# ABC Bank

# Recommendation on data platform for Reporting, MIS and Analytics

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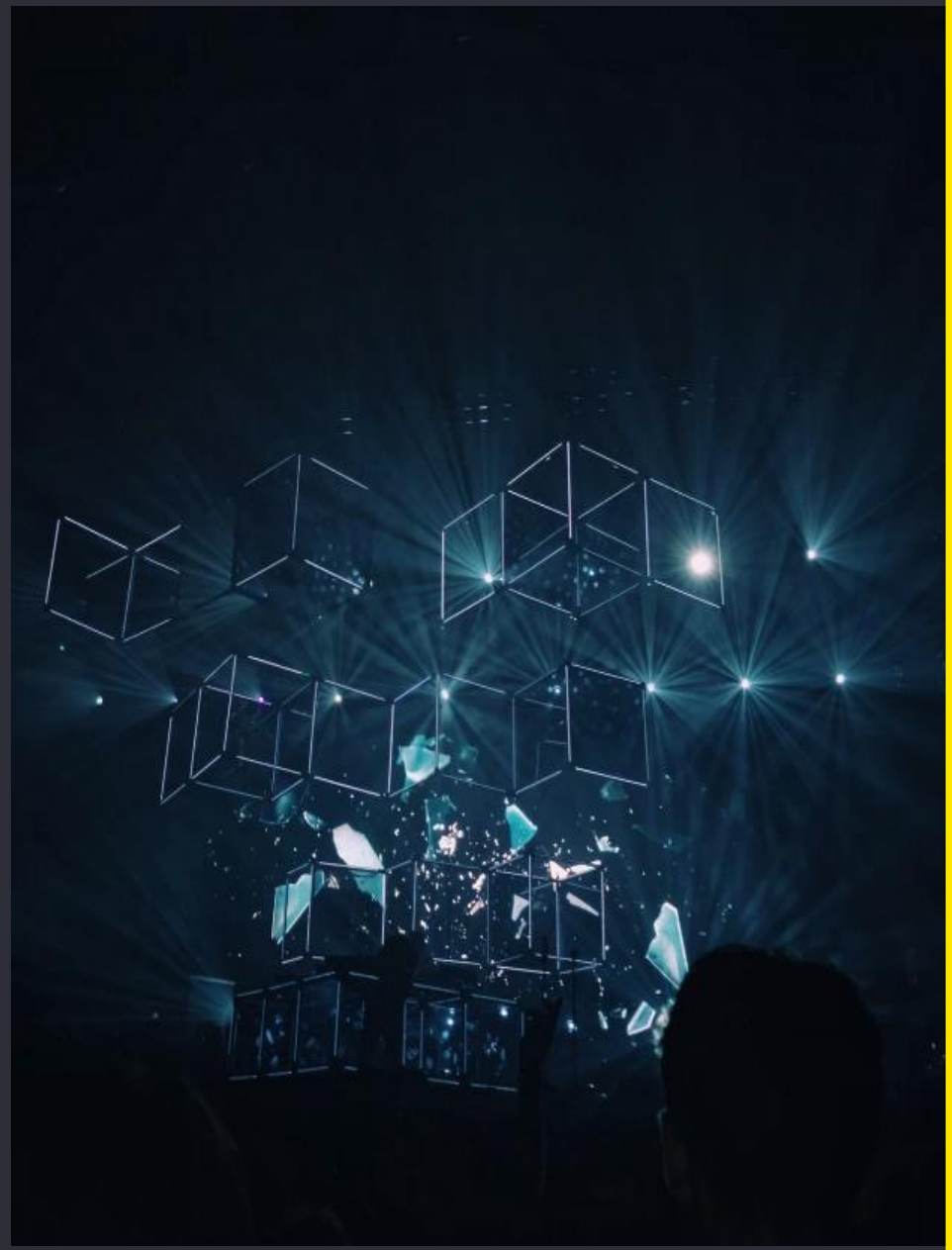
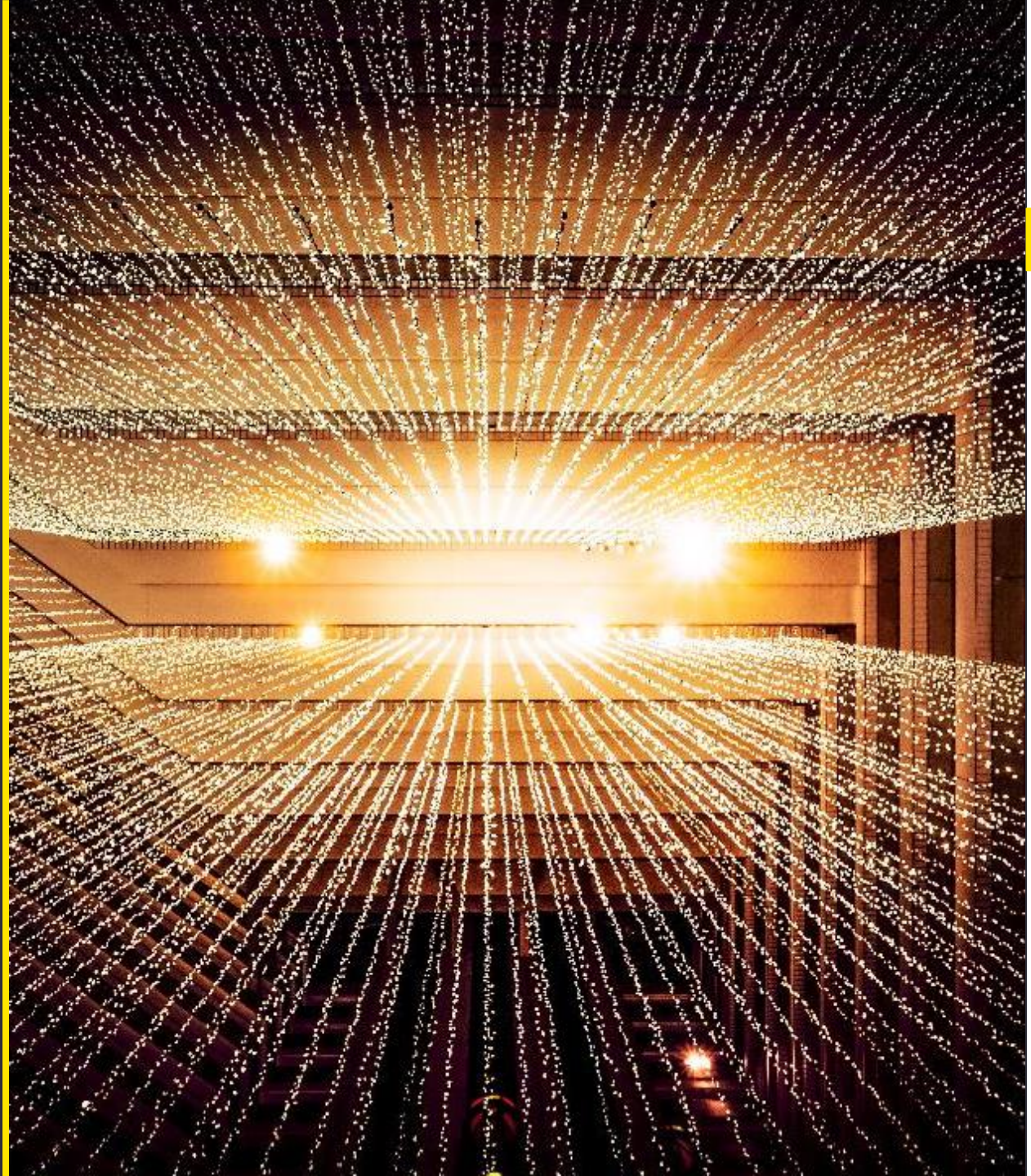


