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Information Management Platform Capability Maturity Assessment

Suman Akkinepally
IT Services/Software

1. INTRODUCTION

Many Organizations have initiated Analytics, Insights and Data platform modernization initiatives in the cloud. All such organizations need a vision and a road map on Information Platform Modernization. Also, they need to assess the need for emerging cloud technologies in their existing data environment and suggest its applicability and use cases.

Oracle's Modern Information Management Platform on Oracle Cloud Infrastructure has all the required capabilities that could meet all the KPIs and use cases of organizations. Oracle can help organizations in conducting Information Management Platform maturity assessment on Oracle cloud and as a part of this assessment

- Oracle can develop a strategy and create a roadmap for Information Management platform modernization on the cloud
- Conduct workshops to assess the current state
- Provide technical product review and fitment analysis
- Provide a report to the organizations on how they can leverage Modern Information Management platform products on the cloud
- Provide Modern Information Management Platform reference architecture on oracle cloud
- Provide maturity assessment scores and with a capability matrix for each dimension
- And help organizations to seamlessly migrate to Oracle cloud infrastructure Modern Information Management Platform

As part of this maturity assessment, Oracle can conduct the Maturity Assessment for the following Information Management Platform dimensions

- Data Repository – HDFS, Appliance, In Memory, Object Storage, Databases
- Data Provisioning & Self-Service BI – On-demand, Real-time and near real time
- Data Virtualization – BI data federation, Data warehouse extension, Big Data integration
- Data Integration – Integration Patterns
- Data Integration Hub – Architecture, entity confirmation, hierarchy, reference data etc.
- Reporting, Visualization & Analytics
- Data Governance, Data Catalog and Metadata Management
- Data Acquisition & Ingestion

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2. ENGAGEMENT APPROACH

2.1 Introduction

To enable Organization's modern Information Management Platform platform modernization initiative, Oracle will conduct assessment of 8 technology components, identified current gaps, understand Organization's business needs and developed a target state architecture.

Oracle has will use the following methodology during the engagement approach to come up with the final assessment report

Information Management Platform Maturity Assessment Strategy

Information Management Platform Maturity Assessment Strategy		
Strategy	**Description**	**Output**
Dimension Analysis	Analyze all the eight identified dimensions	Key pain points and Gaps
Capability Evaluation	Evaluate key capabilities across eight dimensions	Capability Matrix
Current State Architecture and Document Review	Understand current state architecture of all the eight dimensions and document the gaps	Current State Gaps
Industry Best Practices	Understand the best practices and the gaps in existing Organization's architectures	Current State Gaps
Workshops and Interviews	Conduct workshops and interviews with both businesspeople as well as Organization's DMO team	▪ Current State Gaps ▪ Key pain points ▪ Tools related issues ▪ Integration problems ▪ Future vision
Questionnaire Responses	Capture current state maturity for each dimension and evaluate their maturity levels	Capability Maturity Matrix

Oracle has completed this engagement in 4 phases. The overall plan is represented in the figure below

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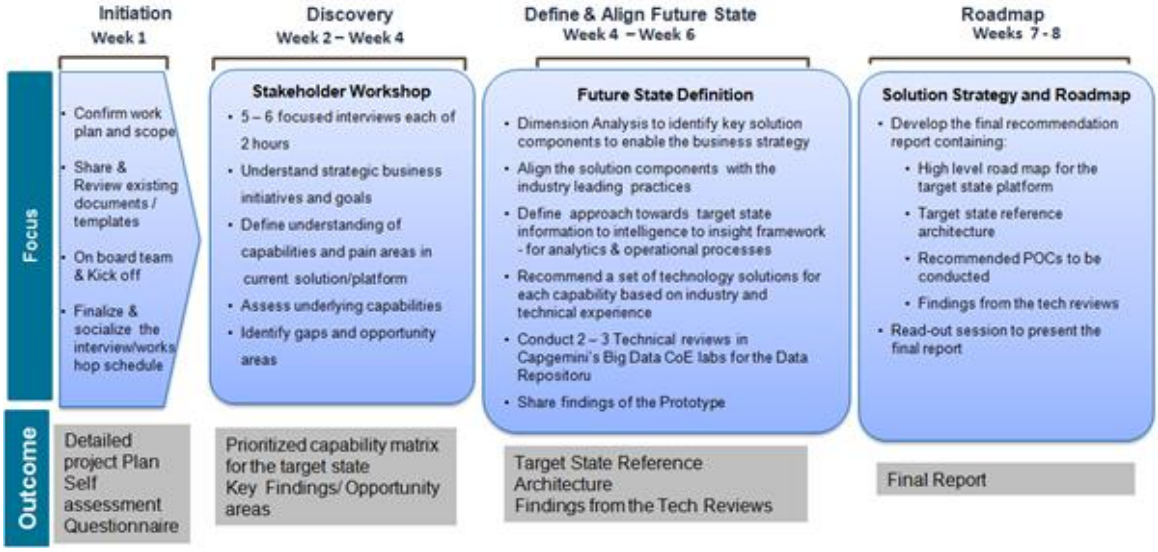
Engagement Approach



