White Paper

Key issues to consider before switching to convergent billing

What will you learn?

› Why you need to transform your current billing system

› How a modern convergent billing platform can help you improve customer experience while keeping costs low

› What features and functionalities you should look for in an ideal convergent billing solution

Introduction

We live in a world where communications go far beyond voice and SMS. A mobile phone serves for video streaming, navigation, playing music and e-mail, and the traditional use of voice and SMS can account for just a small portion of the total time that a handset is in use. The expansion of operators' service offerings into data services has a huge impact on the underlying platform. Offering more data services not only entails additional network capacity investments, but also calls for extra capabilities to be added to the BSS platform. The operator must be able to charge for the new types of services and adapt quickly to competition, while keeping the customer experience intact.

I already have a billing system – why transform it?

The increasing availability and choice of smartphones, their wider capabilities and the reduced prices of mobile data offerings have led to wider use of mobile data services. This poses a new challenge for the operators: the revenues from mobile data services are no longer covering the costs of network maintenance and network capacity investments. Flat rate data offers are evolving into more complex products, where the various services can be rated and charged differently. But the question is this: are the billing systems currently used by operators fit for the new charging models?

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The increasing complexity of charging models does not only mean an operator has to face redefining rating rules. The underlying BSS platform must also have enough capabilities to process the growing number of event data records. It must be able to differentiate the amount of data and the service types that the customer is using, in order for the operator to charge properly for the service usage. As mobile data services are becoming increasingly popular, the existing BSS platform that has been capable of simple data session charging, is facing bigger challenges. This is true especially now, when operators have started to cut down on all-you-can-eat data plans and introduced tiered levels of data quotas per month (including service-specific data quotas).

Then there is a question of another type of differentiation between pricing models – i.e. prepaid versus postpaid. Offering both prepaid and postpaid services can pose a challenge for operators. When the products are rated and charged on different systems, maintenance of both systems becomes much

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more complicated and expensive than having a single, convergent platform for handling both prepaid and postpaid services. The same also applies for different types of services (for example one billing system for mobile services and another billing system for xDSL services). The ideal billing solution should be able to charge all the services, regardless of the underlying network technology. Additional problems may occur when introducing new charging models, because the legacy system may not be capable of supporting them (for example, the billing system used for mobile data may not be able to handle data services efficiently enough).

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Complexity of charging and pricing models is however just one side of the coin. Due to heavy competition, telecom operators are also forced to shorten the time-to-market for new services. Delayed service not only entails additional work, but also potential loss of revenues. Short time-to-market also has another advantage: if an operator is the first one among its competitors to introduce a given service to the market, this service is in unique position, which provides a strong competitive advantage.

The challenges described above are pushing the operators towards transforming the billing platform into a more convergent one. The benefits from this transformation include not only business and revenue growth, but also the ability to react faster to market changes, improve the customer experience and reduce operating costs.

Towards customer-centric BSS

The relationship between an operator and its customers has shifted in favour of the customer and evolved into a more customer-centric model compared to a couple of years ago. The times when the customer and operator had a simple relationship (e.g. the customer used a fixed line telephone service and received an invoice once per month) are over. More stakeholders have entered the market and the service that a customer purchases from an operator acts as a channel for additional content. The operator also has more business partners than before (e.g. content providers, interconnect partners,

resellers) and they must be managed efficiently too, but the main focus stays on the end customer (regardless of whether it is a business customer or an individual).

The operator's billing platform should support the customer-centric approach, by enabling the creation of convergent offers and personalized services. The operator should be able to provide any combination of services in a bundle, and constantly improve the customer experience. Customer data becomes a valuable asset that should be leveraged through up-selling and cross-selling.

Things to look for when looking for a convergent billing platform

Support for numerous business models
The operators that have been in the market for a long time may have modified their business models during the years of operation, or added new ones. Perhaps the focus has been mainly on business customers, and only later expanded to individuals, or vice versa. Perhaps the sales model was based only on direct selling at first, and later it was extended to involve resellers too. Business models evolve. This is why operators need to have a single, convergent BSS platform to support as many business models as possible. Each time the business model changes, the existing BSS platform should be able to support it.

A truly convergent billing system should be service-agnostic, and able to be used in any business model with rating, charging, billing and invoicing for any services offered. That kind of platform should also show versatility, which means the system can operate in a diverse range of configurations with different providers.

