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S o l u t i o n s



"DEDICATED CONVERGENCE" - REALIZING TOMORROW.



WHITE PAPER

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VOIP'S BILLING CUSTOMER CARE WHITE PAPER

This document defines the Billing & Customer care processes required to support Virtual network operators with all major aspects of managing from order entry, service provisioning, rating and billing. BrainRoots offers a complete solution that addresses the business, information technology and operational needs associated with all aspects of our clients' requirements.

TABLE OF CONTENTS

<i>INTRODUCTION</i>	3
<i>VNOs OPPORTUNITIES</i>	3
<i>CHALLENGES</i>	3
<i>BILLING & CUSTOMER MANAGEMENT CONSIDERATIONS</i>	4
Overall Requirements	4
<i>UltraBill (Billing & Customer Care platform for VNOs)</i>	6
1. CDR Collection	6
2. Rating	6
3. User Interfaces	6
4. Order Management	7
5. Provisioning	7
6. CRM	7
7. Branded Invoice Functionality	7
8. Sales channel Management	7
9. Accounting System	8
10. End User Debt Management	8
11. Web Specification	8
<i>ULTRABILL SOLUTION ARCHITECTURE FOR VNOs</i>	9
<i>APPENDIX A: VNO CASE STUDY</i>	11



INTRODUCTION

A Virtual Network Operator (VNO) represents a different type of business model in the telecommunications industry. While not a new concept, VNOs are now poised to make a significant impact on the future direction of the telecommunications marketplace. A VNO (Virtual Network Operator) is a service provider that provides services independently from the operator that is supplying the network. This may include partnering with a network operator for transport, handling distribution, customer management and billing and prepaid and/or postpaid mobile & data services.

Instead of one business entity providing all of these services, the VNO fronts the service to the customers while the network operator exists in the background, often unseen by the end customer.

VNOs OPPORTUNITIES

A VNO model represents a tremendous opportunity to extend the brand and build broader awareness – without having to build the network infrastructure. Potential VNOs have strong brand loyalty with their core target market. They understand their customers better than anyone else and wish to extend their relationship by offering additional services under the same brand.

Being a VNO means much more than reselling voice & Data. Consumers want more from the brand that they have become loyal to. The expectation of the end user is that the VNO will provide value *above and beyond* that of the service provider, geared towards the image projected by the brand owner. This can be realized with specialized exclusive content, branded mobile devices, cross-product bundles and promotions, and the customer service one associates with the brand. For example, minutes spent on the phone might translate to points that can be used to purchase free internet usage, VoIP Minutes, extra downloading capacity etc.

CHALLENGES

The potential VNO must still tackle other challenges including maintaining brand image and customer satisfaction and loyalty. If the service is bad, it can have significant negative implications for the brand company. There's also the risk of falling into a "low priced reseller" trap where the VNO is forced to compete on price rather than value added services which would make the VNO a money loser instead of a revenue winner. There are also challenges with managing and maintaining the customer relationship as the VNO who is fronting the service is tasked with managing the billing and customer care aspects of the customer relationship.

VNOs can introduce new core and bundled service offerings and programs that take advantage of mobile payment methods – both prepaid and postpaid. Pricing models need to be flexible and new services need to be offered in a timely manner. It isn't a matter of simply offering a cell phone or internet connectivity.

BILLING & CUSTOMER MANAGEMENT CONSIDERATIONS

In order to be competitive, companies will need to improve the operational processes they use to provide new services. The demand for new & more sophisticated products and services and the providers' time to market will drive this market place. More than ever, service providers will also need to focus their attention on understanding customers' needs and providing higher quality services. A company's ability to represent and bill accurately for newer and more complex services will become a bigger challenge over the next few years.

The system selection is not simply a software decision -- but rather a *strategic decision* that impacts the future growth and profitability of the company. Sophisticated pricing and billing models dramatically increase the convenience and underlying value of wireless services. Revenue Management and billing systems are essential to enable VNOs to identify and manage issues critical for success. These include capturing areas of revenue, customer management, ways of generating revenue, agility in billing and managing information for revenue. It is imperative that VNOs work with experienced vendors, which will allow them access, leverage and application of global best practices in order to survive.

To achieve a fully integrated, flexible and scaleable Billing and Customer Care system that is easy to use and effective in carrying out day-to-day tasks. The platform needs to be able to deal with large amounts of data without crashing and be fast and reliable.

VNO requires a system which will allow them the following:

- ❖ A system that has all the required functionality out-of-the-box.
- ❖ Flexibility to continue to add and make changes ensuring continued business.
- ❖ Scalability, to ensure client can successfully manage their growing database.
- ❖ Simple and ease to use so anyone can do anything and not require an IT qualified person to run systems or make simple amends to data.
- ❖ Fast turnaround on additional development required to system or faults/bugs.
- ❖ An effective accounting system to effectively chase money and record payments history/transactions.
- ❖ A suite of daily, monthly and quarterly business reports which can be easily extracted.

