Master Data Management and Data Quality Services

G-Cloud Service Definition Document

SERVICE OVERVIEW

Cognizant's Enterprise Data Management service line under the Analytics and Information Management practice, is a focused group that provides end to end data management solutions from consulting to implementation and support to organisations facing data related business challenges. Our Practice has resource strength of around 2600+ and has undertaken 1200+ MDM engagements across multiple industries such as Banking, Insurance, Retail Healthcare and Life Sciences for multiple entities (product, customer, supplier, etc.). We have dedicated COEs for leading tool vendors like Informatica, IBM, SAP, Markit, Oracle, Talend etc. Also, with 90+ Global Rollouts | 350+ Clients Across Industries | 24+ Years of Practice.

Cognizant's Data Management practice is recognised as a "Global Leader" by Forrester and Gartner and has also been recognised Cognizant as a "Top 5" global service provider. Also, won Brandon Hall excellence award (Gold) for focus on MDM Competency development and Industry certifications on Next Gen Cloud solutions.

There are nine services within Cognizant MDM that cover the lifecycle of MDM and DQ deployment:
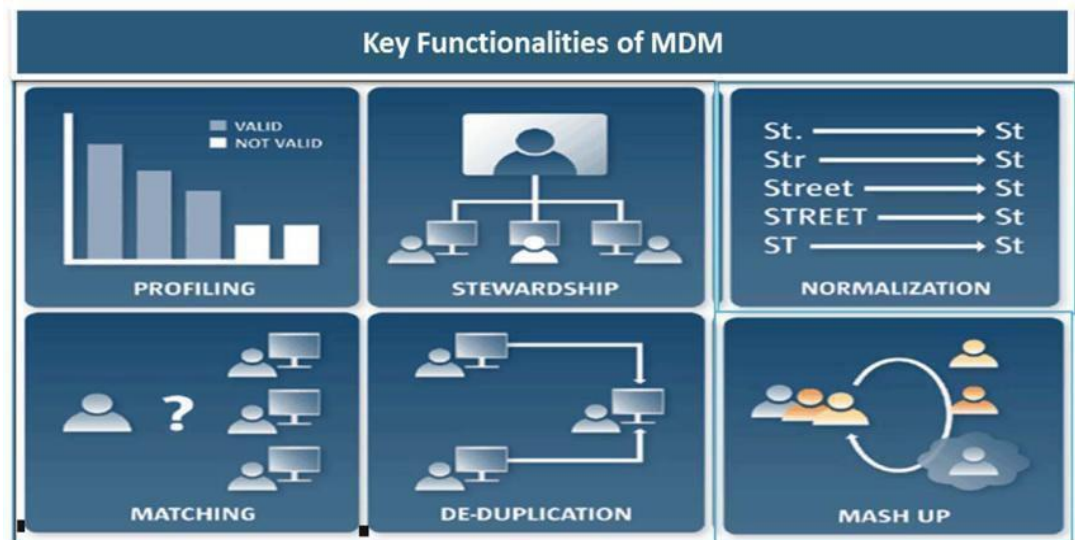
- **Master Data Management Roadmap and Strategy Services** - Providing analysis and roadmap of the benefits MDM can bring to an organisation.

- **Data Quality Assessment and Strategy Services** - A time boxed exercise that will analyse and organisation's data to rate its quality.

- **Master Data Management Development Services** – Development and implementation of MDM solutions for cloud/cloud hosting and on premise.

- **DQ Development Services** - Providing delivery projects around all aspects of data quality improvement including validation, address matching, deduplication, and more.

- **MDM Support Services** – Provide end-to-end support services for MDM solution.

- **DQ Support Services** – Provide end-to-end DQ support services for organisation data.

- **Customer 360 Implementation Service** - Combines the features of MDM Server and Big Data Platform to create a true 360-degree view of the customers, enabling businesses to turn a swell of data into precise insights to drive engagements and revenue forecasts.

- **DQ Health Monitoring Service** - Perform out-of-the-box data quality profiling (both simple and advanced), creating executive dashboards comprising statistical analysis, rule reports and data dimension metrics and provides insights on the organisation data quality.

- **MDM Development service for Big Data** - Master Data Management implemented on top of a NoSQL data store within the Big Data ecosystem

WHAT IS MASTER DATA MANAGEMENT? INTELLIGENCE?

The phrase Master Data Management is the combination of People, Processes & Technology needed to enable an organisation to manage and harmonise its key master entities.

- An MDM programme helps organisations break down information silos and supports greater enterprise agility and integration activities
- It mandates Business and Information Systems to collaborate in order to protect key information assets that are shared across the extended enterprise.
- Supported by data governance processes, MDM eliminates endless debates about *"whose data is correct."*
- Some key entities that organisations would want to master include Citizen, Product, Customer, Employee, Supplier, etc.
- MDM creates a single trusted version of data across the organisation

