ENTERPRISE PRODUCT MANAGEMENT™ (EPM)

THE COMMUNICATIONS INDUSTRY’S MOST ADVANCED ENTERPRISE PRODUCT MANAGEMENT SOFTWARE SOLUTION

TIME TO TAKE CONTROL

These are challenging times for the telecoms and media sectors. Fierce competition is lowering margins. Converging technologies are making product differentiation problematic. Customers are treating products as disposable commodities while brand loyalty is fast becoming a thing of the past. The two-sided business model is challenging traditional B/OSS solutions.

Facing these difficulties, Communication Service Providers (CSPs) are discovering that delivering innovative, profitable products at a lower cost and in less time is an increasingly demanding task. Enterprise Product Management is about taking control over these challenges and providing CSPs with the tools to thrive in this ever-changing landscape.

CAPITALIZING ON ENTERPRISE PRODUCT MANAGEMENT

Control over the product portfolio is essential for CSPs seeking to secure and enhance their market positions. Understanding and effectively managing the underlying product set is the key to enabling more flexibility around managing customer preferences and experiences.

The sheer complexity of CSPs’ product offerings today creates a business environment that is slow, complicated and ill-equipped to meet ever-growing customer demands. Now, more than ever, CSPs are realizing the need to change. Where once organizations released products to match their internal processes and strategies, many now know that meeting customer demand is vital to achieving increased profit and future success.

CSPs will only attain their goal of targeted customer experience and achieve faster time and lower cost to market by addressing the fundamentals of Enterprise Product Management. By doing so, they can take control of their proliferating products, technologies, marketing plans, pricing strategies and processes and focus the results on a consistent, customer centric product management strategy.

To deliver this goal, EPM approaches the CSP product challenge through five cornerstones of Enterprise Product Management (EPM) within one solution suite:

• **Product Data Management (PDM) & Centralized Product Catalog (CPC)** – Provides a centralized, rationalized 360° view and single point of control over the enterprise’s products and services

• **Product Data Integration (PDI)** – Provides consistent product and service data in an automated fashion to the different B/OSS systems (e.g., CRM, Rating/Billing, Order Management, Provisioning, etc)

• **Product Lifecycle Management (PLM)** – Provides a consistent framework for best practice lifecycle and version management activities across the design, build, launch, in-life management and retirement flow

• **Product Business Intelligence (PBI)** – Delivers operational reporting and supports performance analytics for products and services, ranging from bill of material reports to profitability and market penetration analysis

• **Product Channel Management (PCM)** – Provides collaborative access to third party provider and channel partners to supply and/or repackage components of the product and service catalog
Enterprise Product Management

Enterprise Product Management™ (EPM) is the industry’s leading software application for empowering CSPs to place products at the heart of their business. Featuring an easy-to-use collaboration environment for business and IT users alike, EPM provides CSPs total control over their product data and processes.

EPM takes previously inconsistent practices and products and consolidates them into a single, unified catalog with up front role based access and back end system interoperability. The result is a multidimensional, cross-product and channel catalog that sits at the heart of the CSP’s order-to-install-to-cash process, ultimately improving time to market, reducing the cost to market and improving innovation and quality.

EPM has been proven to deliver key benefits to the CSP’s bottom line:

**Time to Market**
- Reduced design, build, test and launch time for products
- Detailed template communication between marketing & IT
- Simplified and accelerated new service / product introduction

**Cost to Market**
- Reduced operational and delivery costs
- Reduced complexity of business processes
- Structured components to maximize reuse and compatibility with long term reference architecture

**Enabling Innovation**
- Increased ability to support complex propositions
- Rapid monetization of network investments
- Ability to compete with / support Web 2.0 solutions & two-sided business models

**Improving Quality Across PLM**
- Elimination of duplicate data entry into multiple systems
- Improved quality and automation of data moving among people and systems
- Real-time visibility of product lifecycle and performance
EPM Solution Components

EPM comprises a modular set of components designed to deliver critical business functions. The EPM solution suite comprises the following components:

