TREDENCE

Sancus
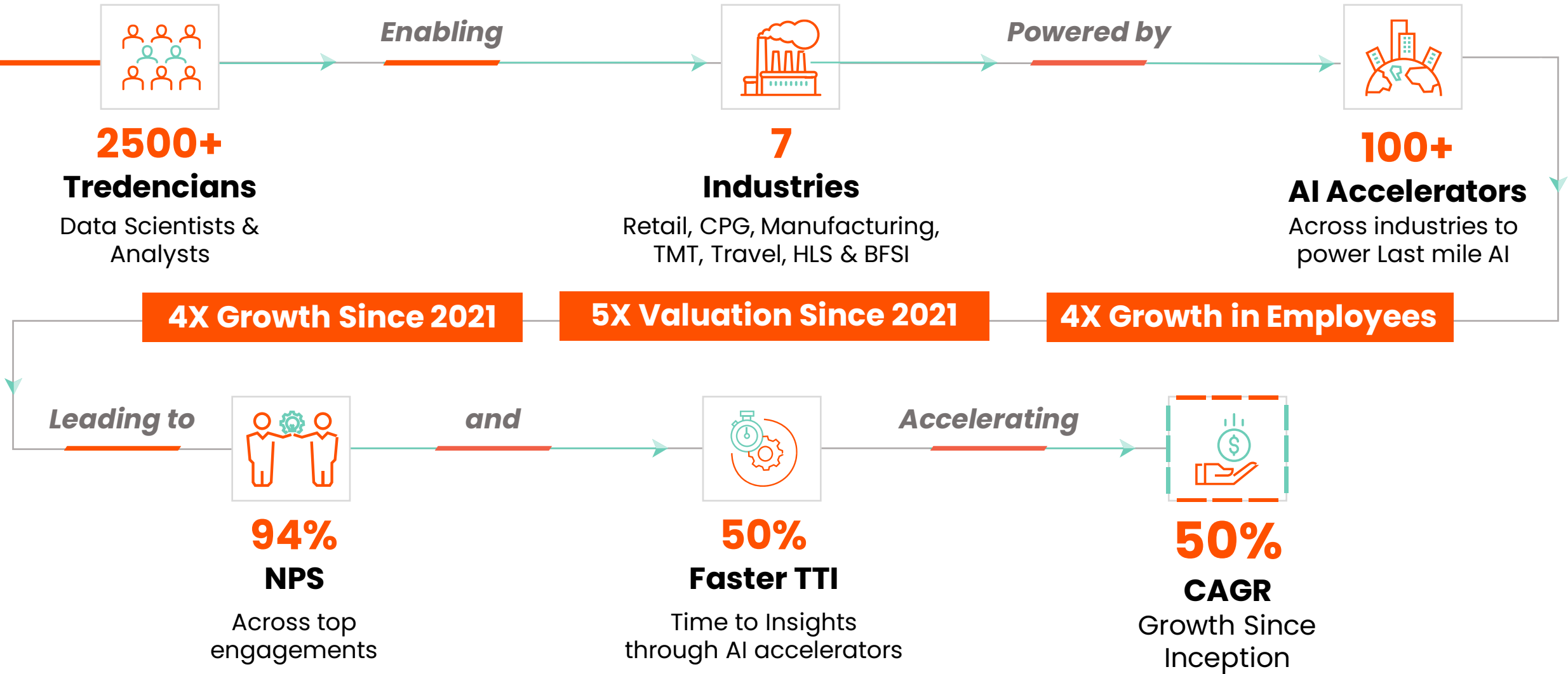
AI/ML-driven Data Quality Management (Sancus) Solution by Tredence

