Data Migration Challenges: A Roadmap for Telecom Service Providers

Abstract

Communications service providers (CSPs) are being pushed to the lower end of the value chain by standalone, over-the-top (OTT) players and Internet of Things (IoT)—which are able to establish direct customer touch points. However, there is a proven methodology for CSPs to transform and migrate their data assets into the digital landscape to meet their business objectives.

For telecom companies to thrive in a hypercompetitive marketplace and ensure continued customer relevance, they need to innovate rapidly, boost agility, reduce the time to market, and embrace the 'everything as a service' paradigm.

Business Imperatives for CSPs

As digitally-empowered users embrace data-rich services and apps, enterprises need to cut costs while upgrading network infrastructure to deliver a superior customer experience and improve revenue management.

Communication service providers (CSPs) should simultaneously focus on increasing their average revenue per user (ARPU) by:

- Provisioning truly differentiated, personalized products and services that enhance consumers' perception of the value they offer.
- Effectively deploying data analytics tools for mining relevant business information.

IT-led Business Transformation

Accordingly, several CSPs have undertaken strategic overhauls of in-house IT systems and infrastructure that underpin their core business processes–including modernization of legacy operations support systems (OSS) and business support systems (BSS).

Key focus areas on this front include automation of infrastructure management, self-service customer relationship management (CRM), digitization of order management, and customer analytics. Additionally, telecom companies are aggressively pursuing simplification and consolidation of their IT application landscape by eliminating redundant systems.

Many carriers are seeking to transform themselves from technology-centric network operators into customer-oriented service providers, while bolstering business nimbleness and operational flexibility.

Data Migration

Typically, data migration is critical in case of application revamp and modernization, streamlining of complex technology portfolios, upgrades of outdated systems, mergers and acquisitions (M&As), and product rationalization for better customer targeting.

CSPs may also have to move their existing information in relation to data centralization, third-party application integration, product migration, and regulatory requirements.

As CSPs embark on IT-driven business transformation initiatives, they must ensure smooth data migration as it enables various IT initiatives:

Cost and schedule overruns have emerged as two of the primary challenges when it comes to orchestrating enterprise data migration. Poor data quality and lack of visibility into associated issues have been cited as the most common factors behind delays and cost spikes.[1]

- Master data management
- Changes in enterprise database and applications
- Adoption of new systems

This multifaceted exercise impacts different functional areas of telecom organizations, including daily workflows and operations, marketing, product management, and OSS and BSS.

Challenges of Data Migration

Often, enterprises struggle to accrue the envisaged business benefits in time, and must contend with huge operational challenges due to migration of inaccurate and redundant data to target systems.

In the case of telecom firms, the impact of suboptimal data migration on business outcomes can be substantial. For instance, botched transition of subscriber data to a new CRM system can result in billing errors, triggering customer attrition and revenue decline.

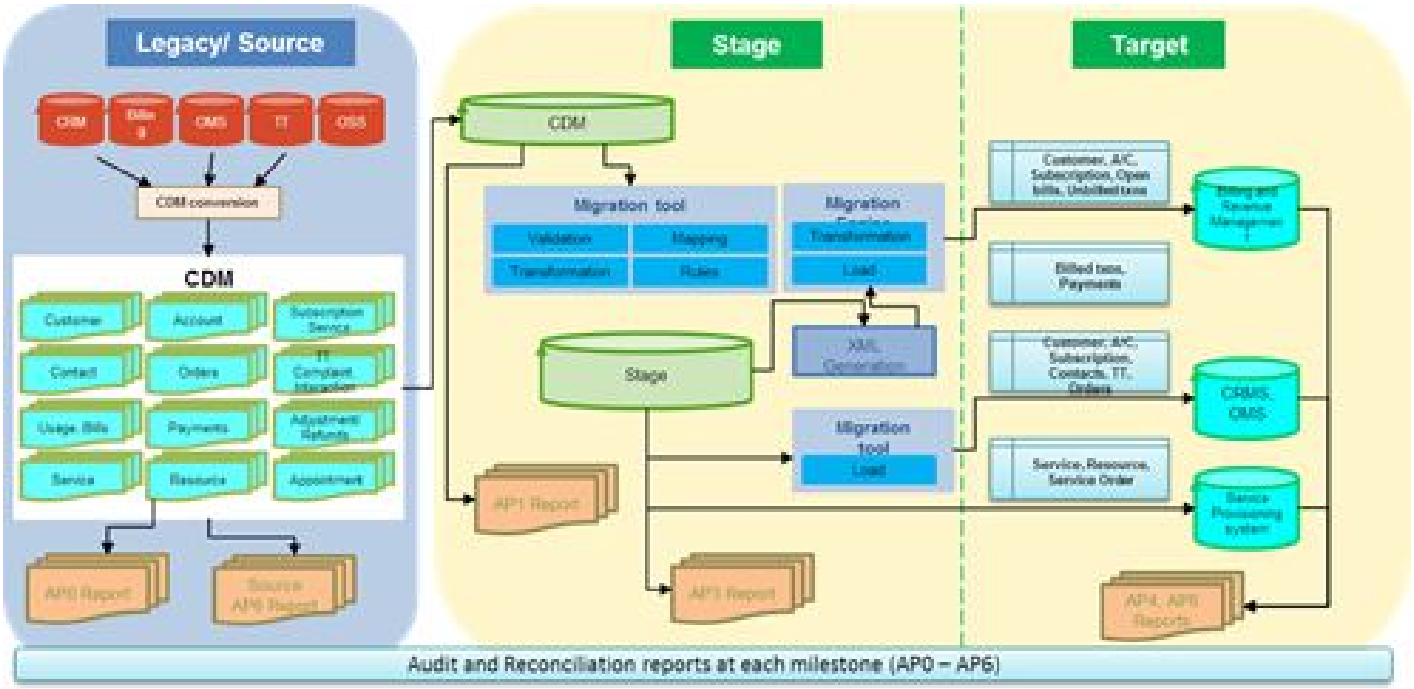
Based on engagements with global enterprises and interactions with industry experts, these are the major challenges to data migration:

- **Lack of business buy-in leading to inadequate provisioning of funding and resources:** data migration is a low business priority compared to the functional aspects of an IT initiative.
- **Underestimating the complexity of data migration:** a typical transition project entails eliminating duplicate data, correcting data anomalies across huge volumes, normalizing large data sets, and ensuring robust data quality to avoid the transfer of hidden problems into new systems.
- **Inadequate analysis of prevalent and destination data models:** inaccurate mapping of data between the source and target, compromises data quality and compounds inaccuracies.
- **Data comprehension:** the bulk of telecom billing legacy software does not have any functionality for creating product hierarchy. Since data may be stored across various systems, deciphering customer trends can become difficult.

- **Ineffective data structuring:** if some data sets are rendered in a different manner under the new system, this can not only complicate matters for telecom companies' customer support function, but also fuel dissatisfaction among some clients, who do not prefer any changes. Therefore, carriers should sequence their subscriber information under new IT systems in a manner similar as they did for legacy software.
- **Suboptimal synchronization of data migration:** errors while synchronizing data from the legacy system can cause valuable customer data losses.

The Common Data Model

As data migration involves multiple heterogeneous sources in legacy and highly normalized target data models, telecom companies should embrace the common data model (CDM)—a logical, semantic information framework that has gained credence for defining details and identity of resources in a standardized way.



A Common Data Model approach

CDM Benefits

Designing and executing data migration around CDM can help companies:

- Optimally extract relevant information from multiple sources, aggregate and store it at one place.
- Foster robust data integrity, with enriched information loaded into different systems, as well as across BSS and OSS.
- Facilitate data transition in the right sequence through a logical split across several groups of entities.
- Ensure that loading processes can be amended without triggering revisions in the extraction processes, even if the target systems or data model undergoes changes.

Best Practices for Data Migration

To successfully migrate data, while meeting cost and timeline targets, CSPs must:

- Plan and analyze their needs exhaustively to mitigate implementation risks, and minimize any adverse impact on day-to-day business.
- Define a migration strategy, documenting what, when, and how data will be moved, as well as the target systems, and the estimated turnaround time.
- Document all data mapping between the source and target systems clearly with buy-in from senior management for data comprehensiveness and accuracy.
- Close any unmapped data items in the source setup after proper review.
- Identify and rectify data cleansing issues such as inaccurate data errors that crop up during data migration based on a troubleshooting guide.
- Generate granular reports at every stage to track the quality of transition by checking the underlying data around both business and data validation rules.

Each phase of the data migration lifecycle must involve a rigorous audit and reconciliation exercise.

Conclusion

Ensuring smooth data migration across various digital transformation initiatives is crucial for CSPs to ensure they have a competitive edge. As CSPs use IT-led business transformation to access accurate, comprehensive, and granular information in real time, managing data migration is extremely important, but not without challenges. The common data model approach provides an option to effectively address these pain points of data migration.

References

Data migration snippets by Philip Howard (Published: 7th June, 2011):
http://www.bloorresearch.com/analysis/data-migration-snippets/

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