

Case Study



NOL Enhances Quality of Business Transformation Programme with Infosys Independent Testing

Partners with Infosys to enable seamless and thorough end-to-end business process testing

The overarching IT plan to transform the IT environment of the NOL Group of companies is known as the “REMODEL” programme. The programme represents the strategic intent of NOL to build a solid Business-IT foundation and deliver new capabilities that will lead to growth and industry leadership in innovation, customer experience and service excellence. The implementation of the SAP Finance ERP is the first project of the REMODEL programme to replace the legacy finance and cost accounting system including system interfaces with more than 50 other legacy applications. To ensure the highest level of system quality prior to system rollout, NOL engaged Infosys to setup an independent test team to plan and conduct thorough system integration testing prior to the user acceptance testing and “live” testing phases of the project.

About NOL

Neptune Orient Lines (NOL), with its two principal operating brands APL and APL Logistics, is a global transportation company, with core businesses in container transportation and supply chain management operating across 100+ countries. NOL is committed to providing customers with quality through operational excellence, supported by advanced IT services.

The growing market demand, constantly changing business environment and the need to deliver higher levels of customer satisfaction are key drivers for the NOL Group IT to create a major IT transformation programme. The programme called "REMODEL" represented the strategic intent of NOL to build a solid Business-IT foundation so as to deliver new capabilities that will lead to growth and industry leadership in innovation, customer experience and service excellence.

A core step of the REMODEL programme involved the complete migration of the company's existing finance and cost accounting legacy applications to the new SAP based enterprise platform.

The SAP Finance System is core to the working of NOL's business spread across 100+ countries. The system processes volumes of financial data in the form of Purchase Orders, Invoices, General Ledger Journals, Vendor Management, Inventory Management, etc., on a daily basis. The application also provides financial reports such as Profit & Loss Statement, Balance Sheet, etc., and supports critical finance sub-functions such as Cost & Profitability Analysis (COPA), Management Accounting and Budgeting (MAB), Fixed Asset Management on a periodic basis.



The Challenge

The implementation of the SAP Finance System was both complex and challenging as the system needed to have tight integration with over 50 complex existing legacy applications. While the system integrator was responsible for the implementation of the SAP Finance ERP, NOL IT was responsible for the integration between the SAP Finance ERP and the existing legacy systems. To ensure that the end-to-end business process to be supported by the new SAP Finance System was thoroughly tested prior to user acceptance testing and production rollout, NOL decided on the need to have an independent testing team to perform this function.

The following challenges were scoped for the independent test team to address:

Need for end-to-end business process testing

As the System Integrator was only responsible for the delivery of the SAP Finance System, the successful rollout of this system required a thorough and seamless end-to-end business process testing, covering all existing interfaces between the new SAP Finance System and the legacy applications.

Need for detailed reconciliation mechanisms

The entire process of verifying accuracy and correctness of data transfer and processing between the legacy and SAP applications was difficult. To overcome this challenge, detailed reconciliation reports and verification mechanisms needed to be developed.

Need for a structured process of test data creation and usage

As multiple test teams needed to perform concurrent testing on the same environment, there was a need to have a very structured process to manage test data challenges with regards to duplication in test data creation and test data usage.

NOL and Infosys Partnership

NOL engaged Infosys, their long-time strategic technology partner, to provide a comprehensive and independent test solution to address the key challenges and ensure that the new SAP Finance System was implemented with the highest quality. The decision to engage Infosys was based on their rich experience in delivering independent testing services for similar SAP-based transformation programmes across the globe as well as their expertise and know-how of the NOL legacy applications.

Based on Infosys' ability to provide the right composition of expertise in testing SAP functionality and the integration with complex legacy interfaces NOL was confident that the overall system quality would be robustly tested by the independent test team. In addition, Infosys provided industry best practices, test automation methodologies and test management capabilities through this engagement.