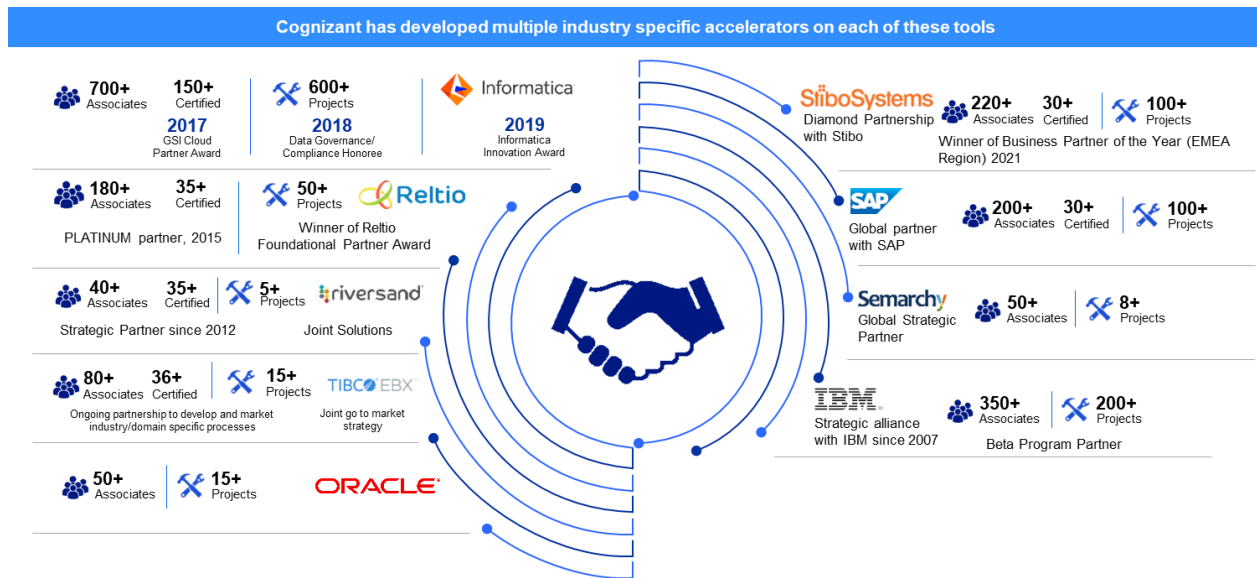The key functionalities of a typical MDM solution are depicted below:

Cognizant has a proven delivery approach for ensuring MDM success that align to the MDM services presented here:
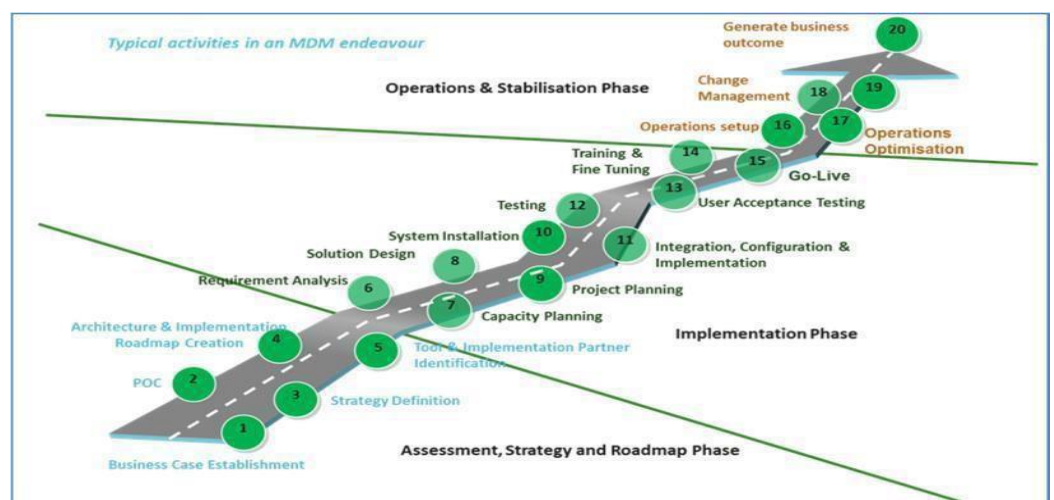
Cognizant enjoys an enviable reputation for its MDM development services and has alliances with all the major solution vendors so that we can determine and deliver the right solution to meet the needs of each client.

Our MDM credentials and top global MDM tool partners are listed below:

Cognizant has developed multiple industry specific accelerators on each of these tools

700+ Associates / **150+** Certified / **600+** Projects	Informatica	**StiboSystems** Diamond Partnership with Stibo — **220+** Associates / **30+** Certified / **100+** Projects
2017 GSI Cloud Partner Award / 2018 Data Governance/Compliance Honoree / 2019 Informatica Innovation Award		Winner of Business Partner of the Year (EMEA Region) 2021
180+ Associates / **35+** Certified / **50+** Projects — Reltio		**SAP** Global partner with SAP — **200+** Associates / **30+** Certified / **100+** Projects
PLATINUM partner, 2015 / Winner of Reltio Foundational Partner Award		
40+ Associates / **35+** Certified / **5+** Projects — riversand		**Semarchy** Global Strategic Partner — **50+** Associates / **8+** Projects
Strategic Partner since 2012 / Joint Solutions		
80+ Associates / **36+** Certified / **15+** Projects — TIBCO EBX		**IBM** Strategic alliance with IBM since 2007 — **350+** Associates / **200+** Projects
Ongoing partnership to develop and market industry/domain specific processes / Joint go to market strategy		Beta Program Partner
50+ Associates / **15+** Projects — ORACLE		

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Master Data Management Roadmap and Strategy Services

