

# **Product Conformance Certification Report**

**Business Process Framework (eTOM)** v20.0

Information Framework v20.0

For:

Cognizant

**Master Data Management Solution** 

March 2021



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#### 1 Introduction

#### 1.1 Executive Summary

This document provides details of Cognizant self-assessment and TM Forum's Conformance Assessment of the **MDM** (Master Data Management) Solution Design, against the following Frameworx 20.0 components:

- Business Process Framework (eTOM) version 20.0
- Information Framework (SID) version 20.0

The assessment included a review of the methodology approach to process and information modeling, respectively against the TM Forum's Business Process Framework (eTOM) and the Information Framework (SID) according to the specific processes and entities submitted in scope for the Assessment.

For more information on Cognizant MDM Solution, please contact:

Rahul Bagchi

Email: Rahul.Bagchi@cognizant.com

Deependra Kumar

Email: Deependra.kumar2@cognizant.com

For any additional information on this Frameworx Conformance Certification Report, please contact TM Forum at: <a href="mailto:conformance@tmforum.org">conformance@tmforum.org</a>.



# 2 Product Functionality/Capability Overview

#### 2.1 MDM - Master Data Management Solution - Overview

For Telecommunication companies, customer data is more often than not scattered and maintained in multiple systems (CRM, ERP, Billing, etc). Without trustworthy data and insights, companies can't provide the personalized and consistent experiences individuals and businesses have come to expect.

The importance of 'single source of golden records' will enable customer achieve a single version of truth for their customer across the different line of business. Customer solution will generate a 360° view and will help other systems to use a standardized and common definition across the organization. Integration with clean and standardized customer record, improves decision making with the help of accurate and reliable information with all relations and associations. The solution will enable preferential treatment of the high valued customers, identify cross-sell and up-sell opportunities, enable single consolidated bill for all the services to increase customer satisfaction, single targeting per campaign per customer and enable common credit ratings.



Cognizant's solution framework will have Customer MDM as center stage for creating and unifying by creating golden record of customer across multiple disparate systems. A Unified Golden record will be used for validation by any system which is responsible of onboarding a customer.

The Golden copy of customer record will also enable downstream system across the Enterprise, with unified 360 degree view of the customer profile.

The unified customer profiles systems will be able to get insights to help improve customer experience, pricing strategy, customer service experience etc. Customer Onboarding process will have an embedded workflow to integrate with Customer MDM for Golden Copy of records.



In Master Data Management (MDM) a golden copy of records are created by sourcing data from different sources, to create a Golden Record with unifying customer definition from different source systems.

Key Components of the MDM Systems for creating golden copy of customer records are as follows:

- Integrating data from different sources.
- Standardize the data received like Address Standardization, Phone & Email Standardization
- Match & Merge algorithms based on Survivorship
- Data Model to store customer records and changes
- Outbound Integration through APIs & File System

Unified Customer Records will be used by the system to improve customer experience management, Bill Invoice Management, Bill Inquiry Handling, Problem Management, Order Management, price improvement etc.



## 2.2 MDM - Master Data Management Solution - Benefits

Telecom companies gain significant benefits through the adoption of an enterprise-wide, centralized, unified customer management capability. Single unified view of customer unified yields more highly effective product cross-sell with stronger profit margins and greater customer satisfaction. MDM Solution delivers these benefits, improving the bottom line through faster time-to-market and lower cost-to-market, enabling innovation and improving quality across Customer Life Cycle Management (CLM). Organization can find below benefits with single customer view:

**Effective Cross-Sell** - Effective management of Customer information and creation of Golden Copy of the Customer, its demographic information and its plan enable the Marketing division to carry out effective segmentation, target campaign and cross sell & up sell.

