Data strategy roadmap

Family entertainment center and restaurant chain

Evaluated the existing data infrastructure and developed an optimal data strategy for the client to support a robust Business Intelligence and Analytics framework along with a roadmap for implementation and cost estimates

Family entertainment center and restaurant chain needs data strategy roadmap

DATA STRATEGY ROADMAP

Picture this…

You're looking for devising an optimal Data Strategy by understanding the current state of data infrastructure, gathering requirements from various stakeholders and ensuring the latest standards and best practices are incorporated on various elements such as IT governance, data quality, data security to support the business intelligence and advanced analytics initiatives.

You turn to Accordion.

We partner with your team to evaluate the existing data infrastructure and develop an optimal data strategy to support a robust Business Intelligence and Analytics framework, including:

1) Reviewing the existing data infrastructure (ERP, CRM systems, HR tools etc.) across business functions, including external data sources, reporting infrastructure and IT governance practices
2) Evaluating status of the various elements of data strategy on the data maturity model and recommending the next steps to move from the current state (data cognizant/proficient) to a data savvy state in the medium-term and data expert state in the long-term.
3) Creating a customized data strategy for the client that focuses on improved data governance, metadata management, role-based access controls, data integration through data lakes and a robust self-serve BI infrastructure
4) Creating a stage-wise roadmap with specific 3-month, 6-month, 12-month and 18-month objectives, and prioritizing the objectives based on the effort required vs benefit expected

Your value is enhanced.

You have a strategically implemented plan to secure approvals from the Board to kick-off various initiatives with clear objectives and benefits. You have also initiatives to implement a global data governance framework and a data warehouse solution that acts as a single source of truth encompassing strong metadata management, automated quality & access controls, and consistent BI reporting and analytics.

KEY RESULT

- Impact 1…
- Impact 2…

VALUE LEVERS PULLED

- Data strategy
- Data maturity model
- Data Lake integration
- Self-serve BI dashboard

Data strategy for a family restaurant chain

Data Strategy Roadmap

Situation

- Opportunity to develop a robust data infrastructure that meets the latest standards and encompasses the best practices on various elements such as IT governance, data quality, data security and support the business intelligence and advanced analytics initiatives
- Partnered with the client to understand their current state of Data Infrastructure, gather requirements from various stakeholders and devise an appropriate and optimal Data Strategy

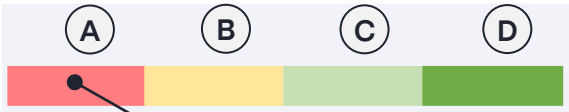
Accordion Value Add

- Reviewed the client's existing data infrastructure (ERP, CRM systems, HR tools etc.) across business functions, including external data sources, reporting infrastructure and IT governance practices
- Evaluated status of the various elements of data strategy on the Data Maturity model and recommended the next steps to move from the current state (Data Cognizant/Proficient) to a Data Savvy state in the medium-term and Data Expert state in the long-term.
- Created a customized data strategy for the client that focused on improved data governance, metadata management, role-based access controls, data integration through data lakes and a robust self-serve BI infrastructure
- Created a stage-wise roadmap with specific 3-month, 6-month, 12-month and 18-month objectives, and prioritized the objectives based on the effort required vs benefit expected

Impact

- Our strategy and implementation plan helped the client's IT team to secure approvals from the Board to kick-off various initiatives with clear objectives and benefits
- The initiatives enabled client to implement a global data governance framework and a data warehouse solution that acts as a single source of truth encompassing strong metadata management, automated quality & access controls, and consistency across all BI reporting and analytics

Data strategy: Data maturity analysis

Elements	Overall Status	Comments
1 Data Governance		SOX/PCI controls ensure some data governance aspects are covered. However, formalized structures and policies for data governance need to be formulated.
2 Data Content		Rich internal data environment, capturing data across the business value chain in NCR systems, Parafait etc. Metadata management needs to be more effective .e.g., Pricing master is manually maintained in spreadsheets by Marketing
3 Data Quality		Source data quality (NCR systems, Parafait) is high, however quality assurance layers and checks not in place to ensure reporting is reliable and accurate
4 Data Access		SOX/PCI ensure aspects of access control to data systems are managed and reviewed. However, formalized access controls under framework of data governance do not exist
5 Data Management		Aloha, NBO and Birthday Reservations are replicated within the company data center servers, but all the sources are not integrated into a centralized data warehouse/lake or “single source of fact”
6 Business Intelligence		Reporting is manual, siloed and repetitive with inconsistent KPI definitions across functions
7 Analytics		Nascent stages of analytics adoption with siloed analytics within business functions (e.g., basic financial forecasting, test reports)

