



**MINDBill®**

**Billing and Customer Care Solution**

**MINDBill for NGN**

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## Executive Overview

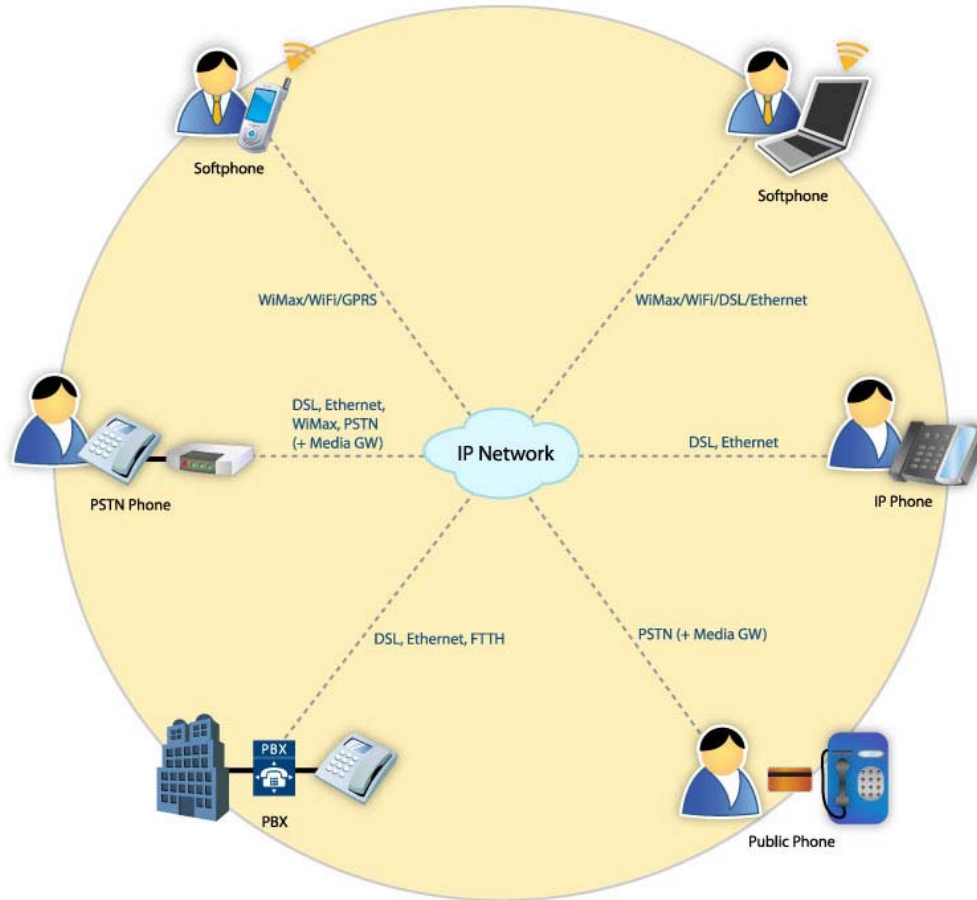
**MIND CTI Ltd.** is a leading provider of convergent end-to-end billing, customer care, mediation, and provisioning solutions for multiple communication services servicing millions of customers worldwide. **MIND** provides a complete range of billing applications for any business model (license, managed service or complete outsourced billing service) for Wireless, Wireline, VoIP, Internet, and Quad-play providers in more than 40 countries around the world.

### The VoIP Opportunity

In the revolutionary world of Voice over IP (VoIP) services, there are many opportunities. Based on IP networks and standard protocols, the evolving Internet Telephony market allows new and incumbent carriers alike to offer high-quality advanced services to enterprises, residential and casual customers, with highly competitive prices. The **MINDBill** carrier-grade OSS/BSS solution is a billing and customer care platform that allows service providers to capture those opportunities within a single solution.

**MINDBill** provides the key OSS/BSS features critical for VoIP next-generation services for a wide variety of markets. A single **MINDBill** system can concurrently support:

- Last mile voice services including managed enterprise voice and voice over broadband.
- Long distance bypass for enterprises and residential customers.
- Prepaid calling cards.
- Wholesale voice – origination, termination, and transit services.



**Figure 1 – MINDBill for VoIP Next-generation Services**

### The ISP Opportunity

**MINDBill** provides key OSS/BSS features critical for ISP services for a wide variety of markets. A single **MINDBill** system can concurrently support:

- Residential and enterprise internet services over broadband, cable, dial-up, DSL, FTTH, WiFi, WiMax, Ethernet, Leased Lines
- Prepaid access cards
- Wholesale traffic.