Workshops and Outcomes		
Event	**Description**	**Outcome**
Data Governance Workshop	Understand Organization's data governance framework and measure where they stand as per the industry	■ Key Pain points ■ Tools related issues ■ Current Capabilities
Data Catalog Workshop	Understand where Organization stands in metadata implementation	■ Key Pain points on Match merge ■ Customer Data problems ■ Employee data related problems ■ Tools related issues ■ Current Capabilities ■ Business related issues
Data Integration Workshop	Understand Data integration techniques used by Organization and pain points	■ Key Pain point related to ETL operations ■ Problems in ingesting unstructured and semi structured data ■ Key findings and issues related to real time and near real time ingestion
Data Repository Workshop	■ Understand how Organization is currently using its data warehouse environment? ■ Gathered big data and Hadoop requirements	■ Key pain points related to Data repository ■ Staging area related issues ■ Tools issues ■ Existing infrastructure scalability issues
Analytics Session 1 and 2	■ Understand Analytics, machine learning, data science and predictive analytics usage in Organization. ■ Gather Business related analytics requirements for eg for a bank - Enterprise Risk, Business Bank, Treasury, Finance, Retail Sales, Retail Operations, Corporate Marketing, and Wealth Management and Continuous improvement group	■ Pain points related to analytics ■ Future requirements ■ Tools related issues ■ Current running analytic programs and issues
Data Virtualization	Understand virtualization requirements and pain points related to virtualization	■ Key pain points in data integration that are related to virtualization ■ Key pain points in analytics that are related to virtualization
Data Provisioning and Self –Service BI	■ Understand the current issues in terms of provisioning the data and using it for self-service business intelligence. ■ Understand how Organization wanted to use the provisioned data for ETL and other integration operations?	■ Key pain points related to data provisioning ■ Key pain points related to self-service BI ■
Straw man solution discussions 1 and 2	■ Present future state solution architecture ■ Collect incorporated the feedback from Organization DMO team	■ Straw man architecture diagrams ■ Technology stack
Roadmap	■ Present future road map and discussed the feasibility in implementing the future state reference architecture	■ Future state road map

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2.2 Dimensional Analysis

Data repository dimension has always been a primary focus of this assessment. Oracle will perform a detailed dimension analysis of this dimension and study at a high level how other seven dimensions would integrate with it. We would fine-tune our strategies and methodologies and come up with a solution that would seamlessly integrate the other seven dimensions with data repository.

Exhibit 1: Data Repository Strategy

Dimension Analysis input matrix	
Dimension	**Input**
Provisioning and Self Service Business Intelligence	■ Business Analytics Pattern Self Service Business ■ Questionnaire Responses ■ Workshop notes
Data Virtualization	■ Business Analytics pattern near real time reporting ■ Questionnaire Responses ■ Workshop notes ■ Prep workshop notes
Reporting Visualization and Analytics	■ Workshop notes ■ Prep workshop notes ■ Questionnaire responses
Operationalization of Data Governance and Meta data management	■ Workshop notes ■ Prep workshop notes ■ Questionnaire responses
Data Integration	■ Workshop notes ■ Prep workshop notes ■ Questionnaire responses
Data Repository	■ Workshop notes ■ Prep workshop notes ■ Questionnaire responses
Data Acquisition and Ingestion	■ Workshop notes ■ Prep workshop notes ■ Questionnaire responses

2.3 Future State Architecture

Oracle would take four step approach to develop the future state data architecture for Organization. Oracle will consider the following inputs that would help to craft the future state reference architecture. All the information related business capabilities, information/Data systems, existing financial platforms, EDW, technology infrastructure and Governance will be carefully analyzed during current state analysis across all the dimensions

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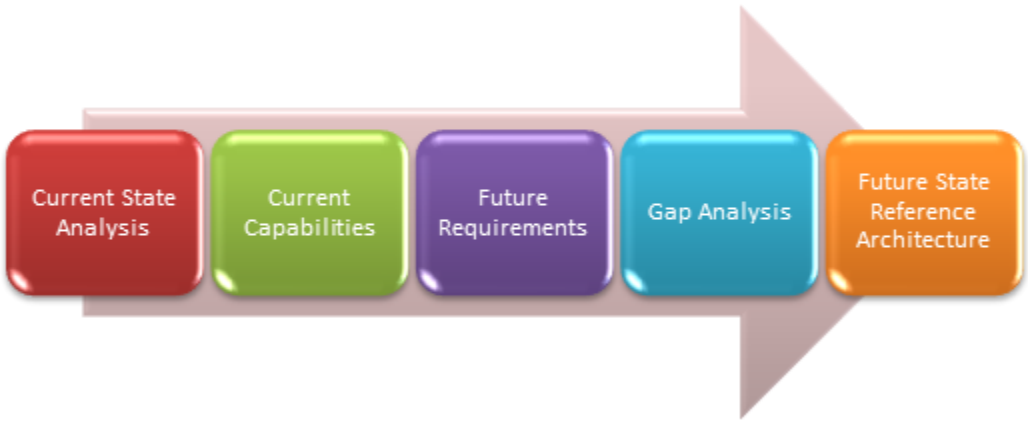
- Current State analysis
- Current capabilities
- Future requirements
- Gap Analysis

Exhibit 2: Exhibit title



2.4 Recommendations & Action Plan

Based on the future state architecture Oracle would recommend the next action plan and the feasibility of the target state reference architecture.
All the necessary assumptions will be carefully documented during the recommendation approach. Also, the key risks involved in achieving the end target reference architecture will be considered and mentioned as part of the deliverable. The following Nonfunctional requirements will also be considered while providing recommendation and action plan in migrating to the cloud

- Agility
- Scalability
- Flexibility
- Reusability
- Portability
- Supportability

2.4.1 Scoring Methodology

All the capabilities will be given equal weightage while calculating the scores between 1-5, 1- being nascent and 5 -being visionary – An average has been taken to get the overall score

$$\textbf{Score for each dimension} = \frac{\textbf{Sum of scores of all the capabilities}}{\textbf{Total Number of capabilities}}$$

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Scoring Drivers

2.5 Current State Capability Matrix

2.5.1 Introduction

Oracle will assess Organization's Information Management platform capabilities in the following eight dimensions

1. Data Repository
2. Provisioning and Self Service Business Intelligence
3. Data Virtualization
4. Data Integration
5. Data Integration Hub *(No capability matrix has been provided below, as Integration Hub is architectural view of Data repository)*
6. Reporting, Visualization and Analytics
7. Operationalization of Data Governance and Data Catalog
8. Data Acquisition and Ingestion

All the capabilities for eight dimensions will be assessed based on five maturity levels they are

