

# Customers first: an object lesson in achieving multiple goals

**Summary:** In 2006, Telekom Slovenije began a rigorously managed OSS transformation project that impacted a number of different systems. Every department involved in this project was given specific, measurable targets. When the project was completed, dozens of benefits had indeed been achieved, including 90 percent automation of the service design process, order-to-bill time reduced by 30 percent, truck rolls decreased by between 9 and 13 percent, and operational expenditures in some areas lowered by 10 percent.

*Dr. Lorien Pratt spoke with Gorazd Hribar Rajterič, head of IT OSS at Telekom Slovenije, to find out about some of the success factors in this major undertaking.*

## Why did Telekom Slovenije embark on such an ambitious initiative?

Telekom Slovenije was privatized in 1994, having been the PTT in our country. It remains the largest operator, with about 2.3 million mobile users and 1 million residential and commercial subscribers. We also offer VoIP, IPTV and Internet services.

In 2006, our legacy OSS systems, especially in our service fulfillment stack, were in silos, with hundreds of one-to-one interfaces between systems, which created huge complexity. We were managing thousands of service specifications, although each was similar to the next. We also had data and process challenges – inventory was of particular concern – and our processes were highly manual and inefficient.

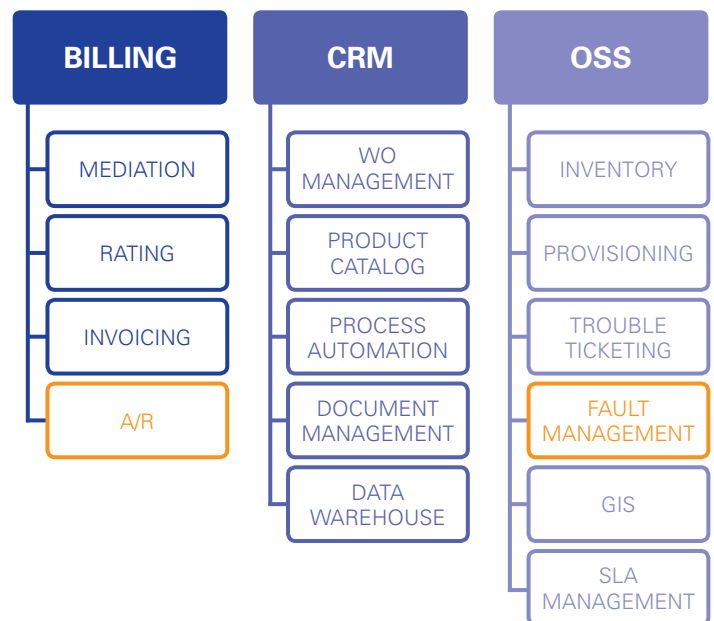
We needed to expand into many new services – such as fiber to the home, Ethernet, virtual private networks, and next generation networks – and realized that the systems we had could not easily support that growth. We also did not have a customer relationship management system (CRM), but knew that we’d have to build or buy one in view of our increasing focus on customers. So we began several interrelated projects, for fulfillment automation, plus the introduction of a geographic information system (GIS), improvements to trouble ticketing, a data consolidation initiative, and a BSS project addressing order management, billing, and CRM.

## Where did you begin?

We knew we wanted to transform the systems shown in the Figure 1.

We used Frameworkx – specifically the Business Process Framework (eTOM), Information Framework (SID), Application Framework (TAM) and Integration Framework – to help us to

Figure 1: Transformed systems



decide which products to select from the market. We wanted products that were open, standardized, interfaced well with other solutions, and that would not take too much time to introduce into our environment. The Integration Framework in particular guided us towards a network model that is technology agnostic, which means that it has considerable future value for us in managing complexity and in continuing to decrease time-to-market for new product offerings.

We organized our objectives into four broad categories to:

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decrease provisioning time; decrease costs (by reducing operating and capital expenditure); increase service quality and customer satisfaction; and increase revenue (by avoiding leakage).

Then, individual projects were given key performance indicator (KPI) targets to meet, such as reducing the number of truck rolls or increasing field force productivity according to certain measures. Detailed objectives (both quantitative as well as qualitative) were outlined within business process areas (such as to decrease mean time to provision, service design unit costs, time-to-market and so on) and for IT systems (including minimizing the total cost of ownership, Framework compliance, automation level, and performance).

For our provisioning improvement project, our goals were to decrease provisioning time for all services to improve customers' experience and shorten time-to-market for services. Finally, we worked closely with our vendors including Telcordia and our Slovenian research and development partner Medius, who helped with deployment.

#### **Those are a lot of goals to handle at once, how did you do it?**

Yes, our CEO once said that the project was like, "Trying to win the 100 meter race while changing our running shoes."

One of the ways that we addressed the challenge was with a number of strategies around our personnel. We created a separate project for every product, and a separate business case justification for each. Over 200 people were assigned to various project teams, and we mixed up our personnel, with no more than 25 percent of people remaining within their original area. We created a project coordination group and an integration testing group, and froze or postponed non-critical work during the transformation effort.