The Master Data Management Strategy and Roadmap services are part of the Cognizant Information Management service family. Providing analysis of the benefits MDM can bring to an organisation. Interview or workshop-based approach delivering both roadmap and strategy. Backed up by business case preparation and vendor tool selection if required.
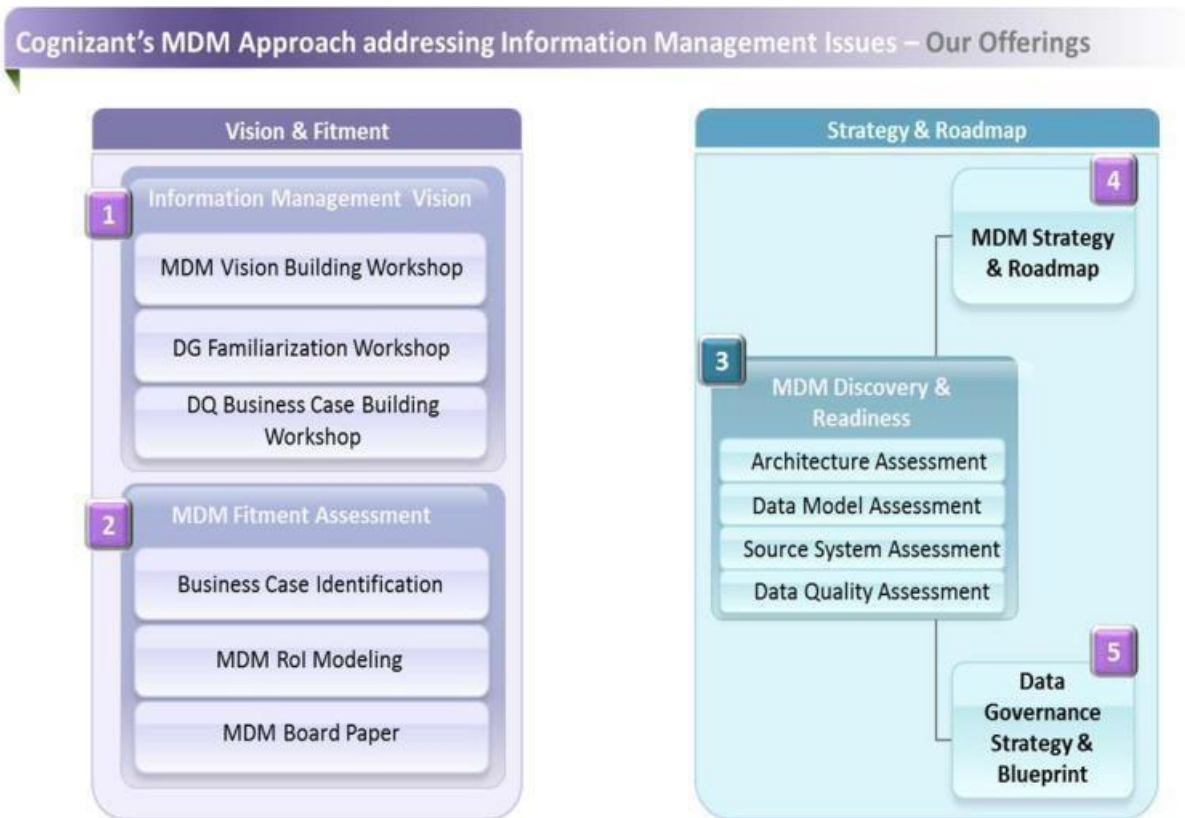
Features	Benefits
1. Identification of business cases for MDM Strategy 2. Determine strategic MDM vision, tactical and long term goals 3. Current state MDM analysis - study technical landscape 4. Customer/Citizen information management ecosystem and maturity assessment 5. Define Business requirements for MDM programme 6. Showcase best of breed Architecture and GAP analysis 7. Define 'To be' state maturity level and architectural blueprint 8. Shortlist and evaluate MDM tools (optional) 9. Phased MDM roadmap definition 10. MDM Programme Plan and Governance Model	1. Establish organisational maturity in terms of data management 2. Establishing that the organisation is in a Ready State for MDM 3. Data Quality and Enterprise Architecture Maturity 4. Establishing that funding for the program is currently available 5. A strong and defined vision for Master Data Management 6. IT execution group and business unit identification 7. Validates the scope that has been established previously 8. Evaluate all assumptions along with their dependencies 9. Phased MDM roadmap and benefits with effort and timelines defined

The strategy and roadmap services enable an organisation to accomplish any or all of the following objectives:

- Identify the potential value that could be derived from an MDM solution
- Analyse and understand their MDM needs
- Express those needs in stakeholder relevant use cases in plain English
- Define key measurement criteria that would demonstrate value has been realised through MDM
- Build a strategic vision for the pervasive use of MDM in the organisation
- Build a roadmap enabling the strategic vision
- Identify quick wins that ensure ROI is maximised at every point of the implementation of the MDM solution
- Complete a vendor selection exercise to choose the right tools to meet the MDM needs of the organisation
- Compete a readiness assessment of the organisation's infrastructure and people to determine ease of adoption and implementation of MDM solutions
- Create a business case for the execution of part or all of the roadmap

These outcomes are achieved through a time boxed discovery process. This discovery phase can be delivered as a fixed price or under T&M via the SFIA rate card.

Cognizant's MDM Strategy and Roadmap services are delivered as part of the following:

Cognizant's MDM Approach addressing Information Management Issues – Our Offerings

Vision & Fitment	Strategy & Roadmap
1 Information Management Vision MDM Vision Building Workshop DG Familiarization Workshop DQ Business Case Building Workshop **2 MDM Fitment Assessment** Business Case Identification MDM RoI Modeling MDM Board Paper	**4 MDM Strategy & Roadmap** **3 MDM Discovery & Readiness** Architecture Assessment Data Model Assessment Source System Assessment Data Quality Assessment **5 Data Governance Strategy & Blueprint**

A typical MDM roadmap also matures through different MDM architectural styles. Cognizant therefore proposes a phased MDM roadmap (as shown below) for medium to large scale MDM programmes.

Please note that the assumption here is that the appropriate Data Quality assessment and cleansing has been installed – to ensure a real ROI is delivered; see the Data Quality Service overview for full details.

