EDUDELIVERED

Expanding into New Markets

ABSTRACT

EduDelivered Corporation, founded in June 2012 and headquartered in Boston, MA, is a mid-sized software company specializing in educational technology. Its flagship platform, ThinkwareEdu, empowers corporations, institutions, community colleges, and universities to deliver scalable and engaging educational content to their learnersn 2024, the company reported $150 million in revenue and is poised for continued growth with a major platform revamp underway.

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Introduction

EduDelivered Corporation sells a software educational platform – ThinkwareEdu -which allows an institution to be able to deliver educational content to their students, which includes corporations, institutions, community colleges, and universities.

As a mid-sized software company, EduDelivered was established in June of 2012. It is currently headquartered in Boston, MA with around 1,100 employees all located in the United States. In 2024, EduDelivered had a reported revenue of $150 million, but is projecting an upward trajectory with the platform revamp. Overall, revenue in online learning platforms is projected to reach roughly $3.65 billion in 2025, which is an annual growth rate of 6.88%. EduDelivered is currently in roughly 3,000 organizations with around 6-8 million active learners at any given time. (*Online Learning Platforms - US | Statista Market Forecast*, 2024)

Business Model

Today, EduDelivered provides **on-premises** software solutions where customers hosts the software within their own data center. Customers can download and install the software on-prem (locally).

Due to high manufacturing costs, sending in-person expertise for customer issues, and competitive forces, there needs to be a plan in place to make the future of EduDelivered lucrative while reducing costs, and globalize.

This document proposes a plan for EduDelivered to change it's business model and migrate ThinkwareEdu from an on-premises product to a SaaS product.

Competitive Forces

Rivalry of competitors and threat of new entrants are the major competitive forces that the driving forces that are behind EduDelivered's drive for change to a SaaS platform. Competitors that already offer these platforms are appealing due to their flexibility, ease of deployment, and cost efficiency.

EduDelivered is facing increasing pressure from competitors that are SaaS-first, where the company was built for the cloud and that offer plug-and-play education platforms that don't need local installations. Lower-cost global providers with lower overhead and pricing models are more appealing to those on a budget. Big tech entrants that are expanding into

the education space with integrated, AI-driven, and cloud-based solutions are now on the board.

Competitive Strategies

As we see the competitive forces, we want to shift our focus to a SaaS competitive strategic model using a cost-leadership strategy by reducing internal costs and offering a more competitively priced, cloud-based platform that is able to scale efficiently while improving the user experience and capabilities.

Migrating EduDelivered to SaaS is a full business model transformation that will reinforce cost leadership with subscription-based revenue, multi-tenant architecture, and can be usage-based and/or tiered pricing models.

With these strategies EduDelivered can position ThinkwareEdu as a cost-effective, scalable, and easy to implement SaaS learning platform that is ideal for corporations, large and small institutions, community colleges, and universities that is more agile and globally accessible than traditional on-prem solutions.

Figure 1 - Competitive Strategy (What Is Competitive Strategy? Definition and Dynamics - Business Jargons, 2019)

System Roll-Out and Transition:

Initial Planning

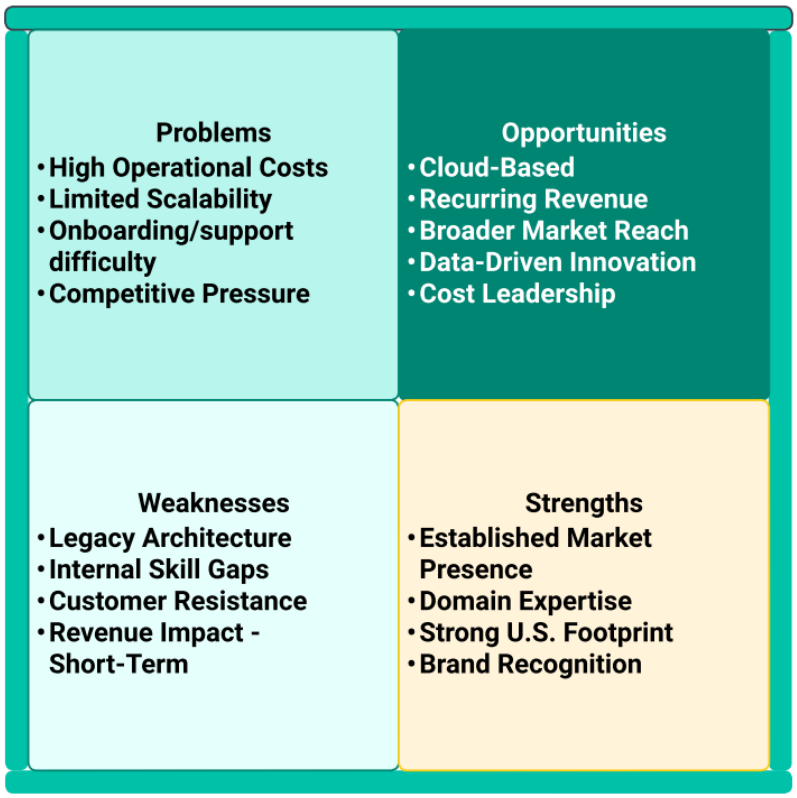

Figure 2-POWS

Problems & Opportunities

Globalization has significantly impacted education platforms – it has accelerated the adoption of modern educational technologies making education more accessible than ever, and statistics only support the expansion of e-learning platforms, with predictions of world-record highs.

(deepticm, 2024)

With this in mind, there is a significant need to drive costs down and to provide an off-premise solution to start combating some of the problems and weaknesses, and start to address the opportunities.

As stated in Fig.1, EduDelivered's Problems are as follows:

- High Operational Costs – On-premises software requires on-site installations, dedicated support, custom updates, travel for support, etc. which all drive up costs
- Limited Scalability – The current on-prem infrastructure restricts globalization and rapid onboarding
- Onboarding/Support Difficulty – Lengthy implementation cycles and IT requirements, as well as on-prem installations are costly across the board, but also deter smaller institutions
- Competitive Pressure – SaaS-native competitors are often more agile, accessible, and lower-cost alternatives

The Opportunities open to EduDelivered will help to combat those Problems, and start us on path to surpass and be the leader. This also translates into benefits for our customers as well:

- Cloud-Based – Transitioning to SaaS allows for instant provisioning, global accessibility, centralized updates, etc.
- Recurring Revenue Stream – Because this now SaaS – we can shift from one-time licensing to subscription-based pricing to stabilize and grow our revenue, and passing on savings to our customers
- Broader Market Reach – Lower barriers to entry enable us to target international markets
- Data-Driven Innovation – Centralized usage data enables AI-driven personalization, analytics, and continuous product improvement – and it can be handled off-prem
- Cost Leadership – Because we will be streamlining, support and infrastructure costs will not be as high, therefore reducing costs to our clients

Goals, Scale, & Scope

EduDelivered needs clear and actionable goal for its SaaS transformation initiative that align with the broader business strategy, identified

weaknesses/Opportunities,and to support our cost-leadership/model-based approach.

Goals:

- Successfully migrate to a cloud-native SaaS Platform
    - Transition from on-premises architecture to multi-tenant SaaS environment
    - Timeframe - ~12-18 Months
    - Cloud Options for Analysis– Amazon Web Services (AWS), Google Cloud Platform (GCP), Microsoft Azure
    - Once migrated, ensure robust security standards with a 99.9% uptime
- Reduce Operational Costs
    - Decrease support and infrastructure-related costs by ~30% through centralized hosting, automation, and standardized deployment
    - Phase out in-person client installations and support – shift to self-service onboarding and online/phone support
- Increase Market Reach/Accessibility
    - Launch Internationally – expand into at least 2 international markets within 18-months post re-launch
    - Develop pricing tiers attract corporations and institutions that could not reasonably justify previous pricing
- Improve Customer Experience
    - Cut average onboarding time from 3-5 weeks on-premises to 5-7 days via SaaS
    - Implement intuitive user dashboards, real-time analytics, and restructured support
- Establish a Scalable Revenue Model
    - From our existing on-prem customers, convert at least 30% of them to the new SaaS platform within the first 12-months
    - Achieve 55% of total revenue from recurring subscriptions by the end of year 2, post-launch
- Ensure Organizational Readiness
    - Upskill support and product teams in SaaS operations, DevOps, and cloud architecture
    - Hire/Contract key SaaS roles within 6-months

Scale:

- Organizational
    - Company-Wide Initiative – Coordination across all departments (Product, Engineering, DevOps, Sales, Support, Marketing, HR, Legal, Customer Success, etc.)
    - Internal Impact – Employees will be affected directly or indirectly, requiring communication plans, upskilling, operational changes, etc.
    - Customer Migration – Targeting full scope of existing customers for eventual migration
- User Impact
    - End Users – With ~6-8 million active users at any given time, the new platform must scale to handle peak usage reliably
    - Admin/Instructor Interface – Revamp expected
    - Global Readiness – Platform must support multi-language, multi-region delivery and compliance
- Technical Scope
    - Re-architecture – Migration from monolithic on-prem solution to multi-tenant, cloud-native SaaS platform
    - Infrastructure Setup – Cloud provider selection (AWS, Google, Azure, etc.), CI/CD Pipelines, Disaster Recovery, etc. planning
    - Integration – Support for existing LMS standards, SSO, third-party content providers, institutional IT systems, etc.
    - Data migration – Securely transfer and validate customer data from legacy environments to the cloud
- Timeline
    - Overall Duration - ~18-24 months
    - Phased Approach –
        - 0-3 months: Planning, Design, Concept
        - 4-9 months: Minimum Viable Product Development, Internal testing
        - 10-15 Months: Pilot with select customers
        - 16-24 months: Full rollout/migration of existing customers
        -
- Financial Scope
    - Estimated Budget
        - Unlimited, but looking at roughly $15-25M over 24-months

