

## Solutions for Mobile Operators

### Introduction

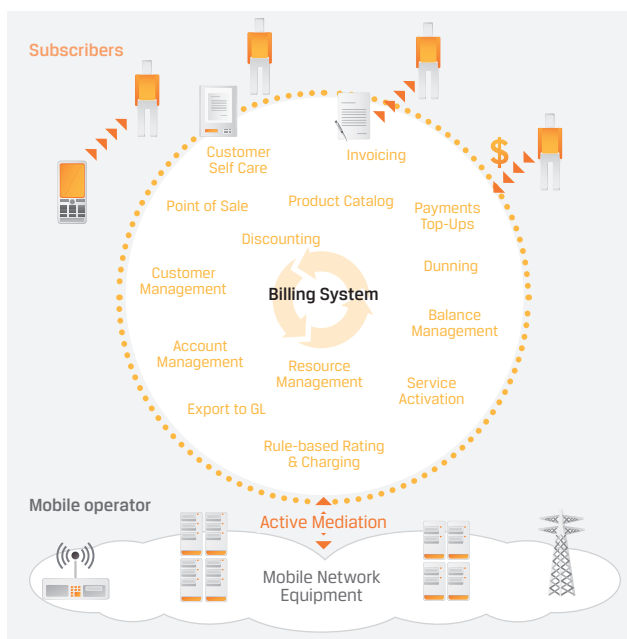
Mobile operators are faced with the challenges resulting from market saturation in the majority of countries. Innovative product offerings and enhanced service levels are indispensable in order to attain new customers.

Mobile operators can find many solutions aimed at improving management and control of services and networks in addition to the billing of end customers. Thanks to our solutions, mobile operators can smoothly deliver, control and bill core and value-added services and easily manage their relationships with customers and other operators.

### Convergent Billing

Comarch Convergent Billing provides operators with all business processes necessary for everyday operations, including revenue management, invoicing processes and customer relationship management, as well as efficient integration with network equipment.

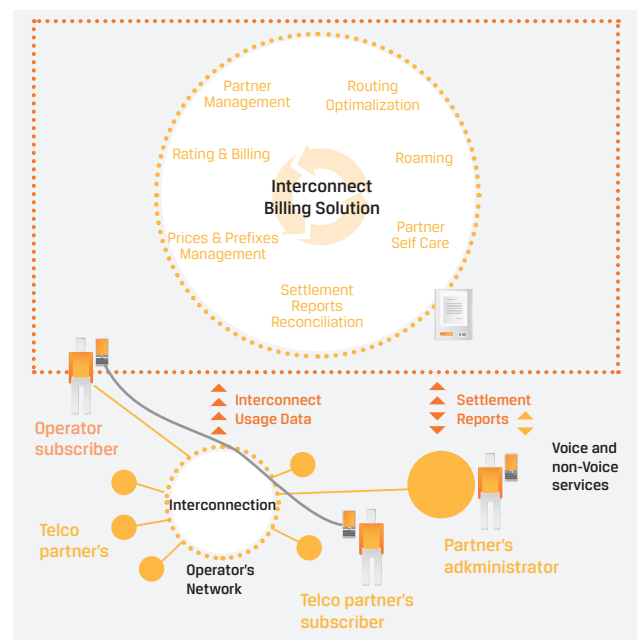
Operators like Auchan Telecom in France, Bite in Lithuania and Latvia, Belize TL in Belize and many more are using the solution for running and successfully developing their businesses.



- Fully convergent solution with real-time, service agnostic billing and discounting of voice and non-voice services
- Integrated subledger
- Carrier grade scalability and performance.

### Interconnect Billing

Comarch Interconnect Billing is designed for all telecommunication operators and service providers who maintain relations with other providers and therefore have the need to exchange settlements, invoices and share revenue or costs. It offers support in handling billing-related processes for origination, termination and transition of services through the operator's network, as well as roaming-related billing processes.



- All services on one platform – Handling Voice, Data, Messaging and content services
- Multiple settlement types – Bilateral agreements, Hubbing, Revenue Sharing, Roaming, Content-based billing and more
- Carrier grade performance, scalability and reliability – Hundreds of millions of events per day, (more than 50M events/1hr, 4CPU)
- Support for regulated services
- Strong support during business changes and following regulations – with flexible configuration and a powerful inbuilt aggregating engine.

## Revenue Sharing

Comarch Revenue Sharing is designed for operators who cooperate with other operators, content or service providers in order to deliver comprehensive services to their customers. It enables the management of partner relationships, settlements and calculating the revenue and costs for all partners.

Revenue Sharing becomes extremely important in modern services where service delivery chains are becoming complex and longer.