- Product Portfolio Manager™ (PPM)
- Design Time Catalog™ (DTC)
- Catalog Control Center™ (CCC)
- Integration Services Framework™ (ISF)
- Connector Sets
- Workbench Utilities

The Enterprise Product Management™ (EPM) product suite provides the core components necessary to centralize, configure, integrate and maintain the CSP’s product and service portfolio across the enterprise:

Collaboration environment for both business & IT users
- Cross-function role based user definitions & security
- Multi-dimensional role based management access to the functions and catalogs within the application

E2E PLM process and activities
- Project definition and tracking
- Automated workflow
- Tasks Lists, impact and notification reporting to more tightly manage the change process

Centralized MDM for product & service catalog
- Componentized data model for Offers, Products, Services, Devices, Pricing, Rules, Processes
- Simple and complex product and service structures
- Definition of commercial and technical aspects of product / service components
- Convergent / N-play, cross-product line bundles
- Sharing of product components across different product and market categories
- Cloning and modification of product structures or individual entities to enable rapid product modeling
- Business and technical modeling of product offers and underlying component specifications
- Highly configurable capability for defining rating attributes for charges and discounts, to support attribute based, tiered, threshold and flat rating and discounting, variable across product lines
- Channel, market and customer specific price lists to manage reuse of products across target markets through different offers
- SID compliant and SID based XML available

Enterprise / B2B products, contracts and SLAs can be constructed from re-usable assets within the product catalog

Support for the end-to-end Order-to-Install / Fulfilment processes

Fully interoperable inbound/outbound integration framework
- SOA web services based integration framework
- Application connector sets to expedite integration configuration between PPM and target applications

Native Reporting and Search functions, with support for externalized reporting

Design time catalog allowing products to be modeled and quickly migrated during the early stages of a Centralized Product Catalog implementation
Centralizing Consistent Product & Service Data

Product Data Management

The first step towards securing Enterprise Product Management™ involves normalizing product and service data into a single, consistent and clear format. By establishing clear proposition definitions and centralizing data into a unified catalog, CSPs can respond effectively and accurately to customer demand.

EPM enables CSPs to normalize and centralize data predicated upon the following:

- Universal, centralized catalog – the MDM of Product & Service – holding all product, service and pricing related entities and rules
- Best practice strategic product and service models, with out-of-the-box templates
- Comprehensive product lexicon
- Rationalized and reusable product, service and rate entities
- Data visibility and functionality based on user roles and responsibilities
- Drag-and-drop graphical user interface for constructing bundles, packages and components
- Industry leading CSP product and service model, certified against the TM Forum SID
Product Portfolio Manager™ (PPM)

Product Portfolio Manager (PPM) manages the enterprise's Production central product and service catalog. It facilitates real time introduction and updates for offers and product and service components, managing them through a full lifecycle from creation / update through to launch. It also allows for underlying product design changes a in real time / production deployments.

- Product Modeler – Models and develops the market offerings, and commercial and service components in a graphical, object-oriented environment
- Product Configurator – Enforces the consistent use of a common product lexicon and structures through configured templates and views
- Rules Manager – Defines and manages behavioral rules of products for external target systems
- Lifecycle/Workflow Manager– Automates and controls the data management workflow and the PLM process for users and products
- BI/Reporting – Configures and executes searches, queries and reports against the product catalog; exposes product data into broader business intelligence universe for performance analysis
- Central Product and Service Catalog – Provides a 360° master view of the products and services in the centralized catalog
- Operational / Reporting Data Store (ODS/RDS) – Operational data stores to support reporting, analytics and system integration

Product & Service Rules and Relationships

Business and technical rules and relationships are crucial to any product definition, governing product behavior from construction and launch to ongoing use. EPM supports the modeling, management and execution of rules for internal and external processes. CSPs can employ them at different points in their product lifecycles, including:

- Compatibility rules such as intra-product conditions. For example, video streaming may only be compatible with certain devices
- Constraint rules such as ‘requires’ and ‘excludes’ conditions. For example, broadband DSL services require a DSL modem
- Recommendation rules and conditions for products. For example, customers purchasing a ‘Brand A’ handset may also be interested in purchasing a ‘Brand A’-compatible headset
- Eligibility rules such as restricting product availability to a specific target customer segment

