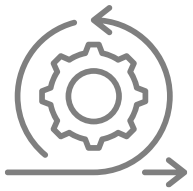

BI Infrastructure Assessment/Diagnostics

Agile, Lean and DevOps at scale framework provider

- Complex operational processes with multiple systems/applications interacting with each other leading to inefficiencies in reporting including with single person dependence.
- Underutilized tech stack and with scattered knowledge base and usage of the tools

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Data architecture and reporting infrastructure assessment

BI INFRASTRUCTURE ASSESSMENT/DIAGNOSTICS

Situation

- Client leverages Snowflake as their Data Warehouse solution which was not designed as per industry best practices. Manual effort is required for reporting as it is heavily dependent on a single resource. The logic to build KPIs/Metrics is done from the poor quality of data and absence of process documents or any master and mapping data makes reporting complicated.
- Partnered with the client to perform a diagnostic study to find out gaps and opportunities in both data architecture and reporting suite.

Accordion Value Add

- Reviewed and assessed current state technology infrastructure, business processes and people controls in place and identified opportunities in Data ingestion process, infrastructure and security, and Process governance.
- Created current state data lineage and data flow diagrams to provide visibility into reporting and data architecture. Analyzed the patterns and identified key areas which can be revamped or automated to meet future state requirements.
- Consolidated all requirements and brainstormed with Business and Technology stakeholders to map data sources and process which need to be setup for automated reporting.
- Developed a future state data architecture with optimized tools stack, providing enhanced cost control and making it more end user friendly

Impact

- Proposed a unified and scalable technical architecture by leveraging single ETL tool to achieve scale and expertise on the tool; proposed industry standard data modeling technique to overcome inefficiencies in reporting and provide drill-down capabilities in the reports. The recommended architecture will increase data quality from 95% to 100%.
- Proposed to reorganize the reporting datasets to ensure data is ingested uniformly into Snowflake Data Warehouse and the source for all reporting happens from Snowflake Data Warehouse. The proposed automated solution will eliminate 4 hrs of manual weekly efforts.
- Proposed end-to-end automation of the data flow to generate and display KPIs/Metrics and remove any manual dependency and human error leading the consistent and timely reporting.

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Devops Solution Provider needs data architecture and reporting infrastructure assessment

Picture this…

You're looking to perform a diagnostic study to find out gaps and opportunities in both data architecture and reporting suite. At present, you leverage snowflake as data warehouse solution that is not designed as per industry best practices. Manual effort is required for reporting as it is heavily dependent on a single resource.

You turn to Accordion.

We partner with your team to perform a complex diagnostic study to identify gaps and opportunities in data ingestion process, infrastructure and security, and Process governance, including .

1) Reviewing and assessing current state technology infrastructure, business processes and people controls in place and identifying opportunities in data ingestion process, infrastructure and security, and process governance
2) Creating current state data lineage and data flow diagrams to provide visibility into reporting and data architecture. Analyzing the patterns and identifying key areas which can be revamped or automated to meet future state requirements.
3) Consolidating all requirements and brainstormed with business and technology stakeholders to map data sources and process which need to be setup for automated reporting.
4) Developing a future state data architecture with optimized tools stack, providing enhanced cost control and making it more end user friendly

Your value is enhanced.

You have a unified and scalable technical architecture by leveraging single ETL tool to achieve scale and expertise on the tool; proposed industry standard data modeling technique to overcome inefficiencies in reporting and provide drill-down capabilities in the reports. The recommended architecture will increase data quality from 95% to 100%. You have reorganized the reporting datasets to ensure data is ingested uniformly into Snowflake Data Warehouse and the source for all reporting happens from Snowflake Data Warehouse. The proposed automated solution will eliminate 4 hrs of manual weekly efforts. You have end-to-end automation of the data flow to generate and display KPIs/Metrics and remove any manual dependency and human error leading the consistent and timely reporting