Solution Deck

#BeyondPossible

Microsoft

T

Tredence at a Glance

2500+
Tredencians
Data Scientists & Analysts

Enabling

7
Industries
Retail, CPG, Manufacturing, TMT, Travel, HLS & BFSI

Powered by

100+
AI Accelerators
Across industries to power Last mile AI

4X Growth Since 2021　　**5X Valuation Since 2021**　　**4X Growth in Employees**

Leading to

94%
NPS
Across top engagements

and

50%
Faster TTI
Time to Insights through AI accelerators

Accelerating

50%
CAGR
Growth Since Inception

Tredence delivers value through full-stack capabilities & white box solutions that drive the last mile adoption of insights

Data Engineering

Machine Learning & AI Enabled Analytics

Last Mile Adoption

Data Engineering

Data Cleansing & Harmonization

Technology Platform Modernization

Cloud Performance & Cost Optimization

Azure

databricks

snowflake

Supply Chain & Procurement	Merchandising Strategies	Marketing & Personalization	Customer Analytics & Experience	Cost Optimization & Productivity
Demand Forecasting & Planning	Price and Promotion Optimization	Personalization Engine	Unified Customer Data Platform	HR Analytics Platform
Supply Chain Control Tower	Assortment and Space Management	Test & Learn Platform	Customer Explorer Visualizations	Store labor optimization
Cost Negotiations Platform	Store Location Optimizer	Marketing Mix Modeling & MTA	Customer Journey Mapping	Associate training management
Out of Stock Alerting	Next Gen Product Recommender		Customer Behavior Modeling	

DATA SCIENCE R&D CENTER

ML WORKS

White box model deployment and monitoring, to ensure complete transparency and explainability of models

TREDENCE STUDIO

Custom Application development & deployment to deliver last mile insights & impact

Computer Vision   *Internet of Things*   *Natural Language Processing*   *Proprietary Frameworks*   *Edge Deployment Capabilities*

AI/ML based data quality tool that aims to deliver reliable data to your business

Data Validation
- Global address validation & correction using postal directories and 3rd party APIs
- Contact/lead email verification

Data Cleansing
- Business rule configuration, Standardization, De–dupe using **AI/ML algorithm** & golden record creation
- Deployed on customer, contact, product, material, vendor master data

Data Ingestion
- Integrates seamlessly with tools/applications like Oracle ERP, Salesforce, etc.
- Leverage OCR tools to scrap data from documents to be consumed by downstream layers for Cleansing

Data Enrichment
- Customer/contact enrichment through 3rd party partnerships
- Product/material enrichment through web scraping, image processing, unstructured data analysis

Hierarchy Management
- Customer/vendor hierarchy validation, creation and management through 3rd party partnerships
- **ML algorithms** for product/material hierarchy assignment at scale (including GPC/GS1 migration)

Feedback Loop
- **Active Learning** based feedback module allows business users to pass feedback and override the algorithm's results
- Enables a reinforcement loop to keep the machine learning models accurate with time

Sancus

Tredence Differentiation: We have structured process templates, frameworks and runbooks

① Data Assets Classification Framework

We have developed a framework to classify data assets into different categories based on different parameters – scope of usage, sensitivity, compliance, functional impact and type of data. Our classification framework helps to establish policies based on the parameters captured against individual entities.
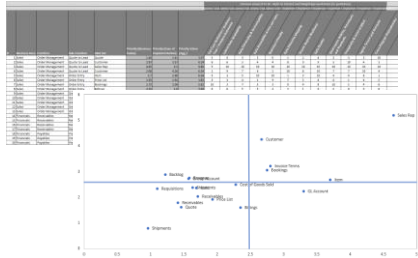
② Data Quality Scorecards & Dashboards

At Tredence, we built a AI based Data Quality solution to master and manage hierarchy data. As part of the data quality solution, we have delivered comprehensive quality scorecards that analysts, data engineers and data domain owners can leverage to measure the quality and take appropriate actions to continually improve the quality.