        - Cloud Infrastructure
        - Staff Increases
        - Training/Change Management
        - Marketing Campaigns
    - ROI
        - Target ~55% of revenue to be subscription-based within 24-months
        - 25-50% reduction in support and deployment costs
    - Risk & Change Management
        - High-Impact – Revenue streams, internal workflows, technical infrastructure, current customer relationships
        - Mitigation – Phased migration, pilot testing, customer incentives, hybrid support model during transition

Scope:

- In Scope
    - Platform Re-Engineering
    - Security & Compliance
    - Product Features (MVP/Phased Enhancements)
    - Global Readiness
    - Migration Strategy
    - Go-To-Market and Support
    - Internal Readiness
- Out of Scope
    - Deep Customizations
    - Marketplace for third-party plugins
    - Advanced AI features, unless already in use
- Deliverables –

Deliverable	Description	Target Phase
MVP Platform	Multi-tenant SaaS version of ThinkwareEdu	1
Cloud Infra Setup	Hosting, CI/C, monitoring, auto-scaling	1
Customer Migration Tools	Tools for safe data transfer	2
Subscription Billing System	Usage-based or tiered pricing with billing integration	2
Globalization	Language support, localization, time zone	2
Documentation/Training	Internal/External-facing guides, videos, and onboarding material	1 & 2

Figure 3 - Major Deliverables

Stakeholders:

- Internal

Stakeholder Group	Role & Responsibilities
Executive Leadership (CEO, COO, CFO, CTO)	Provide strategic oversight, approve budgets, ensure project aligns with company vision
Product Management Team	Define MVP scope, prioritize features, lead roadmap planning
Engineering & DevOps Teams	Build the SaaS platform, implement cloud infrastructure, ensure performance and scalability
UI/UX Design Team	Redesign interfaces for SaaS usability, accessibility, and mobile responsiveness
Sales & Marketing Teams	Update positioning, develop go-to-market strategy, educate customers on SaaS benefits
Customer Success & Support	Handle customer onboarding, migration, training, and issue resolution during and after the transition
Legal & Compliance Teams	Ensure adherence to data privacy laws (GDPR, FERPA), manage contracts and service-level agreements
Finance Team	Align revenue recognition models, manage pricing structure, forecast subscription-based revenue

Figure 4 - Internal Stakeholders

- External

Stakeholder Group	Role & Responsibilities
Existing Customers	Will need to migrate from on-prem to SaaS; their feedback is crucial for pilot testing and feature validation
New Customers	Potential clients evaluating SaaS for cost, accessibility, and speed-to-deploy advantages
Cloud Service Providers (e.g., AWS, Azure)	Hosting partners responsible for uptime, scalability, compliance support, and infrastructure services
Third-Party Integration Partners	Provide tools or services integrated with ThinkwareEdu (e.g., video platforms, SCORM content, SSO providers)
Regulatory Bodies	Ensure the SaaS platform remains compliant with industry-specific education and data regulations

Figure 5 - Extranal Stakeholders

Leadership & Governance

- Leadership Structure

Role	Responsibilities
Executive Sponsor (e.g., CTO or COO)	Provides high-level oversight, secures funding, removes organizational barriers, champions the transformation at the board level
Program Manager / Project Director	Leads the day-to-day execution of the SaaS transition, coordinates cross-functional teams, owns timeline, budget, and scope
SaaS Product Owner	Defines MVP, prioritizes features, manages product backlog, interfaces with end users for feedback
SaaS Engineering Lead	Oversees architecture, development, and integration of the new platform
Change Management Lead	Manages organizational readiness, communication, and training across internal teams and customers
Customer Success Lead	Ensures customer onboarding, migration, and satisfaction during and after rollout
Compliance & Security Officer	Maintains regulatory and security alignment across all phases of development and deployment