Maturity Levels

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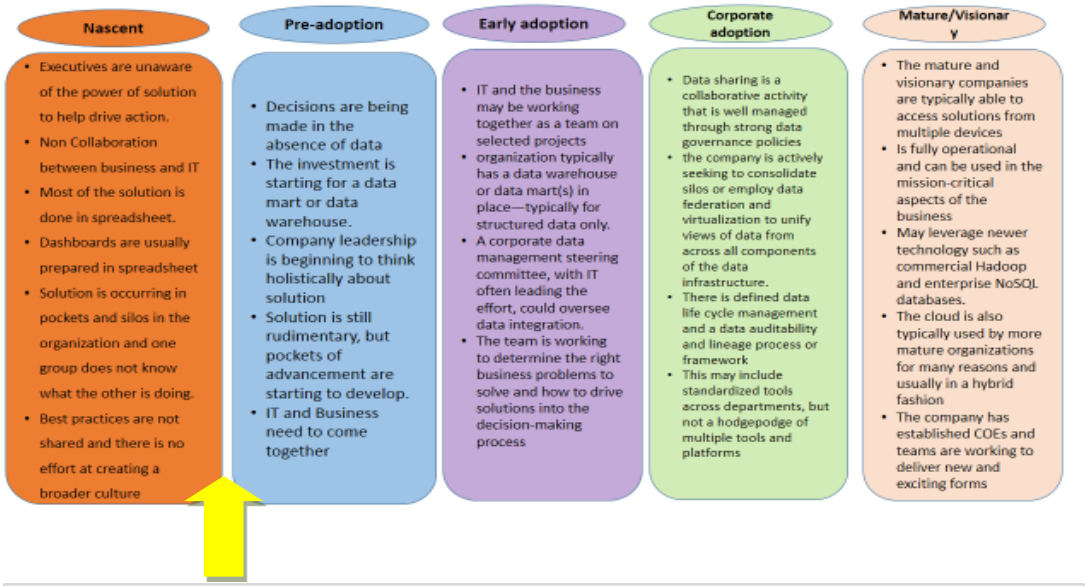
3. Sample Scores

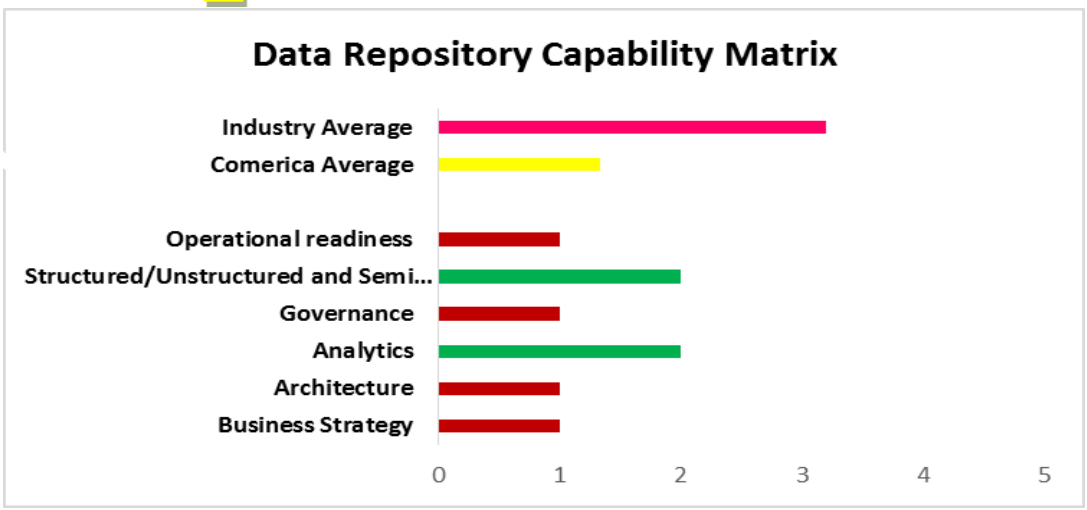
Here are few sample reports and scores

3.1 Data Repository – Sample scores

Organization currently manages a wide variety and a high volume of data. However, they require some additional capabilities to perform advanced analytics on such data at an enterprise level. They also need some advanced analytics tools and technologies to extract, load and transform such variety, volume and velocity data. Their current data warehouse is also not fully utilized at an enterprise level.

Data Repository Score





Organization Average Score – 1.33

- Organization is still working on its business strategy on how to handle high volume, high velocity and wide variety of data and drive business value out of it? Also, they are still working on big data architecture, analytics framework, data governance and operational readiness strategy. Hence all these capabilities have been measured at nascent level.
- Organization has already started adopting big data analytics at a project specific level and started handling structured/semi structured data. Hence are in pre-adoption phase.

Overall on Data repository that includes both data warehouse and big data Organization has been positioned between **nascent and pre-adoption levels**