## ③ Standardised Operational Metadata for GCP Pipelines

Having done a number of GCP data lake implementations, we have standardised the data models to capture operational metadata in data pipelines that can be used for measuring the key operational metrics over time – volume growth, failures / errors, performance etc.
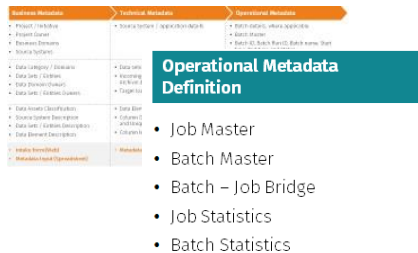
④ Data Governance Policies for Quality and Security

We have pre-defined data quality and security policies that can be adopted by any of our clients with minimal tweaks. Policies are written leveraging our experience implementing data governance for not just retail clients but for some of the more heavily regulated clients as well.
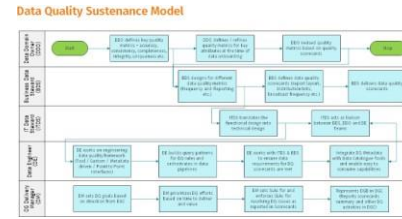
⑤ Data Catalogue Operationalization

Tredence has created templates for operationalizing a data-catalog & standardizing Data stewardship across enterprise Organizations. Our framework helps us move from onboarding to meta data ingestion to object curation at double quick-time.
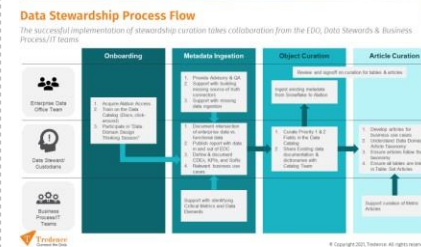
⑥ Taxonomy Definer

We have developed an accelerator that runs through the curated object-metadata and curated metadata and helps to classify tables objects and determine domains. The accelerator uses best in classification techniques & ensemble models to accurately classify the information.

Evolution of the solution for a new market

Levers for reducing data mismatch

Matching Accuracy

40%
Native Algorithm

50%
Contextualized Algorithm

70%
Feedback from Data Stewards

Manual intervention

80%
Custom business rules for anomaly detection

90%
Data improvement and cleansing techniques

Success Criteria = 80% to 85% matching accuracy
Subject to level of user interaction and feedback
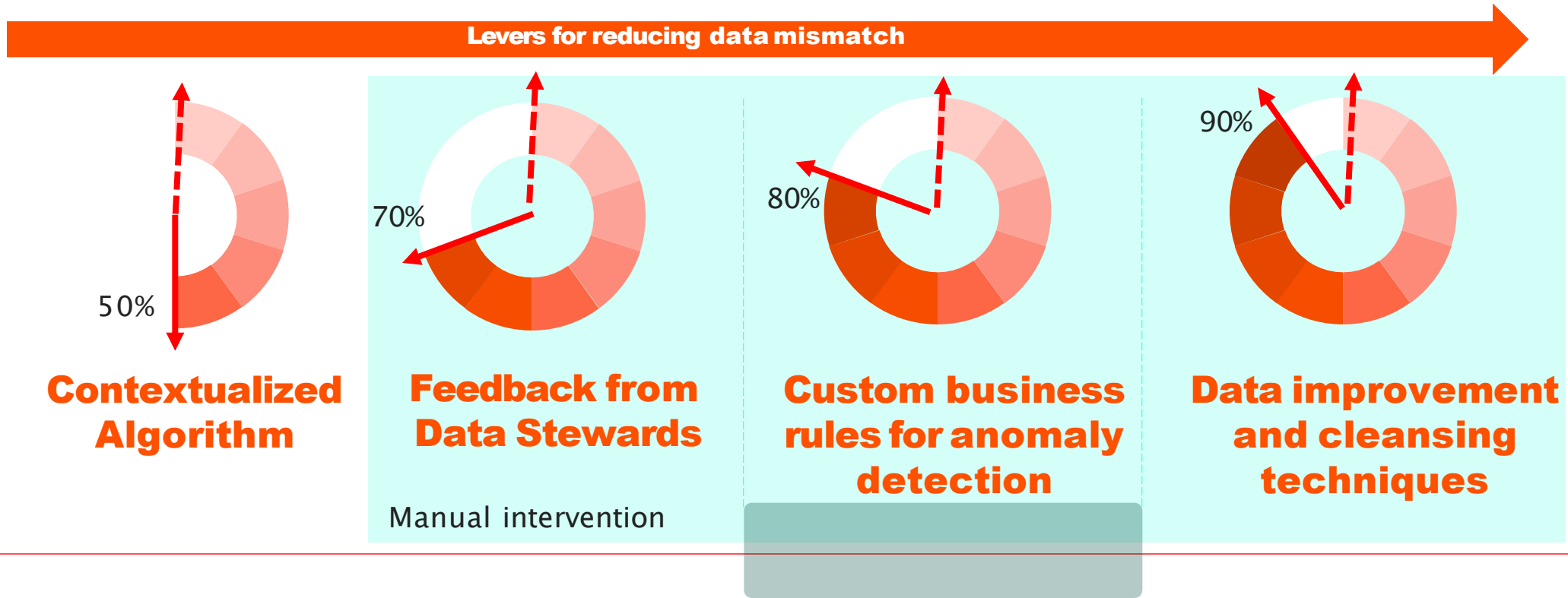
Note: Depending on the available fields and level of structured data available in the market, the final matching accuracy for the pilot may vary by +/− 5%. Although, during scaling, cross geography learning available to the algorithm will result in overall improved accuracy