Charges, Rates, Discounts, Promotions and Pricelists

The price applied to any product is an integral part of the overall customer offering. EPM™ provides the unique ability to visually model the key entities that drive the pricing and offers for products: charges, rates, discounts, promotions and pricelists:

- Define flat, tiered, threshold and attribute-based rates
- Reuse charges across categories and in multiple offers
- Dynamic workspaces to create, manage and view charges, discounts and promotions
- Reuse products across categories in multiple offers
- Control the impact of price changes separate to product specifications
- Vary charges based on conditions, such as volume discounting

Product features and benefits

Product & Service Modeling

Product & Service Modeling is enabled through an easy to use drag-and-drop graphical interface, providing the business user and technical product configurator with a valuable productivity tool. The Product & Service Modeling capability provides the ability to:

- Create, modify and view reusable building block product/service specifications and offerings within the centralized product catalog
- Manage products and services across catalogs and product lines
- Reuse component parts across products
- Track each product and their underlying entities through their lifecycles
**Product Portfolio Manager™ (PPM)**

The Design Time Catalog (DTC) manages the initial and ongoing design and data migration of products and services. It allows the enterprise to safely manage the development of new or migration of existing legacy products and services into the central catalog without disrupting the ongoing management of the production catalog.

Key benefits of DTC include:

- Rapid Catalog Deployment
  Productized deployment and migration tools to shorten the time to product & service catalog go-live
- Concurrent Product Release Management
  Ability to manage multiple, simultaneous product & service development projects and releases

Delivered through:

**Product Requirements Master (PRM)**

The Product Requirements Master (PRM) provides support during the Product Analysis phase of new product development or legacy product migration. It is used to capture high-level constructs and information to support the product and service design process.

**Product Design Master (PDM)**

The Product Design Master (PDM) provides support for the creation and modification of the physical product and service catalog structure and acts as the design master for the entire catalog. The product design consists of the data structures which are maintained through a dedicated set of Workbench Console tools.

**Product Data Instance Master (PDIM)**

The Product Data Instance Master (PDIM) provides the final staging area of the design time catalog just prior to deployment into Production. It provides a normalized relational table view for product and service instances to be inserted directly, via ETL processes or through standard data entry tools such as Excel and InfoPath.

**Product features and benefits**

The product and service management functions served by the DTC include the following:

- Business construct requirement capture and iterative design
- Legacy system data extraction and staging
- Multiple release catalog management
- Product and Service data structure/template compare
- Bulk/mass data changes
- Offline data manipulation
- Allows the data capture and modeling to begin early in a product & service catalog implementation, i.e. before the complete design is known
- Provides an interface that makes it simple to view product design data using common desktop applications such as Excel or table viewing query based tools.
- Data inside the DTC is presented in a format that allows the easy modification of data via common desktop applications (either manually or programmatically) and that allows the data to be easily imported back into DTC
Catalog Control Center™ (CCC)

The Catalog Control Center (CCC) is the command and control center for managing the centralized product and service catalog. It provides centralized Read/Write access into the Sigma solution components for both ‘factory’ and ‘marketing’ creation of products and services and ongoing maintenance of the catalog:

- Upfront design and configuration of the catalog
- Creation of commercial and technical components
- Creation of market products and offers
- Test and production launch
- Ongoing database version/configuration management
- Catalog queries/views
- Application administration

CCC is installed on the desktop and is intended for use by both business and IT personnel responsible for the product design, development, launch and in-life management processes.