Ability to reduce the time-to-market
If an operator's products are defined in multiple systems, those systems can be used to launch new products and charge for their usage, but sooner or later the restraints will become too severe. Operators may find that their current BSS platform does not support modern products, that configuration of individual products takes too much time, or that system maintenance becomes too expensive. The current process of product and offer introduction may already include activities such as duplicating product information (the same information is entered multiple times), struggling to keep the fragmented data consistent, and maintaining the integrated legacy systems. The amount of work in these areas can be significantly reduced with a single convergent billing platform.

If we take a case of a greenfield operator in rollout phase of its services, short time-to-market may even be more impor-

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tant as it speeds up the start of the revenue stream. A convergent billing system should also provide convergence on the prepaid/postpaid level and on a service level. This provides a foundation on which the greenfield operator can construct a large customer base, without limiting the available payment options.

Legacy systems that are still in use in many telecom businesses may limit product and offer definitions or rating and charging scenario definitions. By transforming the billing system into a convergent platform, product managers will gain an opportunity to define and apply many kinds of associations and rules to the products and their charges, which will make their work a lot more efficient.

A truly convergent billing system has a modular and object-oriented construction, which enables fast and simple implementation of new services. Definition of new services is possible thanks to the parameterized services and business rules, and does not then require modifications of the application code (hard coding).

Standardization
Whether an operator needs to fulfill almost the complete set of eTOM processes or just a subset of them, a convergent billing system should come with a suite of out of the box integrated applications to match the individual operator's needs. This enables the operator to avoid the challenge of integrating various software solutions from multiple vendors.

Providing multiple types of operation possibilities
Also, some operators have their business model based on a strong outsourcing strategy, enabling the operator to focus on the most strategic subjects instead of system maintenance. Thus the development and operation efforts of the billing-related activities should be able to be outsourced to the BSS vendor.

One platform for both prepaid and postpaid services
In legacy billing solutions, the operator often maintains two separate systems for postpaid and prepaid services. If similar products are offered in postpaid and prepaid models, there

may be a lot of duplication. Thus having one solution for both types of offers has great advantages (such as cost of ownership and flexibility). Additionally this change will cause all event types (voice, data, SMS) to be rated and billed by the same convergent billing system. Furthermore, the extra work caused by duplicated product catalog and customer data records, as well as all other problems associated with mixed prepaid / postpaid offers, can be eliminated with a single convergent platform.

A well-chosen convergent billing system enables postpaid events to be rated in real-time if needed, reducing the configuration differences between prepaid and postpaid tariff plans. Consequently, only the core of the billing system should be aware of the difference between a postpaid and a prepaid event. All other elements of an operator's IT systems and telco network can be completely unaware of this difference. This results in a very clean implementation of logic for these systems.

Easy integration with other IT systems
To support transformation towards a convergent billing platform, it is necessary to integrate existing IT systems with the platform. Such development can be supported by applying Service Oriented Architecture with the use of open interfaces, which can help limit the growth of the total complexity of the solution. A convergent billing system can support the innovation of operators through the inclusion of features such as an open architecture, customer-centric approach, centralized product management, built-in business process manager and rule-based configuration on various levels.

Multiple levels of convergence
Convergence exists on multiple levels. Prepaid and postpaid, multiple underlying network technologies within a single platform, many different customer types, all services in one… these are just some examples. Having a separate platform for each of these issues would significantly complicate an operator's daily operations.

A convergent billing system allows operators to price and invoice distinctly different services together, with new combinations created quickly to reflect market changes. A unified customer account enables an operator to view the big picture easily, spotting cross-service relationships and buying patterns that show new business opportunities.

Easy introduction of new charging models
As mentioned earlier in this document, network capacity investments and maintenance costs are increasing more rapidly than the revenues from data service usage. In addition, a small percentage of subscribers are using most of the network capacity, thus causing network problems for other subscribers and influencing

their customer experience. This is why policy management has become a very popular concept. It was used for network throttling before, but now it is becoming more common as a tool for providing value-added services and segmenting data services. For example, the usage of Facebook via smartphone can be offered with a cheaper tariff than the usage of YouTube.

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Operators should have policy management capabilities in their billing platform, to be able to offer personalized services and tariffs to their customers, while removing the unlimited data consumption plans and differentiating service types. A convergent billing system enables operators to control and charge the subscriber services basing on the service type, instead of general data consumption only. This provides operators with new business opportunities, reduces the network investment and maintenance costs, and improves customer experience.