CHURN PROPENSITY MODELING

KEY RESULT

- >90% accuracy in prediction
- ~$2.5 Mn increase in potential revenue

VALUE LEVERS PULLED

- Churn propensity model

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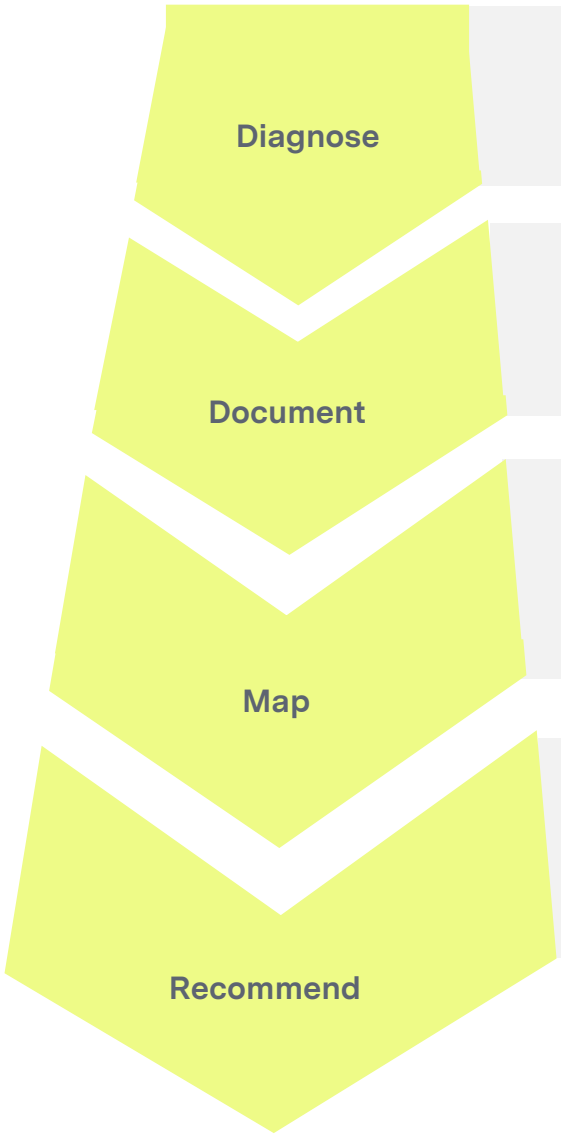
Methodology



- Deep dived into **existing data warehouse** – tables, schema, data flows, tools used
- Deep dived into **existing Tableau reports** and excel reports and documented manual interventions

- Documented gaps and opportunities in **Technology, Process and People**
- Documented **strengths in existing state** which can be revamped and leveraged in future state

- **Mapped data sources** for all KPIs required by executive team and understood any manual interventions and business assumptions for automating reporting in Tableau

- Proposed **future state data architecture design** having features like lower maintenance, integration flexibility, business user friendly structure, high accuracy, access control
- Proposed **future state reporting suite** by creating list of dashboards which covers key metrics across various functions and also executive level reporting

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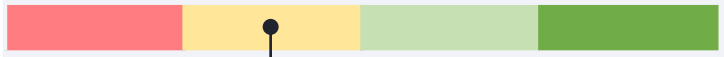
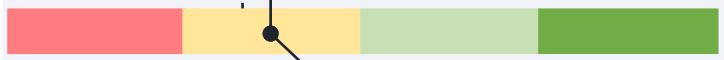
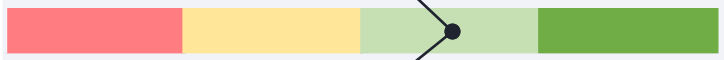
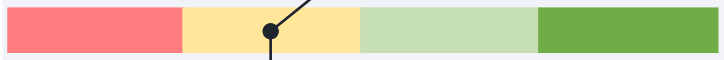
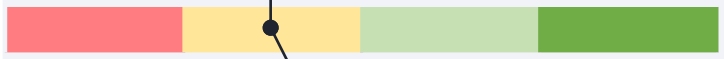
Data assessment scorecard