# Agenda

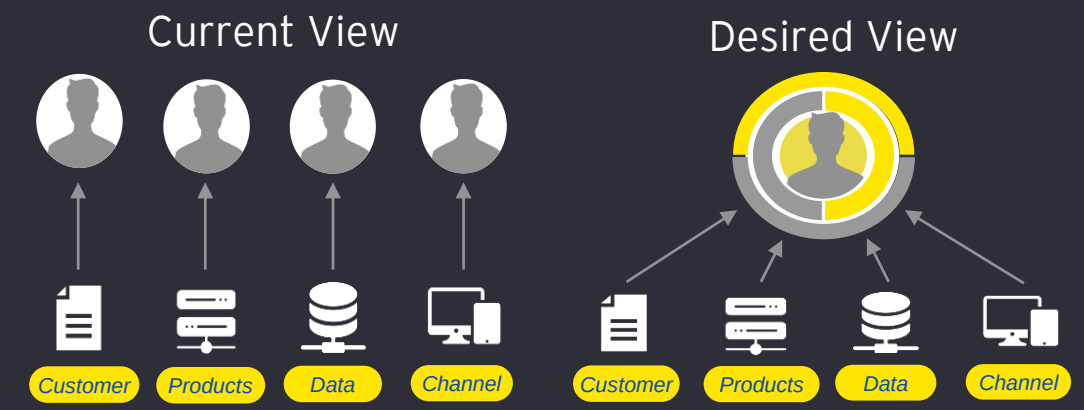
# Key challenges faced by ABC Bank and need for data management platform

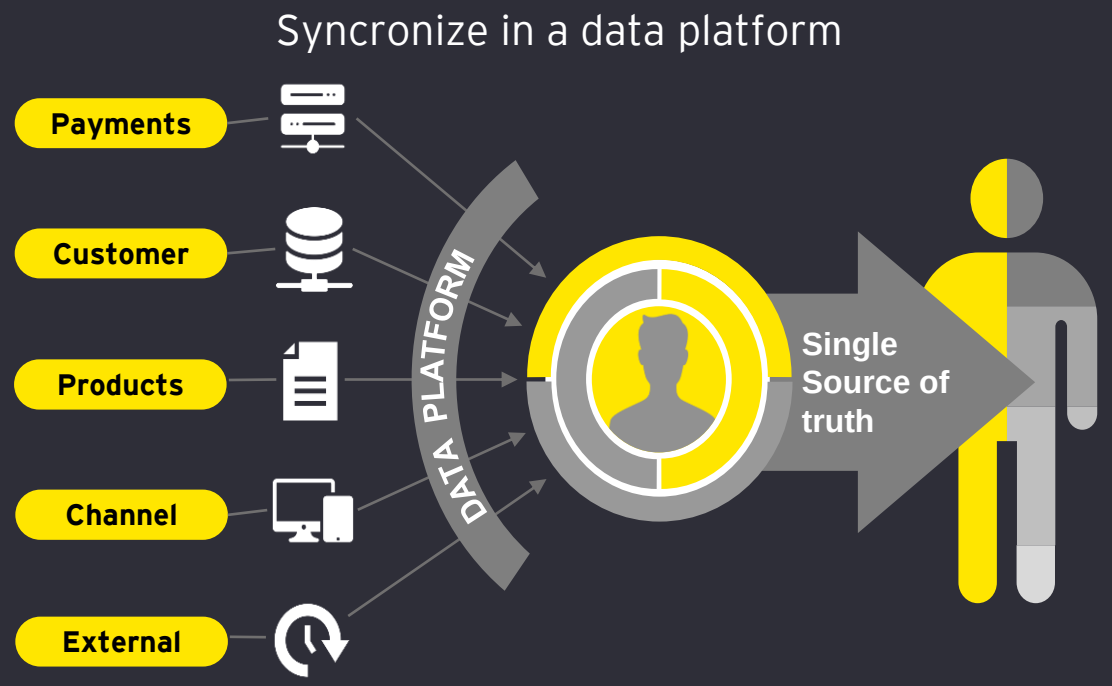


# Challenges faced by ABC Bank and the need for data management platform

## We have identified 9 key challenges that can be addressed through single data platform

- Data governance and stewardship is limited
- Metadata management is limited and siloed
- Data tools are not centrally **standardized**
- Timeliness of data availability is an issue
- Responding to data requirements takes a long time
- Data integration processes is not standardized
- Data is fragmented and siloed across functions
- Multiple data storage leads more sources
- Users spend more time in data preparation



# Framework and areas of focus to address the challenges faced by ABC Bank

## Data platform plays an integral role in entire data management and governance journey

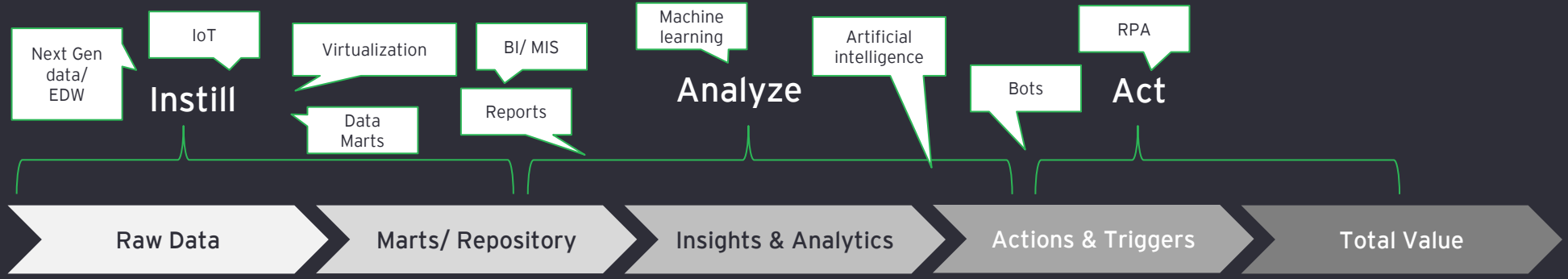
**Need for data management & governance for ABC Bank is to create organizational structure, processes, and tools to:**

- **Realize Single Source of Truth** (unique, consistent, one system of record)
- **Make Information actionable** (timely, accessible, understandable)
- **Maintain data quality** (accurate, complete, compliant)
- **Implementation and operation of system** (data migration, integration interface, etc.)

**Data framework**

- Data Governance
- Data Usage
- Data Management
- Data Architecture
- Data Quality

**Typical data management capabilities that a data platform will enable for ABC Bank**




| Raw Data | Marts/ Repository | Insights & Analytics | Actions & Triggers | Total Value |
|---|---|---|---|---|
| • Multiple sources<br>• Various storages<br>• Structured and unstructured data | • Unified data store<br>• Function data marts<br>• Data flow automation<br>• Scorecard & KPIs | • Data models<br>• Reports/ Visual<br>• Advanced analytics<br>• Insights & next actions | • Segmentations<br>• Campaigns/ content<br>• Triggers/ Next best action | • Data driven decisions<br>• Good data quality<br>• Data ownerships<br>• Analytics approached |

# 3 types of data governance model to implement organized data management practices

## The centralized approach is recommended for ABC Bank to have a Business unit in place for ownership

### Unified

- Governance / Analytics is Organised in a simple central unit, serving the entire organisation

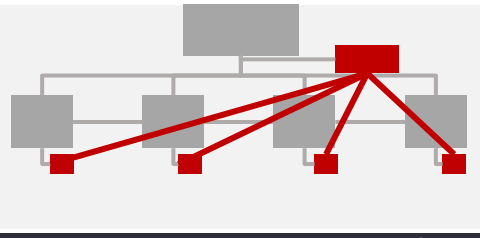
**Pros**

- Easier to Manage and maintain
- Better control in terms of maintaining standards
- Better Knowledge sharing across group

**Cons**

- Time to market will suffer due to centralized delivery
- Skills concentration at central level – adoption at department/branches suffer

### Centralized



- Governance framework and data/rules/authorizations centrally formulated, governed and controlled and individual SPOC's / Data owners in the departments

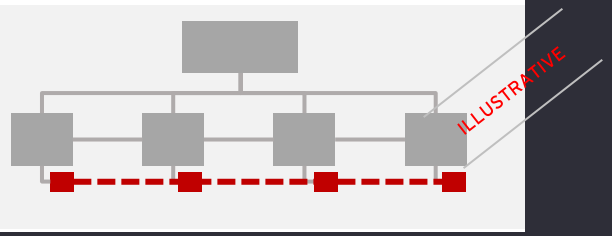
**Pros**

- Design and standards enforced centrally
- Capabilities and skills distributed to departments
- Quicker time to market and sharing

**Cons**

- Need clear authority of control for central teams
- Need strong governance to ensure standards and quality