As the provisioning project got under way, the Application Framework and Integration Framework both helped to reduce the time and effort for decisions around our solution architecture. We used a functional domain decomposition that largely followed the Application Framework, and followed many of the architectural guidelines of the Integration Framework.

Specifically, the Application Framework domain definitions guided us towards decoupling the product and service specification catalogs. We rationalized our service specifications design, which enabled a high level of automation. This reduced the proliferation of thousands of sales bundles into a much simpler service catalog and network factory.

#### **Did this effort produce any measurable benefits?**

Yes, we achieved the 30 percent reduction in order-to-bill time through our technology agnostic approach: we were able to automate design and assign for several mass market services, including POTS, ISDN, broadband, and FTTx. Along the way, our improved service design process and technology, and provisioning improvements reduced truck rolls by 9 to 13 percent.

Perhaps it is worth mentioning that order-to-bill is not the same as order-to-cash. The first difference is in time delay, which is conditioned by payment terms agreed with our customers – in our case between eight and 90 days after the invoice is produced. The second difference is in the amount since we are facing bad debts. As neither payment terms, nor bad debts are system-dependant, we prefer using the order-to-bill terminology.

It is hard to quantify what the cost of our project would have been without TM Forum guidance, but judging from architectures I have seen elsewhere, I'd say that, overall, our effort was reduced to about a third of what it would have been without the use of the TM Forum. We also reduced the risk to the project, in my opinion.

#### **What risks were involved?**

One risk we identified early on was the integration between the order management and other systems for managing the service orders lifecycle. To mitigate that risk, we defined interface contracts based on Integration Framework concepts, adjusted to Telekom Slovenije's particular needs.

Another decision that we made was to adopt a common data language down to the detailed functional requirements level as well as in interface agreements. This also helped us to bridge the language of the IT and business worlds. Here, we were informed by the Information Framework, although again we created extensions specific to our own needs.

#### **Do you have any advice for other CSPs undertaking similar efforts?**

It was hard for our people to visualize that success was possible with such a big transformation until our executives began to spend time going from project to project, explaining its importance.

We realized that resistance to change is natural, and so explaining the benefits to key people, using the same people

for the old and new applications, and ensuring that our users were well educated, turned out to be very important as we retired the legacy applications.

A number of architectural changes simplified these issues as well. Today we have established a service oriented architecture for our infrastructure which has measurably improved system interoperability. As a result, we now have over 1.5 million objects in our centralized GIS showing our network, representing over 26,000km of routes. Among other things, this replaced a stack of documents over 47 meters high.

## When

At Telekom Slovenije, we call ourselves the first Communications Experience Provider. This reflects our focus on the importance of our customers. This project achieved a number of goals that support this overall company mission.

We can now launch products much faster than in the past: the new architecture has reduced our time-to-market by several months. Once a product is launched, we also have enhanced and faster self-care options, based on zero-touch provisioning. After an order is entered, we can now provision data services in three days fewer, on average, than it used to require. In particular, our VPN provisioning time is down by 30 percent and was reduced by four days.

Once the customer's product is up and running, we are able to provide better service quality because we now have automated service impact analysis and root-cause analysis

through our cross-domain fault diagnosis system. We can also offer customer service level agreements, which increase our market share and revenues.

We expect that our centralized inventory system and a reduction in unnecessary fault investigations will also decrease our fault localization time by 25 percent, which means that when we do have a problem, our customers' experience of downtime is reduced.

## Did it

Actually, our operational expenditures are lower today because of the efficiencies of the new architecture. For instance, our operational expenses for each service order is down by 10 percent because of automation of labor-intensive tasks. We can do unbundled service availability checks – required by our regulator – for 15 percent less cost. Finally, our maintenance costs overall for commercial off the shelf products have been reduced by 15 percent.

## Thank

you. We look forward to continuing to work with the TM Forum, especially learning from other service providers as we move forward with new initiatives.

## Technology

As part of our deployment, we chose to position Telcordia's Granite inventory and CNUM at the heart of our OSS. Our rationale: a reliable inventory of all network resources, services (such as ISDN, IPTV, LLU, VOIP, Metro Ethernet, VPN ) and implementation of a catalog of service and resource specifications is a pre-requisite to efficiency, automation, and, ultimately, to cost savings.

During Telekom Slovenije's provisioning improvement project, we defined more than 5,000 different inventory models (in Granite language templates) covering the physical resource layer (racks, shelves, cards, ports), the logical resource layer (including logical connections, channels, clouds, and other logical capacity) and the service layer (service specifications). After our successful data migration, the Granite inventory was populated with Telecom Slovenije's complete network, including copper, fiber, and the MPLS backbone.

Our approach to deploying a service catalog was especially powerful. We modeled our service specification as a technology-agnostic abstraction of a network service, hiding all technological aspects and decisions. This enabled us to keep the number of different specifications relatively small – to around 30. In contrast, the product catalog contains thousands of product specifications.

A product activator module within our order management system decomposes product orders into service orders. As a result, service order orchestration flows are generated on-the-fly as a composition of atomic building blocks, usually containing micro-flow definitions and provisioning rules per service specification (such as POTS activate, IPTV modify, and so on). We consider this a state-of-the-art architecture with the flexibility that we need for future growth.