Better performance of the billing platform
The increasing volume of transactions (for example, from data services that are charged based on a service type) puts a lot of pressure on the billing platform. It must therefore be scalable and support a high volume of transactions. There is no excuse for delays in system operation, especially if these delays are visible to the end customer. For example, if a prepaid service is not charged correctly and a customer's prepaid account is charged much later than when the service was used, the customer may become confused about the actual available balance on their account. Another issue is when service performance is too low and a service cannot be used by a customer. This causes a negative customer experience and leads to revenue loss.

From the hardware perspective, efficient data processing is crucial. An efficient data processing engine in the billing system can handle more events with similar hardware in a given time, than a less efficient tool (where more hardware is needed to reach similar rating performance). A convergent billing solution should include a high-performance rating engine, and in this way it should reduce hardware costs. Additional savings on hardware can be reached by consolidating the separate legacy billing systems into a single convergent platform.

Apart from high performance of the billing platform, efficiency can be increased by automating mass data processing. A convergent billing system provides tools for configuring and scheduling processes (one benefit of this is that billing procedures can be performed during the night when the system is not overloaded with regular user activities) and real-time updated graphs and

charts about the process status. It should also be possible to issue detailed reports about, for example, errors.

Comarch Convergent Billing Overview

The business challenges that have been presented in this document, can be approached with the Comarch Convergent Billing solution. The solution is a high capacity, scalable billing system which can be used in any service provider business model including fixed, mobile, broadband, satellite and cable TV operators, as well as multi-service and MVNOs. The solution enables fast and simple implementation of new services offered in the process of business development, and can operate in a diverse range of configurations with different providers.

In order to streamline the management of complex products, it is recommended that Comarch Convergent Billing is used together with an additional module for product management: Comarch Central Product Manager. This module handles offers and product specifications, defines relationships between various products, and specifies which ones are ex-

clusive or only sold as a component of a bigger package. It also defines target customers, their locations, and many other parameters. Comarch Central Product Manager is an integral part of the overall BSS architecture, and can also be integrated seamlessly with other components of the Comarch BSS Suite if needed.

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Comarch Convergent Billing solution can also be used together with a Product Inventory module that manages the product instances. The Product Inventory module provides an interface for other modules (including Comarch Convergent Billing) to create and terminate product instances, as well as fetching the product instances to be used in the billing system.

The logical architecture of the Comarch Convergent Billing module is presented on the figure below.
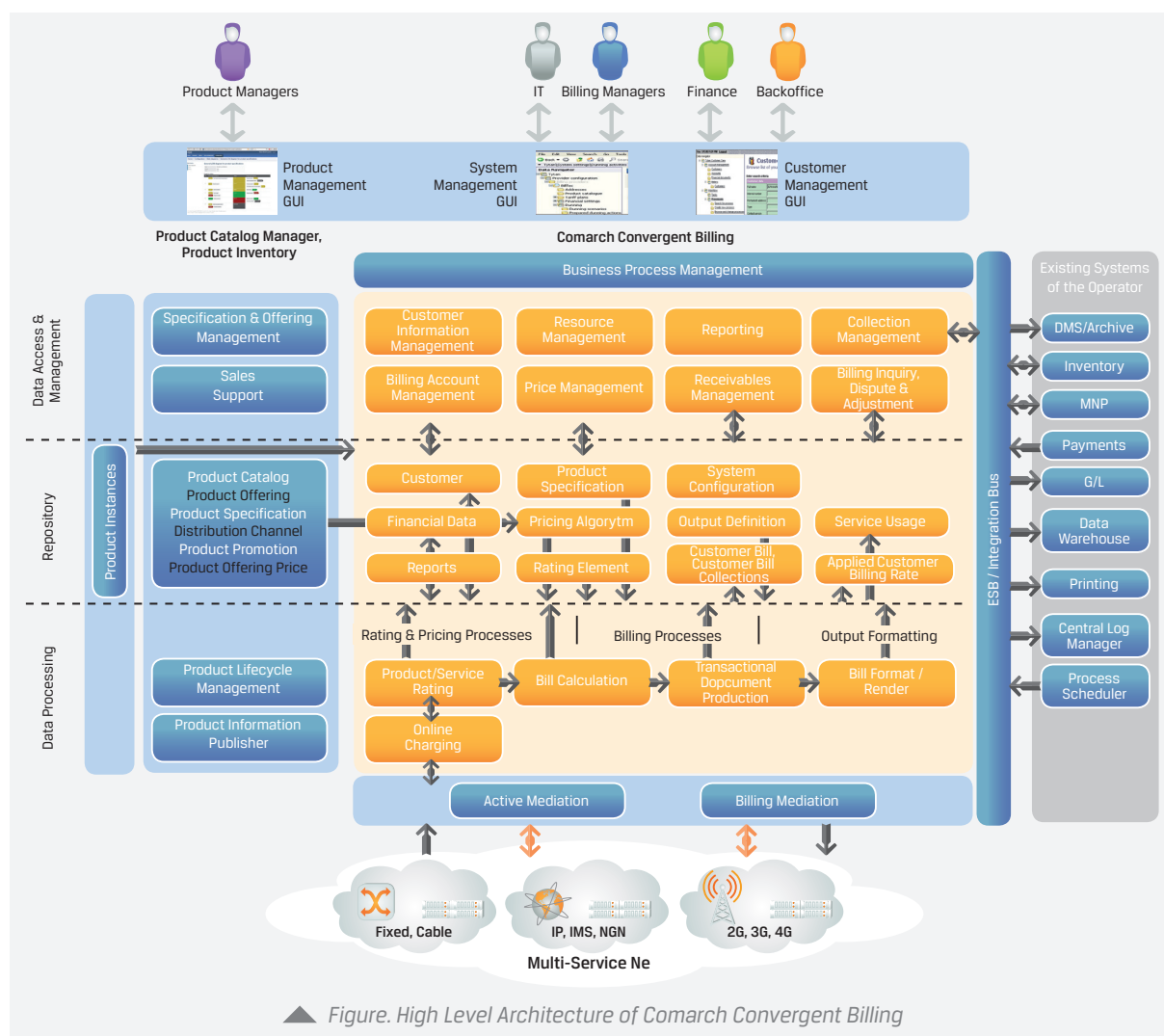
Figure. High Level Architecture of Comarch Convergent Billing

