CenturyLink Case Study

PRODUCT INFORMATION MANAGEMENT IMPLEMENTATION: A TRANSFORMATION FROM BESPOKE ENTERPRISE SERVICES DELIVERY TO PRODUCT FACTORY

This case study is about CenturyLink’s communications transformation from delivering highly bespoke services to its enterprise customers into a product assembly line whereby CenturyLink products are now conceived and planned according to market opportunity and industry advances then introduced into the network in a clean and orderly way.

It begins by setting out the two major challenges faced by CenturyLink Business:

• To efficiently and effectively introduce new products and services in response to market and industry advances
• To move their B2B service offerings away from an array of services customized to each customer’s individual requirements, to a predefined suite of products

The study goes on to describe how CenturyLink achieved the service delivery transformation by implementing a product information management (PIM) solution based on a single product catalog using Sigma’s EPM software. Finally, the study concludes with the benefits now being recognized by CenturyLink.

“CenturyLink see products not just converged from within the telecom industry, but we also see them coming from outside the traditional telecom space. Cloud services being a perfect example. In years past, the cloud was viewed as an IT service, however now it’s seen as an extension of our hosting operations.”

Donald Toland, director of program operations, CenturyLink

Business Challenge

Telecom industry advances—such as innovative business models, cloud services, expanded value chains, converged services, and complex new technologies—constantly challenge a service provider’s ability to offer a high level of customer experience and efficient operations.

CenturyLink, like most other service providers, tended to productize in silos in the way the technologies evolved and productization would hide the disjoint way the services were provided. Rather than presenting a catalog of defined and configured products, CenturyLink offered their enterprise customers a range of services tailored to meet their individual requirements. This resulted in:

• Each customer having a unique configuration of services
• Pricing set by the market or by sales managers external to the product management process
• Constant requirement to align data between Order Capture, Contract Negotiation, Fulfillment, Billing and CRM.

Below: Creating a collaboration environment for Business and IT groups
To support new services such as cloud, and to rationalize and better manage service offerings, CenturyLink realized it needed a Product Information Management (PIM) solution that would consistently federate its network and software services into a common platform and optimize service delivery.

The transformation was handed to CenturyLink’s business architecture group which was specifically formed from the recognition of the need to connect business with technology more tightly in order to provide a cross functional approach to leverage better solutions for the business. The service delivery transformation spanned functions across the organization including Business Markets Group, IT Operations, Products, Network Engineering, Channel Operations, and Finance so the project was suited to the skills of the business architecture group.

Business Drivers

- Improve cycle times for new product offerings, including cloud services
- Reduce operational costs
- Create visibility and traceability from products to services to resources
- Reduce individual service component redundancy
- Enforce CenturyLink’s high standards for the overall customer experience
- Drive down costs, cycle time
- Enable Product Managers to manage products themselves

Product Management Challenge

When bringing new products to market, CenturyLink followed a model similar to most other operators. Products were conceived by product managers in collaboration with network architects and then implemented by IT within the operations and business support systems (OSS/BSS).

The challenges bringing new products to market soon became crystal clear to the team: It was simply too difficult to define products and then get them implemented in the OSS/BSS systems.

Product Lifecycle

To define the products, product managers, network architects and business people need to interact with the business definition. CenturyLink wanted to provide the ability to model products, understand them and talk to customers about their requirements before investing in any ‘manufacturing’ costs.

Once implemented, product managers wanted to be able to update and manage the products and their attributes. These processes were a problem companywide and were in dire need of improvement.

“We were looking at an evolution on same scale as manufacturing several decades ago when the industry transformed from designing with a pencil to full blown CAD modeling. We wanted to model product, but hadn’t the tools to model.”

Donald Toland, director of program operations, CenturyLink
Product Implementation

Delivering a new product requires it to be defined within the OSS/BSS. Enterprise products are very complex and the product data needs to be shared between a range of OSS/BSS systems including Order Capture, Contract Negotiation, Provisioning, Fulfillment, Billing and CRM.

The IT architecture group acknowledged that products were siloed and their data was fragmented across the OSS/BSS. Any product changes were complex and slow. Small updates to existing products, such as changing terms or an ordering rule could take from three to six months and incur a high cost to perform.

For new products, the wait often exceeded one year. It became very clear to CenturyLink that the cost of product development and delivery was directly based on the complexity of product data changes into the OSS/BSS.

“Product definitions were too deeply embedded in systems somewhere and too difficult to extract. The definitions went into IT and stayed in IT.”

Eric Hudson, Principal Business Architect, CenturyLink

CenturyLink concluded that a real paradigm shift from “IT owned” to “business owned” processes was required. It was paramount to put products back into hands of the business and CenturyLink concluded that service delivery transformation would require the implementation of a Product Information Management (PIM) solution.

“CenturyLink’s product lifecycle was far too slow and our product design based IT driven based on ordering and billing system capabilities. We knew what we wanted to do, it just took too long to implement. It was clear that our products would only ever be as good the definitions in the OSS/BSS, put simply: if we can’t define and deploy a product then it’s only an idea.”