## Roaming Billing

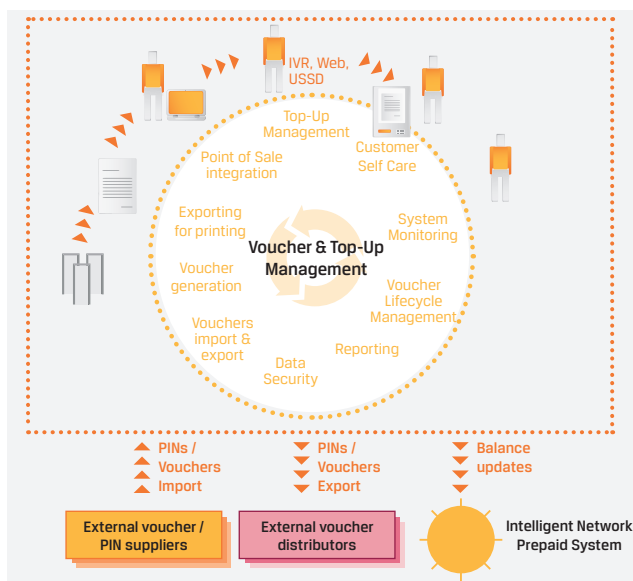
The Comarch Roaming Billing supports the process of roaming settlements for mobile operators and consists of several modules – The Comarch Billing System, Comarch InterPartner Billing and Comarch Billing Mediation.

Roaming billing support the following features:

- Roaming agreements management
- Direct partners agreements or Clearing House
- End customer and partner rating for roaming services
- Usage data exchange via TAP/RAP files and NRRTRDE according to GSMA standards.

## Voucher & Top-Up Management

Comarch Voucher & Top-Up Management is an independent component which supports mobile and IP operators with the management of vouchers and recharging of user accounts. The system can be integrated with existing network infrastructure such as media gateways or delivered with a dedicated IVR module.



## Partner/Supplier Relationship Management

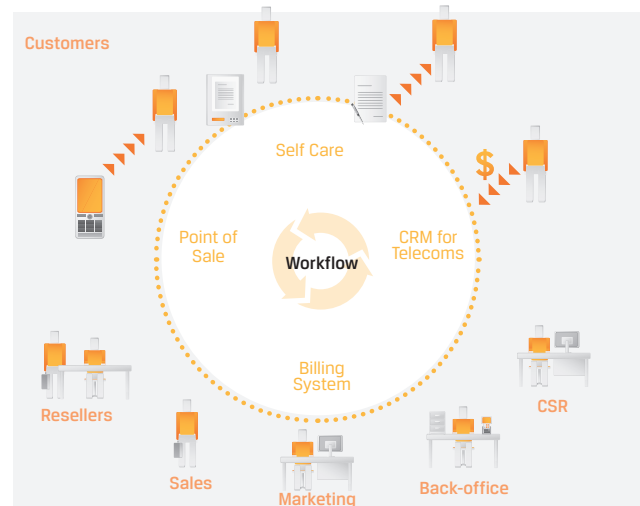
Appropriate inter-partner settlements and revenue assurance scenarios between operators and partners are needed when the level of service offerings for end subscribers increases.

Comarch Partner Relationship Management supports operators in all complex relationships with partners and suppliers and provides core features such as agreements management, workflow processes, regulated services support (BSA, LLU, WLR), dispute management, orders handling, SLA auditing and managed communication channels.

## CRM for a Mobile Solution

The Comarch CRM solution is an integrated set of workflow-driven modules for mobile operators who want to increase ARPU by delivering superior customer experience across channels and across the customer lifecycle. Highlights of the solution include:

- Self Care – more power to customers through unique features for individual and corporate clients
- CRM for Telecoms – with broad functionalities for selling, campaigns and customer service, including order handling, ticketing and more
- Point of Sale – a light yet powerful sales application for shops owned by both operators' and dealers' alike. Pre-integration with Comarch Billing.

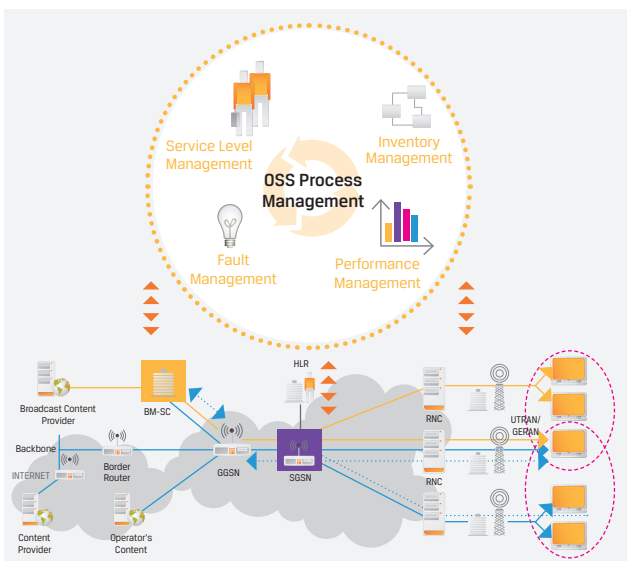


## OSS for Mobile Operators

Comarch OSS for Mobile Operators is a suite of fine grain-end modules with standard based API which can be delivered as a pre-integrated solution comprising both Service and Network Management functionality. The solution is built up from Network & Service Inventory, the Service Delivery Platform and Service Assurance. The OSS Suite includes a comprehensive mediation layer with the underlying network assuring end-to-end operations support processes.