The system can be used for both prepaid and postpaid events. From the implementation point of view, in the system there is almost no difference between a postpaid tariff plan and a prepaid tariff plan. When introducing new tariff plans for the products, the logics from the old tariff plans can be re-used. For example, extending a prepaid tariff plan into a postpaid tariff plan is a straightforward operation, because both tariff plans can use the same configuration rules and a single database that contains the accounts and tariff plans.

When it comes to data processing, Comarch Convergent Billing also shows very high performance. It contains two internal components for data processing – one for mass data processing and one for real-time processing. Both components use the same administration application and configuration rules. The efficiency of the system makes it process even the most complex tariff definitions quickly and accurately.

In addition to the key functionalities such as prepaid and postpaid billing, the system supports multiple types on wired and wireless networks. It also contains a built-in business process management functionality, supports a wide range of additional processes relating to core functionalities, such as mediation, payment processing, dunning and G/L integration, and has a modular architecture, providing various interfaces to external systems.

The key benefits of the solution can be summarized as shorter time-to-market for new services, reduced maintenance costs, convenient adaptation to new business models within the same platform, and improved customer experience.

Conclusions

The telecom business has become more customer-centric than ever before. The customer experience is the strongest focus as it becomes the most efficient weapon in the constant fight for customers. Despite the challenges of falling revenues from voice services, the operators get additional business opportunities from providing new, personalized services to their end customers. Customers also appreciate the smooth operation of the services they are using, and pricing transparency – customers must know what they are paying for.

To use the business opportunities, the underlying billing system of the operator must be capable of enabling new types of services and bundles and ensure a short time-to-market for the services, while at the same time providing cost savings.
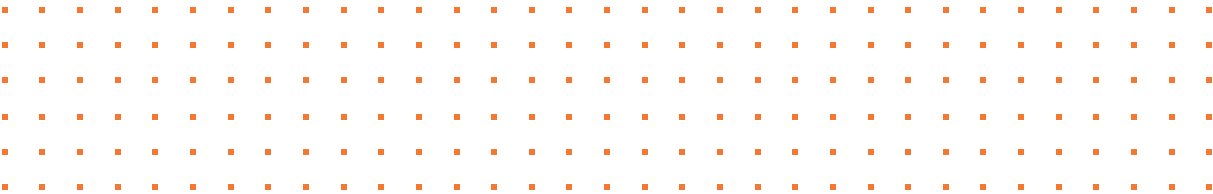
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