Enhancing Customer Centricity - Embedding and coupling suitable CRM strategies along with efficient customer and product data management not only helps telcos to effectively retain existing customers, but also acquire new ones by enhancing customer experience Efficient Digital Strategy- As Telecom companies are devising their new-age digital strategy encompassing Social, Mobile, Analytics in an endeavor to track leads, converting them into customers through effective marketing and provide signature digital experience, MDM plays a pivotal role as a backbone to that strategy by providing single and best view of all relevant customer information collected from various channels

**Streamlined Reference Data Management-** This involves managing all the reference data for a telecom operator in a single place providing a single source of truth of all the critical reference data. This will reduce revenue leakage and increase operational efficiency of all the core business processes

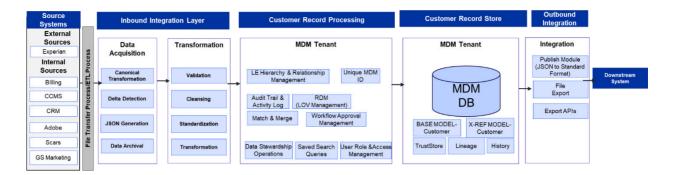
# 2.3 MDM - Master Data Management Solution - Modules

The MDM Solution Framework will have the following components:

- **Data Ingestion Module** Integrating data from different sources in near real time and batch.
- Data Quality Profiling and Cleansing Standardize the data received like Address Standardization, Phone & Email Standardization
- Data Model Data Model to store customer records and changes
- Match -Merge Match & Merge algorithms based on Survivorship
- Data Consumption Outbound Integration through APIs & File System

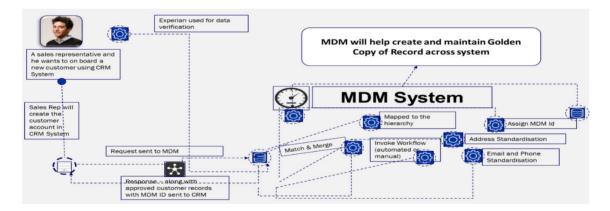
The following solution diagram shows the creation and management of customer records in Master Data Management (MDM)





Customer Master Data Management (Customer MDM) system will integrate data from disparate source systems and create a unified Golden Customer record aka Single Customer View (SCV), customers by consolidating, cleansing, enhancing and governing customer data. MDM system will enable deeper insights into consumers' history and preferences, while providing end users a consolidated view of their direct and indirect customers.

Different systems consuming Customer Unified Record (SCV) will be able to subscribe to the MDM system with published APIs in near real time and batch. An example of real time integration with the CRM system is described below: Customer is on boarded into the Customer Relationship Management (CRM) system and a Golden copy of record is generated using Customer MDM system.



# 2.4 Business Process Framework Level 2 Process Scope

The following figure represents the Business Process Framework Level 2 processes that were presented in scope for conformance certification.



# Business Process Framework (eTOM) - v20.0 - Cognizant - Master Data Management Solution - Conformance Footprint

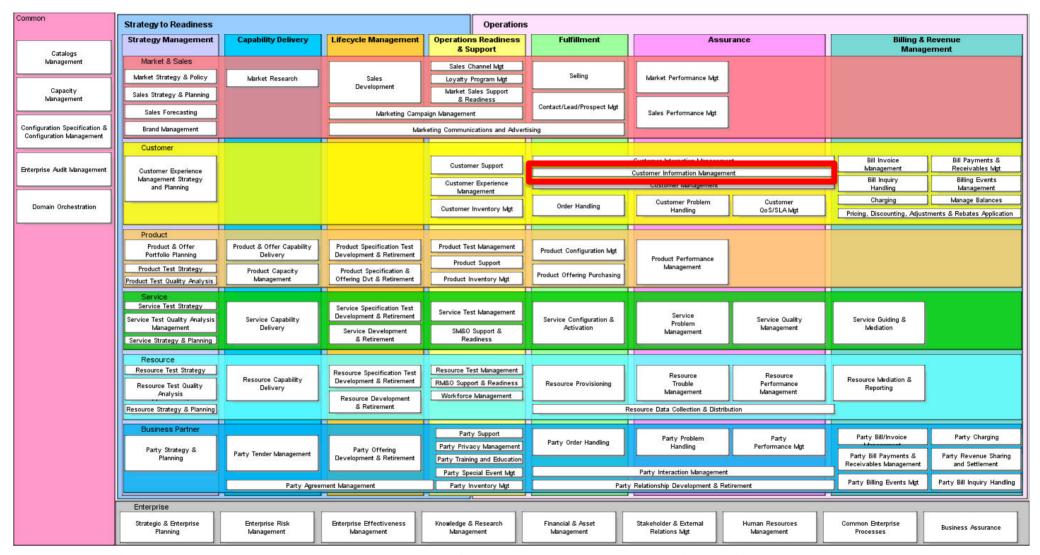


Figure 1 - Level 2 process coverage for Cognizant - Master Data Management Solution Conformance Assessment