### Federated




- Departments are responsible for coordination, supported by central resources

**Pros**

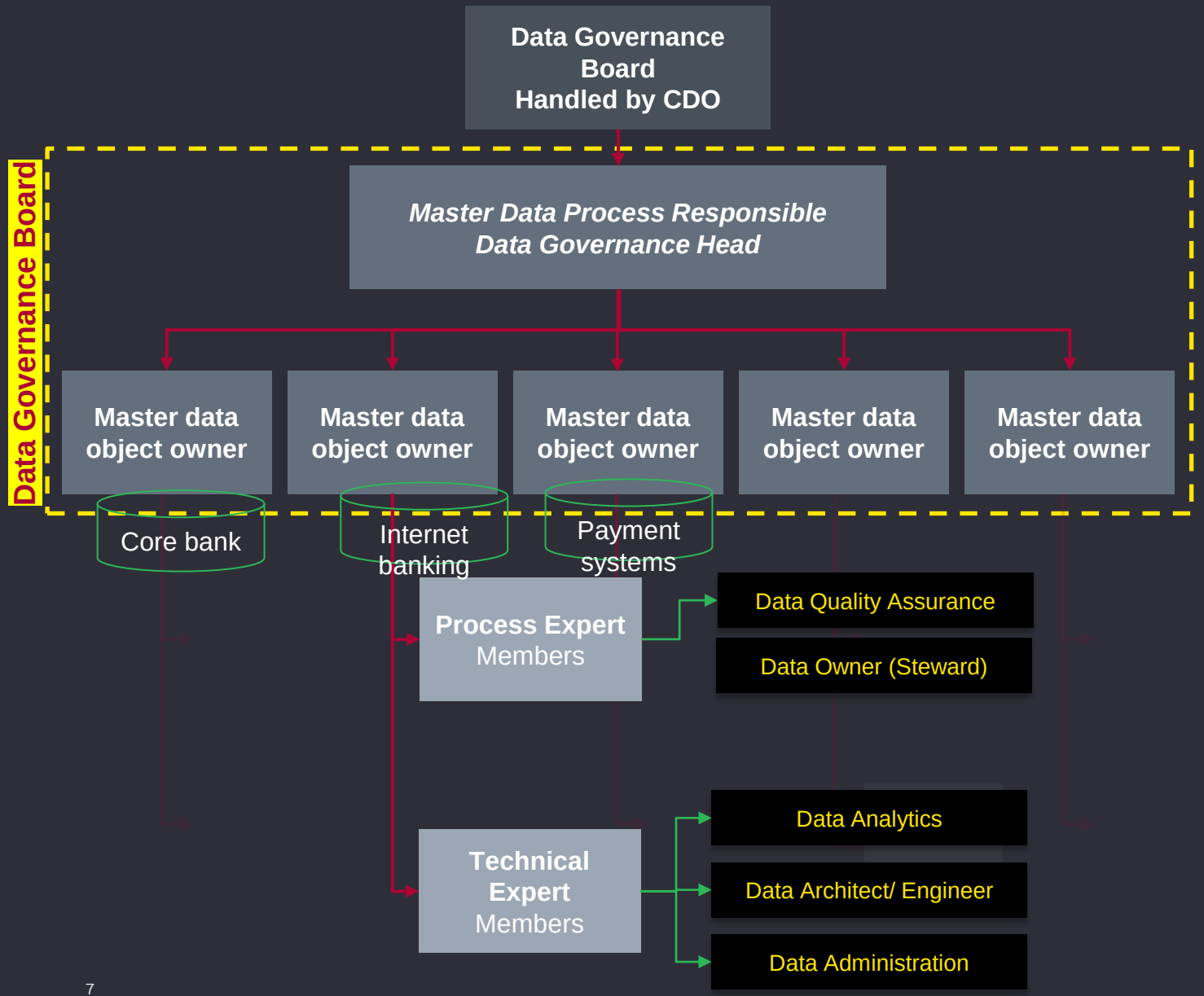
- Quicker time to market as skills are available in department/branches
- Better adoption due to distributed skills

**Cons**

- Knowledge sharing across groups is limited
- No standards enforced – each group does their own thing – duplication of effort, time lost in learning

# High level view to start with ‘Data governance’ pillar in ABC Bank

## Align a DG head and integrate various business functions in the forum




### Master data process owner

- Responsible for the Data Governance Board
- Creates invites and agenda
- Ensures follow-up and management of actions
- Ensures that the agreed format of the Data Governance Board is followed

### Master data object owner

- Member of the Data Governance Board
- Responsible for stakeholder management
- Responsible for amendments being handled according to agreed process
- Responsible for data quality reporting

### Process Expert (Data Steward)

- Where is master data used in the business?
- Who are the stakeholders?
- What are they used for?
- What is the quality of the data and which KPIs are controlling it?

### Technical Expert (Data Custodian)

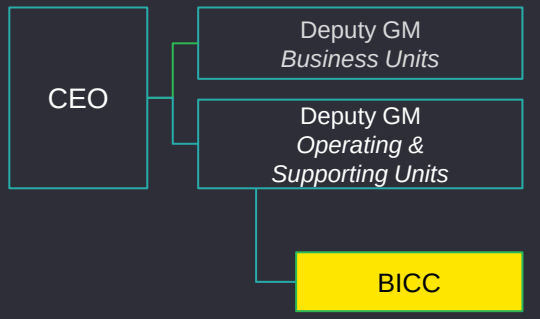
- In which systems are data used?
- Who are technical stakeholders?
- Which fields in the operating systems contain master data?
- How is data quality documented?

# Detailed case study of a finance company in Vietnam

## AZA has a Business intelligence department that operates Data Governance and Data platform set up

### Objective of setting up the data governance council

The bank had set up a **BICC (Business intelligence competency center)** department/ unit set up in bank. BICC had a function to define data governance rules and policies bank wide. They adopted a the centralized governance framework where BICC would form the DG council and be responsible for the data and analytics activities




### How EY supported and set up the Governance council

Worked closely with DG council to **onboard data governance framework, standards** and **policies** required for controlling the data flows from systems

EY designed the bank wide **data operating model** and help **set up data platform**

EY supported in **migrating** transactional **data** (Oracle) to 'Next Gen data platform'

### Major activities performed and the benefits of the DG council

**Unified** standards, guiding principles and policies bank wide

Business glossary for **4000+** source data elements

**Data strategy** to move data in the finalized architect layer

## Key Benefits:

One unit takes entire responsibility of data having other business units supports by sharing required information

# Detailed case study of a bank in China

**Objective of setting up the data governance council**

The bank lacks relevant experience and systematic operating procedures in data management and application and hopes to understand the current status of its data assets through data planning projects, optimize the data governance system, and provide a reference for subsequent data applications and strategic decisions.

**How EY supported and set up the Governance council**

- Develop a full-cycle work schedule;
- Establish an organizational structure and division of responsibilities for data information management
- Establish a planning plan evaluation and decision-making process
- Inventory data assets to form a data asset list and data asset business application map
- Realize the effective application of customer follow-up data.

**Major activities performed and the benefits of the DG council**

## Key Benefits:

Realization of data assets through centralized data catalogue feature having various data owners and stewards assigned to each data asset