Sancus team will provide documents explaining step-by-step process of onboarding a new market in detail

Expected Deliverables through the engagement

End-to-end Orchestrated Pipelines	Data Quality Framework	Certified Datasets	Operationalized Catalog
Extended Logging, Monitoring and Alerting Framework	Base Data Cleansing and Consolidation Code	Market Specific Code Customization and Rules	WebApp
Deduped and Consolidated Operator and Contacts Data	Final Golden Record IDs	Updated Mapping for Other Objects	Specific Azure Customization for Sancus
Support Operating Model	Weekly/Daily Process Runs	Bug Fixes	Service Management/ Service Desk Reports

+

On-demand Consulting, Guidance and Product Enhancements

We follow a robust process to ensure smooth process transition and maintenance

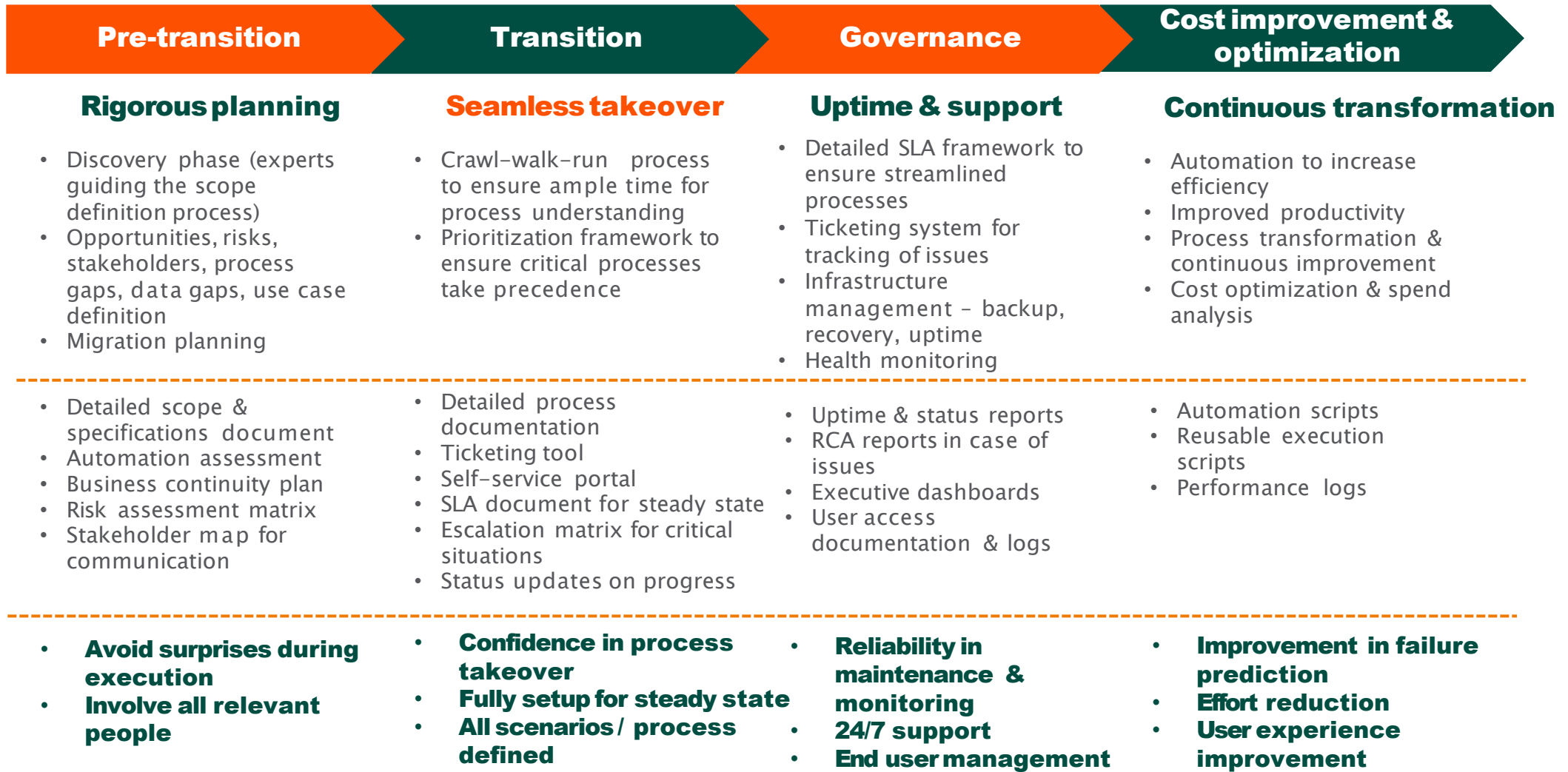Maintenance cost depends on the level of involvement expected from the solution support team

	Pre-transition	Transition	Governance	Cost improvement & optimization
	Rigorous planning	**Seamless takeover**	**Uptime & support**	**Continuous transformation**
What we do	• Discovery phase (experts guiding the scope definition process) • Opportunities, risks, stakeholders, process gaps, data gaps, use case definition • Migration planning	• Crawl–walk–run process to ensure ample time for process understanding • Prioritization framework to ensure critical processes take precedence	• Detailed SLA framework to ensure streamlined processes • Ticketing system for tracking of issues • Infrastructure management – backup, recovery, uptime • Health monitoring	• Automation to increase efficiency • Improved productivity • Process transformation & continuous improvement • Cost optimization & spend analysis
Key deliverables	• Detailed scope & specifications document • Automation assessment • Business continuity plan • Risk assessment matrix • Stakeholder map for communication	• Detailed process documentation • Ticketing tool • Self–service portal • SLA document for steady state • Escalation matrix for critical situations • Status updates on progress	• Uptime & status reports • RCA reports in case of issues • Executive dashboards • User access documentation & logs	• Automation scripts • Reusable execution scripts • Performance logs
Benefits	• Avoid surprises during execution • Involve all relevant people	• Confidence in process takeover • Fully setup for steady state • All scenarios / process defined	• Reliability in maintenance & monitoring • 24/7 support • End user management	• Improvement in failure prediction • Effort reduction • User experience improvement

Sancus – Our AI/ML based data cleansing & consolidation solution has a proven track record of success