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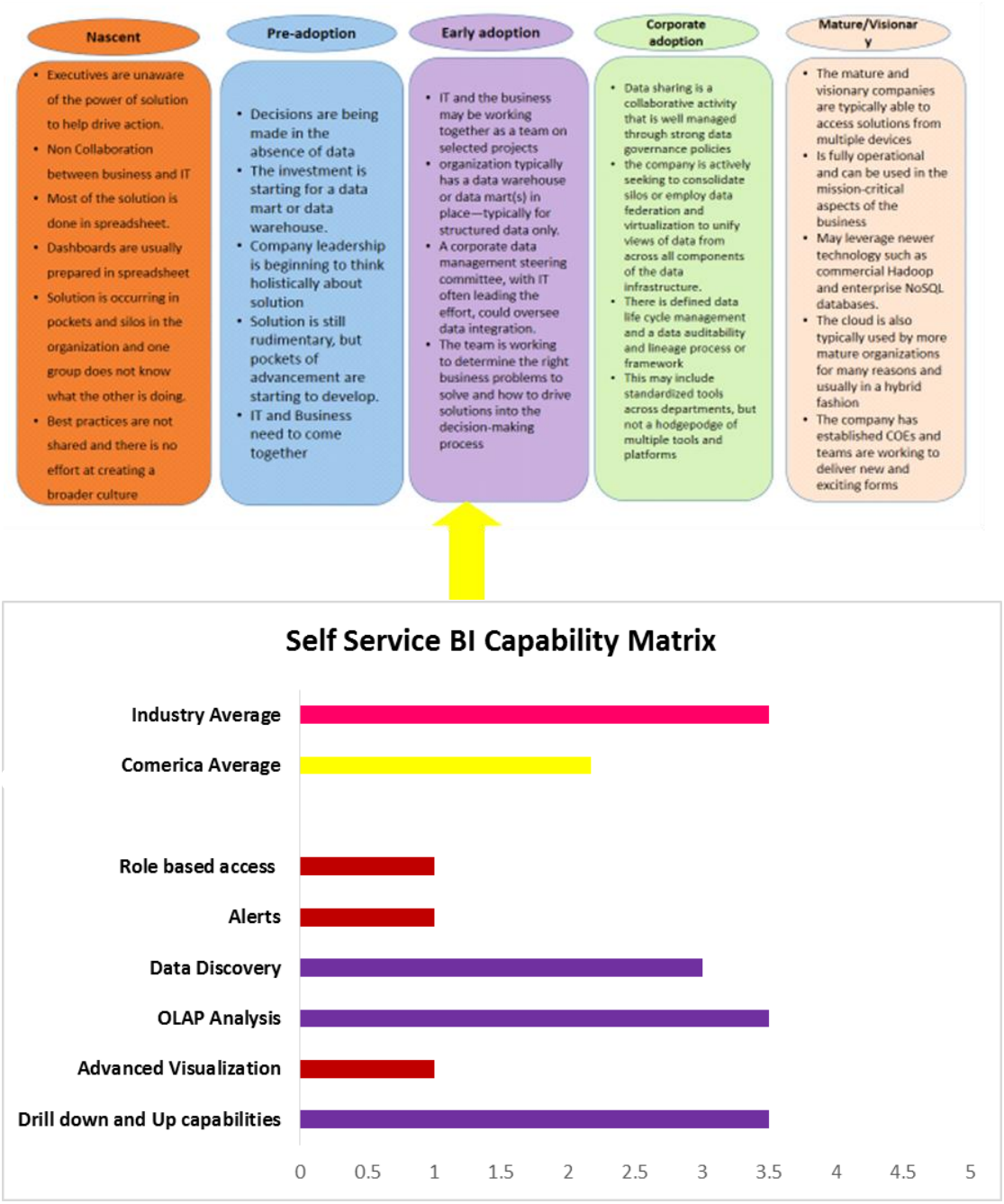
3.2 Data Provisioning and Self-Service Business Intelligence – sample score

Provisioning and Self-Service BI Score



Overall Score – 2.16

- Organization has already been using several self – service Bi tools- (OBIEE, Hyperion, and IBM Cognos). However, they are unable to get more value out of it due to lack of provisioning and quality data. Hence at early adoption stage
- Currently the advanced visualization is not yet part of the organization capabilities. However, there are some of the lob's who are using SAS advanced visualization in a siloes.
- OLAP Analysis and Data discovery are in early adoption stage for Organization as they are using to address the business problems right now and helping the business in decision making process. However, they haven't standardized the solution across the organization.
- Organization is still working on capabilities such as alerts, role-based access and data lineage in terms of self-servicing hence they have been measured at Nascent stage.

Overall Data Provisioning and Self-Service BI dimension of Organization has been assessed at an **early adoption** stage

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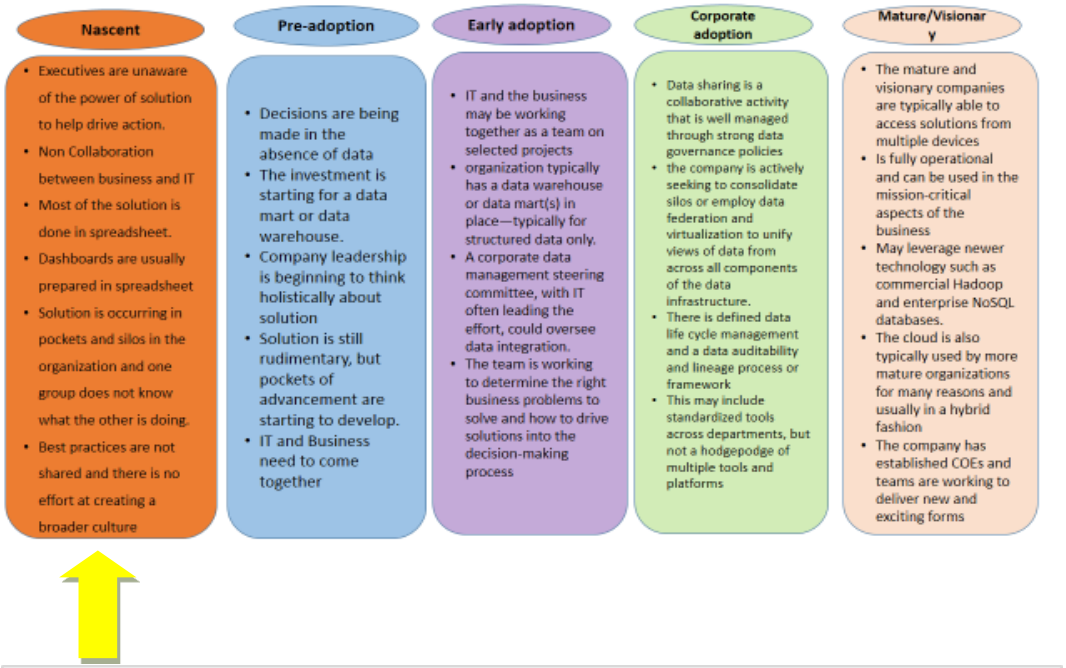
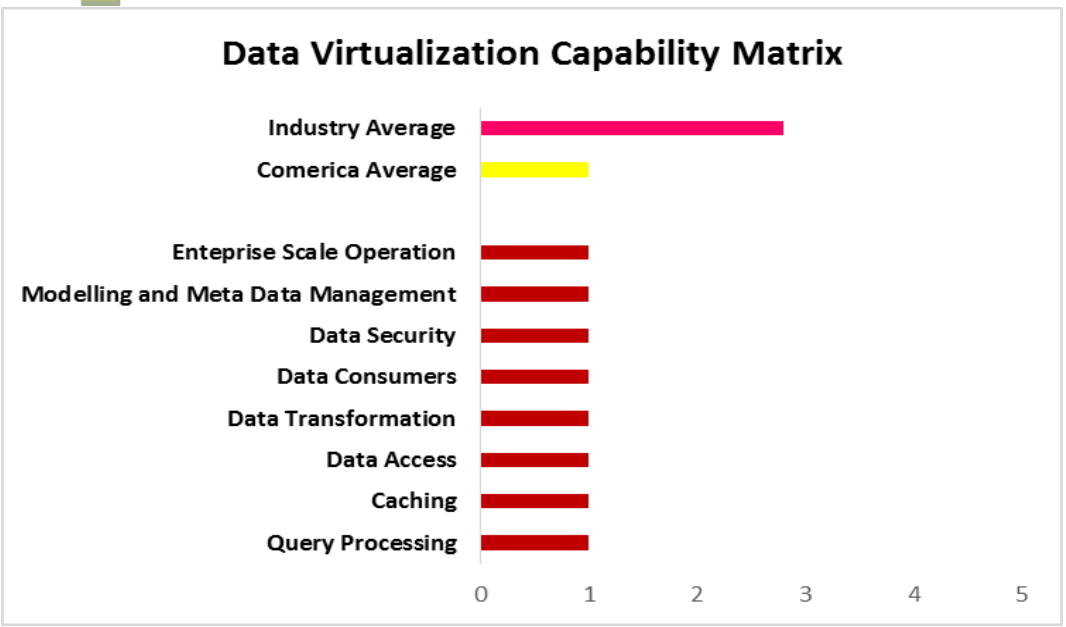
3.3 Data Virtualization – sample score

