



Singapore Healthcare Management 2023

Strengthening KPI Reporting of Critical Operational Tasks that Assure COVID-19 supplies to Public Healthcare Institutions (PHIs)

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Introduction & Aim

To aid ALPS COVID-19 Supply Chain Task Force (SCTF) Team to assure COVID Supplies to PHI, a project was initiated with the aim:

- To establish a shared picture across the SCTF team on KPIs and operational performance

This is to ensure accountability, timely triggers and responses on potential issues, as well as escalations to the respective stakeholders, providing assurance on the distribution of COVID-19 supplies to PHIs and other MOH-directed locations.

Solution

Solutions were pursued along the following:

- Address the pain point of tedious compilation of KPIs with different data formats and definitions
- Identify leading and lagging indicators to provide holistic assessment of operational health.
- Identify means to make the KPI accessible across the team, through the use of a dashboard.

Two solutions were identified to shorten report turn time as well as aligned methodology and data definitions

Methodology

The DMAIC framework was adopted to identify potential root causes, as well as to optimize the process of compilation and strengthen reporting

A. SIPOC Tool to Visualize End to End Process

Suppliers	Input	Process
Pharmaceutical Companies	SAP Reports	1 Consolidate Reports
Medical Device Companies	3PL Reports	2 Mesh the Reports
Warehouse Providers	Vendor Reports	3 Share Results with Stakeholders
Outputs	Customers	
Fulfilment Timeliness	3PL	Internal Stakeholders
Delivery Timeliness	Public Health Institutions	Government Ministries
Inventory Checks		

B. Five Whys Methods to Identify Root Causes From Pain Points

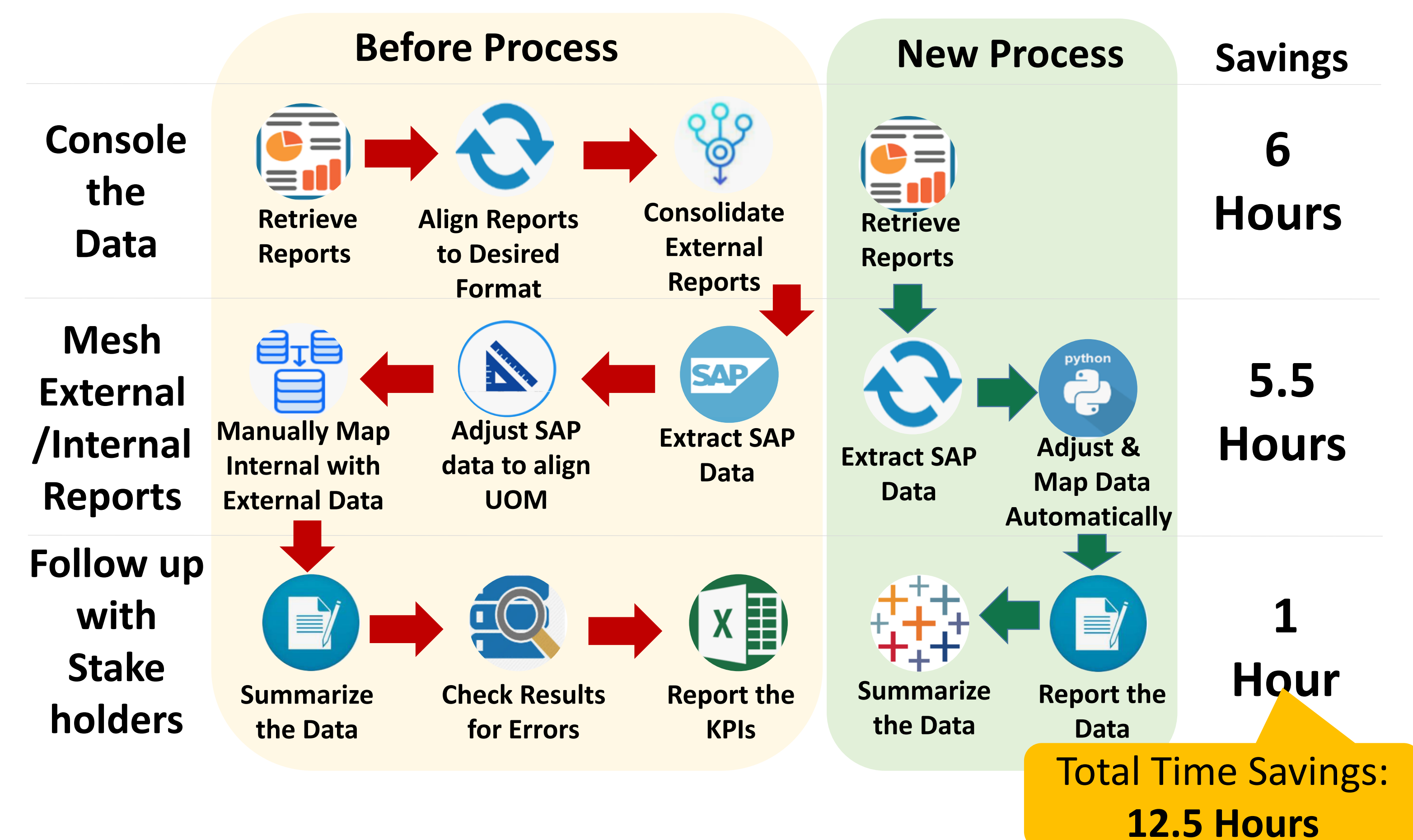
Pain Points

Multiple Data Sources, with Various Formats	Stakeholders Have Multiple Indicators to Measure Operational Health	Accessibility to Reports
<ul style="list-style-type: none"> Multiple vendors and service providers involved Different formatting used Different Unit of Measurement (UOM) used amongst reports 	<ul style="list-style-type: none"> Measurements are done at either input or output phase of a process step 	<ul style="list-style-type: none"> Report could be delivered from various channels A report could be sent to different stakeholders in a week, based on different data snapshots