	Data Strategy Element	Current Status	Comments
1	Data Governance		Formalized data governance best practices are currently not implemented
2	Data Availability		Billings and Transactions data reconciliation and corrections are currently done manually
3	Data Quality		Data Quality of Snowflake environment is high (~90%). However, data cleansing and business rules are currently not in place.
4	Data Access		Access control rules are currently not implemented
5	Data Management		One big table approach is being leveraged instead of Data Models / Data Marts
6	Business Intelligence		Most of the KPIs identified in Phase 1 are not currently being reported (63 out of 76) in Tableau

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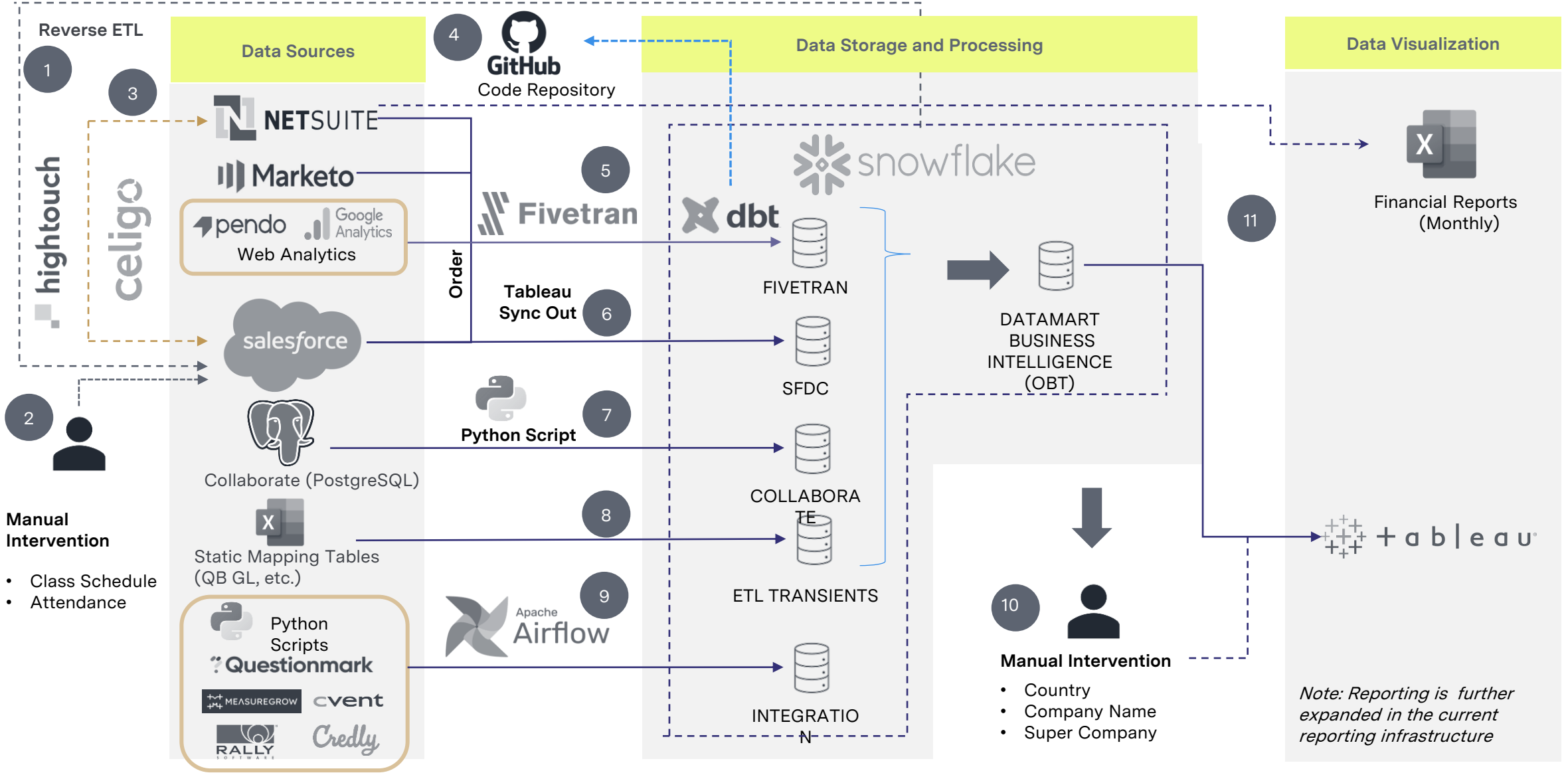
Approach – Current state data architecture