Data virtualization is not a new concept to Organization. They have already gathered lot of knowledge in terms of data federation, data encapsulation and data abstraction. They are aware where data virtualization can be leveraged. They are currently in the process of procuring and implementing it as part of their enterprise data warehouse re-platforming strategy. Here is the capability matrix for data virtualization

Data Virtualization Score





Organization Average Score – 1

- Data virtualization has been well thought at Organization; however it is not implemented so far and being budgeted as part of EDW implementation.
- Hence all the capabilities under the data virtualization have been measured at nascent level.

Overall Organization Data virtualization dimension is at **nascent maturity level**

3.4 Data Integration -sample score

Organization has already been using Informatica tools for data integration and still need to use at an enterprise level. Organization is also using Change Data Capture, Message Queuing, and Web Services for Data Integration.

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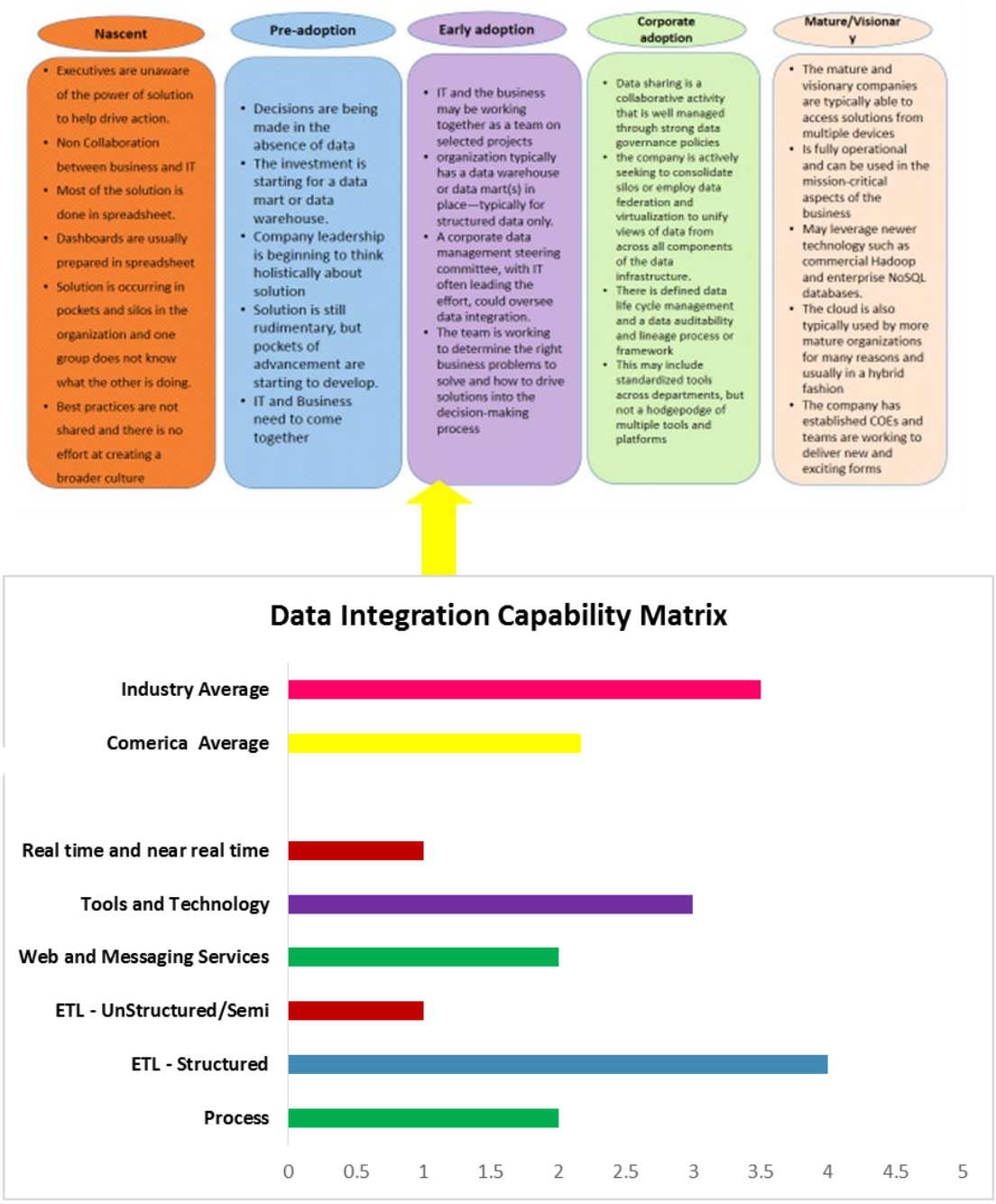

Organization Average Score – 2.16

Organization has been handling ETL operations successfully at a corporate level for all the structured content. However, the solutions are not at an optimal level hence we measured it at and early adoption stage.