Source: Gartner

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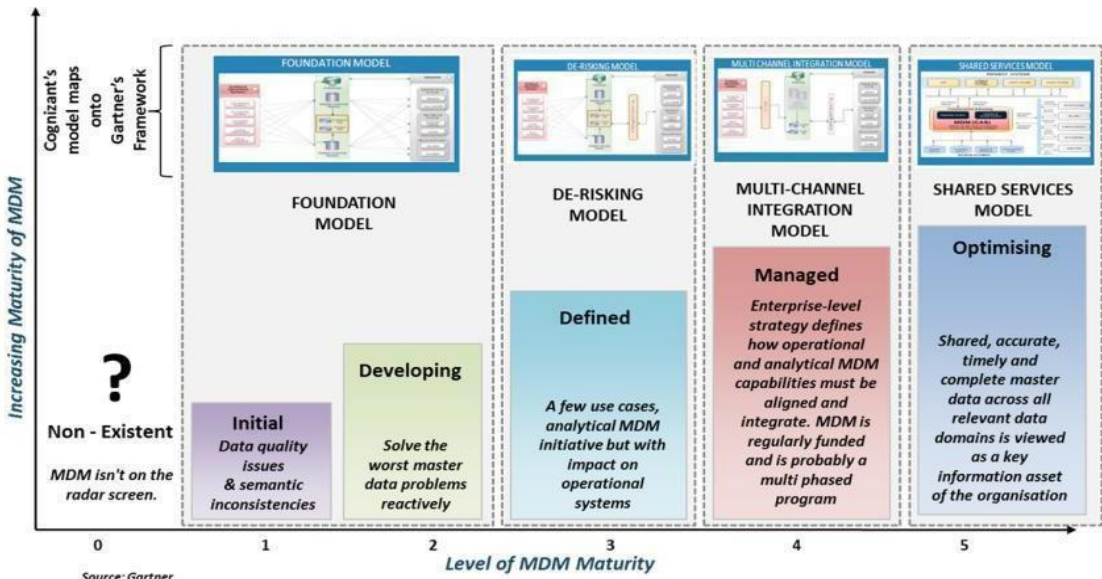
Data Governance Services

The data governance services enable an organisation deliver a range of structures, processes and, where applicable, teams to manage the governance of an organisation's information assets.

In the age of digital transformation and big data one of the most critical assets an organisation holds is its information – or data. Data fuels the decisions the organisation makes, defines it's interactions with external stakeholders ranging from citizens to suppliers/services; enables regulatory compliance, and can generate income through data monetisation strategies.

It is therefore critical that this vital asset is treated the same way any physical asset or resource of value would be treated. The data governance services enable the processes and procedures as well as governing structures to be put in place to achieve this.

Cognizant can provide the following data governance services either on a T&M basis or as part of a fixed price project or programme.

Service	Service Definition
CDO Advisory	Provide input and expertise to an organisation to enable them to establish an office of the Chief Data Officer (CDO). The CDO is the accountable party for data governance across the organisation.
Data Governance Maturity Assessment	A time boxed assessment exercise to evaluate an organisation's current governance processes around data. The output will be the findings of the assessment and recommendations to address areas of concern.
Data Governance Advisory Service	Provide input and expertise to the implementation of governance programmes put in place to address issues identified in the maturity assessment.
Data Governance Service	An end to end implementation of data governance for an organisation run as a service on a monthly fixed price service charge tied to a service level agreement.
Data Monetisation Strategy Service	A time boxed consultative exercise that will assess avenues that may exist for the monetisation of an organisation's information assets. The output will be a report of the possible avenues for data monetisation and a strategy that could realise.

These services help an organisation to create a strong governance process which when combined with Cognizant's Data Quality and Master Data Management solutions will deliver organisational efficiencies (to include cost savings, transparency and regulatory compliance) and enable the implementation of a full digital strategy.

Features	Benefits
Establishes a data governance framework for an organisation	Reduce operational risk through well managed data
Establish the value of information assets through greater visibility	Ensure data treated as an asset and managed accordingly

Provide governance structures necessary to underpin digital transformation	Derives a set of organisational standards and definitions for data
Can include PIM and CDI processes	Underpins the transition to a full MDM strategy
	Delivers the concept of an Enterprise Golden Record

Data Quality Assessment and Strategy Services

The Data Quality Assessment and Strategy Services are part of the Cognizant Information Management service family. The quality of an organisation or department's data will be assessed. A report will be provided on the data quality, its impact on the business and a strategy for improvement.

Features	Benefits
1. Identification of business case for DQ Analysis 2. Determine strategic DQ vision, tactical and long term goals 3. L224. DQ assessment against accuracy, completeness, consistency, cleanliness, etc. 4. Overall business impact analysis of the quality of data 5. Cost and time estimate (manual vs. automated metrics) for Data Quality 6. Current vs. To-Be State DQ Gap Analysis 7. Multi-phase Data Quality improvement roadmap 8. Sustainable Data Quality	1. Establish organisational maturity in terms of data quality 2. Data Quality and Enterprise Architecture Maturity 3. Establishing that funding for the programme is currently available 4. A strong and defined vision for Data Quality and Governance 5. IT execution group and business unit identification 6. DQ assessment validates the scope that has been established previously 7. It evaluates all assumptions along with their dependencies 8. Phased DQ roadmap and benefits with effort and timelines defined

The data quality assessment is a time boxed exercise that will analyse and organisation's data to rate its quality. This rating is done within the context of the business criticality of the data and the potential risk poor quality can bring to operations and decision making within the organisation.