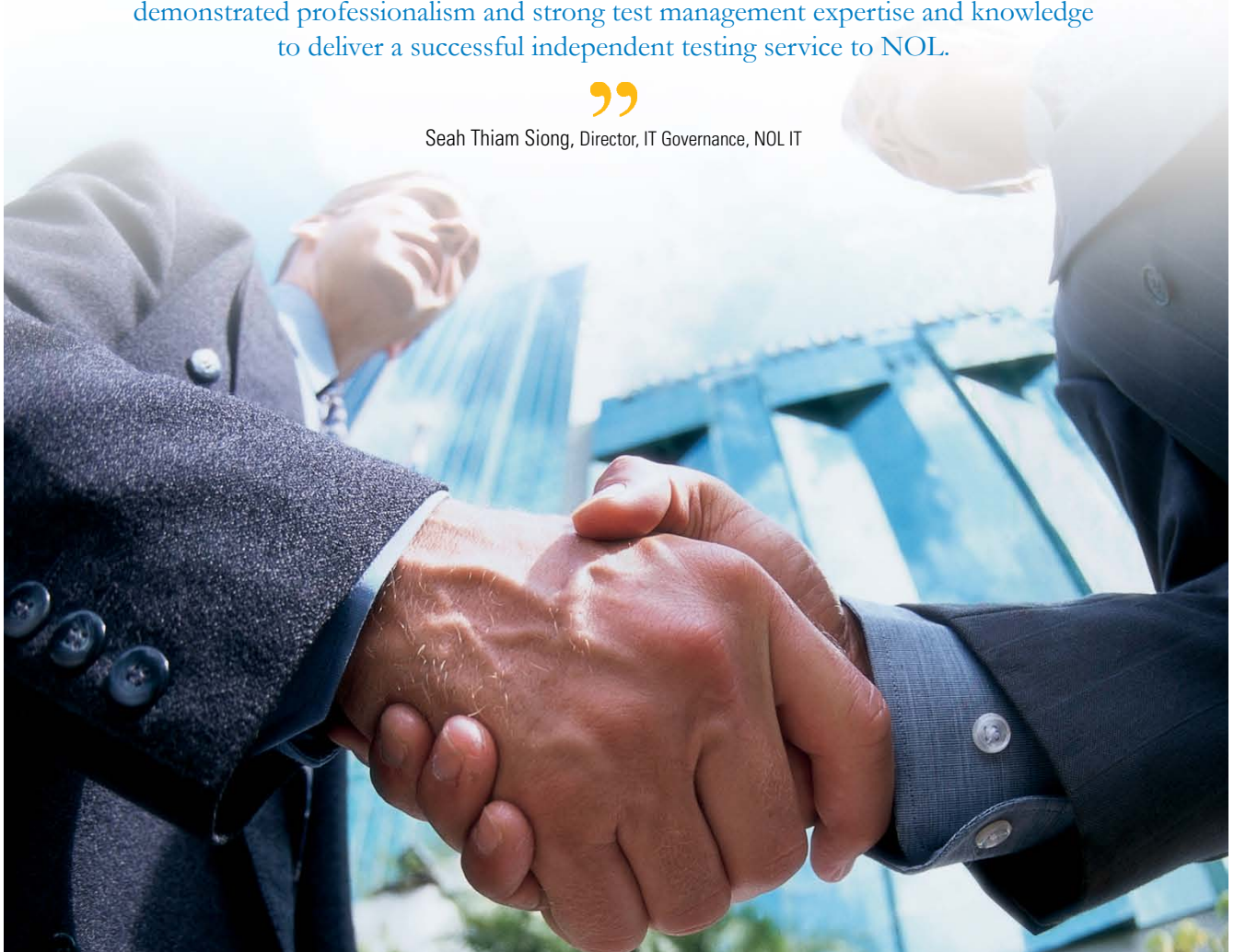
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The engagement of Infosys to provide the independent testing service delivered significant value for this project. This was possible due to a highly competent test team with deep knowledge of SAP Finance and the NOL legacy system landscape.

I am particularly happy with the Infosys test manager for this engagement, who demonstrated professionalism and strong test management expertise and knowledge to deliver a successful independent testing service to NOL.

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Seah Thiam Siong, Director, IT Governance, NOL IT



The Infosys Solution

Infosys' methodological approach to SAP testing, combined with know-how of NOL legacy applications, helped to execute this complex project within the aggressive timelines prescribed by the client.

A very systematic approach was taken by Infosys to identify, and confirm with NOL, the areas of quality concern. Infosys also worked with NOL to ensure complete knowledge acquisition of the impacted NOL legacy applications and the new SAP Finance System. To ensure an independent view of testing and quality at all times, Infosys and NOL established an independent testing governance framework.

Due-Diligence and Strategy

Infosys team started with analysis of the AS-IS situation and apprised NOL regarding the exact status of the project quality. With NOL's confirmation of the areas of concern, Infosys provided NOL with a detailed test strategy that defined test processes, types of testing to be conducted, roadmap of testing and metrics to be captured.

Knowledge Acquisition

Infosys utilized information found in the NOL Application Knowledge Portal and project documents to gain detailed knowledge of the impacted legacy applications and their proposed functionality. Infosys functional and SAP experts also underwent overview sessions by the NOL

SMEs on the proposed SAP Finance System within a short period of four weeks. Based on the knowledge acquired, system overview documents were drawn out to get a confirmation from NOL IT about the understanding of the impacted legacy applications and the new SAP Finance System.