Product Management Console

The Product Management client is a highly graphical and intuitive user interface through which the primary product and service creation and launch functions are conducted:

- Configure technical services
- Assemble products
- Create commercial offers
- Create and associate behavioral rules
- Validate product configurations and offerings
- Launch products from the catalog into target applications

Workbench/DTC Consoles

The Workbench Console provides the user with the tools to configure the Sigma application for implementation and ongoing maintenance. The EPM™ Workbench Console preserves the integrity of the core application when being tailored to a specific customer, avoiding the need for bespoke code or direct table entry:

- Create high level designs of product/service constructs
- Configure the enterprise business hierarchy and product/service model framework
- Extend and create core data structures for business and system purposes
- Configure the product and service templates and views that capture, manage and display the data
- Configure and update the integration and reporting pro formas
- Load, unload, compare versions of databases
- Import/export legacy data and external reference data
- Establish roles, access rights and security
Controlling & Automating Data

Product Data Integration
With comprehensive and consistent product data available in EPM™, integrating the catalog provides this information to other systems and processes throughout the organization.

Providing automated query or distribution of information for the downstream systems dramatically reduces the launch times and costs for product development.

EPM enables CSPs to expose and distribute product data internally and externally, featuring:

- Service-orientated architecture (SOA) and standards-based integration for both publish and query mechanisms
- Enterprise service bus support for loose application coupling
- Application connector framework for reusable system integrations
- Web service interfaces into product catalog and rules engine
- Centralized ID management and reference data
- Migrate mass product data input into central catalog

Integration Services Framework™ (ISF)
Our integration layer provides interoperability across heterogeneous platforms, applications, technologies and enterprise boundaries.

The Integration Services Framework™ (ISF) provides the SOA framework for exposing and / or publishing product data from the centralized catalog into external applications. The ISF supports two-way interoperability of product and service data across heterogeneous platforms, applications, technologies and enterprise boundaries:

- Sigma’s semantic interoperability enables data to be understood by BSS / OSS systems within the enterprise and securely across external channel applications
- Sigma’s event driven and service oriented approach using SOAP over HTTP/JMS extends interoperability across platforms such as UNIX, LINUX, Solaris, Windows Server

Product features and benefits
Integration Services

- Configurable Services – Web Services to support the update, publication and query of data, configurable to suit the data exchanges for different downstream systems
- Operational / Reporting Data Store (O/RDS) – Optimized data store available for external query and reporting purposes
Integration Methods
Sigma's comprehensive integration solution offers a wide range of integration methods:
• Online Query through Web Services Framework
• Publication and Transformation through a lightweight or heavy duty ESB
• File Directory or via an ESB
• Database Extract utilizing SQL queries
• Configurable Reports generated based upon specified needs
• Launch Manager
• Initiate the launch process, providing automated product distribution to configured application targets
• Monitor real-time progress of product launches at integration run-time and allow users to view historical results of previous launches
• View the end-to-end launch process for determining organizational readiness

Delivering Performance Insights

Product Business Intelligence

PPM Business Intelligence (BI) and Reporting is designed to deliver comprehensive reporting functionality for users of PPM. Key features of BI and Reporting include:
• Integrated with the Sigma application
• Enables the building of reports on-the-fly
• Supports validation reports during design
• Provides BI capabilities with SQL Server Analysis Services (SSAS) projects including:
  - Pre-defined Product OLAP cube, dimensions and facts
  - Sample BI reports
  - SQL Server Data Mart database BI artifact
• Can be designed to include any necessary information about product offerings and product and service specifications
• Can be executed from the PPM client or from the SQL Server Reporting Service
• Can be executed from the PPM client or from the SQL Server Reporting Service

Operational report tools
• Off-the-shelf design tools for a comprehensive range of reports, including standard operation reports, bill of materials, catalog reports, and pricing reports

Analytics support
• Integrate analytics tools with the Reporting Data Store to provide enhanced performance insight, such as product profitability and unit costing

Repeating Processes for Products, People & Resources

Product Lifecycle Management

Product Lifecycle Management (PLM) combines people, projects, workflows, technology and data into a strategic approach for developing and managing products across an enterprise and their lifecycles. The PLM offering gives users control over the design, build, launch, in-life management and retirement of their products, featuring:
• Best practice PLM process framework, including organizational and operational models for Effective Product Management
• Workflow management of data through different product development and launch phases
• Full view of products and entities throughout lifecycle; auto-generated data revisions, ensuring no changes are lost and integrity of product status, despite changing associated entities
• Impact assessment for catalog entities
• Product features and benefits
• Workflow and Version Management
• Manage the progression of a product entity through different states (e.g., ‘Create’, ‘Edit’, ‘Validate’, ‘Approve’, ‘Launch’, ‘Update’, ‘Re-launch’ and ‘Retire’) and versions
• Users are given complete visibility to workflow status and version of each product entity through the product lifecycle