The assessment normally takes between 2-4 weeks depending on the number of data sources to be assessed. This is normally offered as a fixed price; however T&M rates can be used.

Following on from the assessment exercise Cognizant can work with the organisation to define a strategy for addressing data quality. This can also be coupled with our data governance services to establish a quality and governance framework for the management of data. The strategy can also incorporate a plan or road map for the delivery of the target state for data quality.

# Master Data Management Development Services

An MDM 'programme' is rarely a one-time, do-it & forget-it implementation at an organisation - It is an enterprise wide initiative typically involving multiple waves of implementation and not merely a project.

It is important for the stakeholders to understand that MDM is a culture and not just a technology. For the success of long-term MDM programmes and to take the organisational changes and challenges in stride, it is important to embrace this MDM culture.

To achieve the desired end-state for the MDM programme, it is also important to layout the long term strategic roadmap and also discover how different MDM projects would align towards meeting this end-state.

Fundamentally, Cognizant brings best practice, good governance and change management skills alongside technical implementation expertise. These skills have been gained over multiple MDM engagements and help ensure a smooth execution of the MDM strategy and roadmap.

Our MDM Assessment Approach:
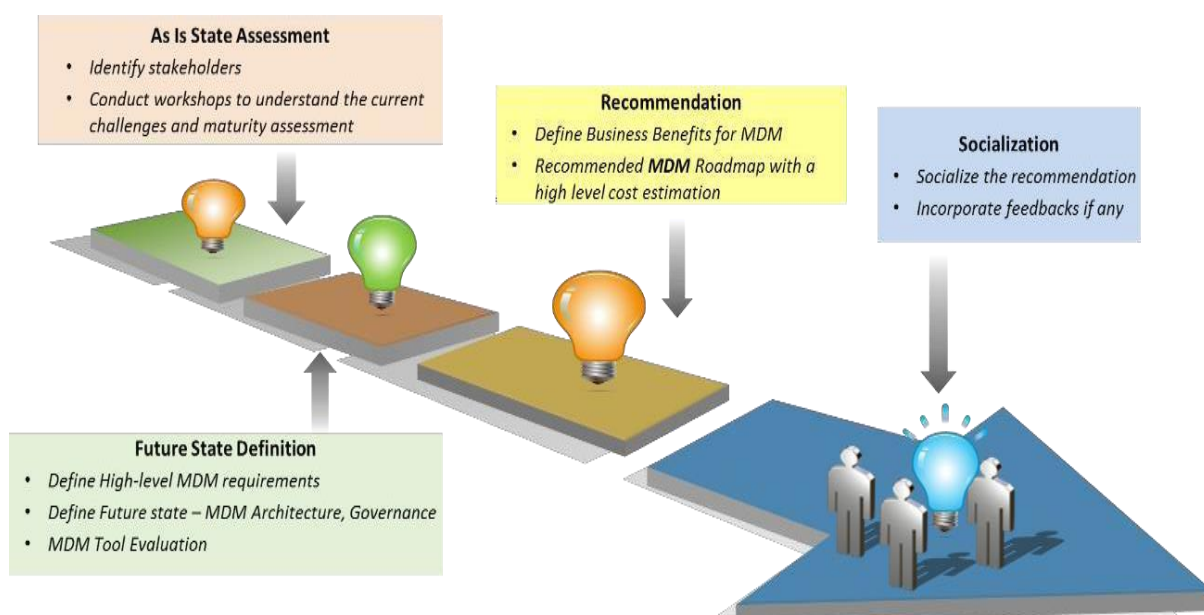
Features	Benefits
1. Distributed SOA compliant architecture to allow customisation with low TCO	1. Reduced data management costs; increased operational efficiency
2. Supports scalability, adaptability and reusability of the business components	2. Highly Reliable Forecasting and Business Intelligence
3. Integrates with 3rd party tools - data enrichment and address standardisation	3. 360 degree views of Data allowing better cross and up sell
4. Supports in-built or external cleansing engine	4. Improved customer retention
5. Supports message-oriented middleware for asynchronous data exchange	5. Increased compliance with all major industry standards
6. Supports load balancing and fail-over with proper H/W backup	6. Accurate KPI reporting
	7. Reduced report generation costs
	8. Improved data mining and analytics
	9. Improved Decision Making