Standardized & Consolidated Customer Master data for a leading CPG company	• Standardized data across **40+** sources across **7** countries • Improved the customer–channel mapping by **26%** and created various hierarchies for Pricing, Local Reporting, Global, etc.
Standardized PO receipts for a large CPG company	• Realized **200k** of receivables per year by consolidating POC receipts across partner and retailer source systems • Reduce PO reconciliation time from **2+ weeks to 2 days**
Cleansed and created a customer master for a leading automobile manufacturer	• Reduced time for master data creation by **50%** over the existing solution • Reduced Marketing campaign costs due to duplicate mails sent to the same customers • Enriched customer address data through third party APIs

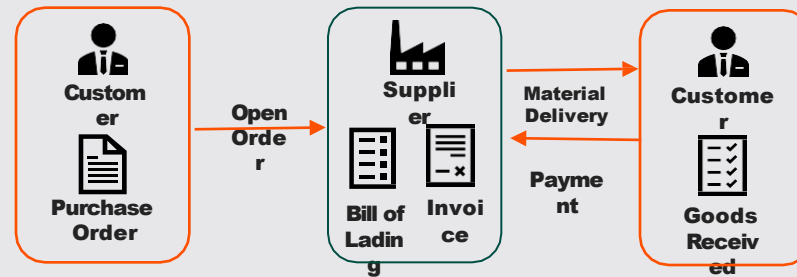# Automation of Purchase Order to Invoice Reconciliation

Situation

- Purchase order to invoice three-way match is transaction reconciliation process of approving payment to a supplier upon completion of an order

- The manual process of reconciliation requires to check products, quantities and costs across purchase order, bill of lading, invoices and contract/MSA

- Reconciling the documents from multiple sources in different formats for transactions takes valuable time and resources

Need

- Objective is to reduce margin leakages caused by incorrect or inefficient PO reconciliation.

- Reduce scope of human error and eliminate nonvalue added activities

- Automate the reconciliation process of POs against the invoices for payment processing

Customer → Open Order → **Supplier** — Material Delivery → **Customer**

Purchase Order | **Bill of Lading** | **Invoice** | Payment | **Goods Received**

Proposed Solution

- **Data Gathering & Cleansing:** Use image processing techniques to convert PDF and JPEG format Invoices to structured CSV or text format for processing

- **Data Tally:** Use Sancus to match invoice details. Validate address anomalies to ensure correct carrier charges

- **Automation of PO Reconciliation:** Improve the efficiency and error proof the process by automating PO reconciliation to close POs

Enabled a large CPG player with Sancus' AI-ML matching & need-based customizations

BACKGROUND

- The CPG Client Food Solutions is looking to enhance the data quality of their Operator and Contact data objects to enable downstream analytics and BI.

- Tredence's ML based matching engine is used to cleanse and consolidate Operator and Contact data, identifying and flagging duplicates and creating a golden record that is propagated forward

BUSINESS NEED

Client wanted an intelligent automated solution to tackle multiple Data Quality challenges that exists, including duplicate and inconsistent data entries. Scope – 75 markets; 12–17 objects per market (including Operator and Contacts)

SOLUTION APPROACH

Tredence's solution created immediate ROI for the client

➢ Design, build and deliver data pipelines for 75 markets

➢ Implement data quality, measure and optimize quality for 15 objects for each of the markets

➢ Read Operator and Contact datasets from UDL ,perform DQ check , process and harmonize the datasets for Sancus consumption

➢ Implement better data profiling, quality and enrichment in the pipeline to improve adoption

➢ Orchestrate end to end pipelines on ADF. Optimize performance & cost. Operationalize logging across pipelines.

OUTCOME

Sancus acts on **100%** of the source data and adapts to unique scenarios within each market

21% increase in accuracy over existing engine

Results provided within **24 hours** of dataset being made available

Proven the effectiveness of Sancus' AI ML matching model for scaling up across all **75 markets** with need-based customizations

#beyondpossible