Overall Requirements

There are some key factors that were required to be considered when developing the new system for this client:

- a. The platform needs to be able to cope with and logically store huge amounts of data without crashing
- b. The data stored needs to be accessible for interrogation to produce a suite of business reports to help us run our business and ascertain the performance of employees, associates and the company
- c. The platform needs to be remotely accessed by home workers to have up to date information.
- d. The system must allow for business clients who have bespoke requests from the standard such as branding, charges etc.
- e. The system must be simple to use and ensure that anyone can operate the systems without the need for a highly skilled IT person to carry out important functions.

- f. The system must have a comprehensive back-up program to ensure that no data is lost in the event of a crash or hard-drive malfunction.
- g. The system needs to be able to integrate with all the differing systems internal and external
- h. The system needs to have a level of access rights so only certain operators can have access to certain elements which is determined in the User Admin facility with one Super User
- i. Sales Channel Management/Commissions functionality
- j. Online, integrated Billing & customer care platform with separate interfaces to partner/CSO & End user.



UltraBill (Billing & Customer Care platform for VNOs)

BrainRoots's UltraBill the Billing & Customer Care platform provides the following functionalities to the virtual network operators:

- ❖ CDR Collection and Rating
- ❖ Branded User Interfaces
- ❖ Order Management
- ❖ Provisioning
- ❖ CRM
- ❖ Interface with supplier carriers
- ❖ Interface with external systems for payment and credit checking.
- ❖ Branded Invoicing functionality.
- ❖ Commission functionality.

1. CDR Collection

Multiple types of CDRs are collected from different types of switches through FTP process. The different CDR Formats are converted into a common format (CDR Enrichment and Normalization) and then the CDRs are sent through the flexible rating engine to be rated for each user.

2. Rating

The following types of rating are implemented:

1. Fixed Monthly Fee for plan rental
2. Peak and Off-Peak rates based on Time of Day – Peak rates are during working hours on weekdays, and off-peak rates during evenings and night weekdays and on weekends.
3. Zone based rating for International Calls (based on Area Codes)
4. Zone based rating for Domestic Calls (based on distance between the area codes)
5. Volume Discounts for more than 1000 minutes of calling per month
6. Pulse of 30 seconds for domestic calls and 1 second for international calls
7. Rounding rules at billing time
8. Tax application at billing time – Flat rate of taxation

3. User Interfaces

There are three different kinds of interfaces implemented:

1. Customer Interface
2. Partner Interface
3. CSR Interface

Customer Interface is used by customers for registration if they are registering themselves or to access their usage or bill details online.

Partner Interface is used by partners of the client to register new orders, manage their own customers through them and provided a branded interface to their customers. Partners can also create new shadow accounts for managing the customers.

CSR Interface is for the employees of the client to manage all the customers, check the validity of partners and handle call center queries.



4. Order Management

Customers and Partners can place orders in the system through online UltraBill interface. The CSR can then check the orders for correctness and on approving the credit check, can convert them into accounts. The system provides partners the functionality to save unfinished orders and complete them once they have all the information.

A Service Providers (SP) will offer services based on calls and the rental of BT lines. The end – user will purchase the services from the SP, entering into the necessary contractual relationship with them. The SP will order new lines, or take over the rental of existing lines, by placing electronic orders with BT. These orders will be received by BT via the SP Gateway. Access to the SP Gateway is via the Internet through a web portal or XML interface.

5. Provisioning

Since the client is a switchless reseller, for each order they have to interface with the supplier's (carrier with switches) order management system. This system is a two way interface to provide the information of new orders and update the information in the billing system, when the order is provisioned.

The billing start date is provided by the provisioning system in the return message. Depending on the billing start date, the monthly charges for that month are be prorated.

6. CRM

The system provides the functionality to record all interactions with customers in terms of email, invoices, disputes or any calls from the customers. All these interactions can be looked up by the CSR when they get a call from the customer.

All users should have to log on to the system so that client can automatically record who made what amends and communications/amends to customer accounts/accounts and associate records. There should be an admin facility to allow a super user to allocate usage levels for staff.

7. Branded Invoice Functionality

The system allows the user to configure a different branded invoice for each of their partner. The invoice also calculates the charges of the carrier and shows the savings that the user has each month, compared to the competitor.

8. Sales channel Management

UltraBill calculates commissions for the partners based on the payments received by customers. The commission is calculated using a **multi-level marketing model**, where different percentage of commission based on the level of hierarchy of partner in the system can be defined.