Figure 6 - Leadership Structure

- Governance Structure

Committee	Members	Key Responsibilities
Steering Committee	Executive Sponsor, CFO, CTO, VP of Product, VP of Engineering	Approves strategic direction, funding, and risk management; meets monthly or bi-weekly
Project Governance Board	Program Manager, Product Owner, Engineering Lead, Finance, Legal	Reviews milestones, monitors progress, ensures cross-departmental alignment
Technical Advisory Group	Senior architects, DevOps, IT security, QA leads	Provides technical standards, advises on scalability, performance, and integration
Customer Advisory Panel	Select existing clients and partners	Offers user feedback, participates in pilot testing and MVP reviews

Figure 7 - Governance Structure

- Governance Tools & Practices
    - Project Management Platform (ex. Jira)
    - Weekly Standups and Monthly Review Meetings
    - KPIs
    - Risk Register
    - Stage Gates

System Planning

System Design and Evaluation

EduDelivered's current programing language is C++, which with the migration is not feasible. This is no longer a low-level system, but one that will be robust and needs to be scalable. C++ is not cloud-friendly, we need rapid iterations, and C++ has slower build times. There also isn't a good support system with C++ , whereas cloud-native technologies have a broader talentpool as well as community support. C++ also lacks built-in frameworks, is costly and complex to refactor the legacy C++, and would overall be harder to maintain and build up increased long-term costs/tech debt.

EduDelivered is looking to migrate from C++ to Java because it offers support for enterprise applications, it is good for cloud-native development, it has strong scalability, performance, and security, and there is a good developer community. As for cloud vendors, we are looking into AWS, Google, and Azure.

Migration Strategy

- Audit existing C++ code — Identify reusable logic and critical modules
- Prioritize — Start with low-dependency modules or microservices
- Rewrite in Java — Use Spring Boot for stateless services
- Bridge Phase — Use adapters or APIs to allow old C++ and new Java services to coexist temporarily
- Refactor Gradually — Replace UI-facing or integration-heavy C++ modules last
- Retire Legacy Code — Once Java equivalent is proven stable and performant

Feasibility & Impact Analysis

- Technical Feasibility
    - *Language Shift (C++ → Java)* - High Feasibility: Java is mature, scalable, and widely supported with modern frameworks (Spring Boot, Hibernate)
    - *Cloud Readiness* - High Feasibility: Java is natively supported by AWS, Azure, GCP; excellent for microservices
    - *Code Migration Complexity* - Moderate Risk: Some C++ logic may not map 1:1 to Java; custom parsers, memory-intensive logic may need redesign
    - *Integration Potential* - Java integrates easily with LMS standards (LTI, SCORM), SSO, and analytics platforms
    - *DevOps & Tooling*- Java fits into modern CI/CD pipelines with Jenkins, GitHub Actions, Docker, Kubernetes
- Operational Feasibility
    - *Team Skills* - Moderate Feasibility: May require training or new hires to fill Java, DevOps, and cloud-native roles
    - *Maintenance & Support* - Improved: Java is easier to maintain, test, and debug than C++ for large-scale SaaS applications
    - *Migration Timeline* - Estimated 12–18 months to fully phase out legacy C++ codebase
- Financial Feasibility
    - *Initial Investment* - Medium–High: Estimated $15M–$25M over 2 years (engineering, cloud infra, training, migration tools)
    - *Long-Term Savings* - High: Lower support costs, reduced need for on-site installs, and scalable cloud-based delivery
    - *Revenue Upside* - High: Subscription-based model with global reach and faster time-to-value for customers
- Business Impact
    - *Market Competitivenes* - Improved: Competes better with SaaS-first LMS vendors (e.g., Blackboard, Canvas, Docebo)
    - *Customer Acquisition* - Expanded TAM (Total Addressable Market), especially in international & mid-sized institutions
    - *Revenue Model* - Transforms from license-based to recurring revenue (ARR), improving predictability and valuation
    - *Brand Perception* - More innovative, agile, and future-ready image to customers and investors

- Technical Impact
    - *System Scalability* - Supports millions of concurrent users with cloud-native scaling
    - *Security* - Easier to implement modern security protocols (OAuth2, encryption, RBAC) with Java frameworks
    - *Dev Velocity* - Faster feature delivery, simplified testing, easier CI/CD setup
    - *Support & Maintenance* - Lower ongoing maintenance; bug fixes and patches deployed instantly via cloud
- Risks & Mitigation
    - *Code rewrite delays* - Use agile approach + prioritize core modules first
    - *Staff ramp-up time* - Invest in Java/DevOps training and bring in experienced SaaS contractors
    - *Customer resistance* - Offer hybrid deployment or migration incentives (e.g., discounts, extended support)
    - *Data migration errors* - Build robust ETL pipelines and run staged dry-runs before cutover
- Worth it? YES!
    - *Technical Feasibility* - Yes – With moderate complexity and high scalability potential
    - *Operational Feasibility* - Yes – Requires training and change management, but highly sustainable
    - Financial Impact - High ROI – Short-term investment, long-term growth and cost savings
    - *Strategic Alignment* - Strong – Aligns with market trends and long-term SaaS growth strategy