7. Supports hierarchy management
8. Supports data audit and lineage
9. Provides workflow based data management UI

Cognizant can deliver a range of services using deliver complete Data Quality – following the steps below.
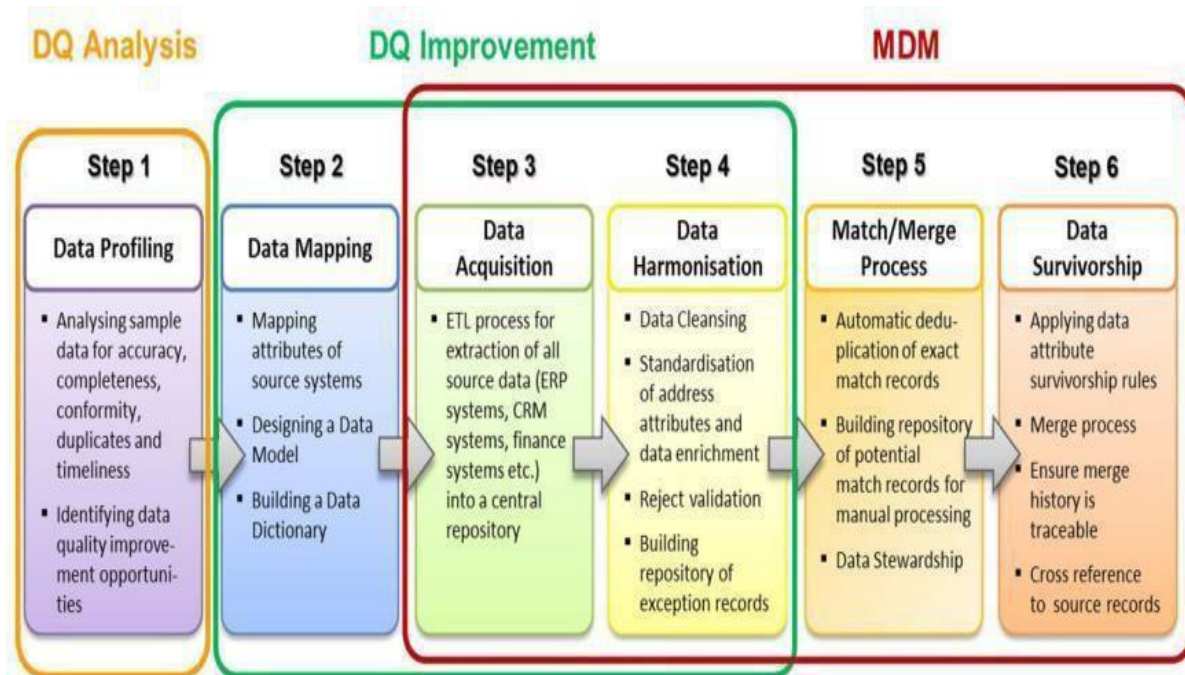
We have a number of data quality solutions and offerings as shown below:

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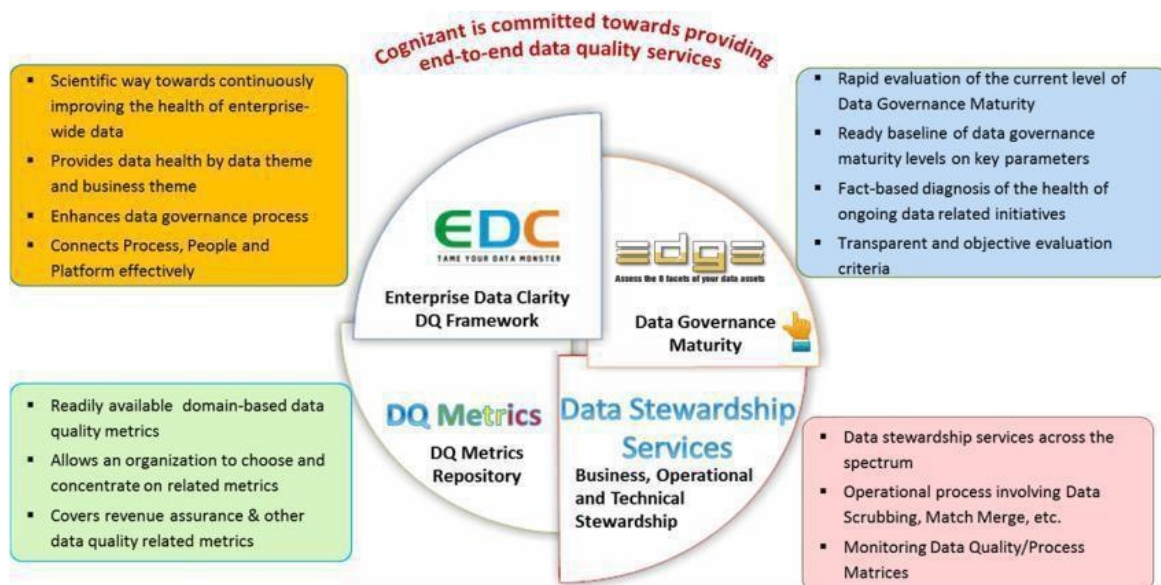
MDM Support Services

The MDM support services provide the tools and expertise to run a master data management platform. These include the following:

- Business As Usual operation of the platform
- Execution of data refreshes
- Management and closure of support tickets (using an organisation's ticket solution)
- Help Desk services
- User support
- User training
- Minor enhancements to the MDM solution

Features	Benefits
1. Process Standardisation and Resource Optimisation 2. SLA Management 3. Continuous Process Improvement 4. End-to-End service ownership 5. Alignment to ITIL Framework 6. Service-Centric Model 7. Business-Aligned Change management 8. Innovation and Transformation 9. Domain-led Delivery	1. Helps in TCO reduction and efficiency improvement 2. Helps in minimal disruption and optimal level of support to client business and customers 3. Contributes directly to the year over year cost reduction objective set 4. Helps in Transformation towards better services 5. Efficient Transition of operations and application knowledge without disruption to business 6. Improved quality of services 7. Access to a pool of specialised/ highly skilled resources 8. Access to best practices in application maintenance across industries and clients 9. Helps in SLA sustenance. Follow-the-sun support across the globe 10. Transparent control over the entire engagement resulting in higher customer satisfaction