# 2.5 Information Framework Assessment - ABE Scope

The following diagram illustrates the Information Framework ABEs that were presented in scope for Certification.

SID Information Framework – v20.0 – Cognizant – Master Data Management Solution - Conformance Footprint

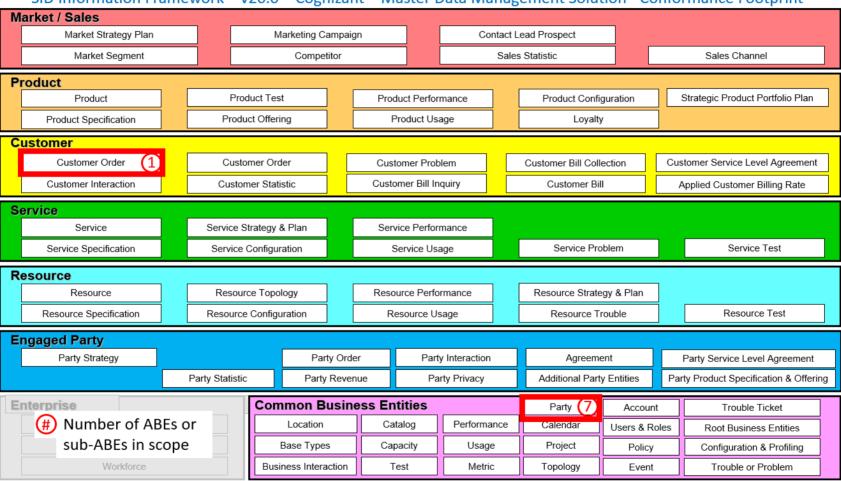


Figure 2 - Level 1 ABEs - SID coverage for Cognizant - Master Data Management Solution Conformance Assessment



#### 3 Business Process Framework Assessment Overview

## 3.1 Mapping Technique Employed

Business Process Framework Level 3 descriptions are analyzed by focusing on implied tasks also referred to as implied functional requirements. (This is similar to how process decomposition can use Semantic Analysis). Each Business Process Framework process is supported by descriptive text. In many cases, each process is aligned and mapped to appropriate company documentation references solution, methodology or modeling material.

Color coded text as highlighted below is used as part of the process mapping whereby highlighted text indicates the level of support for a Level 4 process implied task:

- GREEN is used to highlight key words or key statements that are fully supported
- YELLOW is used to highlight key words/key statements that are partially supported
- GREY is used to highlight key words/key statements that are not supported
- No highlighting is used for words/statements that are irrelevant, just for reference or needed to complete the sentence.

As of February 2018, TM Forum allows mappings to be provided against Level-3 process elements when:

- L3s have relevant, consistent full detailed descriptions reflecting all L4 process elements in their decomposition (usually implied tasks identified and separated by bullet points)
- No decomposition to Level 4 processes was available for a particular L3 process, but the Level-3 mappings fulfil the condition described above, therefore the score awarded hereafter is for the Level 3 process in its entirety.

#### **Manual and Automated Support**

It is important to determine whether the implied task is supported by manual steps, automated steps, or a combination of both. In this document, "A", "M", or "AM" is used for each task to indicate that the step or steps is/are automated (A), manual (M), or both (AM).

#### **TM Forum Note 1:**

When process mappings are presented against Level 4 processes, the mappings are most often provided against the text in the "Mandatory" field for the process. In the event of the Mandatory field not being defined in the eTOM specification, the process mappings are in that case provided



against the Level 4 Extended description. If an Extended description is not defined, then the mapping is provided against the Brief description.