Commitment

- Executive Commitment - EduDelivered's leadership team, including the CEO, CTO, and Board of Directors, are **fully committed** to the SaaS transformation initiative, recognizing it as critical to:
    - Long-term scalability
    - Revenue diversification
    - Market competitiveness

  This commitment includes:
    - Approving significant investment ($15M–$25M over 18–24 months)
    - Supporting reorganization and hiring where needed

    - Backing an agile, innovation-first product culture
- Team and Talent Commitment
    - Team & Talent Commitment
    - Engineering teams will be retooled and reskilled to adopt Java, cloud, and microservices best practices
    - Product & UX teams are aligned on delivering a user-centric SaaS experience, with MVP goals in place
    - QA, DevOps, and Security teams will work in tandem to ensure high availability, compliance, and trust in the new platform
    - Internal training programs are scheduled to accelerate Java and cloud skill acquisition
- Customer Commitment – EduDelivered will provide the following:
    - Team & Talent Commitment
    - Engineering teams will be retooled and reskilled to adopt Java, cloud, and microservices best practices
    - Product & UX teams are aligned on delivering a user-centric SaaS experience, with MVP goals in place
    - QA, DevOps, and Security teams will work in tandem to ensure high availability, compliance, and trust in the new platform
    - Internal training programs are scheduled to accelerate Java and cloud skill acquisition
- Vendor and Partner Commitment
    - Team & Talent Commitment
    - Engineering teams will be retooled and reskilled to adopt Java, cloud, and microservices best practices
    - Product & UX teams are aligned on delivering a user-centric SaaS experience, with MVP goals in place
    - QA, DevOps, and Security teams will work in tandem to ensure high availability, compliance, and trust in the new platform
    - Internal training programs are scheduled to accelerate Java and cloud skill acquisition
- Governance and Accountability Commitment
    - Team & Talent Commitment
    - Engineering teams will be retooled and reskilled to adopt Java, cloud, and microservices best practices
    - Product & UX teams are aligned on delivering a user-centric SaaS experience, with MVP goals in place

- QA, DevOps, and Security teams will work in tandem to ensure high availability, compliance, and trust in the new platform
- Internal training programs are scheduled to accelerate Java and cloud skill acquisition

EduDelivered is 100% all-in on becoming a modern, innovative SaaS company. From leadership to developers, and from infrastructure to customer success – every part of the organization is committed to delivering a scalable, secure, and world-class ThinkiwareEdu SaaS platform.

Implementation Planning

Timeline

Phase	Timeline	Key Outcome
Phase 0: Discovery & Planning	Month 1–2	Team alignment, requirement gathering, architecture finalized
Phase 1: MVP Development	Month 3–8	Build and launch a minimum viable product (MVP)
Phase 2: Pilot & Feedback	Month 9–10	Deploy MVP to select customers, gather insights
Phase 3: Full Migration Tools & Scaling	Month 11–15	Build migration tools, scale platform, support large tenants
Phase 4: Launch & Expansion	Month 16–18	Full rollout, marketing, support, post-launch refinement

Figure 8 - Project Timeline Overview

Phase Breakdown

Phase 0: Discovery & Planning (Months 1–2)
Goals: Align stakeholders, assess existing systems, define scope
Activities:

- Audit C++ codebase and dependencies
- Finalize Java tech stack (Spring Boot, Hibernate, etc.)
- Define cloud provider strategy (e.g., AWS vs Azure)
- Identify pilot customers
- Build initial product backlog
- Establish DevOps toolchain (CI/CD, container registry, infrastructure as code)

Deliverables:

- Architectural blueprint
- Initial backlog and roadmap
- Staffing plan and training schedule

Phase 1: MVP Development (Months 3–8)
Goals: Build core SaaS platform with essential features
Activities:

- Build multi-tenant architecture (Java backend, PostgreSQL, Docker, Kubernetes)
- Implement core LMS features: course creation, user roles, content management
- Implement authentication (SSO, OAuth2)
- Integrate with one content delivery partner
- Launch internal testing environments (QA, staging)
- Set up observability (logging, alerts, dashboards)

Deliverables:

- MVP platform ready for internal use
- Initial documentation and training materials
- Internal security audit

Phase 2: Pilot & Feedback (Months 9–10)
Goals: Validate MVP with real users, iterate based on feedback
Activities:

- Deploy MVP to 5–10 pilot customers
- Monitor performance, support, and feedback
- Conduct user interviews and surveys
- Triage feature requests and bugs

Deliverables:

- Pilot review report
- MVP feature refinements
- Customer success plan

Phase 3: Full Migration Tools & Scaling (Months 11–15)
Goals: Build tools to support full-scale customer migration
Activities:

- Develop migration toolkits (ETL, data mapping, user provisioning)
- Support coexistence of on-prem and SaaS (hybrid environment)
- Harden infrastructure (auto-scaling, backups, disaster recovery)
- Expand role-based permissions, localization, and analytics

Deliverables:

- Migration-ready SaaS platform
- Migration playbook for customer onboarding

- Disaster recovery and SLA documentation

Phase 4: Launch & Expansion (Months 16–18)
Goals: Full market launch and support rollout
Activities:

- Execute go-to-market strategy (website, sales enablement, pricing)
- Train support and sales teams
- Launch customer onboarding experience
- Begin migrating existing customers in waves
- Monitor KPIs (uptime, NPS, churn)

Deliverables:

- Public SaaS release of ThinkwareEdu
- Marketing launch assets

Success Metrics

Metric	Target
MVP Time to Market	< 8 months
Pilot Customer Retention	> 90%
Post-Migration Uptime	≥ 99.9%
Support Ticket Resolution Time	< 48 hours
Churn Rate	< 5% in first year
NPS	≥ 50 in 6–12 months post-launch

Figure 9 - Success Metrics by Phase

Globalization & Resource Balance

Globalization and resource balancing are essential to achieving EduDelivered's goals. With scalability, we need to leverage cloud regions and offshore talent allows for 24/7 uptime and responsiveness for our global learner base. Outsourcing the non-core tasks and offshoring development/support reduces overhead as well as accelerates time-to-market. Utilizing global cloud data centers enhances reliability and reduces latency for international users.

We are not looking to create a completely separate organization, but rather build a dedicated BU within EduDelivered which would have it's own product, engineering, and

DevOps teams, dedicated cloud and support infrastructure, and a hybrid team of onshore and offshore talent.

Area	Strategy
Software Development	Offshore / Nearshore – Set up engineering pods in Poland, India, or Uruguay. These countries have:
	Strong Java/SaaS development talent
	Competitive rates
	Overlapping time zones with the U.S.
Customer Support (Tier 1)	Outsource to firms in the Philippines or Latin America for multilingual 24/7 coverage and cost efficiency.
Cloud Infrastructure	Use multi-region cloud deployment via AWS or Azure:
	US East & West (for North America)
	Frankfurt or Ireland (EU GDPR compliance)
	Singapore or Mumbai (Asia-Pacific latency & scale)
QA & Testing	Consider outsourcing QA to a managed testing partner in Eastern Europe or South Asia to scale quickly and keep internal devs focused on product delivery.
Content Delivery Network (CDN)	Global CDNs like Cloudflare or Akamai to ensure fast video and content loading across continents.

Figure 10 - Globalization Areas

Resource Type	Action	Location	Reason
People – Development	Offshore/Hybrid	India, Poland	Deep Java talent pool, strong Agile capabilities, timezone coverage
People – QA & Support	Outsource	Philippines, Eastern Europe	24/7 coverage, multilingual, cost-effective
Infrastructure – Cloud	Globalize	AWS (US, EU, Asia)	Latency optimization, DR, local compliance
Infrastructure – DevOps Tooling	Outsource partially (e.g., hosting & monitoring)	Cloud-native vendors	Fast setup, lower maintenance, global SLAs
Data & Backup Centers	Distribute	US-East, EU-Central, APAC	Redundancy, regional data privacy compliance

Figure 11 - Outsourcing & Offshoring Strategy

To summarize, we don't want to create a separate organization, we want to build a global business unit within EduDelivered. Our globalization focus is on infrastructure, support, QA, and select engineering functions, and we will take a hybrid approach for outsourcing/offshore efforts to reduce costs and increase time-zone coverage. For scalable global performance, and to improve availability, we want to go cloud-first, content delivery network-backed. This will help to deliver educational content – course materials, videos, PDFs, images, etc. We do want to retain our core architecture, product strategy, and security in-house/US based to protect any IP and align with compliance.

Disaster Recovery

Risk Assessment

EduDelivered's SaaS caries moderate technical and operational risks, with high potential upside if mitigated correctly. The key risk areas include code migration, team capability, cloud security, and customer adoption. With proactive planning, strong DevOps, and stakeholder buy-in, the risks can be mitigated early to ensure a successful migration.

