OSS/BSS explained, part 1:
It used to be simple; now a massive transformation is required

What is a good customer experience and how do you provide it? Customer experience is the foremost reason why operations and business support systems (OSS/BSS) have become a key area of investment for any communications services provider.

UNTIL THE MID-1990S, the telecommunications industry — and specifically the mobile part of it — was wholly run on postpaid subscriptions, and services were few. Then, from 1995 to 2000, most operators around the world started to offer prepaid subscriptions. This was a major shift in the OSS/BSS area because it required real-time and online processes to be implemented in the networks.

In the year 2000 GPRS was introduced; the first version of efficient data communications for mobile communications, which, in turn, enabled another offering – value-added services. This caused the next shift for OSS/BSS, as services could be extended beyond just voice and SMS. It took about another five years for the telecommunications industry to start the next shift, where services were not only directed to people, but also devices. And for all intents and purposes, the industry is still in this shift. As with the shift in the 1990s, the current shift will have a profound impact on the OSS/BSS systems of communications service providers (CSPs).

This article is the first in a series of three that explain the growing importance of OSS/BSS and how closely it is connected to industry developments. Here, we focus on customer experience and why managing it is of paramount importance.

TAKING CARE OF CUSTOMERS
In mid-2012 we are well on the way toward a Networked Society, where everything that can benefit from a connection will have one. The communications industry is undergoing a shift in:

► business models
► go-to-market models
► service offerings and
► value chains.

This shift is driven by the expansion from basic communications services (voice and SMS in mobile) to connectivity being embedded into many devices and our daily lives. In
the OSS/BSS area of CSPs’ operations, this shift is having some serious consequences.
To date, most OSS/BSS systems have been designed with a main go-to-market model (a direct consumer model), a basic set of services (voice, SMS, and data) and a simple value chain where the operator is at the top. With broadband and smart devices, users can now access a large number of over-the-top (OTT) services, and as a result the market model is changing. Users can do a great deal over a single data connection, so the CSP is no longer only providing a basic data service, but is part of a very large number of services used by their customers to manage their lives. In addition, many industries are adopting communications services to manage their businesses more efficiently, and as a result many devices, as well as people, are becoming connected. In December 2011, Swedish newspaper Ny Teknik reported that about 17 percent of mobile subscriptions in use in Sweden were not used by people, but were part of sensory and monitoring systems.

Today, and in the future, the CSP will have two main types of customers – consumers and enterprise customers. Each of them has different needs from their CSP, and these can be summarized as follows:

- Consumers want to feel like they are the CSP’s only customer, which means they want to be taken care of and cared for.
- Enterprises want to use communications to be more efficient, which means they want communications technology and services to bring down cost and increase efficiency. As mentioned above, enterprises are employing communications technology more and more to monitor and manage their businesses, and this is where the machine-to-machine (M2M) sub-segment will be most prevalent in the future.

**BUT WHAT DOES ALL THIS MEAN FOR OSS/BSS?**

Put simply, it means a massive transformation in order to handle the evolution of the telecommunications industry toward the Networked Society. Today, the CSP is faced with many opportunities that can be summarized as follows:

- Customer experience, where understanding, acting and responding to changes in the way customers experience and use services is of the utmost importance to meet their service expectations and proactively propose services that would meet new anticipated customer needs.
- Business innovation, meaning the ability to adapt to and adopt different approaches as the industry shifts toward the Networked Society.
- Business efficiency, where the focus is on consolidating systems and simplifying processes in order to manage total cost of ownership, and in doing so manage profitability for both the CSP and its enterprise customers.

In the past, customer-experience management meant keeping dropped call rates and congestion below a certain average in the network, monitoring SMS failure ratios to keep the number of undelivered messages to a minimum. And before the smartphone, “data” meant keeping an eye on the part of the network carrying the data.

**CHOICE AND CONTROL**

Why is customer experience so important now? First, subscriber growth is no longer in double-digit figures year-over-year, and consequently customer retention becomes critical. The result is that CSPs are more interested in how the customer experiences their services and how they are perceived as providers, since these parameters are all part of maintaining the right level of customer satisfaction. The second reason is the shift to smartphones and mobile broadband.

A recent Ericsson ConsumerLab study showed that the top reason why customers call an operator’s customer-care center is to get an explanation for why they were charged for something in a certain way. Broadband charging is hard for customers to understand, since devices do things in the background for which the customer must
“The telecommunications industry must take a maximum of two years to do what it took banks 10 years to do.”

pay, and as a result many customers do not understand why they are charged for certain services on their accounts and bills. The second most common reason is to change the package or plan that the customer is using. Customers have changed from being passive consumers of operator services in the 1990s to actively picking and choosing what they want and how they want to pay for it.

In summary, customers want choice and control; to be able to structure their package according to their personal needs, and to have control of their spending in the same way that anyone has control over their personal economy as a necessity of being able to function in modern society.

