

Collaborative Information Management for Communication Service Providers

Benefits

- **Time-to-market** – Business users across functional domains can collaborate efficiently to create rich and accurate product, service, customer, and vendor data.
- **Reduced errors** – Accurate and consistent information is available in real time to transactional systems and analytical applications.
- **Reduced cost and complexity** – Organizations can manage data governance centrally while continuing to execute transactions locally.
- **Increased visibility** – Organizations receive detailed reports on the health of their information assets and efficiency of information management processes such as new service introductions.
- **Enhanced auditing and compliance** – Detailed event logs are maintained for every change to the data or metadata. This allows organizations to keep data lineage information for regulatory and partner compliance purposes.



Communication service providers (CSPs) are faced with a common challenge – to attract and retain customers in a saturated market through differentiated products and services. Customer needs are ever changing, and CSPs need to demonstrate unprecedented agility and flexibility to bring new targeted products and services to market more rapidly than competitors. Adding to the challenge, a provider rarely has the entire offering in-house or provisioned by a single turnkey solution. As fixed line services are increasingly bundled with wireless services and vice versa what appears to be a single bundled service from one provider is actually an amalgamation of products provided by many internal “stovepipe” systems or even third-party providers.

In this environment, the information CSPs can leverage about their products, services, customers, and vendors/partners – combined with the ability to design and tailor innovative service offerings and rapidly bring them to market – is a source of competitive advantage.

Critical Success Factors

To succeed in this environment, organizations need the ability to rapidly:

- Design new tailored commercial product offerings.
- Simulate, test, and approve new processes.
- Deploy new bundles into production, ready for orders and fulfillment.
- Accurately bill for the new products, including situations where the bundle is not provided by a single CSP.



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Barriers to Success

Product Silos

Developing new commercial products or offerings often involves repackaging existing services in different ways and sometimes introducing new services or third-party services as well. To effectively build a new product or offering, business users across multiple domains – marketing, product management, engineering, billing, customer service – need to collaborate to provide their inputs. The proposed product or offer then needs to go through an approval process and may require iterations. Today this is hard to do in an efficient manner due to the siloed nature of information and transactions. Domain experts typically work in their own areas and interact with data and systems that are pertinent to them, such as CRM, provisioning, billing, etc. Without a product view that is abstracted from the model of any one specific function, collaboration is manual, error prone, and time consuming.

Complexity of Product Offerings

A second barrier to success is the complexity and dynamic nature of the offering. For example, a “home connectivity” offer may consist of DSL, email, voicemail, and local loop. Each of those services includes network-level resources that must be activated for that user. Bundles are also created by combining existing bundles or by including services provided by third-party providers, such as a content-based service. This complex product hierarchy must be managed across systems, departments, and even organizations so that the validity of a product can be determined and efficiently provisioned.

Complexity of Billing

Hierarchy management also becomes very important in managing vendor information. Product bundles often include services offered by third-party providers who need to be paid on a per usage basis. Even services localized to a single CSP may traverse bandwidth, lines, etc. owned by another CSP as when a mobile customer “roams.” In these cases, CSPs are vendors to their own competition. The complex inter-billing that is required as a result of this interconnected product architecture requires comprehensive vendor master data management including hierarchies of subsidiaries. This is further complicated by the fact that the different states and countries where vendors and subsidiaries are located will have different price and tax regulation and different reporting requirements. Thus vendor management is tied not only to product data but to location data as well. Especially for CSPs that have grown through M&A, aggregating master data across products, vendors, and locations – with appropriate hierarchy and relationship management – is a formidable challenge.

Dynamic Environment

As if these issues weren't enough, CSPs operate in an extremely dynamic environment. Products, services, and bundles are constantly being introduced, updated, and retired. And while a particular bundle may have an extremely short life – such as one centered around a holiday – information regarding that bundle must be maintained indefinitely for auditability. Change management over time is a critical requirement.

For all of the reasons cited above, it is difficult to provide rich, accurate, complete, and consistent data to the CRM, billing, network, partner, and other systems that depend on this data to execute the business.

Master Data Management

Master data management (MDM) refers to the tools and methodology that enable organizations to manage critical information assets, be it information about products, customers, or vendors. Large organizations with complex heterogeneous IT environments typically have large amounts of inaccurate, redundant, fragmented, and inconsistent data spread out across the enterprise. Within this framework, making sure that core data is accurate, consistent, and readily available to transactional processes requires a dedicated solution. That is the charter of MDM.