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Approach – Current state data architecture details

1. Hightouch is a reverse ETL tool, used to push the aggregated Salesforce data from Snowflake back to the Salesforce
2. Class schedule and class attendance details are manually uploaded to Salesforce
3. Celigo is used for two-way sync between the orders data from Salesforce and Transactions data in NetSuite
4. GitHub is being used as code repository for dbt cloud transformations
5. Using Fivetran (ETL/ELT tool), datasets from different sources i.e., NetSuite, Marketo, Pendo, Google Analytics and Salesforce (Orders) are ingested into Fivetran database in Snowflake
6. The Tableau Sync Out tool is used to ingest all required Salesforce objects (except Orders) into Snowflake
7. Collaborate data is pulled from the Postgre database using an API connection
8. Static mapping Excel files for Quick Book GL accounts, country, regions, etc. are imported to the Lookup_Tables schema under the ETL_Transients database
9. Data from sources such as Question Mark, Measure Grow, Credly, and others, is uploaded to Snowflake using Python scripts that run in the Airflow Orchestrator
10. The manual process for company/super-company and region/country mapping is directly used in Tableau reporting and is not updated in Snowflake
11. Data from various databases along with the datamart is being used in Tableau reporting suite

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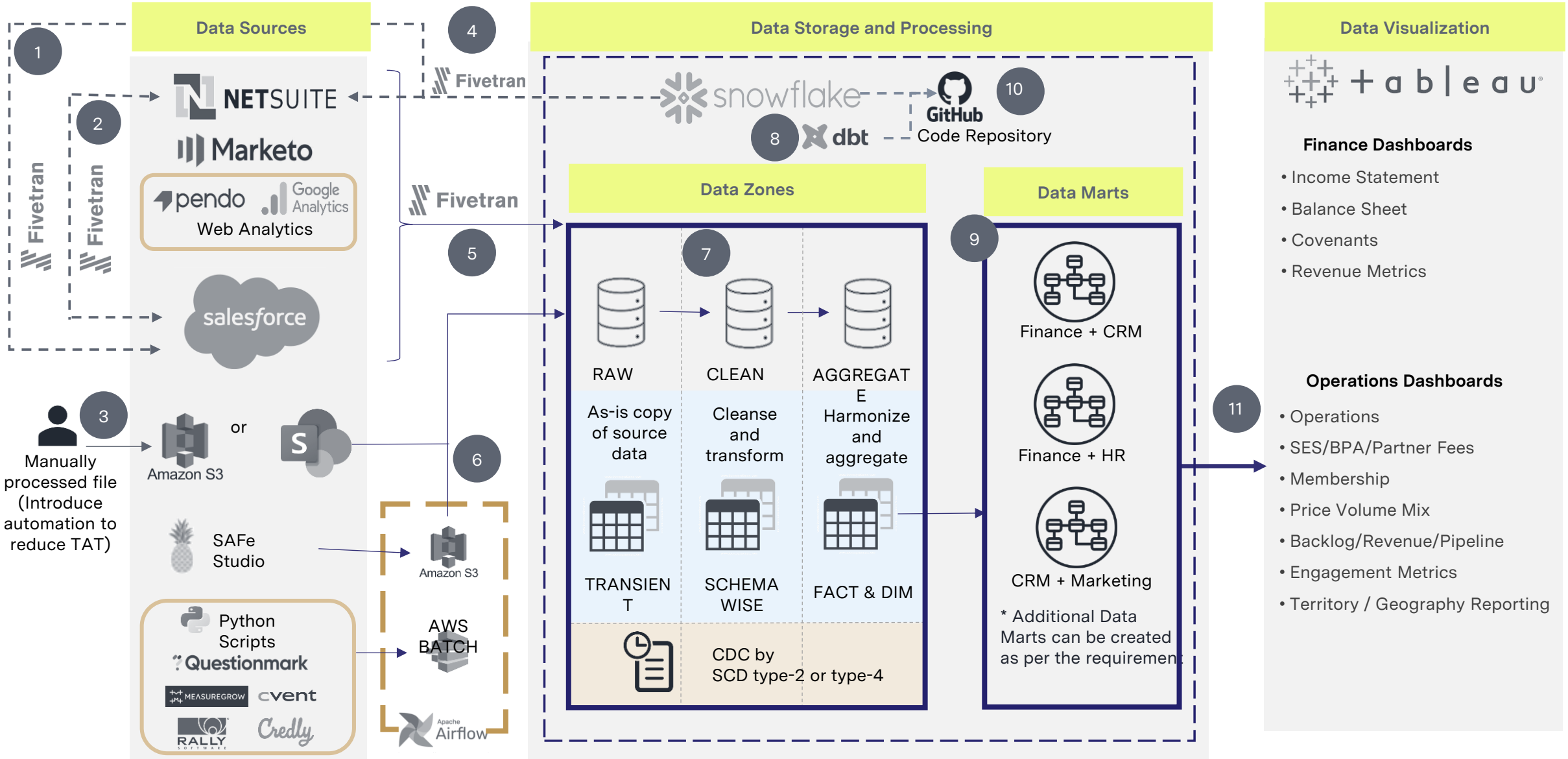
Approach – Future state data architecture