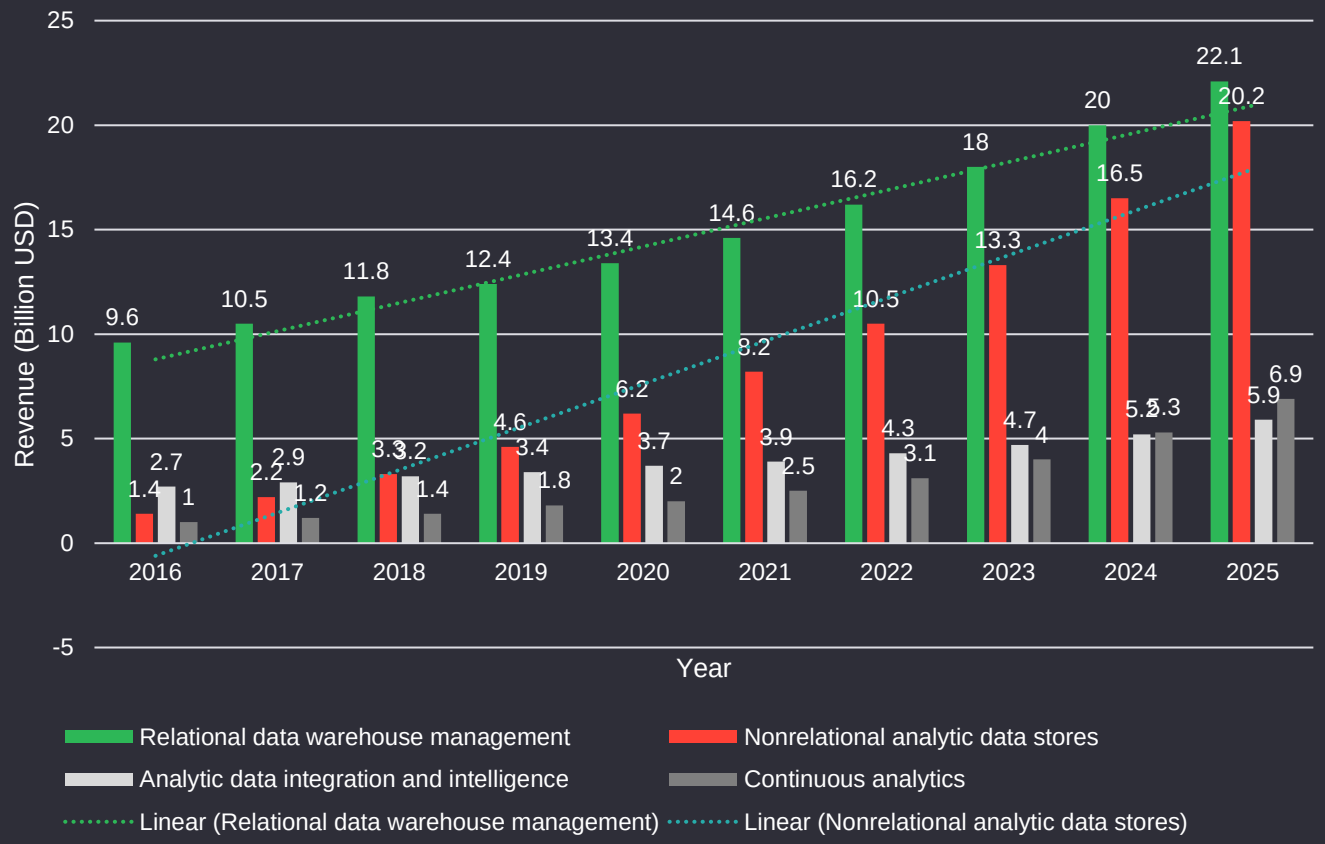
- A panoramic view of data assets to fully display the current status of bank data assets
- Optimized subsequent data management process and clarify the data management implementation roadmap
- Guidance for data management talent reserve.

# Data technology proposition for ABC Bank

# Mainly 2 types of data platform dominate currently i.e. Traditional (Red) & Next Gen (Green)

## The 'Next Gen' demand is 30% more and has seen a huge jump in terms of usage in the banking industry

**Worldwide Big Data and Analytics Software Revenue by Segment, 2016–2025 ($B)**




The Next Gen Data Platform i.e. "nonrelational analytic data stores", with its sharp rising rate, is becoming more and more important in the period of 2021 – 2025.

Big technology suppliers have involved in the Next Gen data stores. Such as: Microsoft, AWS, Cloudera, Google, Databricks, DataStax, IBM, Alibaba Group, HP, etc.

**Source**: IDC - Worldwide Big Data and Analytics Software Forecast, 2021–2025 (Jul 2021)

Note: Software market sizing and forecasts are presented in terms of commercial software revenue. Commercial software revenue excludes service revenue derived from training, consulting, and systems integration that is separate (or unbundled) from the right-to-use license but does include the implicit value of software included in a service that offers software functionality by a different pricing scheme.

The **data warehouse** market includes relational database management system (DBMS) software used to manage and process data in support of ad hoc queries and report generation. The relational data warehouse software market includes both multidomain enterprise data warehouses and single domain data marts

The **Next Gen data stores** market consists of various data management technologies applied to analytic workloads. Non-relational analytic data stores include data lakes, data lakehouses, graph databases, and other NoSQL databases deployed for analytic workloads

The **analytics data integration and intelligence** software market includes a wide range of technologies, including but not limited to extract, transform, and load (ETL); data quality and profiling; and associated metadata management, employed to support analytic workloads or use cases

**Continuous analytics** is software used for real-time and near-real-time decision support and decision automation. This technology continuously receives and transforms data in real time and in micro batches. It is software made up of two primary segments: streaming integration and streaming analytics.

# Next Generation Data Value Proposition

**Initial investments in infrastructure and foundational capabilities are more than offset by the decommissioning of warehouses and / or deceleration in spend. Real value is unlocked by progressing from the bottom of the pyramid to the top where analytical capabilities are enabled to generate real insights.**