#### TM Forum Note 2:

Note that if a Level 3 process has not been decomposed to Level 4 processes in the Business Process Framework, in such cases the process mapping support is provided against the Level 3 process descriptions using the Mandatory/Extended/Brief description as per the guidelines explained for Level 4 based mappings in the previous note.



# 3.2 Scope of Conformance Certification (eTOM)

TM Forum Business Process Framework (eTOM) - Assessment Scope					
Member		COGNIZANT			
	Product	Master Data Management Solution	Level 3 Process		
	Assessment Type	Solution	Elements included in the		
F	ramework Version	20.0			
Number of L3 I	Processes in Scope:	4	certification scope		
Level 2	Level 2 Level 3				
	1.3 - Customer Domain				
1.3.6 - Customer Inf	1.3.6 - Customer Information Management				
1.3.6.1 - Create Customer Record			L3		
1.3.6.2 - Update Customer Data			L3		
	1.3.6.3 - Notify Customer Data Change				
1.3.6.5 - Build a unified customer view			L3		

Table 1 - Business Process Frameworx (eTOM) Assessment Scope

# 3.3 Scope of Conformance Certification - Chart (eTOM)

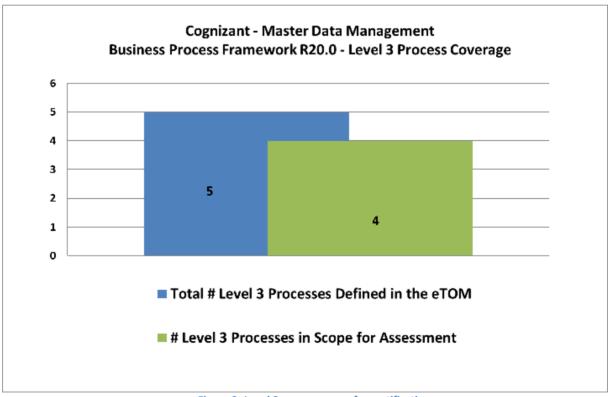


Figure 3- Level 3 process scope for certification



# 3.4 Business Process Framework - Scoring Guidelines

This section provides the Process Mapping output from the self-assessment carried out by TM Forum Subject Matter Experts alongside supporting documentation made available for this purpose.

	Business Process Framework - Conformance Certification Methodology					
Process Level	Conformance Score	Qualifier				
Level 1 Process	Not applicable	Conformance Assessment shall not be carried out at this process level.				
Level 2 Process	Not applicable	A conformance level is not awarded to Level 2 processes in Frameworx Certification.  The Certification Report shall highlight the coverage within a Level 2 process submitted in scope for an Assessment, in terms of number of Level 3 processes submitted for assessment out of the total number defined in the Business Process Framework for the Level 2 process.				
Level 3 Process	Conformance Score is awarded between 3.1 & 5.0	The Conformance Score is awarded for each Level 3 process submitted in scope for the Assessment.  The Conformance Score awarded can be a value between 3.1* & 5 depending on the level of coverage & conformance to the Level 3 process based on the alignment to the level 3 Implied Tasks as decomposed in the Level 4 process definitions. If a Level 3 process has not been decomposed to Level 4 processes, the Level score is awarded according to alignment to the Level 3 defined Implied Tasks.				
Level 4 Process	Level of conformance is calculated as input to parent Level 3 Process Score	Levels of conformance are calculated for Level 4 processes according to alignment to the individual implied tasks. Level 4 scores are summed and averaged to given an overall score for the parent Level 3 process.				

<sup>\*</sup> In earlier Conformance Assessments, scores were awarded to Level 1 & Level 2 processes using values 1 through to 3. For this reason, the Level 3 scores start from > 3.