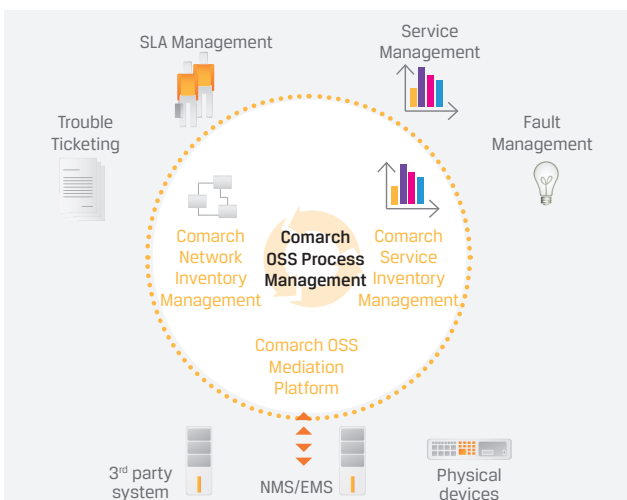
## Benefits

- Customer-tailored solution supporting both pre-integration and individual modules integration
- Reduced integration costs provided by industry standard-based (eTOM, ITIL, SID, MTO SI) based OSS Suite modules
- Complete pre-integrated OSS solution comprising Fulfillment, Assurance, Operations Support & Readiness and Product Lifecycle Management vertical eTOM areas
- Business-driven operation enabled by filling the gap between customer-centric view and network driven operation
- Shortening time-to-market by service lifecycle management and service fulfillment and service assurance process automation spanning service and network layers.



## Process-Driven Inventory

The Process-Driven Inventory solution plays the role of an integration hub for all OSS processes. The unique glue capability is achieved by pre-integration of Network & Service Inventory with the OSS Process Management module. Network & Service Inventory employs TMF's SID model to provide an end-to-end network view comprising the ability to map Customer Facing Services down to network resources.



Customer Facing Services down to network resources. Comarch OSS Process Management, by attaining intelligence from the inventory data, provides high automation for network and service management processes.

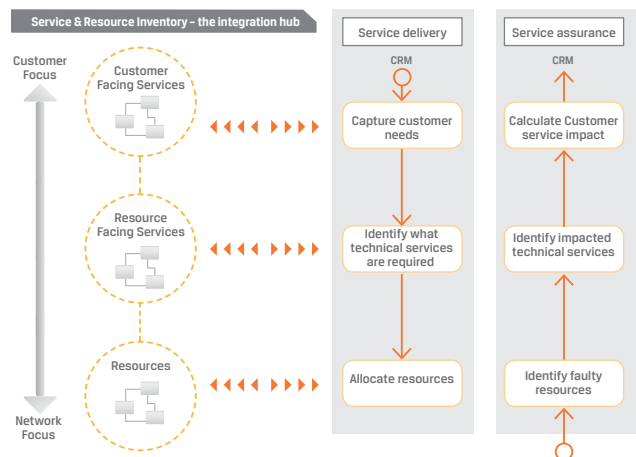
## Benefits

- Operational excellence thanks to the complete top-down view from services to the underlying network resources
- Absence of a gap between business, customer-centric view and underlying technical infrastructure enables better cost control of network development and maintenance
- Higher process automation enabled by "intelligence" captured in comprehensive data
- Seamless integration of operation processes around inventory integration hub
- Central inventory providing unified view for various cross- organization operations processes.

## Next Generation Service Management

Comarch Next Generation Service Management is a solution with the mission of enabling fast and cost-effective introduction of new exciting customer services leveraging technology convergence.

The solution draws benefits from the service fulfillment and service assurance synergy driven by the service inventory data. This idea is depicted in the fig below.



## Benefits

- Reducing time-to-market for service introduction embracing service fulfillment and service assurance operations readiness
- No need for the Big bang – enables a step-by-step transformation from many vertical OSS systems towards a horizontal platform
- Reduced maintenance costs as one NGSM has the potential to replace many vertical OSS systems
- Higher degree of automation by attaining intelligence out offrom inventory data for service fulfillment and assurance processes automation
- Filling the gap between service inception and network operations.