Data strategy : Data governance - current state assessment example

Scope	Best practice	Status	Comments
Organization structure (data governance)	Defined organizational structure to maintain access controls on data infrastructure (i.e. governance committee, data governance policies and processes)	◔	▪ Currently no governance committee or formal structures for data governance roles or processes ▪ IT Committee/Internal Audits are handling some of the responsibilities on an informal basis
	Clearly defined responsibilities for key roles on data governance e.g.- data stewards, data owners, data consumers	◔	▪ IT steering committee/Internal audits handle some of the responsibilities on an ad-hoc basis but no formal roles and responsibilities on data governance
	Defined frequency for review of policies, standards, governance structures & roles on data infrastructure (i.e. how often the governance committee meets, policies reviewed)	◔	▪ Formal governance committee does not exist ▪ Quarterly audits and internal IT steering committee exist to largely review SOX/PCI compliance
	Defined mechanism to enforce policies and procedures on data infrastructure (i.e. If discrepancies are found what is the method of remediation)	◔	▪ Formal structure to enforce data governance is not available. It is currently managed on an ad-hoc basis by IT
	Communication plan to keep stakeholders and users informed (i.e., when changes are made)	○	▪ Formal communication method for data governance is unavailable
Data governance policies, procedures & standards	Defined and documented policies and standards for data management, data availability, retention, transparency and security	◔	▪ While there are documented policies for data retention and restoration, formally documented polices for data access/usage, data quality or data management do not exist
	Defined policies and tracking of data users with in systems	◑	▪ While user logs are created, effective tracking on a defined basis for accountability on source systems/data tools is not available
Metrics	Defined control metrics to evaluate effectiveness of data governance	○	▪ Metrics are not tracked for governance or compliance in the organization
	Defined roadmap for implement- ion of data governance with objectives, timelines and metrics achievement	○	▪ Defined road map or timelines do not exist

Data strategy : Data quality - Current state assessment example

Scope	Best Practice	Status	Comments
Accuracy	Method for detecting duplicate data is in place	◔	▪ Usually any source data issues are identified and rectified by team members informally or as a part of the day-to-day business operations (example: Accounting adjustments in Workday etc.) but no structured process in place
	Method to identify missing data is in place	◑	▪ For SOX compliant systems there are audits to reflect missing data fields, but no formal process for non SOX complaint systems
	Process to identify incorrect or out of date data is in place	◔	▪ Structured process does not exist, e.g., systems such as Great Plains have purchase order data stored since 2009 and have not been cleared
Integrity	Appropriate safeguards/checks to prevent unauthorized changes of data	◑	▪ Client follows the SOX/PCI controls that prescribes that data manipulation does not occur in the source data systems which track revenue/sales
	Review process for changes made to source data	◑	▪ Formal review process for changes on data do not exist for most processes. A few process like accounting related adjustments are made in the Workday environment based on bank statements through a review process
	Process to correct conflicting information is in place	◑	▪ Formal process e.g. accounting related adjustments are made in the Workday environment based on bank statements through a review process
	Process to correct known errors is in place	◔	▪ Defined process to review known errors, currently done on an ad-hoc basis
Reliability	Consistent data collection process across all locations and data sources	◕	▪ Data is being collected consistently across source systems ▪ During onboarding, new employees and new locations have technology overview and training to ensure consistent data entries
	Process to prevent incorrect entry of data at source e.g., ensuring birth date is filled in right format	◕	▪ Most systems have data entry fields formatted to ensure data is in the right format with few exceptions e.g. zip codes
	Periodic training for front- line staff on data entry procedures	◑	▪ Onboarding training provided but intermediate trainings are not mandated

