LTIMindtree

PoV

Payments Transformed:

Architecture as a Service for a Resilient Future

Introduction

In today's digital-first economy, payments have evolved from simple fund transfers into sophisticated, mobile-friendly, real-time ecosystems. Digital payments have undergone a remarkable transformation. What began as a series of static, schedule-bound transactions has exploded into a dynamic, mobile-first ecosystem. Today’s consumers expect instant gratification—a seamless experience where payments are processed in real-time through mobile wallet applications. This shift not only enhances convenience but also drives global commerce into a new era of speed and efficiency.

As digital transactions drive global commerce, having a robust and agile payment infrastructure is no longer a luxury—it’s a business imperative. Consider the scenario of a high-profile Black Friday sale, where retailers invest significant sums in advertising and preparation to capitalize on peak consumer activity. In such a high-stakes environment, even a minor glitch in the payment system can halt the entire transaction process. One failure is not just a technical hiccup—it can cascade into millions lost in revenue, along with irreversible damage to customer loyalty and brand image. It is in these moments that modern, robust payment architectures prove their worth. Fortunately, organizations no longer need to build their entire payment architecture from scratch; by partnering with the right provider and leveraging architecture-as-a-service (AaaS), businesses can transform their legacy systems into modern, secure, and scalable solutions.

Stuck in the past: the challenges of legacy payment systems

Despite the clear benefits of modern solutions, many organizations remain burdened by outdated payment infrastructures. These legacy systems present several key challenges:

High maintenance costs:
Aging infrastructures demand substantial annual spending, with costs projected to increase dramatically as system complexity grows.

Inefficiency and volumes:
Slower processing due to high volumes, impacting customer experience while making day to day transfers (Example: UPI Transfers), Challenges in settlement of real time payment from central bank impacting reconciliation process and operational overheads to the bank

Limited data utilization:
Traditional systems struggle to harness the full potential of transaction data, missing out on insights that could drive strategic decision-making.

Integration complexities:
Incorporating next-generation technologies into outdated systems is both complex and costly, hindering innovation.

Security risks:
Legacy payment platforms are more susceptible to cyber threats due to outdated protocols, posing significant risks for financial transactions.

How are the payments systems transformed?

AaaS offers a transformative alternative to these legacy challenges. Instead of building an entire payment ecosystem in-house, businesses can access a complete, battle-tested architecture from specialized providers. Adopting AaaS is more than just a tech upgrade—it's a strategic move that offers tangible business benefits such as:

Modular Design:
Systems are structured into independent services, ensuring that an issue in one module doesn't disrupt the entire platform.

Agility:
Businesses can swiftly integrate new payment methods and technologies, staying ahead in a rapidly evolving market.

Cost efficiency:
Shifting from large capital expenditures to a predictable operational model helps reduce overall maintenance expenses.

Enhanced security:
By leveraging advanced, layered security protocols, each component is safeguarded against cyber threats.

Scalability and resilience:
Distributed, real-time systems provide high availability even during peak transaction times, ensuring uninterrupted service.

Operational resilience:
A reliable, scalable system minimizes downtime during critical periods, protecting revenue streams.

Enhanced customer trust:
Efficient, secure payment systems drive higher customer satisfaction and loyalty.

Regulatory compliance:
Built-in compliance frameworks help businesses meet stringent global and regional standards without extensive manual oversight.

Focus on core competencies:
Outsourcing architectural management allows organizations to dedicate resources to innovation and customer experience rather than system maintenance.

Future-proofing:
A flexible architecture can quickly adapt to emerging technologies, regulatory changes, and evolving market demands.

Did you know?

The architectural services industry worldwide is expected to reach a projected revenue of US$ 523.2 million by 2030 [4].

