

# QUALITY ITEMS CASE STUDY

Adrian Tudela



## OVERVIEW

"Quality Items," a growing e-commerce retailer, faced critical scalability and performance issues with its outdated on-premises SQL Server, including slow website speeds, security vulnerabilities, and inability to handle peak traffic. This cloud transformation not only resolved immediate technical constraints but also positioned the business for sustainable growth with enhanced security, real-time analytics, and improved customer experience, demonstrating effective technical execution with measurable business impact.

## BUSINESS CHALLENGES

**Problem:** Rapid growth overwhelmed their on-premises SQL Server, causing:

Performance bottlenecks (slow website, checkout delays).

Security risks (unencrypted data, no disaster recovery).

Scalability limits (couldn't handle peak traffic or data growth).

## OBJECTIVES

**Goal:** Migrate to Azure SQL Database for scalability, security, and cost efficiency.

## SCALABILITY

Support 2x more users during peak traffic.  
Enable seamless database growth without performance loss.

## PERFORMANCE

Reduce query response time by 50%+ (achieved 80% faster).  
Eliminate website downtime during high-demand periods.

## OPERATIONAL EFFICIENCY

Automate 30% of manual database tasks (backups, reports).  
Integrate with CRM/ERP for real-time inventory updates.

## SOLUTIONS & APPROACH

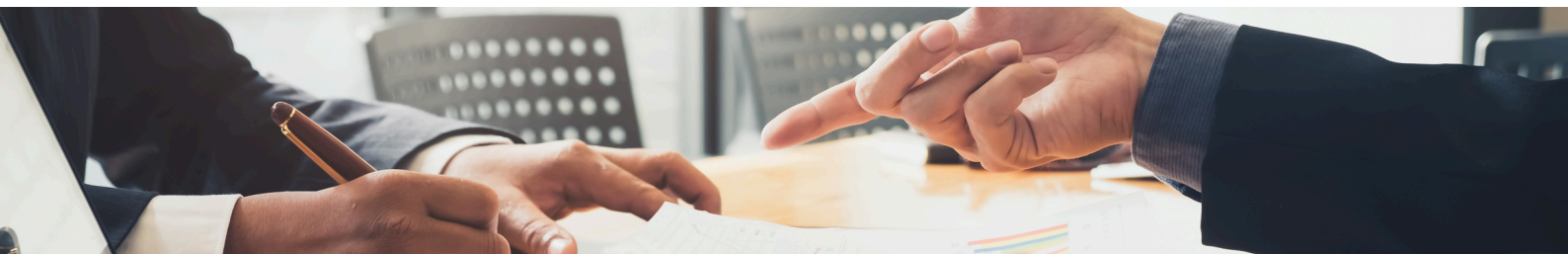
### KEY DELIVERABLES

#### ✓ Phased Migration:

1. Assessment (2 weeks): Audited existing infrastructure.
2. Migration (4 weeks): Moved data to Azure with <1hr downtime.
3. Optimization (2 weeks): Automated backups, real-time dashboards.

#### ✓ Technical Highlights:

- Azure SQL Database: Auto-scaling, built-in encryption.
- GDPR/HIPAA Compliance: Role-based access control (RBAC).
- Cost Optimization: Reserved Azure instances (+20% savings).



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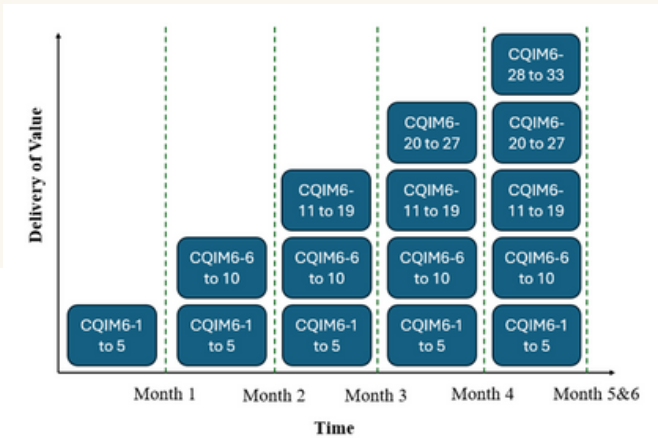
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### Team & Tools

- Roles: Project Manager, Data Engineers, Azure Architects.
- Tools: Azure Data Migration Service, Power BI, SQL scripts.

### Product Increment:



## RESULTS AND IMPACT

Metric	Before	After
Query Speed	5–10 sec latency	<2 sec (80% faster)
Uptime	92% (peak outages)	99.9% SLA
Security	Unencrypted local data	End-to-end encryption
Customer Satisfaction	72% (complaints)	94% (post-migration)

### Business Outcomes:

- 30% reduction in manual data tasks (automation).
- \$15K/year saved on IT maintenance.
- Enabled 2x more users during peak sales.

## LEASONS LEARNED

- ✓ Agile execution (2-week sprints) minimized disruption.
- ✓ Stakeholder training was critical for adoption.
- ⚠ Budget tip: Azure Cost Management tools prevented overruns.

## CONCLUSION

By migrating from an on-premises SQL Server to Azure SQL Database, Quality Items successfully resolved critical scalability and performance limitations while achieving enhanced security, 80% faster query speeds, 99.9% uptime, and \$15K in annual cost savings. The project not only addressed immediate technical constraints but also positioned the company for sustainable growth, enabling real-time analytics, automated workflows, and improved customer experiences.



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