#### Additional Notes

Note 1 - Level 1 processes shall be presented to define the assessment scope only. i.e. they shall not be assessed as selfcontained processes since the level of detail is not considered sufficient. A conformance level shall not be awarded for Level 1

Note 2 - Level 2 processes shall be presented to define the assessment scope only, i.e. they shall not be assessed as selfcontained processes since the level of detail is not considered sufficient. A conformance level shall not be awarded for Level 2 processes. However, the Certification Report shall provide good indication of the coverage of the Level 2 process in terms of number of contained Level 3 processes submitted in scope for the Assessment.

Note 3 - The Conformance Assessment shall be carried out at process level 3 (if there are no level 4 process elements defined for a specific level 3 in scope) or at level 4 (if there are level 4 process elements defined for a specific level 3 in scope). For each Level 3 process (when there are no level 4 processes available), conformance shall be deduced according to the documented support for the process implied tasks.

For each Level 4 process (when available), conformance shall be deduced according to the documented support for the process implied tasks, as decomposed and described in the Level 4 process descriptions. The score awarded for a Level 3 process, is deduced according to the support mapped to the Level 4 processes/Implied Tasks.

Note 4 - In evaluating conformance to the standards, manual intervention shall not impact the conformance score granted. However, any level of manual support shall be noted in the Conformance Report and Detailed Results Report. This note specifically applies to Product & Solution Assessments.

Note 5 - Processes that are supported via manual implementation only, are not considered in scope for the Assessment. This note specifically applies to Product & Solution Assessments.

Figure 4- TM Forum Business Process Framework: Conformance Scoring Rules



# 3.5 Business Process Framework - Process Mapping Descriptions

This Section provides a summary of the solution mappings that were provided in the form of self-assessment.

The self-assessment was reviewed by TM Forum Subject Matter Experts alongside supporting documentation provided.

#### 3.5.1 Customer Domain

#### 3.5.1.1 Mapping Details & Supporting Evidence

The documented mapping information for all Level 3 processes in scope for the '1.3 – Customer Domain' business processes are available from the following link:

#### Cognizant eTOM Conformance Mapping – Customer Information Management

Mappings and supporting evidence were presented for the following **L3** processes:

1.3 - Customer Domain				
1.3.6 - Customer Information Management				
	1.3.6.1 - Create Customer Record			
	1.3.6.2 - Update Customer Data	L3		
	1.3.6.3 - Notify Customer Data Change	L3		
	1.3.6.5 - Build a unified customer view	L3		



# 3.6 Conformance Result

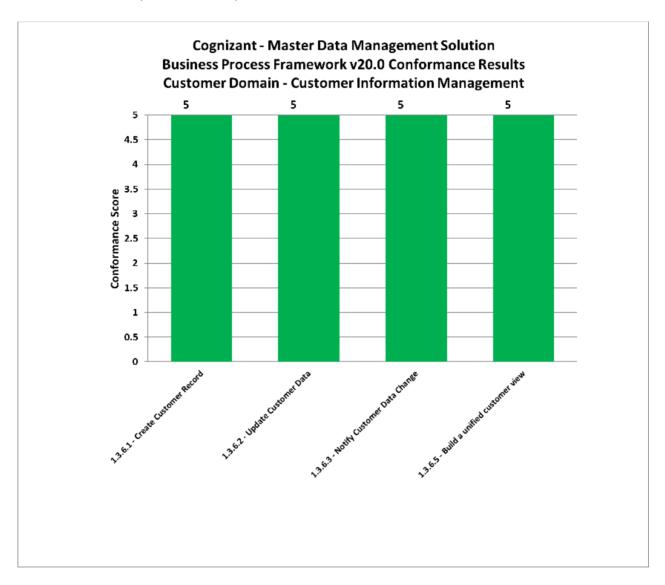
This Section details the Scores awarded to reflect Conformance to the Business Process Framework components of eTOM v20.0.