## NG Service Delivery Platform

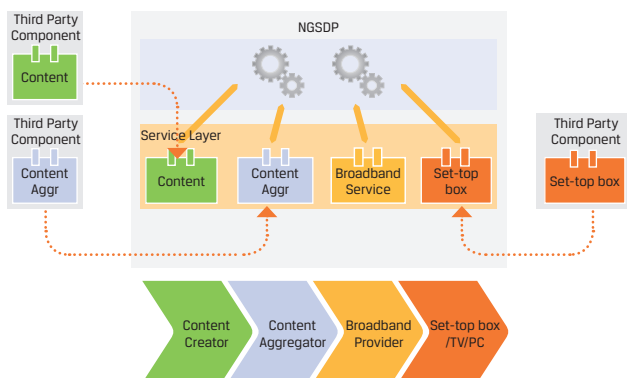
The Comarch Next Generation Service Delivery Platform is a solution within the service fulfillment area which employs a component-based service creation concept to achieve shorter time-to-market for new service introduction while keeping costs low. The concept is implemented by the service catalog-driven service assembly process. The service catalog leverages the TMF SID model for service composition definition, which enables managing a partner's components for creating new customer services.

### Benefits

- Reducing time-to-market for service introduction by component-based service creation concept realization
- Operational readiness for tackling services requiring a very short lifecycle to be able to follow the 'Internet-speed' changing customer needs.
- Ability to embrace new revenue sources based on complex convergent and content services
- Support for business models based on collaboration including leveraging wisdom of the developers community
- Reduced costs by boosting reusability of service components and leveraging SOA.

## Next Generation Service Assurance

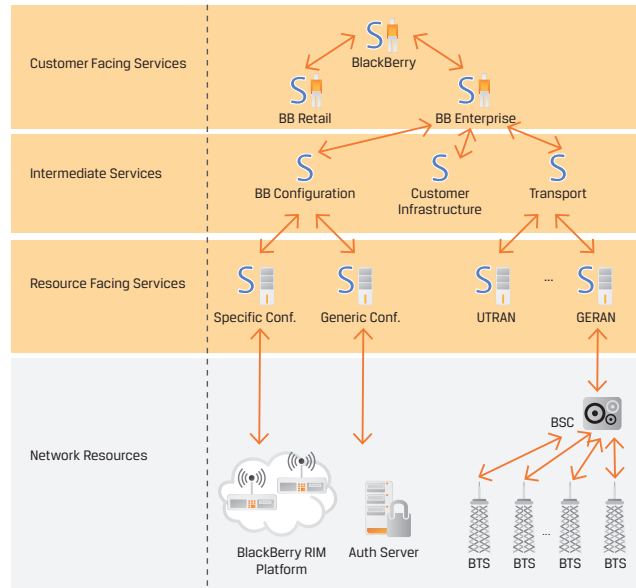
Comarch NG Service Assurance is a solution with the primary role of improving of customer satisfaction and experience. The solution enables detecting and calculating the customer impact for network alarms and resource performance metrics, providing comprehensive customer service monitoring. Early detection combined with ITIL-based incident and



service management enables a high level of pro-activeness, reducing the service degradation perceived by customers.

### Benefits

- Customer service oriented view on network quality
- Pro-active service incident management capability
- Reduced costs by higher automation both in customer service impact calculation and root cause analysis
- Rapid adoption of ITIL and eTOM industry best practices.



## About Comarch

Since 1993, Comarch has been specializing in designing, implementing, and integrating solutions and services for telecommunications operators. Experience gained throughout this period, in addition to the company's knowledge of the latest industry trends led to the development of a wide customer portfolio that is spread across 4 continents and includes some of the biggest market players, such as T-Mobile International, Telefónica O2 Germany, as well as MVNO operators such as Auchan Telecom, France. The satisfaction of Comarch's customers has always been the strongest confirmation of the quality of its solutions in the areas of billing and inter-partner settlements, as well as management of telecommunications networks and services. Comarch's solutions for telecom operators are intended for **Fixed, Cable and Broadband Operators, Mobile Operators, Wholesale Departments, MVNO/MVNE Operators, ISPs and VoIP Operators** and **Content Providers** and **IPTV Operators**.

### Comarch SA

Al. Jana Pawła II 39 a  
31-864 Kraków  
Poland

phone: +48 12 64 61 000

fax: +48 12 64 61 100

e-mail: info@comarch.pl

### www.telecoms.comarch.com

www.comarch.com www.comarch.pl www.comarch.de www.comarch.eu

Comarch Spółka Akcyjna with its registered seat in Kraków at Aleja Jana Pawła II 39A, entered in the National Court Register kept by the District Court for Kraków-Śródmieście in Kraków, the 11th Commercial Division of the National Court Register under no. KRS 000057567. The share capital amounts to 7,960,596.00 zł. The share capital was fully paid, NIP 677-00-65-406  
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