Product features and benefits

Reporting Data Store
• Optimized data store providing access to comprehensive product data for operational reports and third-party analytics tools
Each launchable entity is automatically assigned a version number and revisions of products are automatically generated as products are changed and updated so data is not lost.

- Users can cancel undesired changes and rollback to prior versions.
- As revisions are created, approved and launched, prior revisions are archived automatically.
- Status tracks where a given entity is within the controlled PDM workflow process.
- Role-based access and security.
- Control access according to roles, authority, organization, and administrator-granted rights and visibility levels.
- Access can be controlled from the highest to the lowest level of granularity:
  - Sigma applications
  - Application operations
  - Lifecycle tasks / related functions
  - Levels in the hierarchy
  - Individual data entities / views / elements

Projects, Business Cases and Designs

- As part of the product development process, Sigma provides the ability to define, track and manage key PLM entities such as Project, Business Cases and Designs.
- New entity types can be configured to suit the specific needs of the CSPs PLM process.
- Lifecycle Functions.
- Impact analysis – Identification of all the product entities in the catalog which are linked to a given product.
- Copy management – Rapid creation of an exact copy of the product selected.
- Notification – Notice of any amendments made to products, accessible via the Notifications screen in Sigma or via email.
- Version Compares – Comparisons of product changes between versions, releases, etc.

Embracing Partners & Customers

Product Channel Management

Product Channel Management (PCM) is the final stage in Enterprise Product Management. Having gained complete control over normalizing, distributing, managing and measuring product portfolios, PCM enables CSPs to embrace all external relationships within their processes, including suppliers, resellers and customers.

The PCM offering empowers:

- Customers to select products from various sources, including online and in shops.
- Customers to consume products in ways that meet their exact needs and deliver profits to the CSP.
- Suppliers and resellers to become part of the CSP’s processes, while providing access to consistent data requirements and definitions.
- CSPs to expose the product catalog to customer, wholesale, retail or partner channels.
- CSPs to manage external third-party catalogs.
Rapid time-to-market

The next steps

When selecting a partner to help rationalize, manage, distribute and measure your product portfolio, it pays to make a discerning choice. Sigma is the market leader in Enterprise Product Management solutions for CSPs. EPM™ – Taking Control of the product portfolio:

• Simplify and accelerate the process of introducing new products and services
• Streamline existing product management processes
• Eliminate duplicate data in multiple systems
• Improve data quality between people and systems
• Provide real-time visibility of products and lifecycles
• Facilitate process improvements with minimal impact on organization
• Maximize compatibility with long-term reference architecture
• Deliver significant return on investment
• Reduce time to market with first mover advantage
• Increase capacity to support complex propositions
• Support multiple lines of business
• Control operational costs and business process complexity
• Grow subscriber acquisition and loyalty through improved service
• Enhance overall operational efficiency

ABOUT SIGMA SYSTEMS

Sigma Systems is a privately-held market leader in catalog-driven Idea-to-Install products for Communications Service Providers (CSPs). The company’s BSS/OSS product portfolio spans cloud brokerage, product & service catalog, configure price quote, order management, service provisioning, service inventory, device management and professional services. Sigma has fulfilled 100s of millions of residential and business RGUs including broadband, VoIP, SIP trunking, unified communication, IPTV, mobile, cloud and M2M services

Service Providers around the globe trust Sigma Systems to help them to generate new revenues and contribute to their organizations’ profitability thorugh the rapid and cost-effective delivery of new services.

For more information about Sigma Systems, visit http://www.sigma-systems.com and follow @SigmaSystems on Twitter.