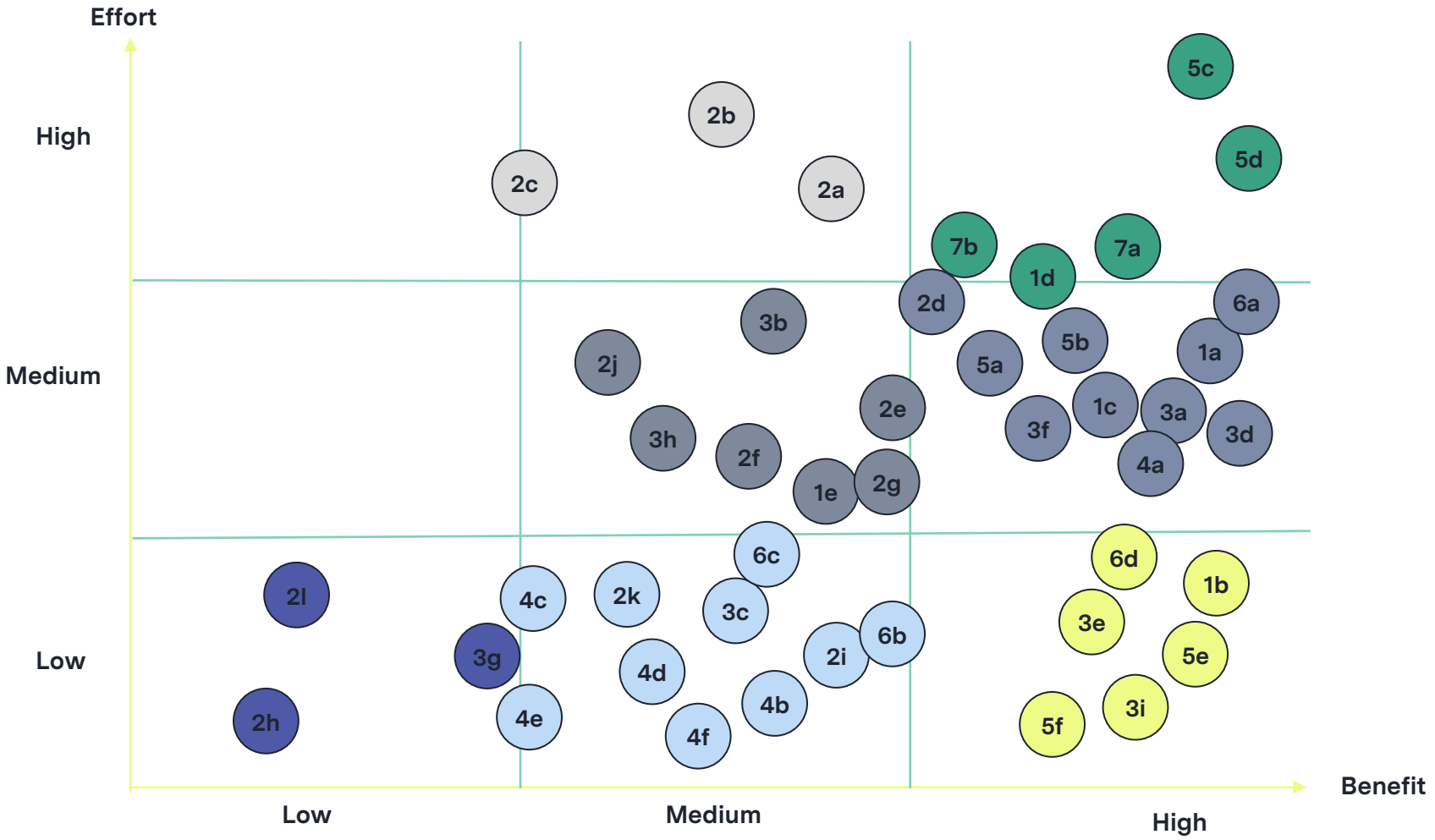
Data strategy : Data content - Current state assessment example

