Transformation of Enterprise Product Management for Rapid Launch of Next Generation Products

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Abstract

The Telecom industry continues to evolve through disruptive products, uncertain markets, shorter product lifecycles and convergence of technologies (ICT). Today's market has moved from network centric to consumer centric and focuses primarily on the customer experience. It has resulted in several product management challenges such as an increased complexity and volume of offerings, creating product variants, accelerating time-to-market, ability to provide multiple product views for varied stakeholders, leveraging OSS intelligence to BSS layer, product co-creation and increasing audit and security concerns for service providers. The white paper discusses how enterprise product management enabled by PLM-based product catalogue solutions helps to launch next generation products rapidly.

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1.0 Introduction

Modern business demands the launch of complex products in a very short timeframe and effecting changes in the price plan faster without IT intervention. One of the key transformation initiatives companies are focusing on is in the area of product management transformation and operational efficiency improvement. As part of these initiatives, companies are investing in best-in-class COTs-based Product Management solutions developed on industry-wide standards.

The new COTs packages are planned to integrate with existing or new B/OSS systems to provide a strategic end-to-end agile solution for reduced time-to-market and order journey time. In addition, system rationalization is being undertaken to phase out legacy systems and migrate to strategic systems.

2.0 An Overview of Product Management in Telecom

Product data in telecom is multi-dimensional and difficult to manage. It increased significantly due to the complexity of the product, product offerings on the converged network, increased volume of offerings, bundled offering structures and ever increasing regulatory requirements.

In addition, the shrinking product lifecycle in telecom makes it difficult to manage the dynamic product data. Mergers and acquisitions coupled with organic growth pose major challenges in product portfolio management. It is a roadblock in the journey towards becoming an agile organization.
‘Network Technology’ is the new dimension in telecom product management where the same products are realized through different networks i.e., Soiled network to Converged network. Consequently, the product solution is different.

The major business implications arising out of the current scenario are slow time-to-market and an inefficient process that affects innovation.

3.0 Transformation of Next Generation Product Management

Companies must focus on their Product Management Transformation Journey in the areas of:

- Management of single truth of product information across the organization/geographies which is currently managed in heterogeneous systems
- Management of the Intellectual Property (IP) on the product concept and partnership in the design of discrete components to integrate into the system
- Leveraging structured and unstructured product data within the extended enterprise to extract consumer insights and drive innovation
- Management of effective operational separation to comply with regulatory bodies
- Reuse of existing designs and add relevant features such as value-added services to enable effective product bundling
PLM-based Enterprise Product Catalogue solutions efficiently address the above requirements and act as an enabler towards product management transformation and rapid product launch.

4.0 PLM-based Enterprise Product Management

Enterprise Product Management (EPM) enables the business to manage complex product attributes of data in complex environments. Product Mastering helps create a ‘single view’ of the product by creating a business-driven, IT-supported environment where a global ‘single truth record’ is created, managed and reused.

4.1 The Business Case for Telco PLM-based solutions for Enterprise Product Management

- Telco PLM-based Product Mastering solutions provide a centralized authoring environment for product definition and control of all product data and rules
- PLM packages are designed to support multiple perspectives of product data (ordering perspective, billing perspective, provisioning perspective)
- Maintains relationships/links between different elements of the entire product definition
- Telco PLM packages are specialized in next generation lifecycle management requirements of products such as revision and state management, test and release management, role management and impact analysis
- Takes into consideration all aspects of OSS product requirements compared to CRM product catalogue solutions where the product data managed is mostly order oriented and transactional
- New breed of Telco PLM packages are designed with ‘open’ standards such as SID and eTOM. They are interoperable, support integration frameworks such as subscription and notification.
- Telco PLM packages have developed good collaboration frameworks to integrate suppliers and partners into the product development value chain
4.2 Various Architectures/Approaches for Product Mastering using Telco PLM tems

4.2.a Single Central Product Management (Mastering) Approach

This approach is implemented across verticals such as aerospace and automotive. It focuses on a physically centralized product master to which other sources are dependent on. The product definition data (Product bundles, service bundles, price plans, offers and discounts, product configuration rules and market campaigns) is created and maintained physically in a centralized environment. In addition, the product definition/authoring environment is centralized. The existing legacy product definition data available in CR M product catalogue, billing catalogue and the legacy product catalogue is migrated to the centralized PLM-based Enterprise Product Management solution.

Architectural changes must be made in the existing business landscape of applications to create and revise data because the applications have to refer to the central repository for approvals and validation of product configurations. It is achieved by modifying how the applications write data or how the applications can be adapted to use the rules to be managed and published.

