## Executive Summary

## Our Customer to whom we demonstrated success through our Cognitive intelligence platform is a leading wealth manager with strong investment banking capabilities. With a global reach with operations in about 50 countries and 46,000+ employees, it offers wide range of financial solutions to private, corporate and institutional clients.

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| * Paradigm shift from ‘Eye-on-Glass’ mode of monitoring to ‘Exception-based’ monitoring
 | * Anomaly detection time reduced to 15 minutes from earlier 3 to 5 hours in the case of Rates Risk Exception monitoring
 | * Significantly reduced or eliminated the dependence on human judgment for issue detection
 | * Eliminated dependence on some monitoring toolset and manual procedures, thereby reducing overall IT cost
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## ignio delivered significant risk management capability and staved off potential penalties due to anomalies reduction by reducing dependence on human judgement

## About the customer

## The company serves its customers through its three regionally focused divisions supported by two other horizontal divisions specializing in investment banking capabilities. The regional businesses offer their products and services to Private Clients, Corporate & Institutional Clients. It also includes Asset Management which offers investment solutions and services to a broad range of clients, including pension funds, governments, foundations and endowments, corporations and individuals.

## The horizontally focused divisions offer a range of investment banking products and services which include advisory services related to M&A, divestitures, and takeover defense strategies, as well as debt and equity offerings. They also provide centralized trading and sales services to private and institutional clients across the three regional divisions.

**Customer’s IT Landscape**

The Enterprise IT landscape of the customer is dotted with more than 500 applications both custom built and packaged solutions with a diverse technology stack. The applications which include Front Office and Back Office applications in a banking environment are spread across 7 different product lines and 19 sub product lines. TCS has a dedicated production support organization for this customer to provide L0/L1 application support.

**Problem statement**
The customer generated 20,000 daily Risk reports across 7 Batches around Hundreds and thousands of tasks. These Reports generate risk measures, financial numbers - critical inputs for the next day’s trading operations. Prior to automation, the Manual monitoring in issue detection during the task executions used to take about 3 to 5 hours after the batch launch.

**Business Benefits that can be accrued**

Why was it important? Delays or failures in report generation have significant business impact and monetary implications including financial penalty in addition to impact on loss in trading opportunity if the books are not ready on time. Historical Delays have lead to regulatory non -compliance with penalty cost (~ 700K USD) in Fx area. In addition to the Reputational Loss due to Revenue Impact (~ 500K USD) in Bond Trading

**Ignio Solution’s approach to problem solving**

* ignio™ performs continuous monitoring of the report executions and constantly compares the current execution of the reports against the normal execution pattern that it has learned from historical data. For example using, Overrunning Reports - Precise and timely detection, if a report is overrunning in Pre-grid, Grid or Post-grid, ignio predicts the possibility of potential OLA breach. Another way of detecting is Hung Reports – the platform Detects potential hung reports by comparing current execution parameters with the parameters ignio has derived for normal behavior from history data. These parameters include Average Run Time, Start Time, End Time, SLA Time, Elapsed Time, Time to SLA, OLA, Folds Left, etc.; Not-kicked off and Failed Reports are also caught as well**.**
* **Benefits delivered**
Paradigm shift from ‘Eye-on-Glass’ mode of monitoring to ‘Exception-based’ monitoring
* Anomaly detection time reduced to 15 minutes from earlier 3 to 5 hours
* Significantly reduced or eliminated the dependence on human judgment for issue detection and monitoring toolset

**Our Optimization journey**

ignio™ has been deployed at the customer to enable intelligent IT automation in Application Operations space. ignio™ has been integrated with Service Now (ITSM), NetIQ Operations Centre (NOC) (Alert Dashboard) and Start of Day Checklist Tool applications. ignio™ pulls work items from these ITSM, monitoring and scheduling applications to automate tasks performed by the Application Support teams.

An application’s processing architecture can be abstracted into 3 primary areas: Input, Processing and Output. ignio™ has deployed use cases across all the 3 application areas.

The ignio™ journey at the customer started towards late 2016 with the primary goal of effort optimization in the Application Support teams.

Few of the ignio™ use cases have been documented in this artifact for their automation features and benefits.

**What achieved so far**

**ignio™ Assets Deployed: Description and Benefits Delivered**

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| * AI.ITOps solutions: Rates Risk Exception Monitoring use case
 | * There are close to 20,000 daily Risk reports produced across 7 Rates/CVA/CAV Batches; hundreds and thousands of tasks are performed to produce these reports. These reports generate risk measures, financial numbers etc which are critical inputs for the next day’s trading operations. Delays or failures in report generation have significant business impact and monetary implications including financial penalty. It also has impact on loss in trading opportunity if the books are not ready on time.
* Technically, the reports get executed on Enterprise Grid throughout the week (24x5) across 3 regions i.e. APAC, EMEA and Americas. Traditionally, using the manual monitoring method, detection of an issue in producing any of these reports used to take about 3 to 5 hours after the batch launch. The set of monitoring and investigative tools provided only partial information and detection of an issue required human judgment. There were no monitoring tools to flag hung reports, overrunning reports and reports that have not been kicked-off at their scheduled times.
* Post ignio™ implementation, ignio™ performs continuous monitoring of the report executions and constantly compares the current execution of the reports against the normal execution pattern that it has learned from historical data. ignio™ can flag-off anomaly cases such as, Overrunning Reports, Hung Reports, Not-Kicked off Reports and Failed Reports.
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| * AI.ITOps solutions: File and DB Sanity Check use case
 | * Application Support team compares portfolio/books of current business day for any missing files or for any significant file size change before these files are picked by the scheduled batch operations for EoD processing. Approximately 20,000 reports get generated that need to be monitored for various books/portfolios. Before ignio™, this process was done manually taking time and impacting quality due to human errors. ignio™ automated Feed Sanity Check against thresholds and post-feed sanity DB check for outages. ignio™ compares the attributes for current day’s report files with the ones it has learned from the past data. ignio™ flags-off anomaly cases like missing data files, significant deviation in data file sizes etc.
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| * AI.ITOps solutions: NOC Alert Management Use case
 | * NetIQ Operations Center (NOC) is one of the key alert monitoring systems at the customer. NOC captures the alerts across the various layers of the technology stack i.e. infrastructure, application etc. Application Support team manually monitors the NOC dashboard for critical severity alerts and takes action as per SOP. Close to 200,000+ alerts get recorded every month, across 200+ alert types and 500 applications.
* ignio™ connects with the NOC alert management system through its NOC adapter. ignio™ performs text pattern-match on the alert descriptions to select the alerts it can process. It intelligently extracts the relevant IT asset data from the alert description and scans its knowledge base to match and execute the action flow. Action flows can be Catch & Dispatch (send mail, create INC, post chat message) or Action-Resolution (execute commands as per SOP on Windows / Linux systems).
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 **Examples of Ignio™ optimization**

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**Bottom line:**

ignio™ is well integrated within the customer’s IT landscape enabling quick turnaround in delivering automation use cases. It connects with customer’s ITSM applications to get work; for monitoring and actions it integrates with various tools within the customer environment like BMC Control-M, Splunk, Enterprise Grid, custom batch schedulers, Skype Chat; integrates with various technologies like Windows, Linux, Sybase, SQL Server, Oracle and also COTS applications like IntelliMatch.