Eric Hudson, Principal Business Architect, CenturyLink

Summary of Product Management Challenges

Product Information Management
- Poor collaboration in product design process
- Lack of product build and modeling ownership, and understanding by product management
- Time and cost to market for product updates and introductions

Product Implementation
- Product development processes difficult to navigate and manage
- Slow and costly time-to-market for new products
- Variability in quality-to-market for new products
- Implementation of bundles and price/rate changes hindered by dependency on current systems and processes
- Limited product development cycle time measurements/metrics

Product Lifecycle Management
- Current product catalog lacked integration with operational disciplines
- No model level view of products and services was available
- Business visibility into product builds challenged by order capture / management accessibility
- Standards for definition of products were difficult to track and monitor
Product Management Requirement

The business architecture group set about defining their requirements for a PIM solution.

To reduce investment risk and assure business goals were achievable prior to committing funds to a full-scale implementation, CenturyLink turned to the TM Forum’s Frameworx industry standard to guide planning and implementation of their new PIM solution. CenturyLink used the service layer of the Business Process Framework (eTOM) to model proposed telecom and cloud services, and the Information Framework (SID) to rationalize product and service definitions. TM Forum’s Service Delivery Framework work was used to address product and service lifecycle requirements.

CenturyLink took full advantage of the TM Forum Catalyst program—a collaborative approach to solving critical industry challenges. By including their business partners, which now included Sigma,

CenturyLink prototyped and demonstrated their proposed solutions as a TM Forum Catalyst. This process not only demonstrated feasibility, but also confirmed compatibility of the solution across CenturyLink’s business partners.

“We first needed to ensure our approach for addressing operational and service challenges was headed in the right direction. To start, we presented our concepts to the TM Forum Community via a Catalyst proposal. After a critical review of TM Forum Frameworx standards and extensive participation in the feedback forums with vendors, we prototyped and demonstrated our solution—Service Model Catalyst: Enabling the Cloud Services Supply Chain—at the Management World event in Nice in 2009.”

Donald Toland, director of program operations, CenturyLink

CenturyLink PIM Solution Requirements

Using this process, CenturyLink were able to confidently specify their PIM requirements to transform their product lifecycle and product delivery processes to meet changing industry and business pressures.

Business

• Streamline product delivery processes
• Speed concept-to-cash cycle times
• Deliver best-in-class service levels

Business and IT Alignment

• Decrease IT involvement in Product Lifecycle Management
• Provide and instrument Product Lifecycle Management process
• Decrease Total Cost of Ownership of Product Lifecycle Management
• Create visibility and traceability from products to services to resources

PIM Solution

• Agility to allow for rapid product definition/modification
• Maximize data inheritance and reusability throughout the data model
• Reduce individual service component redundancy
• Adhere as closely as possible to the TM Forum’s Shared Information Data Model (SID) to create loose coupling between a product and the services/resources that it is based
• Adherence to it best in breed architectural principal
• Minimize the amount of change to existing OSS/BSS environment
Choice of Sigma

CenturyLink’s business case to accelerate revenue on product introduction and modification timeframes and a better customer experience had been fully established and agreed. Now the decision process whether to build an in-house PIM solution or chose a PIM software solution provider, and then select that provider, took place.

CenturyLink’s IT team were fully aware of complexities of implementing a solution and undertook a comprehensive proof of concept. Additionally, as already described, CenturyLink had engaged with the TM Forum and the wider TM Forum community to prototype PIM solutions with vendors using TM Forum best practice and standards. CenturyLink had already worked with different vendors and other CSPs to vet and test concepts without giving away competitive advantage. As CenturyLink couldn’t find a suitably comparative situation where a PIM solution had been implemented with enterprise products (which inherently involve more data and more complexity), CenturyLink set about choosing the right PIM vendor in a robust selection process.

CenturyLink looked at all of the viable industry PIM leaders. Convergys and IBM had both worked with CenturyLink on other programs were included in the selection process. With a close working relationship formed early through involvement in the TM Forum Catalyst Program, CenturyLink included Sigma in the selection processes.

The prototyping in the catalysts not only helped CenturyLink’s understanding of Sigma and their Sigma EPM software, but were able to meet and work with Sigma’s team. CenturyLink were impressed with the way Sigma performed in this set up and experienced firsthand the team’s confidence, capability and speed of response.

Mid 2009 CenturyLink invited both Convergys and Sigma to participate in a proof-of-concept (PoC) project. The PoC lasted eight weeks and was based on a complex modeling scenario that included product bundling, pricing, etc. and integration with CenturyLink’s ordering system.

Sigma completed the PoC and CenturyLink could easily see the intuitive and visual way their products were modeled in Sigma EPM. Convergys did not complete the PoC.

“The PoC was a pivotal moment for the PIM project. We could see how Sigma EPM could model our complex products in the EPM solution. We were blown away with the whole approach by Sigma. They were the stand out solution and the project was now a reality.”

Eric Hudson, Principal Business Architect, CenturyLink

Early 2010, CenturyLink selected Sigma for their PIM solution.