Benefits of an Independent Master Data Platform

Nearly every transactional system, be it billing, CRM, order fulfillment, etc. provides its own product and customer catalog, hence many CSPs do not see the need for yet another catalog. However, it is the proliferation of all these different catalog systems that necessitates an independent master data layer outside the domain of any one application. Application-specific systems care only about their own view of the world. They are not designed to manage the large superset of data attributes that make up master data. By design, these systems are fairly rigid in terms of their data structure, to protect the integrity of the transactions they process. Any change to the model to account for new business or regulatory requirements generally requires custom development which is time-consuming, expensive, risky, and often does not deliver the business benefits intended within the time period dictated by the business.

The nature of business today requires a flexible data model and the ability to deal with data that is constantly changing. New products and services are being introduced, modified, consumed, and terminated. In this dynamic environment even a flexible data model is not enough. A process-centric approach to data management is critical so that data is not introduced and updated in an ad hoc manner. Rather, a rich and controlled workflow is enforced with the right level of validations, automated and manual approval steps, and information visibility. This ingrains data quality and process efficiency into day-to-day activities and ensures that clean data stays clean over time. Clean, consistent master data becomes a by-product of business activities rather than a costly and disruptive IT initiative.

How MDM Can Help CSPs

MDM helps CSPs by providing the necessary tools to manage product, customer, and vendor data.

In the case of product data, an MDM solution allows CSPs to:

- Create a rich repository of product data that encompasses the superset of product data rather than the slice of product data that relates to any one domain, such as billing or fulfillment. This is not intended to replace product data stored in existing transactional systems. Rather, it provides a way to harmonize and align product data across these systems so that they are accurate and consistent with each other. This allows existing transactions executing across these systems to be more effective.
- Manage the complexity of the data model. This includes managing the product hierarchies and how products in different functional domains (offering, product, service, and network resource) relate to each other.
- Manage all the information governance rules and dependencies down to the attribute level for each domain. This includes managing what are the optional and required attributes, what are valid value lists for each attribute, cross-product dependencies, and even business context rules such as certain products can only be sold in certain geographies.
- Manage relationships between products and between products and other master data entities such as vendors, customers, and locations.
- Manage the product data lifecycle so that clean data stays clean over time. It does so through:
 - Automated processes for new product / service introduction including bundles, assortments, and so on that enable business users to collaborate and share data with the necessary process management, controls, and escalation policies.
 - Automated processes for updating product attributes with the right workflow and approvals so that this is not done in an ad hoc fashion.
- Synchronize, in real time or batch, relevant subsets of product data with all the downstream systems and decision-makers that depend on it.
- Maintain a rich audit trail of product data for compliance purposes.



TIBCO Software Inc.

(NASDAQ: TIBX) is the leading independent business integration software company in the world and a leading enabler of real-time business, helping companies become more cost-effective, more agile and more efficient. TIBCO has delivered the value of real-time business, what TIBCO calls The Power of Now[®], to thousands of customers around the world and in a wide variety of industries.

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Master data domains are inherently connected. For example, customer data is related to product data, vendor data, and location data. Being able to manage these relationships and execute business processes that leverage these relationships, such as up-sell/cross-sell, vendor rationalization and billing, customer service, etc. requires a flexible master data platform that is designed from the bottom up to be multi-domain and extensible to encompass the organization's diverse information ecosystem.

TIBCO Collaborative Information Manager

TIBCO Collaborative Information Manager[™], the cornerstone of TIBCO's MDM solution, is a self-contained application that provides rich out-of-the-box functionality to deliver the key capabilities for master data management:

- Total information management, including extensible repository, rules, relationships and hierarchy.
- Information change management, including workflow and approvals.
- Internal and external synchronization
- Reporting and analytics
- Templates and best practices

TIBCO Collaborative Information Manager is optimized for business users. Its intuitive web and rich graphical user interface allows business users from multiple departments to collaborate to create and update information. Information management processes, validation rules, and even the data model itself can be changed dynamically by a business analyst without the need for coding or bringing the system down. By being flexible and adaptive to the needs to the business, Collaborative Information Manager delivers a long lasting solution that yields tangible ROI.

TIBCO augments the Collaborative Information Manager application with all the necessary components for a comprehensive MDM solution, including application and data integration, a B2B gateway, data quality and cleansing, web service support, message-oriented middleware, and robust monitoring and management. With over 20 years of experience in distributed computing for global organizations across industries, TIBCO delivers a best-in-class MDM solution that has been successfully implemented by some of the largest organizations across industries.

To learn more about TIBCO's proven approach to MDM, please visit the TIBCO web site at **www.tibco.com**.

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