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Approach – Future state data architecture details

1. Fivetran has cloud function connector which will be utilized to run python code in serverless function apps and push missing transactions data back from Snowflake to NetSuite
2. Fivetran can also be used to run a python script which performs a 2-way sync between orders and transactions data between Salesforce and NetSuite
3. Automate manual process of company/super-company and region/country mapping. As an interim solution, leverage SharePoint or Amazon S3 bucket, which will ingest data into Snowflake
4. Fivetran can also be used to run python script which will push aggregated Salesforce data from Snowflake back to the source
5. Ingest datasets from different sources i.e., NetSuite, Marketo, Pendo, Google Analytics and Salesforce (Orders) using Fivetran (ETL/ELT tool) into Fivetran database in Snowflake
6. Upload data from sources such as Question Mark, Measure Grow, Credly, and others, to an Amazon S3 bucket using Python scripts that run in AWS Batch and Airflow Orchestrator
7. Leverage a staged data storage layer by loading data into the Raw zone, defining the schema for cleaned and transformed data, and then pushing to the cleaned zone. Further harmonization is carried out, and data models (Kimball principal), along with a few aggregate tables, are created in Aggregate zone. CDC by SCD Type-2 or Type-4 should be implemented
9. Create Data Marts using dimensional data models that are created in the aggregate zone and tailor as per the requirements
8. Data transformation tool (dbt Cloud) for all the transformations, which will create data models and Data Marts, which feed the Tableau reports
10. Use GitHub as a code repository for version control of Snowflake data warehouse and dbt cloud transformations
11. Tableau reporting BI suite will utilize the data marts created for the dashboards

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Approach – Proposed reporting suite

snowflake

DATAWAREHOUSE

Roll Up
Drill Down
Slice & Divide
Pivot

Data Marts	Reporting Suite	Reporting Dashboards	Key KPIs
Finance + CRM	Executive	Executive Dashboard	Key KPIs from each function
Finance + HR	Finance	Financial Dashboard Account Management Dashboard Sales and Revenue Dashboard	Revenue, Gross Margin, Net Income, Debt, ARR, MRR
	Sales	Sales Performance Dashboard Sales Pipeline Dashboard	Headcount, Sales Team Expense, CAC, Booking(#) in pipeline, Pipeline Volume
CRM + Marketing	Sales and Marketing	Account Management Dashboard Deal Velocity Dashboard Leads Conversion Dashboard* Sales and Revenue Dashboard Marketing Dashboard	Days in Pipeline, Stages, Opportunity, Book to bill, $ booked
	Operations	Partner Performance Dashboard License Tracking Dashboard Membership Management Dashboard* Training Performance Dashboard*	Certification Rate, Members count and Renewal rate