Scope	Best Practice	Status	Comments
Business value chain	Data is comprehensively captured at source systems based on the business value chain	◕	▪ Data is being captured across sources systems comprehensively
	Documentation is made available to relevant stakeholders	◔	▪ Documentation or awareness trainings for relevant stakeholders on existing data does not exist
External data sources	Identifying external data sources that will provide insight into a business function or to perform advanced analytics	◔	▪ Advanced analytics use cases are not defined which would require partnership with 3rd party data sources e.g., customer sentiment analysis on social media, new location or renewal of lease analysis for real estate etc.
Metadata Management	Defined metadata standards and policies for representation of data lineage, data models and data dictionaries	◑	▪ Metadata is handled within each of the source systems (e.g., Workday HR for Employees, Workday GL for stores) ▪ Data dictionaries or documented polices for MDM do not exist
	Defined policies for capturing metadata	◑	▪ Metadata for products/locations/people go through a clear process of approval within the appropriate source systems. ▪ However documentation or framework that outlines the process and the people authorized to make changes to meta data, or how metadata is entered or stored is not available
	Appropriate tools and technology to create and manage metadata	○	▪ MDM tool does not exist. Product master, location master etc. are maintained in discrete spreadsheets by various functions

Data strategy : Data management - Current state assessment example

Scope	Best Practice	Status	Comments
General architecture and infrastructure	Defined and optimized tech architecture workflow, integrated data warehouse with defined and standardized KPIs	◔	▪ Multiple source systems used for data management leading to a complex and unstable architecture ▪ Integrated or consolidated central repository of data does not exist. Data is spread across disparate systems ▪ Defined and documented definitions and business rules for the necessary transformations, key terms and KPIs do not exist ▪ Metadata repository does not exist and metadata maintained in different source systems ▪ Metadata management consists of multiple layers of approvals but formal standardized process does not fully exist (e.g., definitions, business rules, main values, data quality, etc.)
ETL	Efficient extraction, transformation and loading process to decrease data latency and increased data access to users	○	▪ Simple ETL that only extracts and loads data into the Client's servers, some data aggregation for Aloha and NBO into Penelope ▪ Transformation of data before loading into user databases does not occur ▪ Defined and documented standards for ETL do not exist (e.g.: naming conventions, set-up standards, recovery process, etc.)
Data Modelling	Documentation of software and business system design is available	○	▪ Data modelling being performed is nascent ▪ Defined and documented standards for data do not exist (e.g., naming conventions, metadata, etc.) ▪ Metadata documentation is not structured and is not based on defined data governance framework (e.g.: definitions, business rules, main values, data quality)
Monitoring capabilities	Tracking the performance and maintenance of data systems	◔	▪ Collection of statistics regarding the utilization of the hardware and software resources occurs during audits but not from a data governance perspective (e.g., memory management, physical disk storage space utilization, processor usage, total number of distinct users per day, etc.)

Data strategy : Prioritization of recommendations based on effort vs. benefit



Data governance committee – Illustrative recommendations

People

Data governance committee to be responsible for data governance policy & compliance

Data Governance Committee

- Data Steward
- CIO
- Members of the IT team
- Members of the Data Security team
- Head of COE (Analytics)
- Business function managers (F&S, Mkt, HR etc.)

Responsibilities

- Define the vision and mission for data governance
- Outline policies for data access controls, availability and quality and metrics for monitoring
- Create governance framework and hand-off to business functions for implementation
- Set up processes for monitoring and reporting compliance of policies on a monthly basis
- Provide support to the business functions in implementation of the framework

Create a role for a Data Steward

- Data Steward is the central point of contact/liaison between IT and business functions
- Responsible for carrying out data usage and security policies as determined by the Governance Committee

Policy

- **Formalize and document Access Control policy** under the purview of the data governance committee to facilitate **role based access controls** with customized access privileges
- **Formalize and document a centralized Data Availability and Quality Control policy** which takes into account **benchmarks across the data systems** such as Aloha, Penelope, Workday GL
- Ensure **a robust Data Retention policy** involving “cloud glaciers” such as AWS to manage historical data as a cost effective solution while ensuring data is available as needed
- Strengthen and **review the existing Data Backup policy** to ensure data from all systems are backed up on a separate workspace as the source system and **random restoration checks are performed** by the data governance committee
- Formalize Information Security controls within the scope of the data security function and streamline under data governance along with existing SOX/PCI compliance

Process

- Data Governance Committee will **be responsible for performing internal checks** across functions with business process owners to track compliance
- **Data steward would monitor the compliance** across governance policies and would take necessary action on relevant stakeholders for adherence to the policies
- **Business function managers will be responsible to implementing** the data governance framework in their respective functions and **ensuring adherence to policies**

Data access – Role based access controls to enhance data security

Role based access controls (RBAC) with clearly defined roles and access privileges to classify access controls for each user