- Organization has also been using tools and technology for various integration strategies and adopted them, however they didn't implement at an enterprise level and still using in project specific requirements. Hence measured tools and technology in early adoption
- Process, and ETL for semi structured and unstructured data are still being adopted. Teams are still working on methods and technologies to resolve the problems related to unstructured and semi structure data. Hence these two capabilities are at pre-adoption stage
- Organization has been using tools for web services and messaging services to integrate with other systems. However, they still have challenges in handling real-time, near real-time data. Also, they have similar challenges in handling high volume web data. Hence this capability has been measured at pre-adoption stage
- Finally, Web/messaging services and real time ingestion and integration has still been a challenge for the organization to implement. Hence these are still at nascent level.

Based on the overall score Organization Data integration capability between **preadoption and early adoption stage.**

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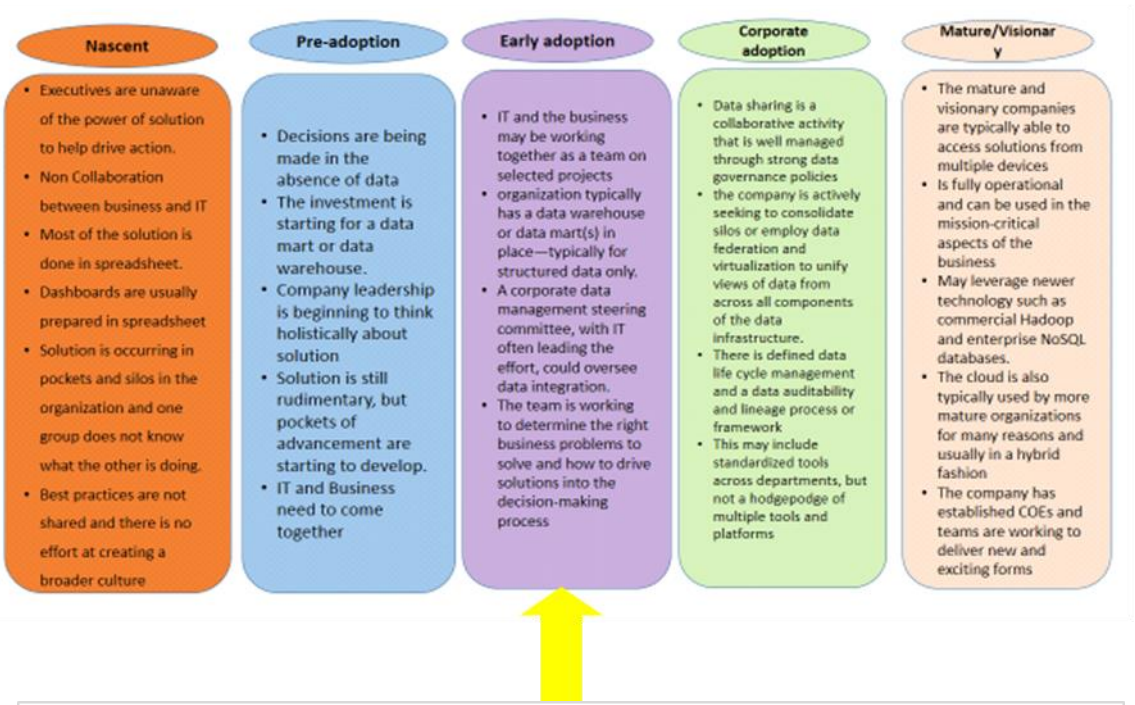
3.5 Analytics, reporting and Visualization – sample score

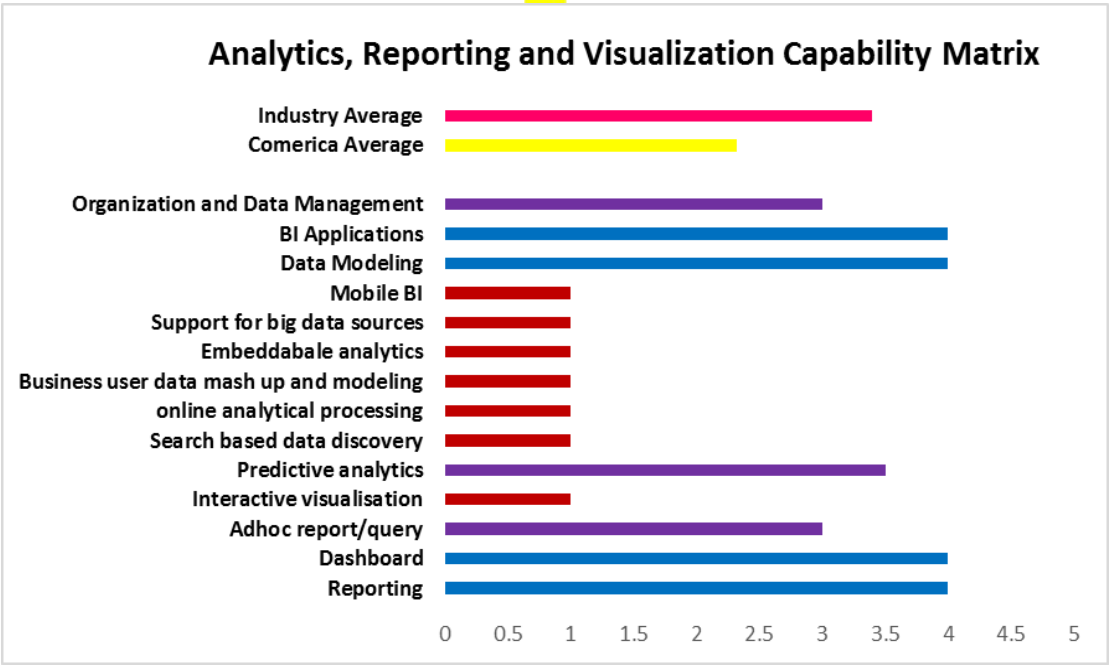
Organization team has identified five patterns that are in demand across the organization. They are

1. Self – Service BI
2. Real- time and near real-time analytics
3. Dashboards
4. Security – Role based landing
5. And Alerts / Notifications

They have already started working on analyzing these patterns and working on gathering information related to tools and techniques.