Additional Data Marts can be created as per the requirement

1 DATAMART BUSINESS INTELLIGENCE — Current Reporting Dashboards — Currently Reported KPIs

2 Self Serve — Self Serve Reporting Capability

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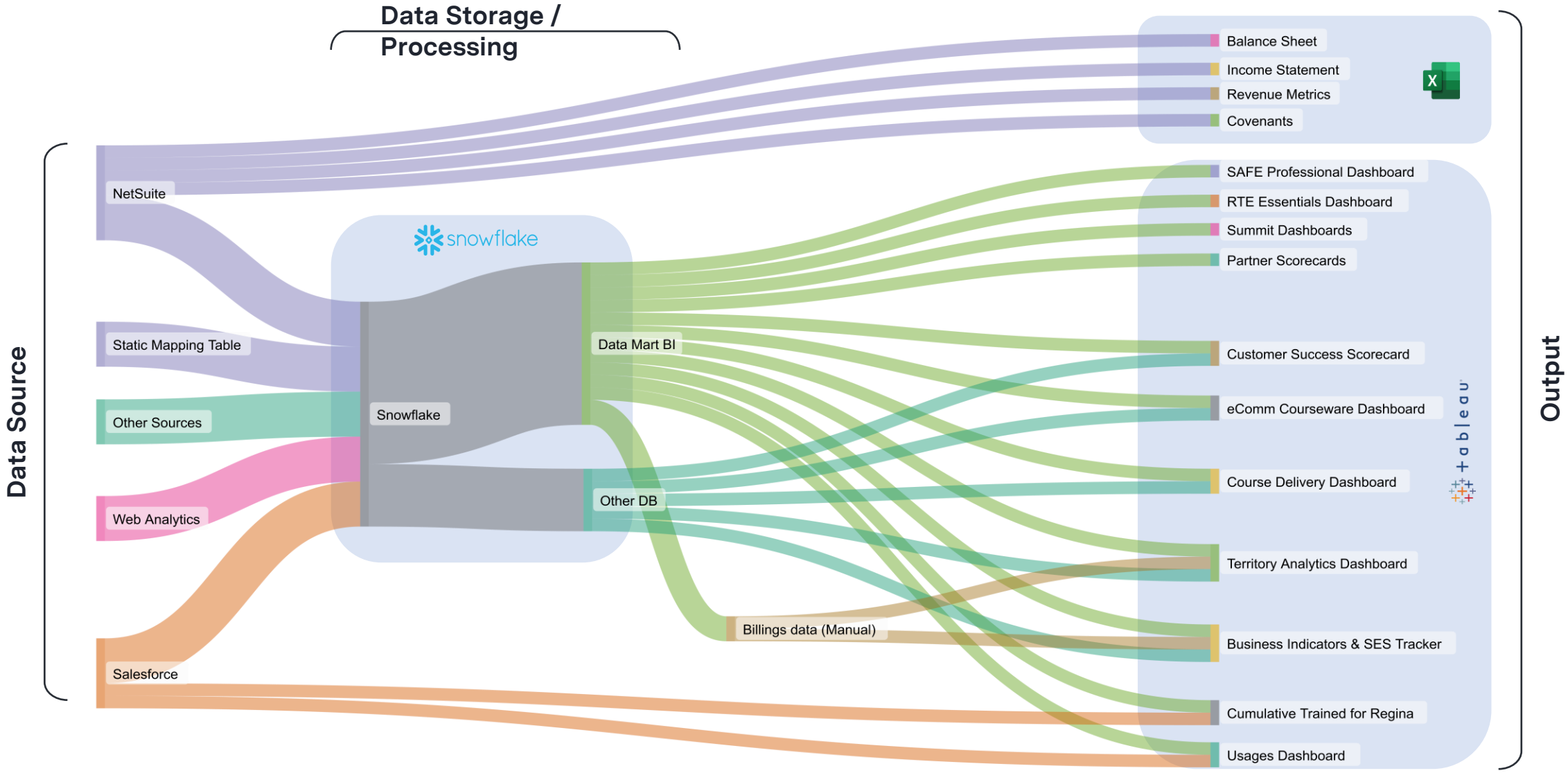
Approach – Current state reporting lineage