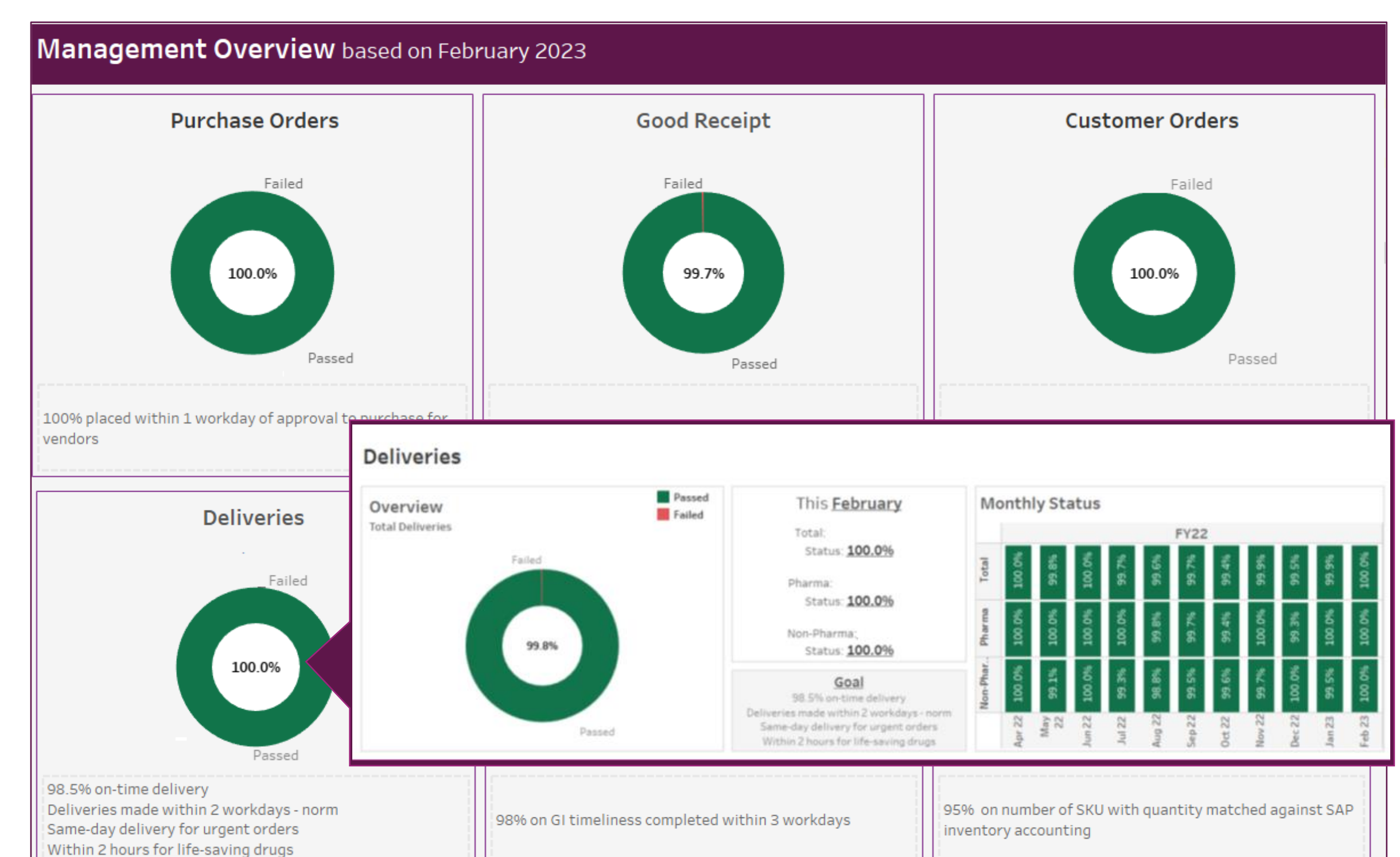
Root Causes

Tedious to compile report as there are no establish data standards for 3PLs to conform.	There are too many indicators, used by different parties, to assess the state of operations	There is no single channel to deliver a consistent report to stakeholders.
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A. Python application to reduce the time required to compile the various sources



B. Provide a common access to stakeholders through a dashboard ,without the need to manually share the report



Key Features

- Common Access to Single, Consistent Data Source
- Summarize Views Enabling Users to Make Better Decisions & Planning
- Data Drilldown from Summary to Details is Available for Further Analysis

Results and Conclusion

With reduced report turn time as well as aligned methodology and data definitions, SCTF team can better focus on driving operational excellence, by tracking key KPIs to identify key operational issues on a timely basis. Some of the key highlights include:

- ✓ Average On Time in Full (OTIF) kept at a consistently high standard since implementation in June 2022 at above 98.5%
- ✓ High accuracy of inventory to enable planning for mass distribution : For example distribution of ART kit.
- ✓ Simultaneous view of operation performance of all 3PLs and triggers on performance dips for correction, ensuring consistent 3PL service standards