Analytics reporting and Visualization Score





Organization Average Score – 2.32

- Organization has been working at a corporate level extensively on reporting, dashboards, data modelling and BI applications that use business intelligence reports.
- Usage of ad-hoc reporting and organization level data management policies and processes have not been adopted at an enterprise level.

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- Risk business unit uses SAS platform for predictive analytics, Treasury uses QRM, Credit Risk uses Moody's. All these business units use their own analytics solutions. Hence measured at level early adoption.
- Other capabilities – interactive visualization, search based data discovery, online analytical processing, business and data mash up, embedded analytics, mobile BI and support to big data capabilities, though they have been identified as key requirements, they have not been used and not even at a rudimentary state, hence at nascent level.

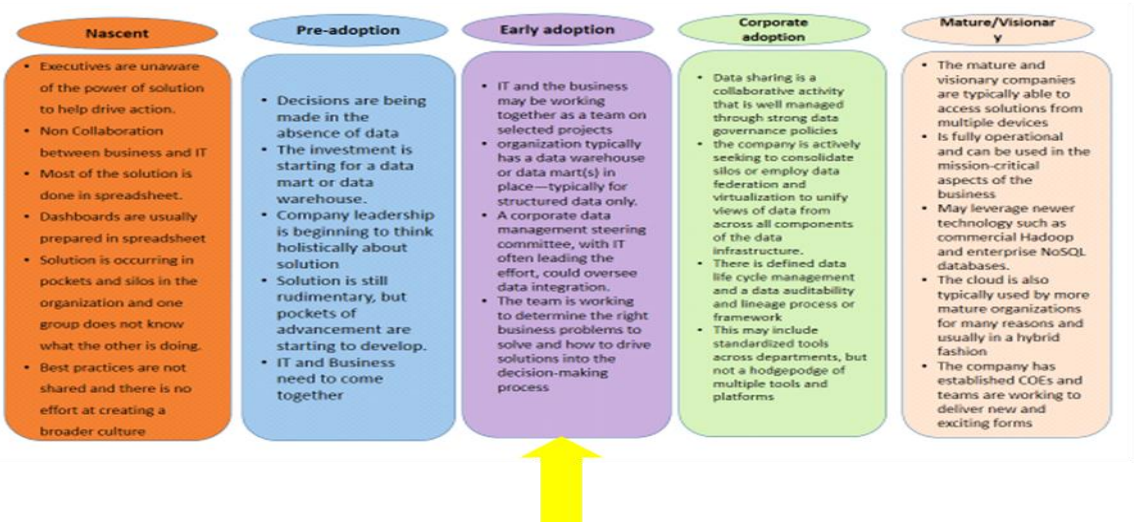
Overall analytics, reporting and visualization dimension capabilities have been measured between pre-adoption and **early adoption level**

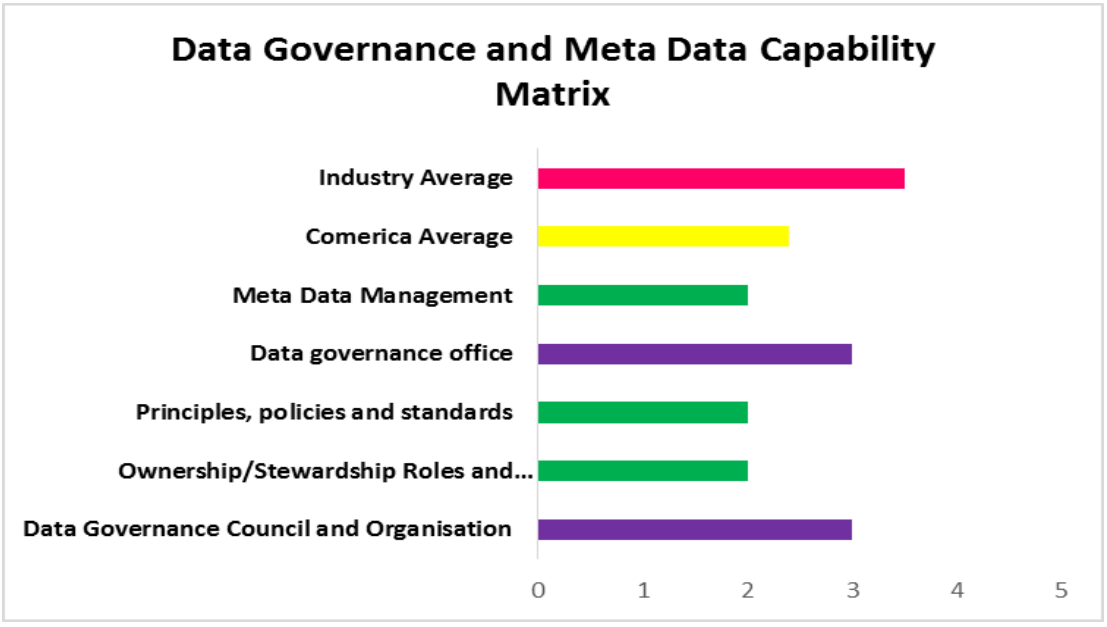
3.6 Operationalization of Data Governance and data catalog – sample score

Organization is currently in process of effectively implementing proactive solutions to resolve Data Governance challenges. Most of the Organization business units are project based. Organization data governance team confronts the problems only after they occur. Multiple systems support the organization's transactional and decision-making needs. While certain employees in the organization appreciate the relevance of data governance, they are yet to develop a robust strategic vision to meet short term & long term goals & objectives of Data Governance. Organization currently uses Informatica Meta data management tool. However, the usage of the tool is in pre-adoption stage and it is still not being explored to the maximum level at an enterprise level.

Data Governance council plays an advisory board role whereas Data Governance office plans, sponsors and manages data management projects and services. Organization is at an early adoption level on both these capabilities.

Exhibit 3: Data governance Score





Organization Average Score – 2.4

- Data Governance council and Organization, DGO capabilities have been identified and they started adopting to the same. Hence these two capabilities are in early adoption state.

