ORACLE COMMUNICATIONS DATA MODEL (OCDM)

ORACLE

COMMUNICATIONS

PREBUILT DATA WAREHOUSE, DESIGNED AND TUNED FOR ORACLE DATABASE AND HARDWARE

KEY FEATURES

- 3rd Normal Form (3NF) Logical Data Model with transaction level access
- Physical data model with more than 1,500 tables; 30,000 columns; and 1,000 industry-specific measurements
- Prebuilt OLAP cubes and prebuilt data mining models
- Reports and dashboards
- Comprehensive metadata for business intelligence reporting and ad hoc query
- Industry-specific advanced and predictive analytics

KEY BENEFITS

- Reduced time, cost, and risk for a data warehouse or business intelligence implementation
- Faster time-to-value
- Designed and optimized for Oracle data warehouses, including Oracle Exadata
- Works with any communications application
- Easy to extend and customize
- Expeditious data warehouse implementation with prebuilt components and embedded data warehousing best practices for communications service providers

"If you don't know where you are in the present, it's hard to take quality steps toward the future." Intentionally or not, this wise statement by statistician Nate Silver certainly sums up the dilemma currently facing many CSPs worldwide. These companies own a wealth of customer information but have a hard time making sense of it all. If only CSPs knew what they know about customers...

Many know they must do something fast. After all, it's an increasingly competitive world, with new threats emerging from all directions. This explains why so many CSPs worldwide are searching for better ways to hang onto existing customers while finding and securing new ones. They are seeking ways to transform their business to a customer-centric business model. CSPs know they need to deliver more customer-centric solutions. They need 360-degree views of customers so they can more effectively personalize new products and services in both the short and long term. This means more effectively utilizing and understanding their own data warehousing solutions.

Despite their sophisticated databases, advanced analytics, and visualization tools, CSPs still struggle to address the daunting challenge of integrating IT and network data. According to independent industry analyst firm Ovum, "Telcos view improved quality of customer experience and service personalization as key to reducing churn, but they still struggle to achieve a holistic view of each subscriber. They aim to achieve a 360-degree view of the customer, combining customer data from various application silos across their operations – such as billing, customer care, and the network. But overall, a true 360-degree view seems to be a distant dream."

Understanding the present requires measuring it – and analytics has not been an area of traditional strength for the CSPs. While many CSPs have existing data warehouses, many of these warehousing solutions are nearing the end of their useful lifecycle and are barely able to manage daily operations let alone meet the challenges of tomorrow. The problem is compounded with the complexity of the systems portfolio of a typical CSP, which is likely to consist of hundreds of systems supporting multiple lines of business. To make matters even more complex, network and customer data is often managed by different organizations and retained in different systems with no way to perform analysis drawn from multiple incompatible systems.

Truth is, it's difficult for carriers to get actionable information fast enough to make on-the-spot decisions. While CSPs often have a wealth of basic data on customers and prospects, the CSP's current systems may lack an effective way to leverage this data for rich analytics. The carrier's systems may also lack historical data about the customer's interactions over the lifespan of the relationship. To better understand the customer

ORACLE

going forward, the CSP's systems must be able to transform raw customer data into actionable knowledge.

Designed for today and tomorrow

To address this customer challenge, Oracle has developed the Oracle Communications Data Model (OCDM), which combines market-leading communications application knowledge with the performance of Oracle's database and business intelligence platforms. OCDM can be used in any application environment and is easily extendable. With it, you can jump-start the design and implementation of a superior communications data warehouse that precisely matches your requirements, ensuring a positive return on investment (ROI) with a predictable implementation effort.

OCDM is designed to meet the requirements of today's communications services providers − with proven scalability, up-to-date conformance to industry standards, and ability to leverage technologies such as Big Data (Hadoop) and Exadata. The Oracle Communications Data Model offers customers an easy-to-implement, standards-based, comprehensive data warehouse.
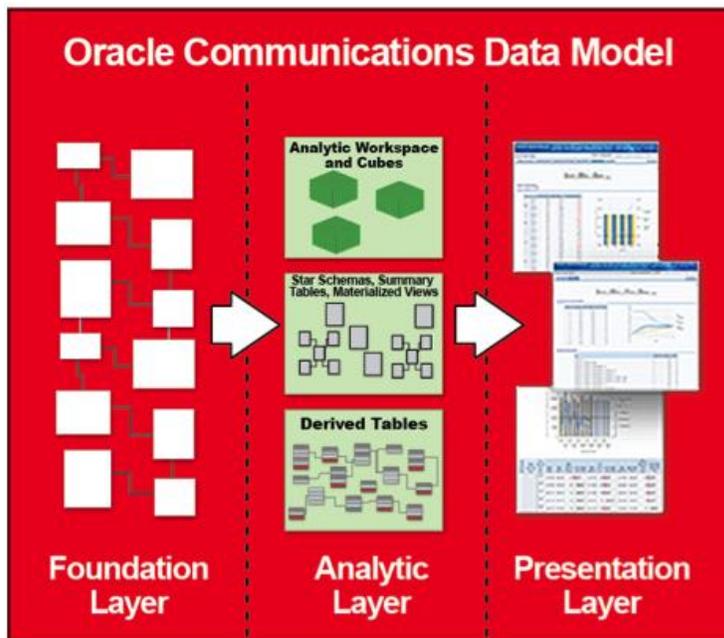

Figure 1. Three Layers of Oracle Communications Data Model

OCDM is built following an industry best practices layered architecture. It is also aligned to the latest communications industry standards, enabling the consolidation of data across a service provider's operation into a single unified database, supporting both network and customer data.