The ability to charge services according to the actual resources consumed, and not simply at a flat rate, is crucial. The amount of data transferred both upstream and downstream is one of the most popular metrics.

Intensified competition and rapid evolution in the ISP market have caused providers to introduce more services. **MINDBill** makes it easier to define and bill services such as domain registration, Web hosting, mail hosting and DNS (Domain Name System), to name just a few.

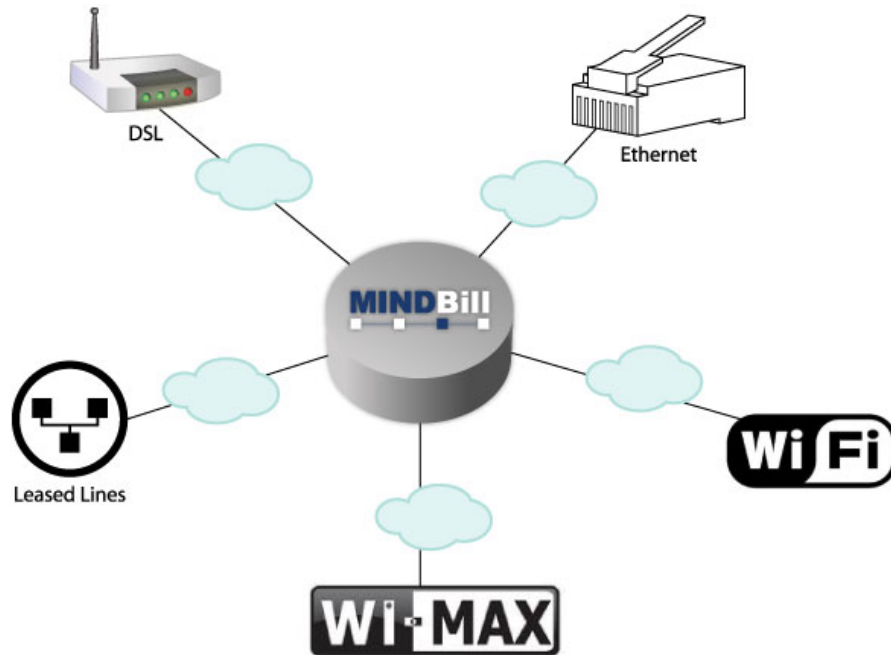


Figure 2 – MINDBill for ISP services

## MIND and the NGN Market

### MIND Track Record in the NGN Market

**MIND** is a NGN billing pioneer with real-world experience since 1995, and as such has a remarkable track record in this area. Being familiar with IP technologies from the start, **MINDBill** was designed especially for the IP next-generation world, not relying on legacy telephony 'single service' architecture. Many successful implementations of **MINDBill** NGN solutions are spread all over the globe, including one of the world's largest prepaid VoIP implementation at China Unicom, supporting more than 40 million active prepaid subscribers all over China in real time, any time.

### Unmatched Interoperability

**MINDBill** simplifies the mediation and settlement for connections over various signaling networks, including H.323, SIP, SS7/ISUP, CAS and ISDN. **MINDBill** supports real-time and batch interfaces for usage records retrieval from various network elements from multiple vendors.

**MINDBill** is pre-integrated with equipment from leading VoIP system manufactures including Cisco, Sonus Networks, Veraz Networks, Ericsson, Nortel, Alcatel, BroadWorks, IP Gallery, Cirpack, Huawei, NexTone and Netcentrex. Furthermore, the solution concurrently supports multiple vendors and protocols in the same deployment.

### Fast Deployment and Immediate ROI

Due to the extensive experience with VoIP and data networks and business models, deploying the **MINDBill** NGN B&CC solution is a matter of a few weeks. The solution is designed as an "off-the-shelf" product for next-generation carriers. Being pre-

integrated with all major equipment vendors, the integration effort on the network side is minimal. The definition of the business models, including packages, services and rating plans, is done via a friendly and intuitive GUI. Open APIs enable swift integration with the external OSS/BSS systems.

In addition, a skilled group of professional services engineers is conducting the deployment at the customer site. This personnel is familiar with both the network and the business requirements of the market, ensuring smooth implementation, Immediate Return on Investment, and lower Total Cost of Ownership.