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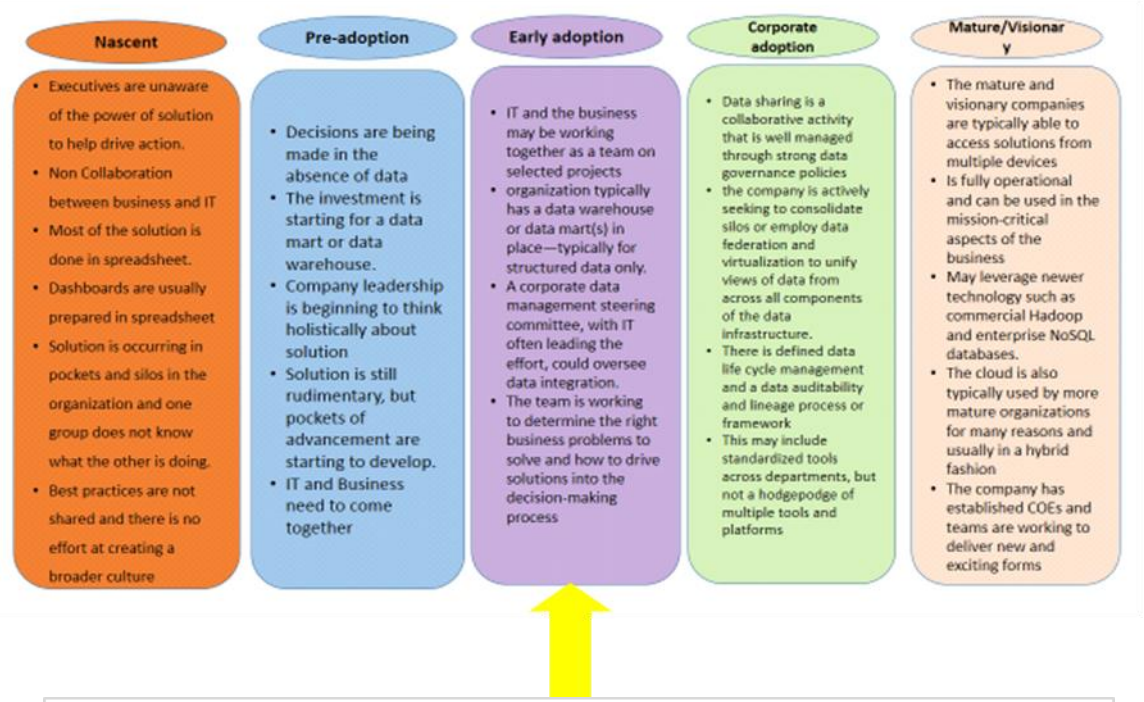
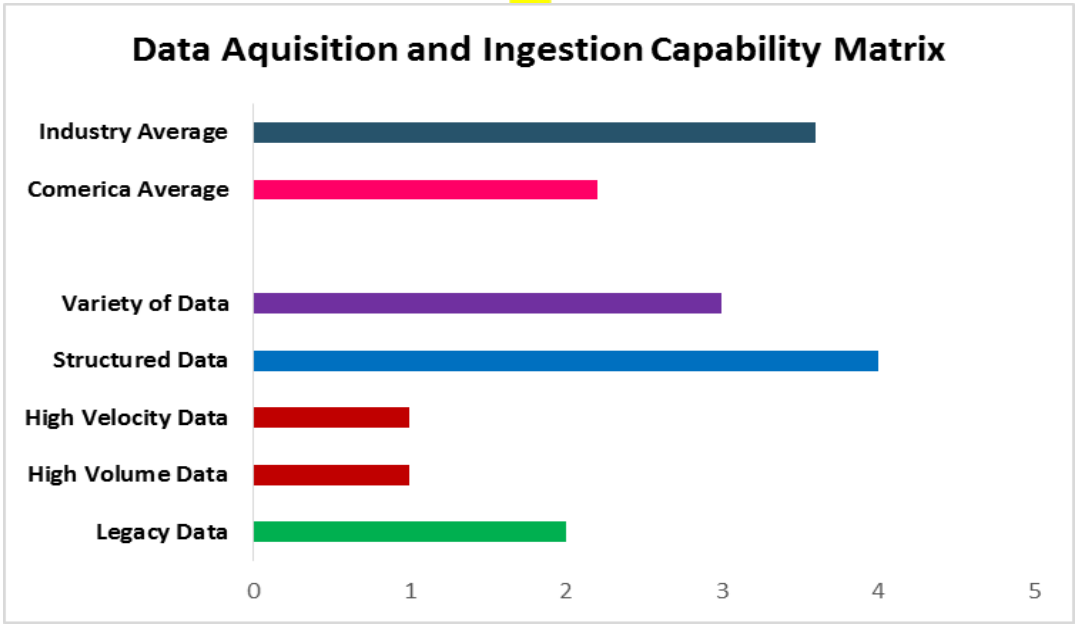
- Stewardship, policies and principles capabilities have been identifies but not adopted so far. Hence they have been measured at pre-adoption state.

Over all data governance and Meta data management has been measured at **early adoption stage**

3.7 Data Acquisition and Ingestion – sample score

Data Acquisition and Ingestion Score





Organization Average Score – 2.2

- Organization is currently handling many ingestion problems related to legacy data and variety of data. All these capabilities are not matured and they still require proper tools and technologies to handle those problems. Hence the ingestion capabilities to handle legacy data and variety of data have been measured at pre-adoption stage.
- All the high volume and high velocity data ingestion capabilities are still being considered to be at a nascent state.
- Organization team is acquiring and ingesting all the structured data with the usage of tools and approaches. Hence in corporate adoption level

Overall Organization's Data ingestion and acquisition capability is at **early adoption stage**

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3.8 Overall Capability Matrix – sample score

Converging all the above capability matrices into one matrix here is the overall Organization's maturity matrix

Note: Financial services Industry average scores provided below are based on few standard industry reports and private organization scores. These scores are only for the comparison and might not be to the context of Organization, as every organization has its own criteria to measure capabilities.

Organization Data Maturity Score