The commission is directly credited to the partner's account using the direct debit interface. Partners can view their commission using the online partner extranet interface.

In order to maximize the sales potential of this associate channel, the client has to provide certain flexibilities called the "**AFFINITY PROGRAMME**". Associates will be

able to access their extranet and download a wizard which will guide them through building a simple co-branded or white labeled information page web site explaining the deal with an online form. These pages can be accessed via a link from the organization's web site.

9. Accounting System

- ❖ Ability to search for invoices by reference
- ❖ Ability to search by customer to view their invoices
- ❖ Ability to allow for part payment
- ❖ Ability to generate credit notes with customer details within and record them to his account
- ❖ Ability to mark accounts paid when check or late payment received
- ❖ All daily transactions e.g. checks in, direct debits in, credit card payments should be batched up daily and given a batch number that can then be accessed by operator to view each day's incomings. The outgoings such as credit notes should be batched daily also.
- ❖ Every month or whenever billing takes place, the customer ledgers should record the amount invoiced as a debit.
- ❖ The bank will inform the system electronically of DD failures and once received, the client should be able to upload and populate the sales ledges accordingly.
- ❖ The system should automatically send email to customers whose DD has failed (unless postal customer) the first credit control and the cycle starts from there.

10. End User Debt Management

End User debt management refers generically to a set of measures that a WLR SP can take to apply variable amounts of call restrictions on a selected WLR line.

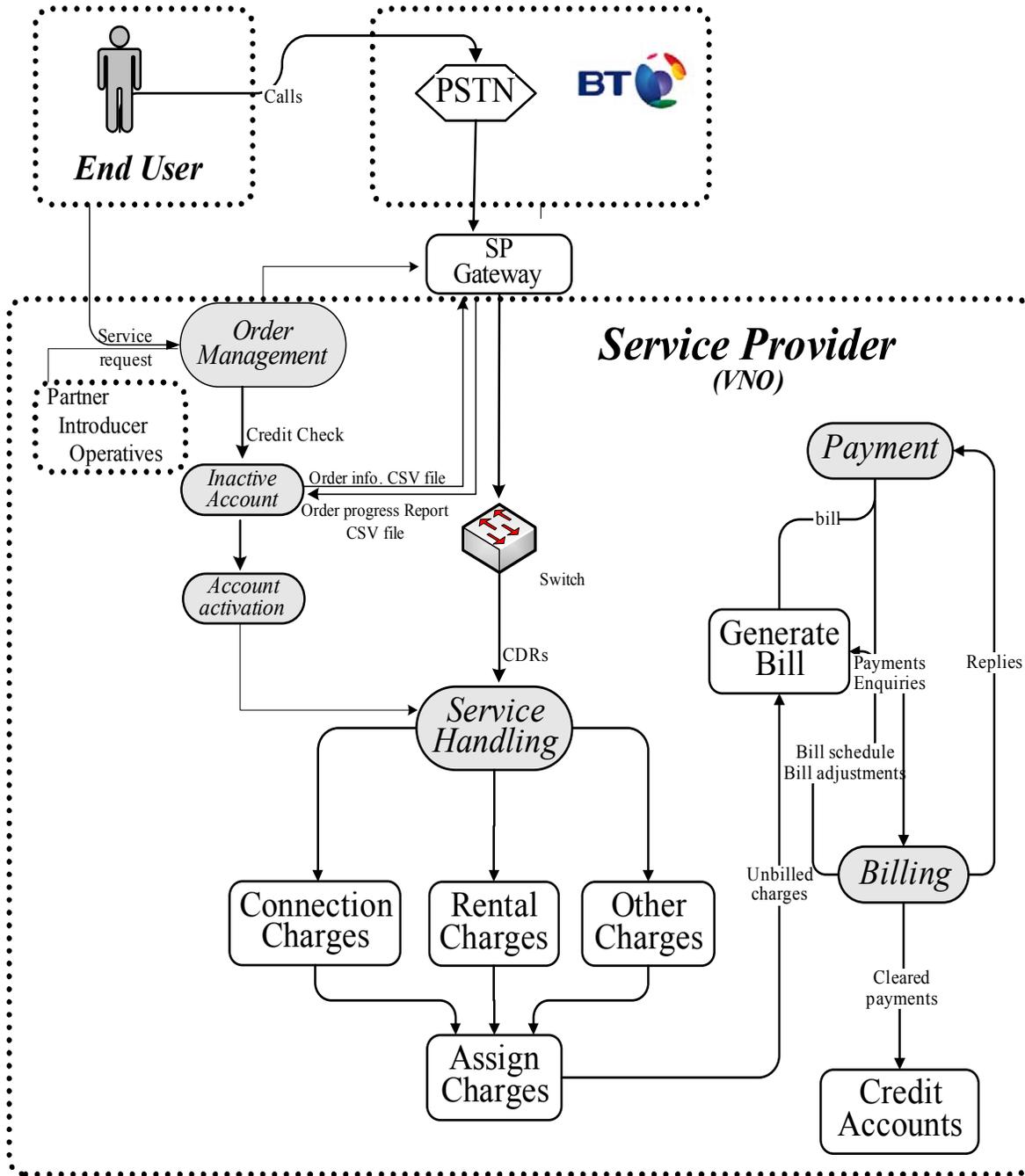
Debt management by the SP itself. e.g.: when End-Users has not paid an outstanding bill, or is building up a bill at an excessive rate, this is the ability to minimise the size of the debt by barring certain types of call (eg premium rate or international) or ultimately barring all calls.