Complete product configuration validation will be done in enterprise / central product catalogue and final configuration will be sent to the B/OSS system through the SOA compliant product distribution architecture. The approach/architecture enables greater control in terms of product data management and product data governance.
4.2.b Federated Product Management (Mastering) Architecture

In the federated product mastering approach, the basic unique product definition data (product id, description product hierarchy, basic price plans and simple product design rules) will be centrally created and will be maintained. And, the advanced product definition (Product bundling, promotions, offers & discount plans) will be created in respective downstream OSS systems. The advanced product definition (Product bundling, promotions, offers and discount plans) will be created in respective downstream OSS systems.

For example, basic product definitions such as attributes, product hierarchy and basic price plans will be created and maintained in Enterprise/Central product reference catalogue and distributed to downstream OSS systems. Respective downstream OSS systems build product bundles, promotions, advanced price plans over the basic product definition and master the advanced product definition. Central reference database accesses the respective other source product master data and assembles a point-in-time consolidated view of the product. The approach is typically adapted in some merger and acquisition scenarios where there is a low probability of a central physical authority managing the data. In addition, the migration effort in this case is minimal and there are no big architectural changes to the organization application landscape. However, this approach will not result in better product data management and data governance.
5.0 Customer Scenario - Before EPC deployment

A leading global telecommunications service provider wanted to launch a quad play and triple play service offering in the shortest possible lead time. The service provider was offering Broadband and VoIP services to customers. The company wanted to reuse a majority of the Broadband services and price plans and bundle them with new wireless and IPTV services for quad play and triple play. The challenges in launching the new service offerings were:

- Broadband product data was stored in multiple product catalogues (CRM catalogue, Billing catalogue, spread sheets)
- Product managers spent a lot of time performing tasks involving duplication or re-keying of data. Manual effort caused errors, cost and time over-runs.
- No effective product and price data governance mechanism. Price change issues arising from the lack of data consistency across systems resulted in leakage of customer value and revenue.
- Product data had re-usability issues and was not in a structured formal. It resulted in uncontrolled product portfolio creation and product management issues.
- Lack of enterprise product model resulted into product distribution challenges and thus delays in product launch.
- Designers are constrained by existing legacy product management solutions to model product/service requirements and product configuration rules such as upgrading, downgrading and cross selling.

![Figure 8: Triple Play Plan](image-url)
5.1 Customer Scenario - After EPC deployment

The company deployed PLM-based Enterprise Product Catalogue solutions to launch quad play service after evaluating various product catalogues. The broadband product offering, service and price data were migrated to the new system, and the product and price plan hierarchy for new offerings were created using the entities defined in the Enterprise Product Model. Supplier product catalogue data such as routers and set up boxes were loaded onto the new solution through SOA-based web service. Price plans and configuration rules were built in the new system. The validated final product configurations were extracted from the product catalogue in a SID format and were distributed to the downstream BLOSS systems through exposed SOA-based web services. The transformations required for the BLOSS system were handled using the transformation layer as part of the solution.
6.0 How PLM enabled Product Management Transformation

PLM-based Product Catalogue Solution helped the customer reduce the product launch cycle time by 30% and enable transformation of Product Management for next generation services.

7.0 Conclusion

On the one hand, the telecom industry is undergoing changes due to disruptions, uncertain product markets and increased complexity of products. On the other hand, the ARPU is decreasing year-on-year. Communication Service Providers are embarking on convergence, bundled service offerings, flexibility to cross-sell and up-sell, introduce new value-added services, leverage Web 2.0 concepts and network capabilities. Consequently, large scale IT transformation initiatives to improve their ARPU supporting network and business transformations are a business imperative. Product Management has become a focus area. Companies are investing in best-in-class COTS solutions to reduce time-to-market, ensure rapid service delivery and improve operational efficiency. An efficient PLM-based enterprise product mastering solution plays a key role in achieving zero touch automation and rapid product launch.
Acronyms and Abbreviations:

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<tr>
<th>Acronyms</th>
<th>Description</th>
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<tbody>
<tr>
<td>PLM</td>
<td>Product Lifecycle Management</td>
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<td>OSS</td>
<td>Operations Support Systems</td>
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<td>PSTN</td>
<td>Public Switched Telephone Network</td>
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References:

1. Preston G. Smith, Donald G. Reineristsem, Van Nostrand Reinhold “Developing Products in Half the time”.

About the Authors

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