## Value Proposition

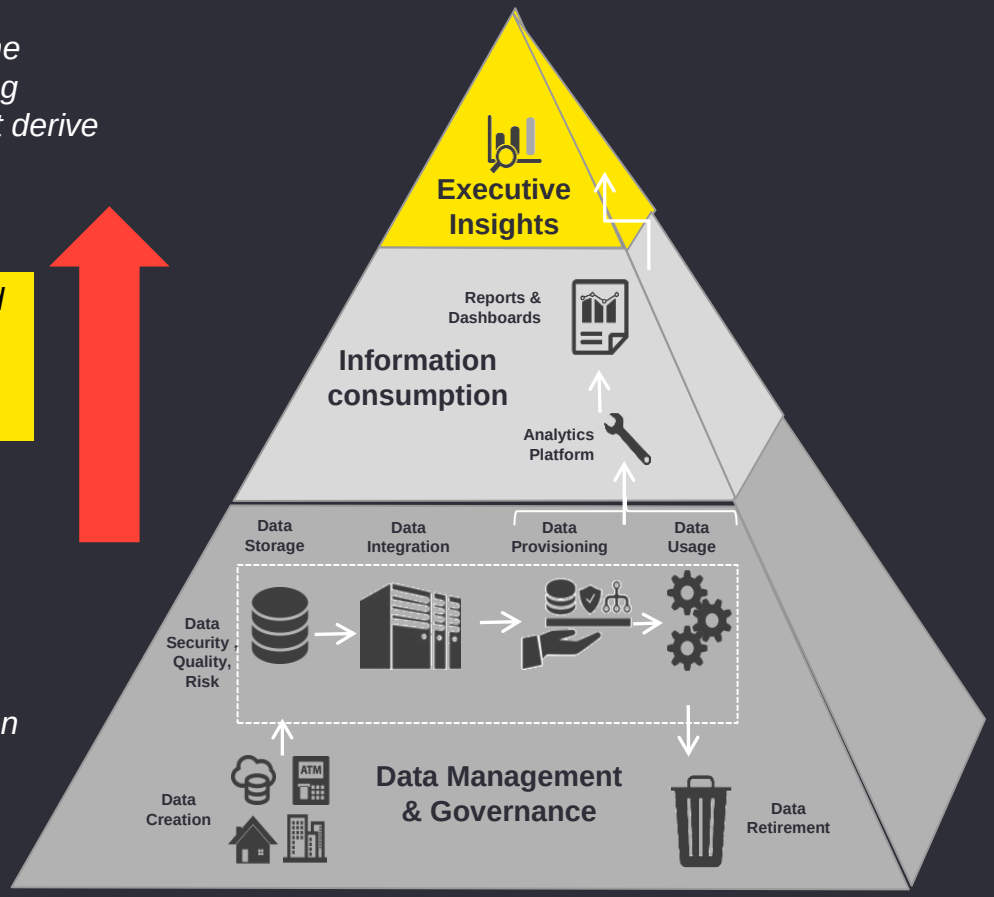
VALUE

***Value** is unlocked from the investments by developing analytical capabilities that derive insights to drive action*

***Cost savings** are realized from decommissioning / arresting the growth of legacy systems*

INVESTMENT

***Investment** in the Next Gen Data platform establishes the foundation*




## Enabling Capabilities

**Discovery & Insights: Revenue Growth, Enhanced Client Experiences, Product & Channel Evolution**

Machine learning, Cognitive Analytics, Advanced Modeling Simulations

**Business Intelligence: Reporting, historical trend analysis & forecasting**

Ad-hoc queries, Dashboards and Scorecards

**Infrastructure & Foundational Capabilities: Scalable & Secure Platforms, Managing Data as a Corporate Asset**

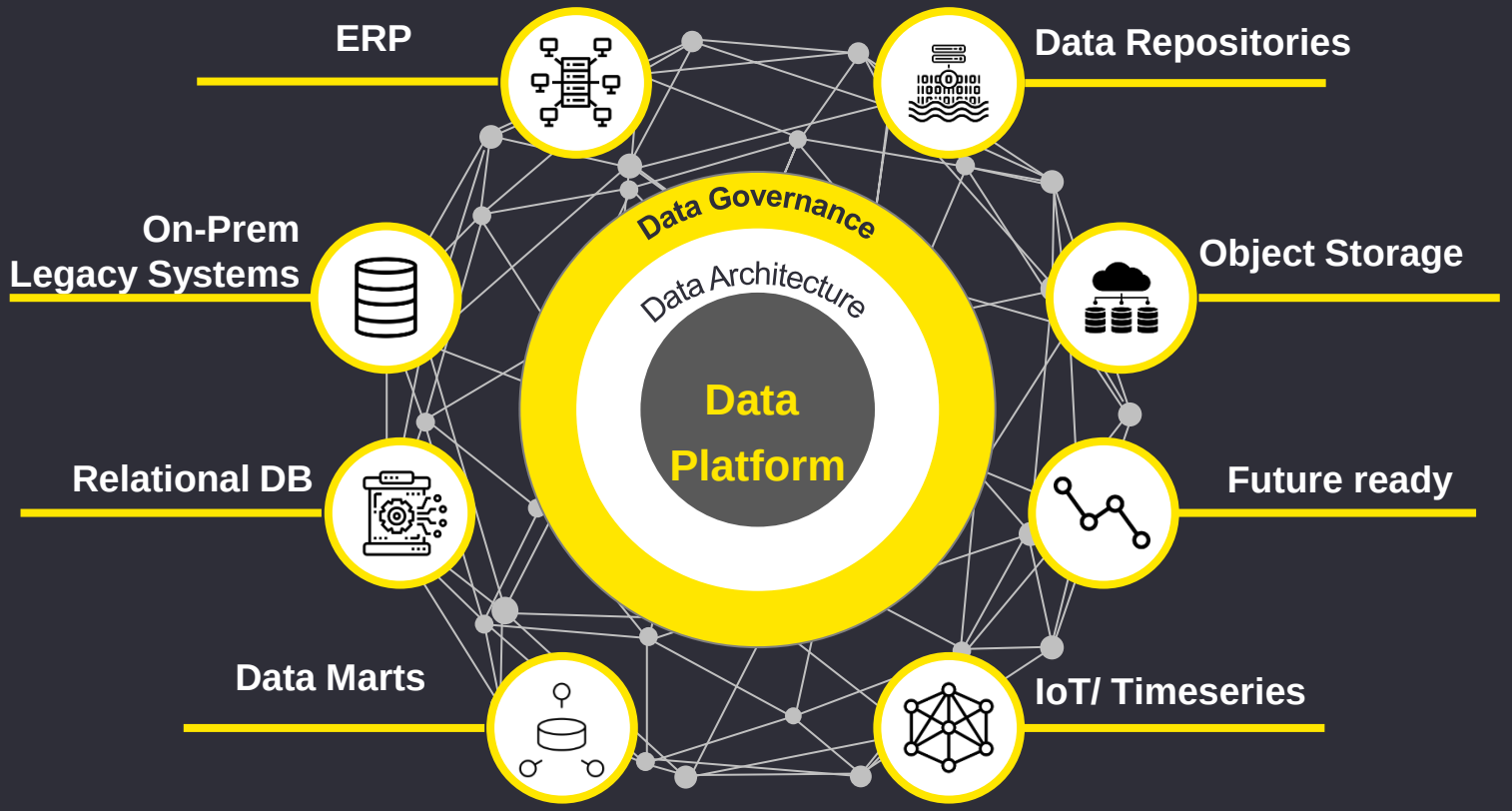
Robust Data Management & Governance, “Fit for Use” Data Ecosystem

# How ‘Next Gen’ data platform drives more value than the traditional data platform…

The real value for ABC Bank from now to becoming a data driven decision maker could be fulfilled by this ecosystem

## Next-Gen Data Platform

It’s a **set of governance, management & technologies** that are stitched together **to provide a single view** of your data, irrespective of the repositories where it is generated, migrated to or consumed from




## ENABLING DATA CAPABILITIES

- **DATA GOVERNANCE & MANAGEMENT**
- **AUTOMATION** of data ingestion, movement and persistence across environments

- **AI DRIVEN DATA** Discovery & Orchestration
- **CONSOLIDATED REAL TIME VIEW** of data across on-prem and multi-cloud environments

- **EFFICIENT** utilization of **INFRASTRUCTURE** across disparate environments
- Retire Legacy Systems WHILE **BUSINESS SYSTEMS** run continuously **WITHOUT DOWNTIMES**

***“in the new world metadata is more important than the data itself…”***

# Key asks as we hear and users demand from a data platform…

The functionalities and features will enable ABC Bank to invest once and gain monetary benefits on long run…

1

## Integrated data store

Single data store for provisioning enterprise data for all use

2

## Variety of data

Single store will hold structured, semi structured and unstructured data

3

## Frequency of data

Enable real time and batch loads into the data store

4

## Integration for data consumption

Seamless integration of upstream and downstream application

5

## Data governance & quality

Primary source for maintaining lineages and data quality

6

## Dataflow automation

End to end automated data flows between various layers of the architecture

7

## Data life cycle management

Data collection, access, storage, purging, archiving, logging and security

8

## Self service BI & reports

Enables end users with data driven decision making

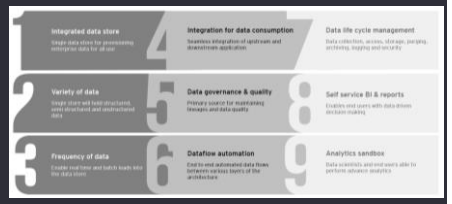
9

## Analytics sandbox

Data scientists and end users able to perform advance analytics

# We have finalized ABC Bank's data architecture and key functionalities…

## Yellow blocks indicate traditional functionalities and as a whole is Next Gen fit



| Inputs/Sources | Data Ingestion | Data Techniques | Data Repositories | Output / Consume | Reports/ Analytics |
|---|---|---|---|---|---|

**Tabular data**
- Core banking
- CRM/ ERP
- Structured data

**Semi structure**
- Mobile
- Net banking
- Web logs

**Unstructured**
- Email
- Social
- Telemetry

**Next Gen Data Platform**

Domain Policies

Real time streams

Batch

Metadata Tagging

Wrangle
Cleanse
Governance
Summarizing
Profiling

Self Service User Interface

Search
Access
Analyses
Query
View

Portal/Visual Query

Search Engines
API's
Tables
Other Formats (JSON, XML)
Reporting Tools
Tool Drivers

Machine Learning
Data Mining
Business Intelligence
Predictive Analysis
Data Science

Data archiving
Data masking
Hadoop | Spark | SQL - Storage and querying

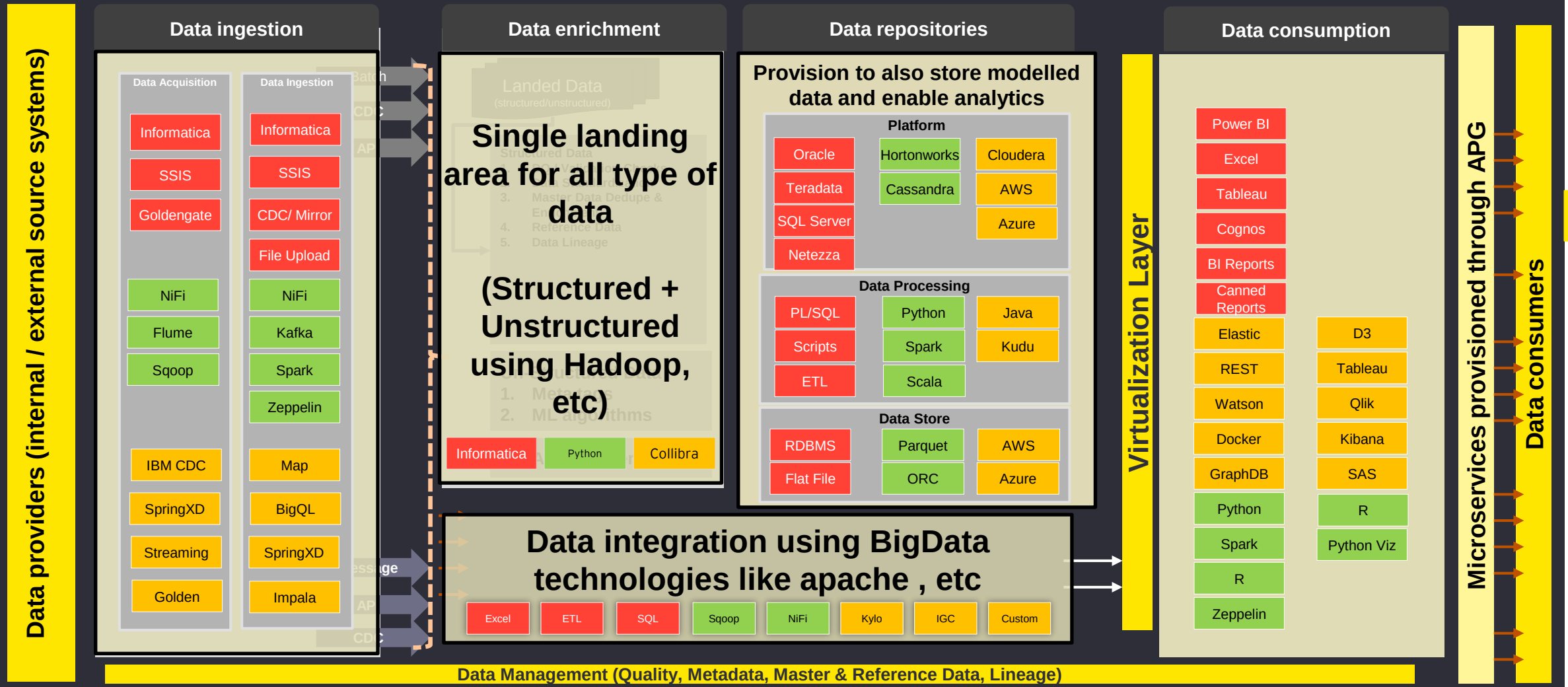
**Data management & Governance - Security, Metadata, Lineage, Data Quality**