11. Web Specification

- ❖ The site will offer an order form for order acquisition which will populate a customer record on the CRM system and can be viewed on a new order screen
- ❖ The site will service existing customers with information and options on other products
- ❖ The site will offer an extranet where customers can log on and view information relevant to their account
- ❖ The site will offer an extranet facility to affiliates for them to log on and view reports and data relating to their account and customers
- ❖ the site will allow customers and associates to edit personal data which will populate an updates screen on the CRM system and be recorded on the customers account notes
- ❖ The web site should also be easy to update and all parts should be accessible to facilitate changes and make amends whenever necessary i.e. have a back office system to the web site.



ULTRABILL SOLUTION ARCHITECTURE FOR VNOs



About BrainRoots Solutions

BrainRoots Solutions (Pvt.) Ltd., an ISO 9001:2000 company approved by KPMG is an IT Product and Consulting Organization focusing on Convergent Billing & Customer Care based in New Delhi, India with presence in UK, Japan and other countries and a base of satisfied leading CSPs world wide. BrainRoots has been listed in the DELOITTE TECHNOLOGY FAST 500 ASIA PACIFIC ranking & REDHERRING ASIA 100 FINALIST for 2005.

BrainRoots have developed proficiency in developing Solutions for prepaid calling cards, prepaid & post-paid VoIP services, PIN Management, Vendor Management, Bandwidth management, Content Billing, IP billing etc. Apart from this, BrainRoots had strategic partnership with **PORTAL**, **SIEMENS**, **IBM** etc to provide the best upgraded solutions.



Winner of 2004



Winner of 2005

Deloitte.
Technology Fast50
INDIA



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APPENDIX A: VNO CASE STUDY



<p>Aim of new system</p>	<ul style="list-style-type: none"> ◆ A system that has all the required functionality out-of-the-box. • Flexibility to continue to add and make changes ensuring continued business • Scalability, to ensure client can successfully manage their growing database • Simple and ease to use so anyone can do anything and not require an IT qualified person to run systems or make simple amends to data • Fast turnaround on additional development required to system or faults/bugs • An effective accounting system to effectively chase money and record payments history/transactions • A suite of daily, monthly and quarterly business reports which can be easily generated
<p>Key Requirements</p>	<ul style="list-style-type: none"> ◆ A Customer care and billing system to interact with their suppliers, partners, resellers and the customers. ◆ The platform needs to be able to cope with and logically store huge amounts of data without crashing ◆ The data stored needs to be accessible for interrogation to produce a suite of business reports to help us run our business and ascertain the performance of employees, associates and the company. ◆ The platform needs to be remotely accessed by home workers to have up to date information. ◆ The system must allow for business clients who have bespoke requests from the standard such as branding, charges etc. ◆ The system must be simple to use and ensure that anyone can operate the systems without the need for a highly skilled IT person to carry out important functions. ◆ The system must have a comprehensive back-up program to ensure that no data is lost in the event of a crash or hard-drive malfunction. ◆ The system needs to be able to integrate with all the differing systems internal and external ◆ The system needs to have a level of access rights so only certain operators can have access to certain elements which is determined in the User Admin facility with one Super User. ◆ These associates are contractually bound to achieve certain sales targets, which the new system will need to track and report on. • Client need to keep an Associate record for customer services • Client need to provide associates with an extranet, which contains information to aid sales plus a customer information suite which associates use to input new customers and view the progress of orders. ◆ System should allow customers and associates to edit personal data which will populate an updates screen on the CRM system and be recorded on the customers account notes.



Solution	• CDR Collection and Rating
	• Branded User Interfaces
	• Order Management
	• Provisioning
	• CRM
	• Interface with external systems for payment and credit checking.
	• Branded Invoicing functionality.
	• Commission functionality.