Support services can be provided in shift patterns ranging from UK working hours through to full 24/7 operational support. We also provide out of hours on call services. Our support experts can be based out of the UK or India or a combination of both to drive longer support windows.
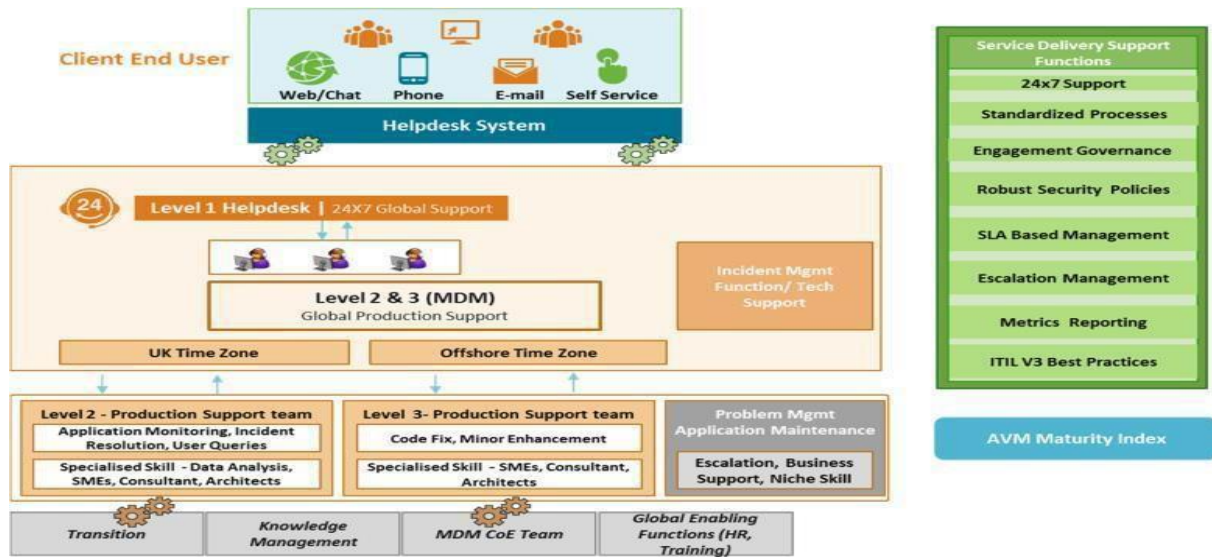
Normally, support would be on a monthly service charge aligned to a service level agreement. However these services can be provided on a traditional fixed price fixed duration model or through T&M charging.

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Data Quality Support Services

The Data Quality Support Services are part of the Cognizant Information Management service family. Providing business as usual operational support or a data quality solution. This includes data stewardship activities alongside traditional support services.

The Data Quality support services provide the tools and expertise to run a data quality solution or service. These include the following:

- Business as Usual operation of the data quality solution / service
- Data stewardship activities to apply manual changes to data
- Management and closure of support tickets (using an organisation's ticket solution)
- Help Desk services
- User support
- User training
- Minor enhancements to the data quality solution

Features	Benefits
1. Develop Data Quality metrics and monitoring performance of data assets 2. Managing Operational Data Stewards 3. Identify and resolve matches and non matches within master data 4. Managing and resolving exceptions generated by any automated process 5. Generate and verify data quality test results 6. Managing data redundancy 7. Backup and recovery of the data 8. Data archival and restoration 9. Quality assurance and testing for data quality solutions	1. Automated monitoring of relevant KPIs backed by reliable data 2. Ongoing data quality monitoring and maintenance 3. Track ROI/positive cash flow through improved data quality 4. Operational savings by automating data cleansing over time 5. Foundation for strategic data governance initiatives 6. Easier migration of new business data 7. Easier onboarding/demerging of new systems

Support services can be provided in shift patterns ranging from UK working hours through to full 24/7 operational support. We also provide out of hours on call services. Our support experts can be based in the UK, India or a combination of both to drive longer support windows.

Normally support would be on a monthly service charge aligned to a service level agreement. However these services can be provided on a traditional fixed price fixed duration model or through T&M charging.

Cognizant follows a 3-step process to cleanse and standardise data and to support data quality/stewardship as a BAU process. The approach is illustrated below:

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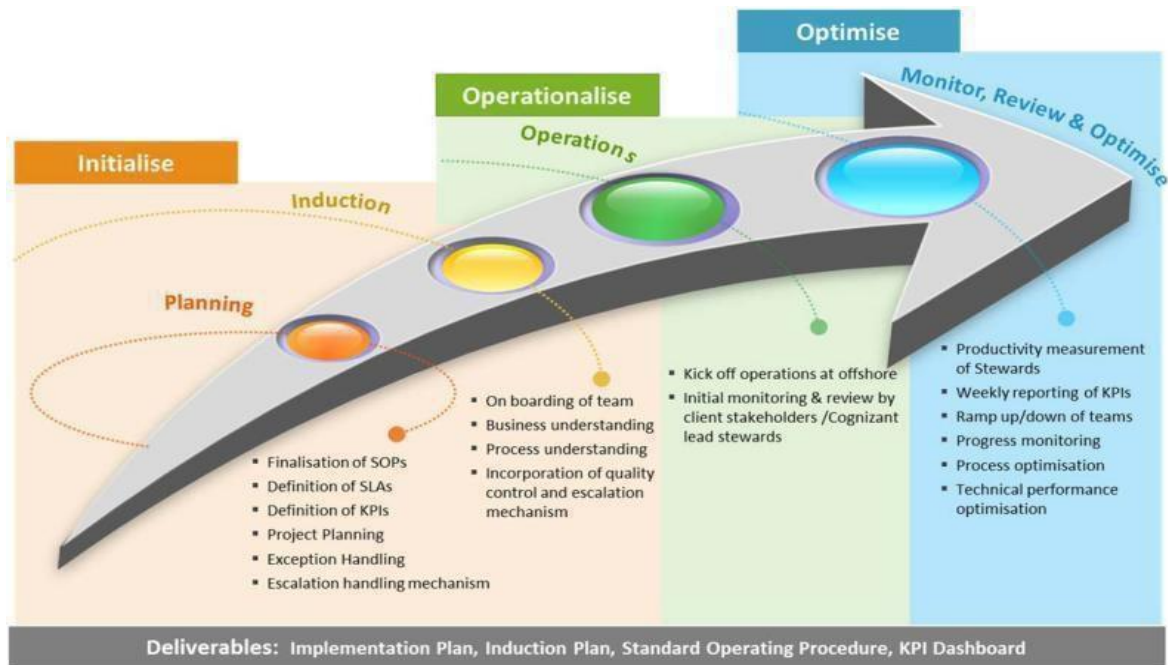
Customer 360 Implementation Service