Traditional EDW capability
+ Next Gen Data Platform which includes EDW capabilities and is also future ready

# Our prosed architecture fits both i.e. Traditional vs Next Gen – Data platform

## This will keep the architecture flexible for an EDW or a Data lake

We have identified technology landscape for both that would fit the proposed architecture



# Data Technologies
# EDW vs New Age Data Platforms, Data Lake etc.

Key benefits going with a ' Next Gen Data Platform ' Which is Big Data ready:

| Key Factors and considerations | Enterprise data warehouse | Next Gen Data Platform |
|---|---|---|
| 1 Single store | • Provision only structured data<br>Source systems (Core, ERP, CRM) | • Provision variety of data<br>Sources systems + Audio, Images, Video |
| 2 Frequency of data | • Only batch<br>End of day or weekly or monthly loads | • Both - batch + Real time<br>Real time stream for variety of data |
| 3 Data integration | • Limited capability for downstream<br>Primarily end users reporting | • Both upstream + downstream<br>Reporting, analytics, back to CRM, stores |
| 4 Data models & marts | • Build – models and marts<br>Reference integrity, tried and tested | • Build – models and marts<br>Provision first as cheap storage |
| 5 End users & analytics | • Only business consumers<br>Reporting and limited analytics model | • Business, Data engineers, science<br>Reporting and advanced analytics |
| 5 Time and pricing | • Typically takes 18-24 months<br>Storage is expensive and limited | • 25% less time than EDW<br>Storage costs 30-40% less than on-prem |
| 5 Go to market | • 18th month onwards<br>Strong reporting capability | • 9th month onwards raw layer ready<br>Execution starts in parallel from month 6 |

25% 50% 75% 100%

# Detailed case study of Telesure in South Africa

Telesure has similar size and customer base as ABC Bank and adopted 'Next Gen data platform' instead of EDW


## Key Benefits:

BIU able to extract data real time to drive appropriate actions and decision making. Entire org benefiting from a central data repository with single version of truth

**Objective of setting up the data governance council**

The insurance org had did not have a centralized and unified data repository. They were in mid to take a decision on procuring an on-prem EDW or data lake. EY worked back with the client to identify capabilities and functionalities required for end consumption. The client choose to go with Next Gen data platform and implemented data lake as a solution. The entire organization uses the data lake repositories for central reporting and analytics purpose.

**How EY supported and set up the Governance council**

- EY gathered requirements from 10+ business functions and aligned DG owners
- Performed assessment of current sources and types of data to be stored
- Identified and mapped capabilities required from variety of data and the platform
- Integrated 8+ key sources including structured and unstructured data

**Major activities performed and the benefits of the DG council**

Unified eco system & data repository for the entire organization

Structured data model layer resides in the lake and serves down stream apps

Organization was able to use data platform for real time customer analytics

# Build or buy considerations for Next-Gen Data Platform deployments

Traditional EDW is 2X the cost of implementing on-prem Next Gen data capabilities having double time for go to market based on EY's experience

## WHAT IS THE OVERALL COST OF DOING ONE OPTION VS. ANOTHER – THE KEY QUESTIONS

- *Does the **business case** (or basic proposition) align **better with one option** vs. another?*
- ***Are your current solutions prepared to scale** and adapt to support your business needs and goals?*
- *Is the solution **redundant with an existing capability**?*
- *Is your organization **capable of delivering a custom solution** based on the stated requirements?*
- ***Do you already have a support model** in operation or one in the works?*
- *Does the business come with the **right skill mix**?*
- ***Can those skills be covered by** training, hiring, consulting or outsourcing?*
- ***Does the team have the right tools** to deliver with quality, on time, and on budget?*

## On-Prem

| Pros | Cons | Key benefits |
|---|---|---|
| • Familiarity with the system<br>• Opportunity to customize<br>• Potentially cheaper than buying a COTS solution<br>• Organizations may qualify for special grants | • Time consuming<br>• Required train employees on the job to learn new skills<br>• More resistance to innovation<br>• Upgrading, repairing, or replacing a custom solution can affect the project life cycle | **Less** time to market<br>**Increase** in control and risk mitigation<br>**Unique** fit to business needs and sometimes less flexible<br>**$$$ - Approx. USD 1.2 Mn*** <br>1X gain in efficiency |

## 3rd Party

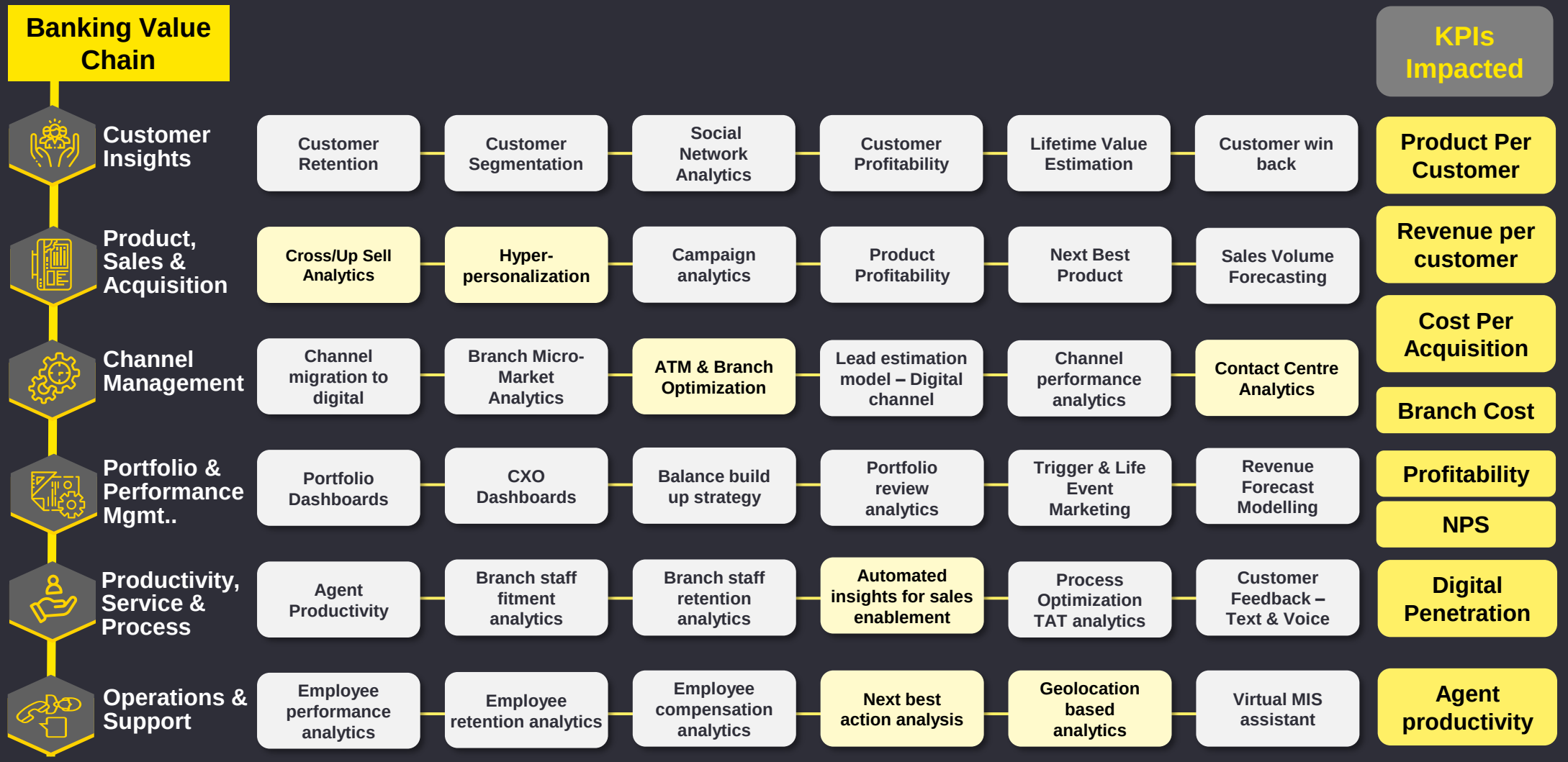
| Pros | Cons | Key benefits |
|---|---|---|
| • Faster go-to-market<br>• Fewer bags<br>• The tool exists and already has many of the functions the organization needs or may need | • May not meet the key business requirements of a project<br>• More standardization<br>• Costly | **5x faster** time to market<br>**Up to 7x** more cost effective<br>**40% to 90%** less human intervention<br>**$$ - Approx. USD 350K**** <br>10X gain in efficiency |