TM Forum Business Process Framework (eTOM) - Assessment Scores					
Member		COGNIZANT			
	Product	Master Data Management Solution	Level 3 Process		
	Assessment Type	Solution	Elements		
F	Framework Version	20.0	Scores		
Number of L3	Processes in Scope:	4	achieved		
Level 2	Level 2 Level 3				
	1.3 - Customer Domain				
1.3.6 - Customer Information Management					
1.3.6.1 - Create Customer Record			5		
1.3.6.2 - Update Customer Data			5		
1.3.6.3 - Notify Customer Data Change			5		
1.3.6.5 - Build a unified customer view			5		

Figure 5- - eTOM Conformance Scores Summary

# 3.7 Business Process Framework - Conformance Result Summary

This Section provides a graphical view of the conformance levels granted to the Level 3 Processes presented in scope for Cognizant – Master Data Management Solution. Each Level 3 process was measured using a Business Process Framework (eTOM) conformance score according to the level of Conformance – Full Conformance (Score = 5) or Partial Conformance (Score below 5)



**Figure 6- eTOM Conformance Scores** 



#### 4 Information Framework Assessment Overview

# 4.1 Mapping Technique Employed

The certification scope defines the list of Information Framework (SID) ABES (Aggregate Business Entities) for which mapping support is reviewed during the assessment. For each of the ABEs defined in scope for the assessment, the organization undergoing the assessment must map their information model to the core entities and dependent entities and the required and optional attributes for each entity, as defined in the SID model, according to what is supported for the product/solution under assessment.

For a view of the ABEs that were submitted in scope for conformance certification, please refer to Figure 2 - Level 1 ABEs - SID coverage for Cognizant – Master Data Management Solution Conformance Assessment on page 10.



#### 4.2 Information Frameworx Conformance Result

This Section details the Scores awarded to reflect Conformance of Cognizant – Master Data Management Solution to the Information Framework components release 20.0.

#### **4.2.1** Information Framework - Scoring Rules

Between 2013 (Frameworx 14.0) and the end of 2017, TM Forum applied a combined scoring method based on two different categories of conformance scoring:

- 1. Information Framework Maturity
- 2. Information Framework Adoption

Starting on the 1<sup>st</sup> of January 2018, only one method has been retained instead of these two scoring methods (Maturity + Adoption). The use of two different methods made interpretation and understanding difficult and ambiguous for many of our members, on the ground of such experience, the TM Forum decided to keep only the "Adoption" scoring method and discard the "Maturity" scoring method.

**Adoption scoring** ensures a good balance between qualitative and quantitative criteria on SID conformance criteria. The adoption scoring method consists of a range of scores from 1 to 10 which makes it intuitive and fair, it is also based on weighted criteria e.g. core element, dependent, required, optional, etc.

This section provides further details about the **Adoption** scoring method.



#### 4.2.2 Information Framework Adoption Conformance Scoring Methodology

As of Frameworx 14.0 based Conformance Assessments, to recognize the overall adoption of the Information Framework SID Information model, the Information Framework Adoption Scoring system was introduced to complement the Maturity Levels that have been used since the launch of the Frameworx Conformance Program.

Information Framework Adoption scores are granted based on the detailed scoring guidelines outlined in Table 2 below.

Adoption conformance is based on an accumulative scoring system - i.e. scores are awarded for each element of an ABE to give an overall total Adoption score for the ABE – with elements in this context defined by core & dependent entities and required and optional attributes for both category of entity.

The scores for each element are calibrated according to relative weightings, according to the significance of each element e.g. core entity having higher weighting than dependent entities and required attributes having higher weighting than optional attributes. The relative weightings for each ABE 'element' are indicated in Table 2 - TM Forum Information Framework Adoption Conformance - Scoring Rules Table 2 below.

Table 2 - TM Forum Information Framework Adoption Conformance - Scoring Rules

	SID Component			Weighted Scoring Calculation			
Lowest Level A	BE		Equivalent – 1 score point				
Core Entity			Equivalent – 2 score points				
Core Entity Rec	quired Attribute		% equivalent * 2 [Must support min 50% of Required Attributes]				
Dependent En	tity		% equivalent	• 1.5			
Dependent En	tities - Required	Attributes	% equivalent * 1.5				
Core Entity - O	ptional Attributes	5	% equivalent * 1.2				
Dependent En	tity - Optional Att	ributes	% equivalent * 0.8				
		Adoption (	Conformance Score	Graduation			
Ion Conformance [Score = 1 to 3]	Very Low Conformance [3.0 < Score <= 4.0]	Low Conformance [4.0 < Score <= 5.0]	Medium Conformance [5.0 < Score <= 6.0]	High Conformance [6.0 < Score <= 8.0]	Very High Conformance [8.0 < Score < 10.0]	Full Conformanc [Score = 10.0]	