WHAT IS THE WANTED CUSTOMER EXPERIENCE?
Consider the following scenario: A smartphone user accesses an online service like video on demand (VoD) and orders a movie to be streamed to their chosen device. After the user has watched half of the movie, it suddenly stops streaming and the picture freezes. After a few minutes of hoping the situation will improve, the user gives up and contacts the CSP’s customer-care center. The customer service representative (CSR) takes the call and examines the user’s account and subscribed services. The CSR also has an overview of which services the consumer uses and the quality experienced for each service. On this list, the CSR can see that a video-streaming session ran into problems because the speed was too low between the VoD service and the user’s device. The CSR can also see that the user’s package includes a bundle of data, and the speed committed to the user is lowered unless the user extends the bundle. The CSR can also see a summary of all the services the user has used throughout the month, and from this they can explain to the user that the movie stuttered because the bundle expired halfway through the viewing session. At first, the user contests this, but when the CSR reads a list of the various services used and the volume that each of these consumed, the user is reminded of a new app downloaded that contained a large amount of data, and as a result the consumed bundle as described by the CSR is correct. The CSR now offers to extend the user’s bundle, which the user agrees to in order to continue watching the movie.

Another scenario is an enterprise that deploys sensory and measurement systems in its infrastructure and agrees on certain service-level agreements (SLAs) for these with the CSP. For some reason, there are problems with a part of the deployment phase. First, the CSP must monitor the committed SLA continuously to avoid penalties, but it must also be proactive in order to be a real business partner for the enterprise. After some diagnostics, the enterprise contacts the CSP to log a trouble report, but the CSR taking the call can immediately see that the connections in question seem to have a basic configuration problem that results in the devices not establishing their data connection correctly. The CSR issues new configurations to the enterprise’s devices and the problem is resolved.

The examples above involve the user contacting the CSP’s customer-service center, and each customer call costs the CSP a lot of money. The next step in experience management is therefore to allow customers to access their subscriptions and service information themselves, and this is what we call self-care. To do this, consumers will use internet portals or apps on devices, while enterprises will integrate their own management systems with the CSP’s OSS/BSS systems, which we call on-boarding.

CUSTOMERS TAKING CARE OF THEMSELVES
Self-care is nothing new, and banking is the leading industry in this area. Banks have been developing internet banking for more than 10 years, and as a result customers rarely need to visit a branch office. Banks have given customers choice and control; choice to do their banking when it suits them, and control of their finances. As a result, the customers are more satisfied and the banks save money.

The banks were able to reach this level of maturity because most people with a bank account also have access to the internet and a personal computer (even if this means having to go to an internet café). However, this has not been the case for mobile users. As mobile devices were primarily feature phones optimized for voice and SMS services, and even though most feature phones sold today support data, such devices are not particularly suitable for accessing the internet or for using advanced services.

With its large screen and support for applications, the smartphone is a very good platform for providing users with self-care,
and this is exactly the trend that is visible right now. Most CSPs that offer broadband with smartphones are also offering some form of self-care, but this is in its infancy because CSPs are at the same stage as the banks were about 10 years ago. This does not mean, however, that it will take 10 years to give users proper self-care.

In fact, in some countries regulatory bodies are demanding CSPs provide users with information about their accounts as soon as possible. In North America, for example, the large carriers have committed to providing users with information about their accounts and how they consume bundles, with real-time accuracy, by Q4 2012. This makes it clear that the telecommunications industry must take a maximum of two years to do what it took banks 10 years to do.

Referring back to OSS/BSS systems: to make the examples above possible, a great deal of information must be collected, correlated and presented in a way that makes sense to CSRs and to users who are not telecommunications and OSS/BSS experts. This is where the challenge in providing a good customer experience lies. A communications network produces a huge amount of information about the network and about what people and connected devices are doing when they use the network. The trick is to be able to make sense of all this information and understand how it impacts different users.

**TRANSFORMING EXISTING SYSTEMS**

The natural next step, once the systems can deduce the customer experience, is to get ahead of the users and correct problems that can be solved automatically without the need for the user to even contact the CSP. This saves the CSP money and improves customer satisfaction since they feel cared for.

In cases like the consumer example above, systems should notify the user that their bundle is about to run out before it happens. In this way, the user can pause the movie and extend the bundle before the streaming session is affected by the CSP lowering the speed according to its agreement with the user. In the enterprise example, the CSP systems should recognize that a device that is attached to the network is not configured according to the contracted set of services. It can then send the configuration settings to the device automatically, long before the enterprise even notices it has a connectivity problem.

So, today, customer experience is about being able to deduce the actual user experience by understanding the information from the networks; tomorrow the emphasis will be on being proactive and correcting issues that can be solved automatically. All of this sounds simple, but anyone working with OSS/BSS on a daily basis will tell you that CSPs’ existing systems are not yet working together to deliver this level of experience.

Nonetheless, the needs are clear. It is a matter of transforming the existing systems to understand the network data and expose it to people and systems, both inside and outside of the CSP, to enable them to manage situations for us as our world becomes more and more connected.

This article explored the first of three opportunities that CSPs face. The next article will address how all the connectivity being added to devices is creating a shift in business models and value chains and is opening the door for a great deal of business innovation. A CSP’s OSS/BSS systems are the nerve center of the business, so it should be no surprise that business innovation is in practice enabled, or limited, by the OSS/BSS systems.

**AUTHOR**

*Jaco Fourie* is Senior Expert Business Support Systems at Ericsson’s Business Unit Support Solutions. He focuses on the evolution of the company’s Operations and Business Support Systems portfolio to meet the demands that the Networked Society will impose on next-generation support systems. Fourie began his career in data communication in the 1980s, working with the X-Series Standards for packet-switching. In the early stages of the introduction of GSM, he joined MTN South Africa and focused on value-added services and charging. He joined Ericsson in 1999, as Head of Product Management for Charging Systems. (jaco.fourie@ericsson.com)