**MINDBill** is a cost-effective, product-based, off-the-shelf solution for the NGN market, ensuring fast implementation, and a lower total cost of ownership. The solution enables the provider to rapidly deploy competitive new services and rating plans, thus immediately getting a return of the initial investment.

The 'pay-as-you-grow' model enables to start a VoIP operation with a reasonable budget, and upgrade the license and hardware when required. This and the simplicity of the system operation and its automation ensure that the cost of operation is proportional to the revenues.

## Prepaid and Postpaid Convergence

The **MINDBill** portfolio for convergent billing supports in one system both Postpaid and Prepaid subscribers for multiple services such as Voice, Internet, Data, Content, and more. The proven field track record enables MIND to offer operators a genuine convergent billing system for building a strategic convergent billing asset.

The **MINDBill** Product Catalog is designed to adapt to the dynamic marketing requirements enabling operators to define, configure and deploy new packages and services, having distinct rating and discounting schemes to take advantage of market developments and to increase revenue. Operators that have deployed the **MINDBill** convergent solution are able to bundle groups of services into tailor-made packages targeting specific market segments for which they can offer special rates, discounts and promotions to achieve a competitive advantage and differentiate their brand.

**MINDBill**'s convergent prepaid and postpaid platform supports a single front-end customer care interface; it incorporates the benefit of an integral comprehensive point-of-sale solution (with a very user-friendly sales clerk application) with modules for cashier and inventory management and introduces a wide set of BI capabilities.

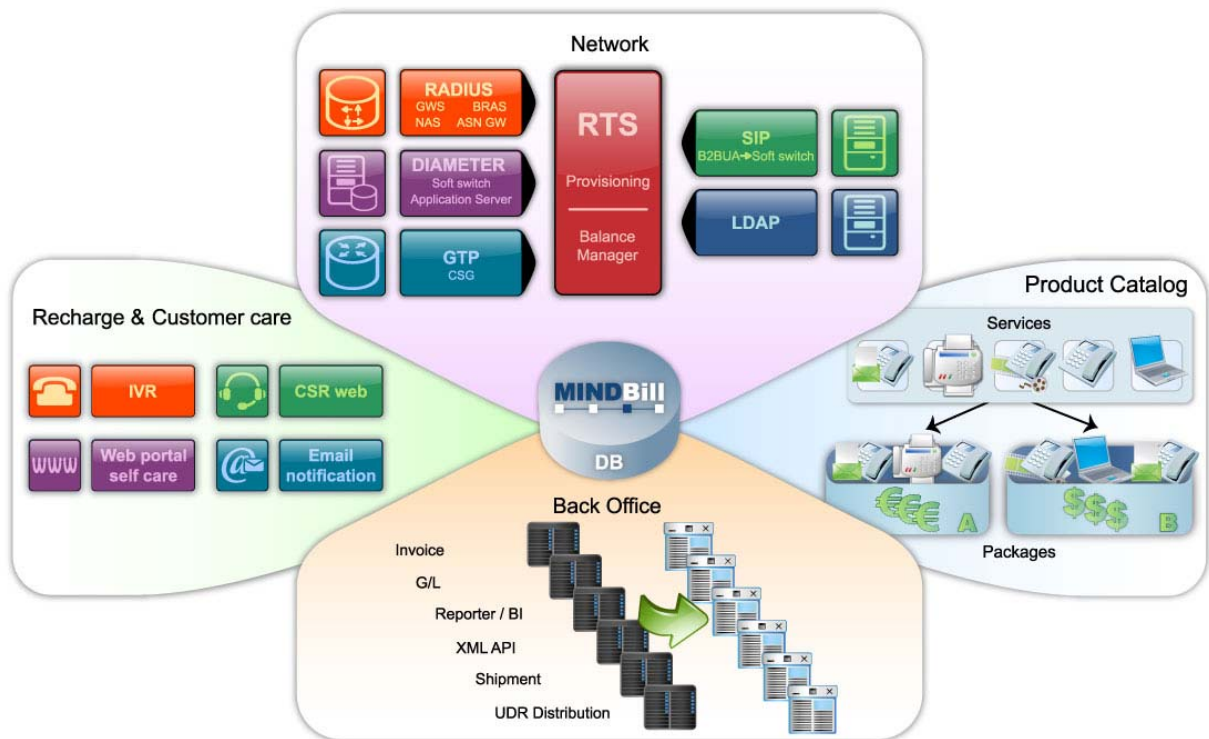


Figure 3 – MINDBill Modular Topology Layout

# Mediation and Fulfillment

## Mediation

**MINDBill** provides a reliable, flexible, and scalable mediation solution, allowing the provider to offer high quality services and maintain control over the usage and the billing aspects. The **MINDBill** mediation solution covers real-time and batch collection of various events from multiple sources, correlation of multiple events related to the same session, and conversion into a billable record.