LTIMindtree's architecture-as-a-service excellence

LTIMindtree is leading the charge in payment modernization efforts, having partnered with global banking giants to revamp legacy architectures. Our architecture as a service journey in the payment area started with the largest global bank with a footprint in more than 50 countries. The bank's objective was to modernize its existing legacy payment platform to serve customers with a new instant payment rail, be competitive in the market, and comply with regulations. Our architects have developed a comprehensive strategy that is aligned with the bank's future state architecture for implementing real-time and instant payment systems across the enterprise multi-country model.

Our architecture as a service framework delivers a comprehensive blueprint for payment transformation, including:

- Bank ASIS architecture landscape
- TOBE architecture landscape
- Design considerations and trade-off
- Different solution options
- Non-functional considerations
- Technology landscape
- Build and deployment strategy.
- Road map and high-level cost for payment modernization
- Architecture governance
- Design authority walkthrough and approval

Three-dimensional focus areas

Security first

We prioritize transaction security with encryption protocols, vulnerability safeguards, and hardware security management (HSM, key vaults, etc.).

Regulatory compliance

Future-ready architectures comply with country-specific regulations, including GDPR, ISO 20022, and emerging standards for fintech ecosystems.

Performance optimization

End-to-end modernization ensures minimal latency and seamless processing, even under high transaction volumes.

Success stories

Transforming payment systems for leading bank in UK

The payment modernization of a large global bank in the UK was successfully achieved by focusing on several key objectives: building a stable payment platform utilizing composable and event-driven architecture, onboarding multiple payment schemes onto the same platform, and implementing end-to-end encryption for payment data both in transit and at rest. These strategic initiatives ensured a robust, secure, and versatile payment system capable of handling diverse payment schemes while maintaining the highest standards of data security.

Business benefits achieved:

1. **Achieved a 5x improvement in process capabilities and throughput, significantly enhancing operational efficiency.**
2. **Successfully implemented a scalable platform capable of supporting high transaction volumes, handling over 25,000 transactions per file.**
3. **Attained a payment transaction processing rate of over 500 transactions per second (TPS), ensuring rapid and reliable payment processing.**

RTP Enablement success at a major US global bank

The RTP (Real Time Processing) enablement of a major global bank in the US was successfully accomplished by focusing on several key objectives: creating a fit-for-future multi-geography solution, developing a stable payment platform based on composable and event-driven architecture, and migrating payment rails one at a time from the current system to the new platform. These strategic initiatives ensured a robust, adaptable, and efficient payment system capable of meeting the diverse needs of the bank's global operations.

Business benefits achieved:

- Reduced TCO (Total cost of optimization) by decommissioning 19 platforms.
- Significantly reduced the cost of vendor products, support, and services, achieving at least a 30% cost reduction post-implementation.
- Lowered the cost of change significantly by ensuring the API entry points to the payment environments were compliant with ISO20022.
- Decoupled the delivery of data initiatives from payment processing.

Conclusion

In a high-pressure digital economy, where every transaction matters and a single failure can result in million-dollar losses, transforming your payment system is not optional—it's essential. Legacy systems, with their inherent challenges, are ill-equipped to handle today's demand for real-time, secure transactions. Adopting architecture-as-a-service, underpinned by the robust framework of service-oriented architecture (SOA), empowers organizations to build agile, scalable, and secure payment ecosystems.

By choosing the right AaaS provider, businesses can bypass the pitfalls of outdated systems, lock in cost efficiency, enhanced security, and operational resilience, and stay poised to adapt to future technological advancements. Ultimately, this forward-thinking approach not only prevents costly disruptions but also paves the way for sustainable growth in an increasingly digital marketplace. For more information, check our AaaS offerings.

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Author

Pradeep is a seasoned technology leader with over 24 years of experience in banking, financial services, and insurance. At LTIMindtree, he spearheads complex technology transformations and modernization efforts for key clients. Pradeep is recognized as a thought leader and technology evangelist specializing in digital transformations, cloud-native architecture development, and AI initiatives. He has led various first-of-its-kind solutions from conceptualization to technology implementation.

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Future. Faster.

Together.

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