$ * - Are estimates for one time Next Gen data platform excluding consulting/ implementation cost

$ ** - Are estimates per year for Next Gen data platform excluding consulting/ implementation cost

# Data analytics is the future and what are next steps

# Banks in Vietnam are rolling out and implementing analytics across the value chain…



# Critical levers for driving analytics setup and consumption

Building blocks that organizations need to look at irrespective of their current state in analytics journey

| | Critical levers | What does it cover |
|---|---|---|
| Operating model | **Business Integration**<br>Assess analytics purpose by linking business functions and their defined objectives | • **Integration** : Analytics strategy, leadership alignment & sponsorship/business case<br>• **Value-based initiatives** : Robust prioritization criteria from development to implementation<br>• **Analytics alignment** : Linking business units & functions (Risk, Marketing etc) with analytical needs |
| Operating model | **Analytics Organization Structure**<br>End state analytics structure that depends on current maturity and the evolution steps | • **Organizational structure** : Functional, Centralized or Business aligned<br>• **Governance model** : Operating model to define working between analytics producers & consumers<br>• **Roles and responsibilities** : Functions/analytics team alignment and engagement process |
| Analytics techniques & Business consumption | **Advanced analytics**<br>Quantitative and qualitative (skill set & roles) value realization method for analytics initiatives | • **Skill set requirement** : Leveraging use of advanced analytical techniques for business decisioning<br>• **Talent need** : Talent assessment, profile definition, and high level development plan<br>• **Performance measurement** : Promote continuous improvement of insights driven value |
| Analytics techniques & Business consumption | **Data, BI and Tech**<br>Data and infrastructure requirement to perform desired business analysis | • **Tech platform** : Flexible to deploy and manage analytics delivery<br>• **Standardization** : Well governed & managed data with repeatable processes to drive data standards<br>• **Visualization & Insights** : Accurate and informed decisions in the least amount of time |

# Detailed case study of a bank in Vietnam

XYZ has a traditional EDW and they are in process to migrate data to ‘Next Gen platform’ and sunset the EDW

## Key Benefits:

Bank is able to save more time on data preparation by 50%
EY supported to create quick wins by creating analytics enabled platform using structured and unstructured data

**Objective of setting up the data analytics**

The bank has initiated a digital transformation initiative. They have a vision and goal to be become completely digital by 2025 where all process to onboard and maintain customers will be technology driven. This will be with help of the entire bank taking data driven decisions with a unified data platform

**How EY supported**

- Identified required capabilities by the business functions on use cases basis
- Evaluated technologies and ‘To-Be’ future ready data architecture
- Gather requirements from 9+ business functions to identify analytics use cases
- Build 4 analytics models from the Next Gen data platform across customer, product

**Major benefits**

- tools, technologies and skills to build the platform
- End users were able to consume data by **saving 80% of time** compared to EDW
- Enable end users with use cases to drive more insights for instance, customer churn, credit line, cross sell.

# Detailed case study of a telecom company in Vietnam

## XXX has moved to Next gen platform/ lake environment for executing and driving all data analytics activities

**Objective of setting up the data analytics**

XXX initiated a CLM and CLV journey to enrich data analysis to **overall increase customer stickiness** for existing customers, understand profiles on worthy customer and focus on new base to increase top line revenue. EY was partnered with XXX to create the data architecture and execute 6 pilot use cases from the data platform.

**How EY supported**

- Designed initiatives and aligned objective for a unified Next Gen data platform
- Gather requirements from 10+ business functions to identify analytics use cases
- Finalized and scaled infrastructure to set up environments for executing use cases
- Enabled data marts and build analytics ML models that catered from the platform

## Key Benefits:

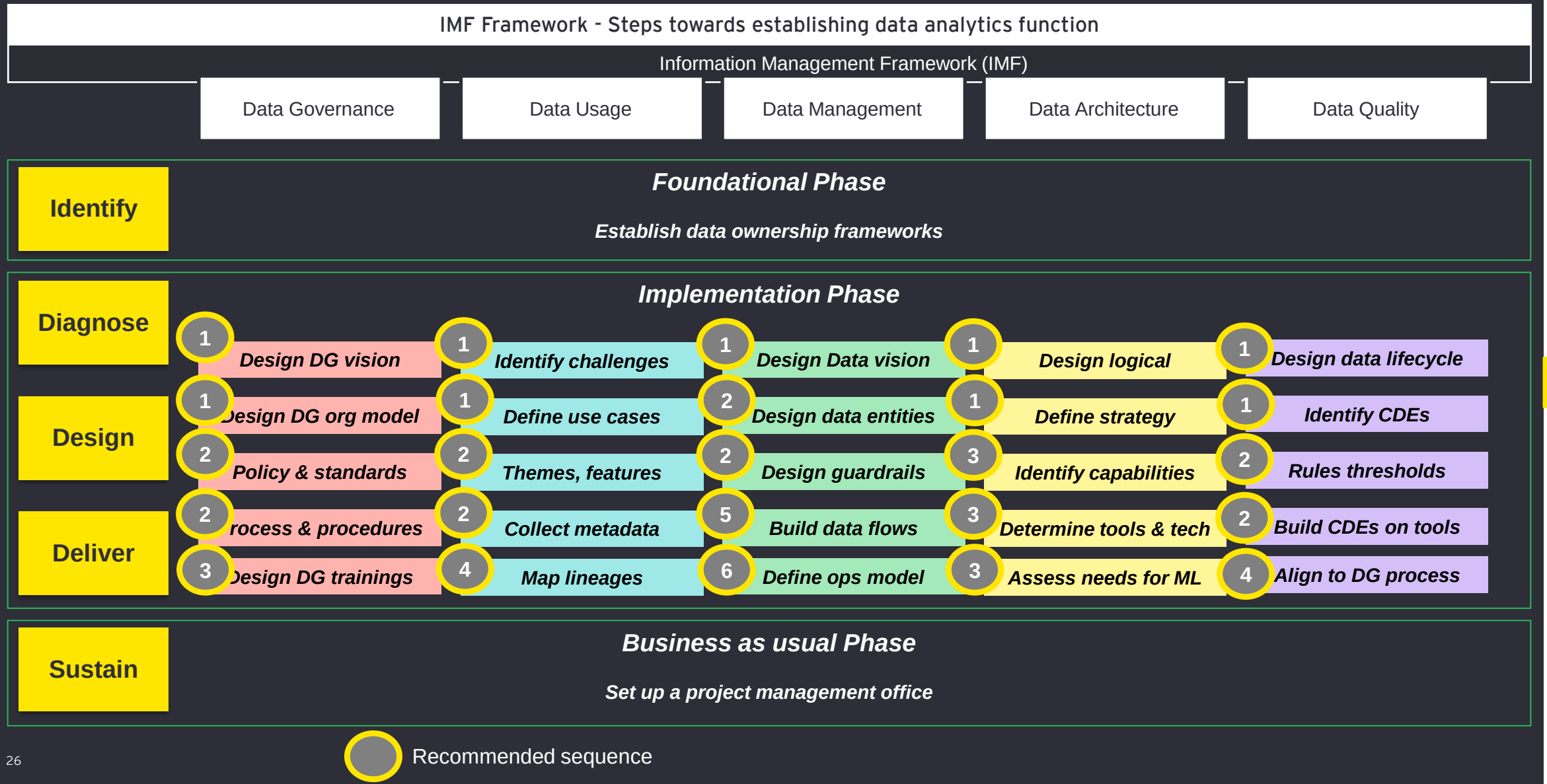
Client is able to save more time on data preparation by 70%
EY supported to build and execute analytics uses cases across customer and product.
Within 5 months client was able to roll out pilot campaigns to customers

