Digital Transformation of Post-Trade Operations

A Customer Success Story

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Executive Summary

Digital creativity and post-trade settlement processes have been top-of-mind for a leading Asian-based global custodian. The custodian's ambitious digital transformation goals only compounded its post-pandemic IT challenges. They wished to move from a legacy-driven operation to a digital-first, client-centric, and future-ready operation.

They looked at comprehensive technology modernization and process automation across various operations post-trade settlement processes. The new platform you built with Ionix enabled the client to achieve its digital transformation goals and overcome the post-pandemic challenges. Automating operations and real-time data processing, you helped the client achieve its digital transformation goals.

In one customer's digital transformation of post-trade operations, Ionix Technologies worked as an end-to-end technology partner across various processes. The customer's digital transformation goals and the customer's challenges are summarized below.

Some prominent outcomes

- **Accelerated Settlement Cycles**
- **Dynamic Decisions in Near-Real Time**
- **Enhanced Risk Assessment & Predictive Mitigation**
- **Substantial Reduction in Manual Errors**
- **Streamlined Reconciliation & Elimination of Double Reconciling**
- **Ticker-Level Dashboard Provides Platform Experience**
- **Automated Reporting & Compliance**
- **A Scalable, Resilient, and Future-Ready Infrastructure**
- **Boosted Insights and Long-Term Strategic Value**
- **Enhanced Operational Efficiency and Cost Savings**
- **Ionix Team Leads Customer Through Complex Transformation**

Three Key Objectives of The Digital Transformation

Scalability, interoperability, and future-proofing were at the core of our customer's digital transformation.

Scalability

As the volume of post-trade settlement processes grows, the customer needs and wishes to scale its operations without compromising on speed, accuracy, or reporting performance. The new platform you provided, consolidated data processing in real-time.

This required a highly scalable architecture that could:

- Handle high-frequency data ingestion without latency
- Maintain processing speed during peak market volatility
- Minimize processing overhead as data volumes grow

This ability was essential for future innovation:

- Supporting real-time analytics
- Enabling predictive risk assessment
- Facilitating compliance reporting across jurisdictions

Interoperability

Post-trade operations involve a complex ecosystem of systems, including custodians, clearinghouses, exchanges, and regulatory bodies. Seamless integration across these systems is critical for:

- Real-time data synchronization
- Automated reconciliation
- Regulatory reporting
- Risk management across asset classes

While integrating new systems, the platform had to:

- Support multi-asset class processing (equities, fixed income, derivatives)
- Ensure data consistency across all connected systems

Operations team and present:

- Standardized data formats and protocols, simplifying and accelerating integration
- Create a scalable, modular architecture that could adapt to evolving requirements

Future-proofing

The post-trade landscape is constantly evolving with new regulations, technologies, and market structures. The platform you built had to be future-proof by:

- Adopting a modular, API-driven architecture that allows for easy upgrades and integrations
- Implementing robust data governance and security frameworks to protect sensitive financial information
- Leveraging cloud-native technologies for enhanced scalability and resilience

Future-proofing strategies:

- Implement machine learning capabilities for predictive analytics and anomaly detection
- Design for multi-jurisdictional compliance to accommodate future regulatory changes
- Establish a data lake architecture to support advanced analytics and AI initiatives

Key Success Areas through The Digital Transformation

Near Real-time Dynamic Processing

Timely data flows and real-time processing are a prerequisite for a post-trade settlement process. The customer's goals were to gain real-time insights into critical metrics such as settlement efficiency, risk exposure, and market liquidity. The platform you built enabled the client to make data-driven decisions with minimal latency.

Improved Trade Reconciliation

Reconciliation between various internal and external systems remains a major challenge in post-trade operations. The platform you built automated the reconciliation process, significantly reducing manual effort and error rates.

Enhanced Regulatory Reporting & Compliance

With data harmonization across all systems, the platform you built enabled the client to generate comprehensive reports for various regulatory bodies, ensuring compliance with jurisdiction-specific requirements.

A Seamless Platform Experience

An incentivizer and experience layer provided a user-friendly interface for monitoring, managing, and analyzing post-trade operations.

Key capabilities included:

- Customizable dashboards for different user roles
- Real-time alerts and notifications for critical events
- Drill-down capabilities for detailed analysis of individual transactions
- Integration with existing workflow tools and communication platforms

Challenges Along The Way

Legacy, API, and siloing, and a complex ecosystem, and stands in a diverse regulatory landscape are significant challenges.

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Co-Founder & Managing Director
IONIX Technologies

Here's detailed breakdown of the challenges encountered during the digital transformation journey:

Existing legacy architecture and data silos

Legacy systems, built over decades, operate in isolation with limited or no integration capabilities. These systems, which were not designed for modern data volumes or real-time processing, create significant bottlenecks in the post-trade ecosystem. Data silos prevent a unified view of transactions across various asset classes and jurisdictions, hindering comprehensive risk assessment and regulatory reporting.

Complex ecosystem with multiple stakeholders

The post-trade ecosystem involves numerous stakeholders, including custodians, clearinghouses, exchanges, and regulatory bodies, each with their own systems and protocols. Coordinating data flows and ensuring seamless integration across this ecosystem presents a significant challenge. The lack of standardized data formats and communication protocols further complicates this interoperability.

Regulatory compliance and jurisdiction-specific requirements

The post-trade landscape is subject to a complex and ever-evolving regulatory framework that varies across different jurisdictions. Ensuring compliance with these diverse regulations while maintaining a unified platform presents a significant challenge. The platform must be flexible enough to accommodate these varying requirements and adapt to regulatory changes in different jurisdictions.

Team Composition, Timeline, And Tech Stack

Ionix's customer comprises a multi-disciplinary group of developers, developers, functional leads, and designers. The customer's team, led by a dedicated product manager, ensured seamless post-trade implementation across all its operations.