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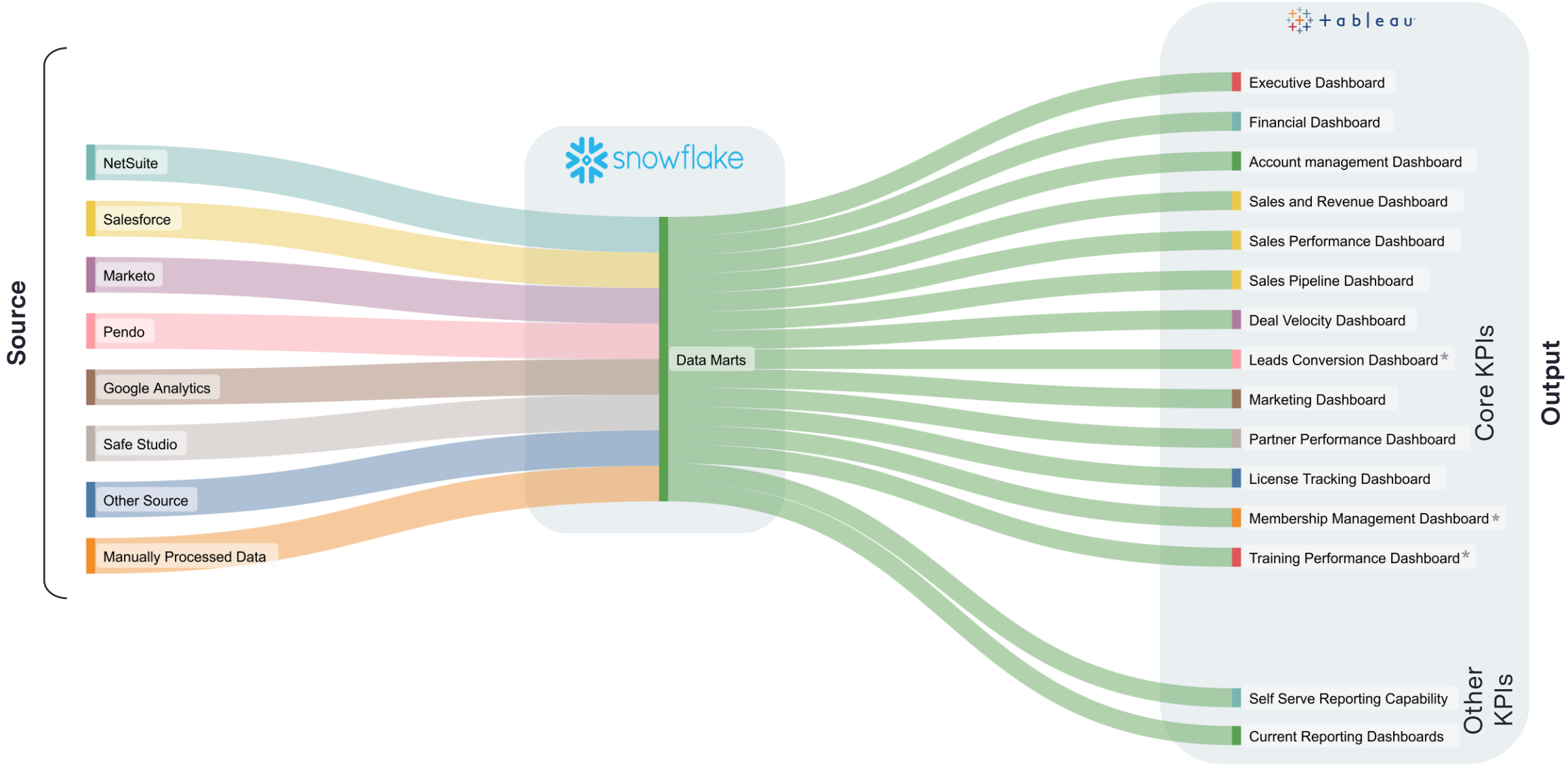
Approach – Future state reporting lineage



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