on documentation with AI-powered knowledge extraction tools



Benefits

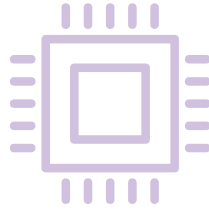
The **GenAI**-augmented transformation delivered the following tangible business outcomes:

- ◆ A single, all-in-one platform to manage day-to-day school operations and classroom functions
- ◆ Replaced **~40** fragmented educational applications, significantly reducing operational complexity
- ◆ Scalable cloud platform with microservices drastically reduced release cycles and enabled agile deployments
- ◆ **GenAI** integration reduced manual development load by **20–25%**, accelerating feature delivery
- ◆ AI-assisted unit testing brought down test creation efforts by **40–50%**, enhancing overall software quality
- ◆ Onboarding time for new schools dropped from **5 days to just 1 day** due to pre-built automation workflows
- ◆ Achieved approximately **65%** savings on licensing, training, and maintenance when compared to leading SIS/SMS and LMS platforms
- ◆ The clean, intuitive and age-inclusive UI led to high user adoption and ease of use
- ◆ Real-time communication and feedback features powered by **GenAI** improved stakeholder engagement with over **95%** satisfaction reported among parents





Technology Snapshot



- » NET Core Web API
- » Angular
- » React Native
- » Python
- » Postgres SQL
- » AWS DocumentDB
- » AWS EKS
- » Cloud front
- » Kong API Gateway
- » AWS Cognito
- » AWS Lambda
- » AWS RDS for SQL Server
- » AWS X-Ray
- » TechCello SaaS Accelerator
- » Azure DevOps



Aspire Systems is a global technology services firm serving as a trusted technology partner for our customers. We work with some of the world's most innovative enterprises and independent software vendors, helping them leverage technology and outsourcing in our specific areas of expertise. Our core philosophy of "Attention. Always." communicates our belief in lavishing care and attention on our customer and employees.

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