A next generation solution that combines the features of MDM Server and Big Data Platform to create a true 360-degree view of the customers, enabling businesses to turn a swell of data into precise insights to drive engagements and revenue forecasts. The solution entails being able to integrate data from multiple communication channels as well, such as citizen communication on the phone, in email, on social media, in live chat and so on. It serves as a one-stop shop for all enterprise banking & insurance functions including operations, sales & marketing, risk, etc.
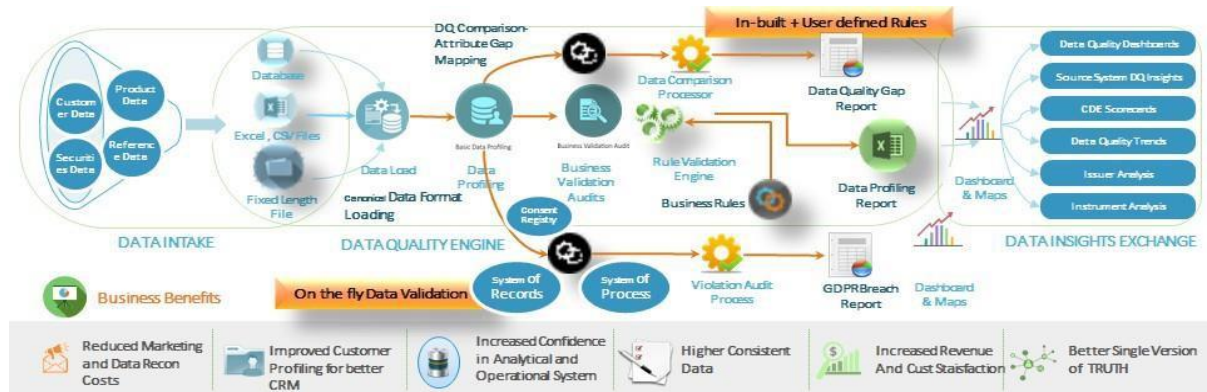

Features	Benefits
1. Universal Customer Profile creation with social and 3rd Party data enrichment 2. 360 degree view, Hierarchy & Grouping, Portfolio view, Contracts, Relationships & affiliation, House holding 3. Preference Management 4. Total exposure view 5. Behavioral dimensions 6. Spend pattern analysis 7. Granular customer profitability 8. Campaign and Marketing	1. True "360 view" for next generation customer experience & satisfaction 2. Meaningful and easily accessible view of customer's past interactions 3. Better customer retention, relationship management 4. Insight driven data model to achieve true differentiation and build exceptional customer loyalty 5. Up-sell/Cross-sell opportunities or targeted messages to prospects 6. Enabling Campaign and Marketing Automation

Data Quality Health Monitoring Service

Online Data Quality and Analysis Platform capable of performing Advanced Data Profiling, Business Rule Validation, Data Comparison, insights and advanced analytics to help the Business discover their Data Issues, hidden vaults of value and reorganise their transformation strategies.

The solution is aimed at understanding Data Quality of Business Critical Data Elements and generate meaningful insights and analytics on the following Data Domains: Customer, Product and Securities Product Data

Features	Benefits
1. In-built functionality to provide Basic Data Profiling consisting the following – NULLs, Unique, Masks, Patterns, etc. 2. In-built domain specific rules are offered along with customised User defined rules, Regular Expression validation, Reference data validation etc. 3. In-built Domain specific Business Rules for advanced profiling 4. In-built mechanism to load a transaction file and compare the incoming master attributes 5. In-built GDPR Readiness and PII Glossary validation 6. In-built GDPR Audit violation reporting based on data sourced at System of Records, System of Engagement and Consent Registry system	1. Native Java Swing application hence no additional software (except system JRE) required 2. Java Exception Handling mechanism 3. Introduction of additional memory (and cores) scales up assigning additional space 4. XML-based (Non-DB) persistence ensures fast and responsive yet strongly type-checked portability 5. Native hosting (contrary to Web-based UI) leads to less downtime and high availability

Master Data Management Development Services for Big Data

Solution description

- A custom Master Data Management platform built on top of a NoSQL data store within the Big Data ecosystem
- The solution is built using loosely coupled open source components and is cloud-enabled
- It comprises of configurable Probabilistic Matching Engine and uses Google SOLR search technology to provide "Match-as-A-Service" capabilities
- The solution also comes with out of the box custom UI for data stewardship

Solution features

- Custom-built & Configurable Batch Processor to support data load into the MDM
- Built on Big Data platform with Cassandra as the NoSQL DB
- Custom-built Probabilistic Match Engine over SOLR and exposed as RESTful Services
- Custom-built UI for Stewardship
- Google-like intuitive search
- Custom built Publisher for outbound publishing for Files/Messages

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About Cognizant

Cognizant (Nasdaq-100: CTSH) engineers modern businesses. We help our clients modernize technology, reimagine processes and transform experiences so they can stay ahead in our fast changing world. Together, we're improving everyday life. See how at **www.cognizant.com** or **@Cognizant**.

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