- If 50% of of the required attributes of Core entities are not supported, scores for following components are not applied as Adoption Conformance requires conformance to 50% of the required attributes of Core entities.
- Adoption Score versus Maturity Level: Using the scoring category to recognise SID adoption, an assessed ABE for which there is equivalence to 2/3 required core attributes and 8/10 dependent entities would be awarded Maturity Level Score = 2.5 (Very Low Conformance) & Adoption Conformance score = 5.2 (Medium Conformance).



#### 4.2.3 Additional Notes on Information Framework Conformance Adoption scoring:

- 1. For each level, according to what is required, a value is calculated based on the percentage of entities/attributes supported as appropriate. This will result in a decimal figure (rounded to one decimal place).
- 2. Adoption Scoring is based on the progressive scoring schema from the former "Maturity" scoring, however it provides additional flexibility in-so-far as it allows to score all attributes and entities in an assessed ABE. In the former "Maturity" scoring, when not all required attributes of the Core Entity were supported, the Maturity Level score would not progress to the next level, regardless of conformance to other "subordinate" components of the ABE (e.g. dependent entities, optional attributes). "Adoption" scoring fixes this constraint as it provides a weighting mechanism to score all elements supported, regardless of the absence of the core entity or/and required attributes.
- 3. A **core business entity** is an entity upon which other entities within the ABE are dependent. For example, Service in the Service ABE. A model should strive to attain as high a level of Information Framework (SID) conformance as possible. A core entity is also an entity whose absence in the ABE would make the ABE incomplete.
- 4. A **dependent entity** is one whose instances are dependent on an instance of a core entity. For example, a ServiceCharacteristic instance within the Service ABE is dependent upon an instance of the Service entity.
- 5. The score values for each SID component are added together to get the overall Adoption Conformance score.
- 6. If 50% of the required attributes of Core entities are not supported, scores for following categories are not applied as Adoption Conformance requires conformance to 50% of the required attributes of Core entities.

#### 4.3 Information Framework - Conformance Result Summary

The following sections provide the summary results of the Information Framework Adoption scores granted to the ABEs presented in scope for the assessment of Cognizant – Master Data Management Solution.

Each ABE was measured using the Information Framework (SID) conformance scoring guidelines as described in section 4.2.2 above.



# 4.4 Information Framework - Detailed Conformance Results

Member	со	GNIZANT		
Product	Master Data Management Solution			
Assessment Type		Solution	Conformance Certification	
Framework Version	20.0		Final Scores Achieved for ABEs	
ABEs in Scope	0			
Level 1 ABEs	Level 2 ABEs	Level 3 ABEs		
Common Domain				
Party ABE			6.6 - High Conformance	
	Contact Medium ABE		6.2 - High Conformance	
	Identification ABE		6.8 - High Conformance	
	Party Community ABE		10 - Full Conformance	
	Party Demographic ABE		7.0 - High Conformance	
	Party Organization ABE		8.2 - Very High Conformance	
	Party Profile ABE		6.2 - High Conformance	
Customer Domain				
Customer Roles ABE			7.0 - High Conformance	

# **COGNIZANT - Master Data Management Solution** Information Framework v20.0 - Conformance Results (Adoption)

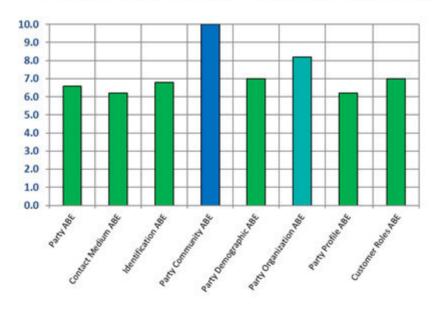


Table 3 - Information Framework: Conformance Scores