Governance Structure

To ensure the truly independent working of the proposed QA partnership between Infosys and NOL IT, the Infosys team was asked to directly report into the function of the IT Governance Director. This ensured that an independent and non-biased assessment of the application QA could be done at every stage to ensure higher quality.



With a clear understanding of the issues on hand, Infosys and NOL IT commenced work in the following areas:

End-to-end Business Process Testing of SAP Global Template solution

- Infosys deployed a good mix of SAP functional experts, testing experts and legacy application experts to review the existing design documents and test cases to identify end-to-end business processes. Based on this, additional test scenarios, scenario variants and negative test conditions were created to ensure comprehensive end-to-end coverage of all identified business processes.
- End-to-end test cases were designed to cover the respective legacy applications where business transactions originate the interfaces to the respective SAP modules, data processing within SAP modules, the interfaces back to the respective legacy applications and the reconciliation process designed by the NOL IT according to the suggestions provided by the Infosys functional experts. Such a comprehensive set of end-to-end test cases ensured that all the functional and technical aspects within the new SAP Finance System, the interfaces to the legacy applications and the changes made in the legacy applications were thoroughly tested.
- Infosys executed all end-to-end test cases before releasing the application for user acceptance testing. This ensured that the system delivered for UAT was free from all critical and high severity defects thereby enhancing the quality of the new SAP Finance System significantly.

Establishment of detailed reconciliation mechanism

- The Infosys team realized early in the engagement that the key for reducing the long UAT cycles was to have comprehensive reconciliation mechanism to validate the data exchanged between the legacy applications and the new SAP Finance System. Hence, Infosys proposed a comprehensive reconciliation mechanism that validated the large volumes of data channeled to SAP from the highly complex legacy interfaces. NOL IT teams built these

reconciliation mechanisms which effectively tracked data exchange between the two systems during the UAT phase.

Test Data Management Best Practices

To avoid the test data conflicts between multiple testing teams performing concurrent testing in the same environment, the following best practices were implemented:

- Test data planning was to be done by the Infosys team during the test design phase for each test scenario o Each testing team was to be given a group of company codes, GL accounts and cost centers to perform testing within the restricted area.
- Each testing team had to create the test data on their own according to their testing needs
- Batch jobs were to be run by a centralized team of Infosys and NOL IT, at the end the day, to process the test data created by all the testing teams
- Common processes that needed to be tested by each of the testing teams, within the same testing phase, were scheduled on alternate days so that each team made progress and no conflicts occurred

Regression Test Automation

- Besides this, Infosys also identified a set of critical regression test cases and automated them using the SAP Test Acceleration and Optimisation tool. This helped ensure comprehensive coverage, for all important business processes, during the regression testing phase of the SAP Global Template prior to “Go-Live”. The regression test solution was also designed to help NOL in all future rollout phases too.

The Benefits

The Independent Testing project was declared an overall success by NOL. Infosys and NOL both acknowledged that the tight deadlines of the project presented several challenges. However, the two organizations were able to work together to establish best practices for a high-quality testing engagement. Infosys' guidance and SAP testing expertise provided opportunities for NOL to make quantifiable improvements in application quality. As a result of the engagement, NOL achieved the following benefits:

99% defect free systems (both legacy and the new SAP Finance System)

Defect free systems were released for UAT and to the production environment. Enhanced quality of application released to production eliminated downtime and potential negative business impact.

100% schedule adherence

Although the project implementation schedule was extremely tight, the User Acceptance Testing (UAT), Live

testing and "Go-Live" dates were met with minimum schedule change without compromising the expected higher quality of application released to UAT and production.

50% reduction in regression test execution effort

By creating a reusable automated regression test suite for business critical scenarios, the regression test execution effort was reduced by over 50%.

In addition, Infosys established a robust test governance framework consisting of rigorous test processes, standards and metrics. Infosys also developed a dashboard reporting tool for the NOL IT and Business management. This provided easy access to the project status with the help of intuitive dashboards and status reports. The support and sponsorship of the NOL senior management throughout this engagement laid the foundation for a long-term strategic relationship between NOL and Infosys for all future engagements of the "REMODEL" programme.





For more information, contact askus@infosys.com

About Infosys

Many of the world's most successful organizations rely on Infosys to deliver measurable business value. Infosys provides business consulting, technology, engineering and outsourcing services to help clients in over 30 countries build tomorrow's enterprise.

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