Sigma EPM Selection Criteria

• Comprehensive CSP Data Model
• Ability to translate to Legacy Data Models
• Graphical User Interface
• Track record of Successful Telco Implementations
• Ability to master product and service eligibility and compatibility Rules
• Ability to contain groups of product changes into release sets
• Workflow Capabilities to track change throughout the PLM process including a flexible approval framework
• Validation of product changes and Simulation into test environments
• Extensibility of the underlying data model to suit legacy OSS/BSS data requirements
• Low TCO for required hardware and software
Implementation

In March 2010, the PIM implementation project started. The first release (Release 1), scheduled for end user delivery on October 2010, was a standalone product catalog for the entire suite of products that support BMG – CenturyLink’s single-source communications solution for data networking service, equipment, installation and local access.

An iterative development process was used with four separate cycles to ensure the implementation went smoothly to plan and the functionality was fully tested and signed off by the users. The product catalog went live on October 10, 2010 with twelve product management users, three business analysts and six IT users.

Success

CenturyLink implemented the following solutions to meet their service delivery transformation goals:
- Product Information Manager: Product life-cycle management and workflow; rationalized product and service definitions; real-time product definition simulation and validation
- Order Management: Automated Sales order entry and order status visibility; centralized service and product specifications; configuration tools; consistent product and service orders; accurate quotes
- Active Service Catalog: Logical integration of product and service layers; model resources and services; drive provisioning workflow automation and inventory; rapid update of product offerings

“Most important lessons I have taken from this project are: First, get the right talent on-board. Then, prove the concepts with TM Forum Catalyst and PoC projects to enable introduction of concepts to make business case and spread costs out over process.”

Eric Hudson, Principal Business Architect, CenturyLink

PIM Release 1 Capability
- All Enterprise Service Delivery Platform products now modeled in the Sigma PIM solution
- PLM process enabled as part of enterprise product design and development process for all current and new products
- Dynamic bundling of products and services
- All new products launched through new PLM process
- Product Management ability to develop and utilize a holistic product model
- Replacement of current product build spreadsheet

Achievements to-date
- All enterprise business products modeled, configured and populated in Sigma
- Completed first release in 4.5 months
- Trained and certified 25 CenturyLink users on Sigma
- Prepared organization for utilization of centralized product catalog
- Involved user community in the deployment to facilitate business readiness and buy-in
- Replaced 75% current application that supports ordering product definition
- Transforming the way in which the organization manages product data

Core company divisions such as enterprise Business Markets Group, IT Operations, Products, Network Engineering, Channel Operations, and Finance all now interact and work together to bring CenturyLink’s product to market.

- A central definition of products
- Consistent naming and definitions.
- More systematical product management, more reuse
“The PLM/PIM enforces standard process for development with key questions of viability and costs now asked and controlled upfront.”

Eric Hudson, Principal Business Architect, CenturyLink

With a combination of Sigma, leveraging TM Forum Frameworx and industry best practices, CenturyLink was able to demonstrate feasibility quickly and to justify a full-scale solution investment with limited risk. CenturyLink continues to strategize, innovate, and streamline their service delivery methods with the help of the PIM tool.

Quantifiable Results

Within just one year, CenturyLink realized the following quantifiable results from Sigma:

- a 4% revenue increase
- a 5% cost reduction
- a 25% new product deployment cycle time improvement
- a decrease in unique provisioning and assurance job steps
- able to maintain exceptional customer service

Below: CenturyLink PLM process captured within Sigma

Benefits

As of October 2010, the PIM is complete for product design but the project will not be stopping there. CenturyLink are expanding the product data within the PIM to include the pricing and rating data.

PIM integration with Ordering Billing and CRM (Salesforce.com) will seek upfront sales process improvements for both sales effectiveness and solution design to achieve faster ordering and fulfillment.

Plans are also on the horizon to focus on real-time events, on-demand customer configurations, and using business analytics to explore cross-selling opportunities.

Product Modeling and Lifecycle Management

- Product manager visibility into and control of the product build
- Componentized understanding of the elements required for any given product idea
- Consistent and reusable product structures, data, and rules
- Introduce, operationalize, and govern product modeling in the PIM
- Integrate with and leverages existing processes, tools, and infrastructure
- Facilitate process consolidation, streamlining, and fast-tracking where possible

“The PLM/PIM enforces standard process for development with key questions of viability and costs now asked and controlled upfront.”

Eric Hudson, Principal Business Architect, CenturyLink
Business

- Cost Control – Enterprise products will no longer be custom-built from the ground-up for each customer, but rather constructed from re-usable assets within the product catalog.
- Manageable Customer Personalization – Enterprise customer agreements will no longer require complex spreadsheets to manage, but rather centrally maintained with all the possible permutations and options readily available to tailor accordingly. Customization has been reduce down to below 10% from above 30%.
- Assembly Line Efficiency – Quoting and configuration of Enterprise customers’ products will no longer be unpredictable in time and outcome, but rather follow pre-defined fulfillment processes that minimize errors and maximize feasibility of the offerings.

“Our new PIM solution has placed product managers in direct control of product enhancements and development. A single product master catalog has engaged departments and enabled collaborative product management – and no more spread sheets.”

Eric Hudson, Principal Business Architect, CenturyLink

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 thorough 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.