**Major benefits**

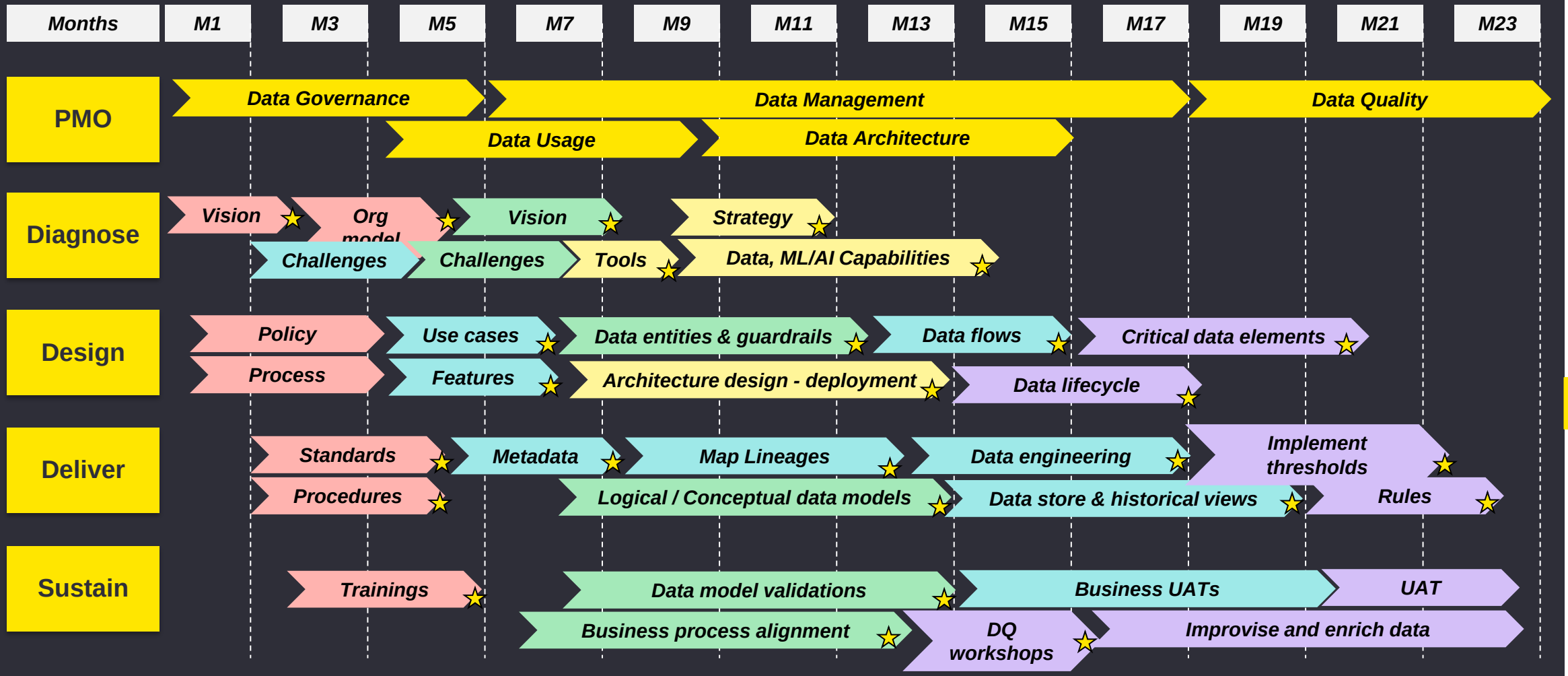
- tools, technologies and skills to build the platform
- Data readiness for usage in a modelled environment from 5+ sources in less than 2 months
- 6 quick-win ML models were build in 5 months using semi structured data
- Pilot use cases are under production for entire customer base in next 3-6 months

# How does ABC Bank bring all together?

# Roadmap for Implementation – Sequential list of projects and timelines



# Roadmap for Implementation – Sequential list of projects and timelines



# Scope of the projects and potential timeline and cost

*Areas of focus and project prioritization:* *Data Governance* | *Data Usage* | *Data Management* | *Data Architecture* | *Data Quality*

| Sr # | Areas | Indicator | Project objective | Project details | Timelines | Duration |
|---|---|---|---|---|---|---|
| 1 | DG | Strategy | Organization vision | Design frameworks and build forums/ councils | M1 - M2 | 2 Months |
| 2 | DG | Implement | Governance framework | Processes, standards, procedures and trainings | M2 -M5 | 3 Months |
| 3 | DU | Build | Data dictionary | Define use cases, collect metadata, map lineages | M5 - M11 | 6 Months |
| 4 | DM | Design | Data model | Identify entities, data domains and create models | M7 - M13 | 6 Months |
| 5 | DA | Design & Evaluate | Architecture | Design and procure tools and technology | M5 - M8 | 3 Months |
| 6 | DM | Build | Data flows and stores | Extract data, store and provision in marts | M13 - M20 | 7 Months |
| 7 | DM | Build & Implement | Data quality rules | Identify CDEs, data validation check | M20 - M23 | 3 Months |

# How EY can help: Assets & Capabilities

# EY Data and Analytics experience…

## Why EY





| Fresh pair of eyes | Experienced and dedicated international team with the right expertise | International integrated firm providing seamless service across countries | Experienced working with you across the group | Strong track record in working with vendors |
|---|---|---|---|---|
| ► We will provide a new perspective on efforts already in motion while respecting key decisions that have already been made<br>► We will review and enhance existing programs with additional best practices harvested from successful client engagements and industry best practices<br>► We will strike the right balance between local BU and International HO interests as well as the right balance between strategic perspective and operational execution & implementation | ► Our proposed team will be responsible for the delivery of the program. EY prides itself in engaging with clients in a collaborative approach. We work hand-in-glove with you every step of the engagement<br>► Considering the complexity of ABC Bank's question, we carefully considered the areas of expertise the delivery team should cover<br>► Based on our experiences we suggest a combination of:<br>  ► Core team to manage the entire program<br>  ► Centre of Excellence for architecture support and data implementation capacity<br>  ► Local SPOCs in each country to be the bridge between ABC Bank local stakeholders and other streams | ► We are recognized as the most globally coordinated professional services firm and have a truly integrated network with skilled teams world wide. Where needed, we can call upon subject matter resources across the globe<br>► Data Management and Engineering expertise we have clustered within EY in four center of excellences, Greece, Spain, Poland and India. For this engagement we foresee to work closely primarily with the Greece Centre of Excellence<br>► We have a leading data management market position supporting global financial services clients, please find our credentials in the appendix | ► We have a strong track record past year(s) of partnering with ABC Bank on challenging data management engagements<br>► We have supported ABC Bank Services with a market analysis and target operating model design to support their expansion strategy<br>► We have provided advise and implementation support for ABC Bank data implementation<br>► We have also successfully worked in a collaborative format with ABC Bank on a Finance Transformation Program. This program was established and run as a joint exercise | ► EY has a global alliance with Microsoft focused on data & analytics<br>► EY has won 9 awards over the past few years in areas including digital technologies and Analytics<br>► We have over 5000 consultants trained in multiple technologies and delivered innovative projects together |

**EY** | Assurance | Tax | Strategy and Transactions | Consulting

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Ernst & Young LLP, 1 More London Place, London, SE1 2AF.



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