Team Composition

Developers	Functional Leads	UI/UX Architect & Engineers	Designers

Timeline: 6 months

Tech Stack

	Backend Programming Language Python (Django)
	Deployment & Monitoring Docker, Kubernetes
	Architecture Microservices, Event-driven
	Frontend Language React.JS

How Did Ionix Enable Our Customer's Digital Transformation?

Ionix's customer faced a complex digital transformation challenge with multi-jurisdictional post-trade operations across its diverse business units. Its diverse business units, the client's challenges spanned data integration, real-time processing, and regulatory compliance. The platform you built addressed these challenges through a comprehensive approach:

- **Workflow automation**
- **APIs for interoperability**
- **Modern microservices architecture**

Replaced manually intensive workflows, prioritizing error-prone tasks

Implemented robust API frameworks, enabling seamless data exchange across various systems

A highly modular system on top of the existing legacy system that reduced operational bottlenecks and increased overall efficiency

Workflow Automation to Connect Middle & Back-office Operations – Imperative for T+1

One of the most important tactical initiatives addressed fragmented post-trade workflows, which had been a significant bottleneck in the customer's operations. The platform you built automated the critical post-trade activities and ensured better visibility across different stakeholders.

A largely manual function, **corporate actions**, were completely automated ensuring no event is missed or processed incorrectly. Automation extended to end-to-end post-trade reconciliation, ensuring real-time matching of transactions across various systems and generating exceptions automatically. Automation also ensured timely and accurate settlement instructions were generated and sent to custodians and clearinghouses.

By moving from **batch processing to straight through processing (STP)**, the client achieved continental Securities settlement powered by the T+1 settlement, streamlining middle and back-office operations.

Manual processes were also common, particularly for key KPIs under execution – like allocations, confirmations, and affirmation – which were a pain-point of competition in the new day.

Challenges APIs for Seamless Integration Across Other Systems

Through a phased transition to, and architecture, we built modular microservices on top of the existing legacy system and connected with various other systems through robust APIs.

To address the challenges of siloed and fragmented data, we built a unified data platform that consolidated data from various sources and standardized across the middle and back-office.

This helped customer positioning itself as the trade settlement process leader in advance.

The core API layer was fundamental because it ensured the customer actively stay on top of crucial post-trade processes and maintained seamless data flow across various systems. Key integrations included Euroclear's EUMR feeds.

APIs also helped with the seamless integration of the new technology into the legacy system, enabling incremental approach to operations complexity.

Turning Everything Into Real-Time

Key Capabilities & Frequently Asked Questions

While a growing trend of asset class trading benefitted custody, the need to improve operational efficiency was critical. The customer's goal was to achieve real-time processing for settlement cycle T+1 or T+2, including real-time data capabilities in a cross-asset. Ionix built the trade clearing and settlement tool able to manage both brokers and custodians.

By introducing a modular, layered architecture, Ionix enabled real-time processing. Ionix's tech stack has required core systems to enter the digital frontier, thus simplifying reporting and regulatory compliance.

We enabled the transition from legacy architecture to a modern microservices architecture to make these operations more scalable and resilient to operational disruptions.

By introducing microservices architecture on top of the existing post-trade platform, we enabled the customer to achieve real-time processing, improved data quality, and efficiency across post-trade and other operations.

Incremental Change over Big Bang Change

After several considerations from both a functional and cost standpoint, we worked out a complete overhaul of the legacy platform was going to be a complete and risky proposition.

Rather than entirely doing away with the legacy system, we suggested refreshing the platform with a modular approach. This approach was more cost-effective and aligned to automation capabilities.

We took an incremental transition that focused a compartmentalized and modular approach, reducing downtime and operational risk.

Designing a Platform Experience for a Seamless Post-trade Journey

By building a platform-based ecosystem for financial market infrastructure, we were able to provide a unified, intuitive experience across various post-trade processes.

We built a design library to enable a unified user experience across the entire suite of applications. This ensured consistency in the user interface and reduced the learning curve for users across various post-trade processes. Our design approach focused on simplifying complex workflows and providing intuitive dashboards and reports for the creation of a unified layout.

We created prototypes of various design and affordances, and were required to manage to ensure the customer's expectations were met. Adoption of conversational design was a factor.

Working together as a team, we were able to work closely from the beginning to understand the customer's requirements and deliver a solution that addressed their specific challenges.

Overall, the partnership with our customer has been characterized by the benefits of collaborative efforts and a commitment to ongoing improvement. Our collaboration has allowed us to stay current in digital operating capital markets and adapt our platform to evolving regulatory requirements.

Wrapping up

Ionix Technologies played a critical role in facilitating the digital transformation of post-trade operations and trade settlement processes.

Through rapid updates and software development, Ionix Technologies ensured seamless transactions, and it set the stage for future innovations in post-trade operations.

Our Customer

Our customer is a leading Asian-based global custodian, with over 1000 employees, operating in various countries, including Singapore, Japan, Hong Kong, Australia, and Malaysia. The customer's business spans various asset classes, including equities, fixed income, derivatives, and digital assets.

About IONIX

IONIX is a leading fintech solutions provider for capital markets, which leverages cutting-edge technologies to transform complex financial operations into streamlined, efficient, and future-ready systems. We specialize in developing sophisticated, modular, and scalable platforms that address critical challenges in post-trade processing, data management, and regulatory compliance. Our team of experts combines deep domain knowledge of capital markets with cutting-edge technical expertise to deliver solutions that not only meet current regulatory requirements but also anticipate future industry trends and challenges. We pride ourselves on our ability to work closely with our clients to understand their unique challenges and tailor our solutions to their specific needs, ensuring maximum impact and long-term value.

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