Foundation Layer

From the various operational support systems, transactional level details are fed to the OCDM foundation layer, which consists of a third-normal-form (3NF) schema that is able to manage data from any source application at its lowest level of granularity. OCDM is aligned with the TM Forum Information Framework (SID) 12 standard. By following this

standard, data is consolidated across a service provider's operation into a single unified database, supporting both network and customer data. Its optimized database design and layered architecture follows data warehousing best practices based on experience drawn across all industries.

Analytic Layer

OCDM automatically populates the OLAP cubes and star schema models at the analytic layer based on data existing in the foundation layer. OCDM also comes with pre-built and easily modifiable data mining models, such as churn prediction, customer segmentation, customer lifetime value, customer sentiment analysis and cross-sell/up-sell. Some examples of how OCDM provides a more comprehensive understanding of the business include:

- Customer churn predictions which take into account both network reliability measures and customer demographic and interaction data.
- Target promotions based on cross-sell/up-sell predictions of customers most likely to purchase specific offers.
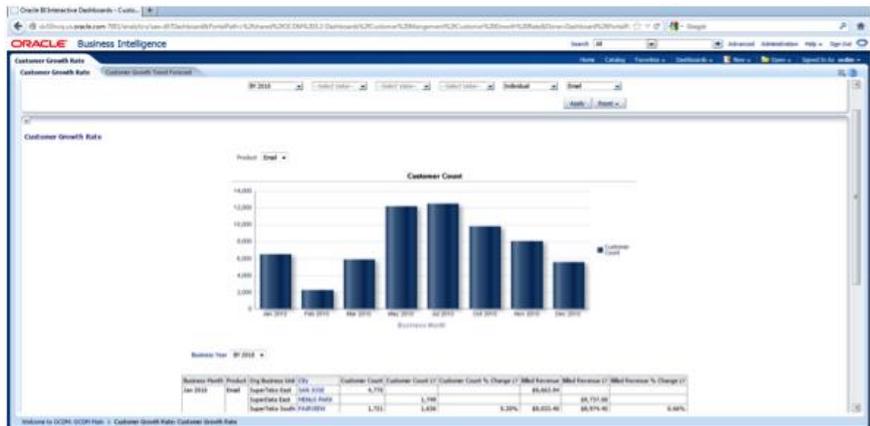
Fig 2. Pre-Built Report measuring Customer Growth by Month and Geography

Presentation Layer

OCDM provides a predefined semantic layer for Oracle Business Intelligence Enterprise Edition, as well as a sample set of pre-built reports and dashboards for each of the supported business areas. Customers can leverage the pre-built dashboards as is, or as guides to develop their own customized reports/dashboards. Because trending and data mining capabilities are built into the system, OCDM reports can provide greater business insights than ever before. Sample reports are accessible from easy-to-use, role-specific dashboards via any standard Web browser.

Core technologies underneath OCDM

Built using Oracle's leading data warehousing technology – including Oracle Database 11g, Oracle Advanced Analytics, and Oracle OLAP – the Oracle Communications Data Model raises the bar on scalability and performance in the delivery of detailed transaction-level information. In fact, Oracle Communications Data Model, when paired with Oracle Exadata, has proven in customer environments to be a full order of

magnitude faster than existing solutions.

Additional components to enhance the power of OCDM

Oracle provides prebuilt, productized adapters that load data into OCDM from Oracle OSS/BSS applications, enabling CSPs to optimize their knowledge of the customer base. These adapters include:

- Billing and Revenue Management (BRM) Adapter
- Network Charging and Control (NCC) Adapter
- Policy Management (OCPM) Adapter

Oracle has developed a family of add-on analytic application products that reside on OCDM and considerably enhance its power while also expanding functionality. These analytic applications run on top of OCDM providing end- to-end analytic solutions enabling even faster and more sophisticated implementations. These include:

- Oracle Communications Billing Analytics – provides access to a host of new dashboards and analytics, all supporting a greater understanding of customers and revenue as well as the effectiveness of billing processes
- Oracle Communications Social Network Analytics − leverages Call Detail Record data within OCDM to identify customer communities and influencers within those communities, a vital component for successful viral marketing and churn retention campaigns
- Oracle Communications Policy and Charging Analytics - provides visibility to how policy rules impact subscribers of a CSP's network