Risk Category	Risk Description	Likelihood	Impact	Mitigation Strategy
Technical	Migration complexity from C++ to Java may cause delays or bugs	Medium	High	Modular migration approach, phased rollout, strong QA and automated testing
Technical	Integration challenges with legacy systems and data	High	Medium	Build APIs/adapters for gradual transition, use data mapping tools
Operational	Lack of Java/cloud-native skills within current team	High	High	Conduct training, hire experienced SaaS engineers, use mentors or contractors
Operational	DevOps pipeline and infrastructure setup delays	Medium	Medium	Pre-define infrastructure-as-code (IaC), use cloud-native tools like Terraform
Security	Risk of exposing data or misconfiguring security in cloud	Medium	High	Use secure-by-design approach, regular audits, apply least privilege principles
Customer	Resistance from existing on-prem customers to switch to SaaS	Medium	High	Offer hybrid deployment, pricing incentives, and extended support
Customer	Service interruptions during migration period	Low	High	Roll out in isolated environments, with rollback and backup plans in place
Financial	Initial investment costs overrun budget	Medium	Medium	Track spend per phase, lock fixed costs where possible, monitor burn rate weekly
Compliance	Data privacy laws (e.g., GDPR, FERPA) not fully implemented	Low	High	Design compliance into the architecture, use certified cloud regions, audit logs
Vendor	Cloud provider outages or lock-in	Low	Medium	Use multi-region deployment and consider multi-cloud or cloud-agnostic design
Scaling	Sudden user growth breaks the system	Medium	High	Design elastic architecture, load test early, use CDN and horizontal scaling

Figure 12- Risk Assessment

Top 5 High-Priority Risks and Mitigations

#	Risk	Mitigation Plan
1	Code migration errors from C++ to Java	Start with least dependent modules, implement strict CI/CD pipelines, and validate each service against existing outputs
2	Customer reluctance to leave on-prem model	Offer dual-mode (hybrid) support for a limited time, provide migration services, communicate clear ROI
3	Security vulnerabilities in cloud setup	Adopt zero-trust model, enforce encryption at rest/in transit, automate security testing in CI/CD
4	Skill gap in Java and cloud	Initiate internal training (Java/Spring Boot/AWS), pair programming with senior SaaS engineers, and bring in consultants
5	Infrastructure cost sprawl	Set clear budget per phase, monitor cloud spend via FinOps tools (e.g., AWS Cost Explorer, CloudHealth)

Figure 13 - Top High-Priority Risks

Disaster Recovery Plan

We need to ensure business continuity, minimal downtime, and data integrity in the event of system failures, cyberattacks, data corruption, natural disasters, etc.

Recovery Objectives:

- Recovery Point Objective (RPO) – Target ≤ 5 Minutes (No more than 5 minutes of data loss)
- Recovery Time Objective (RTO) – Target ≤ 1 Hour (Restore critical services within 1 hour)

Core DR Architecture (Layer and DR Strategy):

- Application Services (Java) - Containerized microservices deployed across multi-AZ (Availability Zones) in AWS or Azure; auto-healing via Kubernetes
- Database (PostgreSQL / MySQL) - High availability setup with real-time replication to a secondary region; daily full backups and continuous transaction log streaming
- Object Storage - Cross-region replication for all static content (videos, documents, images)
- CI/CD Pipeline - Hosted in cloud with auto-scaling runners and config backups in version control
- Monitoring & Alerts - 24/7 monitoring via New Relic, PagerDuty for alert escalation
- DNS & Traffic Routing - Geo-aware DNS routing with automatic fallback using Cloudflare or AWS Route 53 failover policies

Disaster Recovery Procedures:

- *Scenario 1: Application Outage (e.g., Deployment Failure)*
    - Detection: Alert from monitoring/health checks
    - Response: Automatic rollback via CI/CD or blue-green deployment switch
    - Recovery Time: < 10 minutes

- *Scenario 2: Data Loss (e.g., Ransomware or Human Error)*
    - Detection: Backup integrity checks or anomaly alerts
    - Response: Restore from point-in-time backup in DR database region
    - Recovery Time: < 1 hour

- Scenario 3: Full Region Outage (Cloud Provider)
    - Detection: Multi-service failure alerts
    - Response: Reroute DNS to hot standby in secondary cloud region
    - Recovery Time: 30–60 minutes

- *Scenario 4: Security Breach*
    - Detection: SOC alerts, WAF triggers, or user-reported anomalies
    - Response: Isolate affected services, rotate credentials, restore clean version from backup
    - Recovery Time: Varies (depends on impact), priority support escalation enabled

Roles & Responsibilities:

- Disaster Recovery Manager - Leads DR response, coordinates communication
- DevOps Team - Executes infrastructure failover, rollback, and scaling
- Security Lead - Coordinates breach investigation and post-incident reviews
- Support Team - Notifies customers and manages incident communication
- Compliance Officer - Ensures reporting and regulatory compliance during/after incident

Testing & Maintenance:

- DR Drills every 6 months (including full failover and rollback simulation)
- Backup Verification daily
- Chaos Engineering practices (e.g., Gremlin) to simulate real-world failures
- Regular updates to DR documentation and stakeholder playbooks

Business Continuity

- **Purpose and Objectives**:
    - Ensure uninterrupted learning access for EduDelivered's clients
    - Minimize downtime and restore operations quickly after a disruption
    - Protect business-critical data, resources, and infrastructure
    - Comply with regulatory and SLAs (Service Level Agreements
- **Scope – Covers disruptions that may affect:**
    - Cloud infrastructure and hosting environments
    - Software/application availability (SaaS delivery of ThinkwareEdu)
    - Internal systems supporting operations (CRM, DevOps pipelines)
    - Third-party services or integrations (content providers, SSO)

- Workforce availability (pandemic, strike, disaster, etc.)

- **Impact Analysis:**

Critical Process	RTO	RPO	Priority
Platform Access (LMS)	1 hour	5 minutes	Critical
Authentication (SSO)	1 hour	10 minutes	Critical
Content Delivery	2 hours	15 minutes	High
Customer Support	4 hours	30 minutes	Moderate
Internal DevOps / CI/CD	24 hours	1 hour	Moderate

Figure 14 - Impact Analysis

- **Continuity Strategies:**
  - *Technical Strategies*
    - Multi-region cloud architecture with failover (AWS/Azure)
    - Auto-scaling and load balancing to manage traffic spikes
    - Regular database and object storage backups (encrypted & versioned)
    - CDN distribution for global access to content even if origin fails
    - Zero-trust security and identity management for secure remote work
  - *Workforce & Operations*
    - Remote work readiness: Laptops, VPN, cloud-based collaboration tools (Slack, Zoom, Jira)
    - Cross-trained teams: Reduces reliance on single points of failure
    - Clear SOPs (Standard Operating Procedures) for service continuity
    - Call trees and alerting systems in case of personnel disruptions
  - Vendor & Partner Dependencies
    - Contracts with multiple vendors for hosting, content delivery, and support
    - SLAs in place with third parties for 99.9%+ uptime
    - Annual vendor continuity assessments conducted
- **Incident Response & Communication – channels include Slack, Status Page, Direct E-Mail, Website Updates:**

1. Detection - Triggered by monitoring system or incident report
2. Activation - Business Continuity Team (BCT) initiates response
3. Containment - Isolate affected services, activate failover systems
4. Communication - Notify internal teams, clients, and stakeholders
5. Restoration - Recover services using DR plan, assess damage
6. Postmortem - Conduct after-action review and update playbooks

- **Roles & Responsibilities:**
    - BCP Lead / Project Manager - Oversees continuity planning and execution
    - Engineering/DevOps Lead - Manages technical recovery and service failover
    - Support & Customer Success - Handles client communication and issue tracking
    - Compliance Officer - Ensures adherence to legal and regulatory mandates
    - Executive Sponsor - Escalation point and decision-maker during crisis
- **Testing & Continuous Improvement**
    - Quarterly continuity drills (e.g., simulate region outage, ransomware)
    - Annual BCP review and update
    - Performance metrics tracked: time to recovery, customer satisfaction post-incident, system downtime

Conclusion

The proposed migration of ThinkwareEdu from an on-premises C++-based system to a scalable, cloud-native SaaS platform represents a pivotal evolution for EduDelivered. This initiative is not merely a technological upgrade—it is a strategic transformation aimed at positioning EduDelivered as a global leader in modern educational technology.

By adopting a Java-based microservices architecture, leveraging cloud infrastructure, implementing a CDN-backed delivery model, and establishing a strong foundation in disaster recovery and business continuity, the company is creating a platform built for resilience, growth, and user satisfaction.

Through smart globalization strategies, balanced resourcing, risk mitigation, and ongoing executive and organizational commitment, EduDelivered will be able to reduce operational costs, expand internationally, and meet the rising demands of digital learners and institutions.

This transformation aligns with industry trends, competitive forces, and long-term financial objectives. By starting with a well-defined MVP, scaling iteratively, and engaging customers throughout, EduDelivered ensures that innovation is delivered without disruption.

EduDelivered is future-ready. With this SaaS migration, it not only adapts to the digital learning landscape—it leads it.

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