The mediations solution is pre-integrated with multiple vendors and equipment types, supporting different protocols, such as RADIUS, Diameter, SIP (real-time), and FTP, SFTP (batch).

## Radius

**MINDBill** supports real-time call control for both postpaid and prepaid users, call control being a must for prepaid real-time. The **MINDBill Real-Time Server (RTS)** is responsible for the real-time event handling, namely AAA – Authentication, Authorization and Accounting.

- *Authentication* – The customer is identified by various methods, such as user name, PIN, password, MAC, or calling phone number (ANI).
- *Authorization* – Based on the customer's profile, tariff, and remaining balance, the session is either authorized or rejected and the appropriate message is sent back to the network element with a cut-off parameter where relevant.
- *Accounting* – During the session or at session end, a message is sent to the RTS that includes usage parameters, such as the duration, volume and QoS measures. **MINDBill** rates the call according to the relevant tariff, stores the rated record in the database, and updates the customer's balance accordingly.

## Diameter

The protocol enables a Client to Authenticate, Authorize and Account (AAA) prepaid and postpaid users. It is based on the Diameter Base Protocol (RFC 3588) and the Diameter Credit Control Application (RFC 4006). The Diameter Base protocol may be used by itself for accounting purposes only, or it may be used with a Diameter application, such as DCCA to provide credit control for pre-paid services.

By utilizing DCCA, the **MINDBill Real-Time Server (RTS)** can be used for real-time credit-control for a variety of end-user services, such as network access, SIP services, messaging services, and download services. It provides a general solution to real-time cost and credit control.

Furthermore, this mechanism can allow users to be informed of the charges to be levied for a requested service. Also, there are services such as content and advertising that may credit as well as debit a user account.

## SIP

The world of VoIP is adopting SIP signaling. More and more VoIP Service Providers are upgrading their current signaling networks to SIP signaling or deploy new SIP-based signaling networks.

**MINDBill SIP Application Server** provides a powerful solution for prepaid services in a SIP network. By utilizing a SIP Back-To-Back User Agent - B2BUA architecture, the **MINDBill SIP Application Server** interacts in the SIP network and provides full call control functionality. It includes an internal IVR function for media detection and prompts, and alternatively provides a connection to external Media Server(s). For real-time AAA, rating and billing functions the **MINDBill SIP Application Server** interfaces with the **MINDBill Real-Time Server**.

The **MINDBill Internal IVR** is an integrated part of the **MINDBill SIP Application Server**. It supports multi-lingual prompt playback using language-specific number logic. The IVR supports DTMF detection and collection using IETF RFC 2833 for entering user codes IDs, passwords, and destination information. Furthermore, the IVR provides voice recording and voice mixing support for conferencing and other. Using an external SIP Media Server, it is possible to extend and scale up the IVR functionality to support any given network provider.

**MINDBill** includes service applications for zero-stage direct dialing services without IVR (for registered subscribers) and one-stage dialing services with IVR (for registered subscribers, calling cards, etc.).

The '*Zero-Stage*' dialing service application includes the following features:

- Direct service access by dialing the destination number directly.
- Automatic subscriber authentication according to Calling Line Identification.
- Call authorization per subscriber balance and destination number rate.
- Toll free calls with optional time limit even when the balance is zero.
- Automatic call cutoff when the balance expires.
- Invocation of SIP error responses for call failures due to e.g. no authorization, not enough money, busy, no answer, etc. These responses can be translated to special tones or announcements if an announcement server is installed in the SIP signaling path.

The '*Single stage*' dialing service application includes the following features:

- Access to the service by dialing a special access number.
- Multi-lingual announcements – language may be assigned per subscriber, per special access number, or by playing a language selection menu.
- Caller authentication by CLI (for registered prepaid subscribers) or by PIN and password (for prepaid calling cards).
- Configurable number of failed caller authentication attempts before the caller is disconnected.
- Optional actions menu – allows the caller to choose whether to perform a call, recharge their account, transfer money to and from another account,

inquire balance, change password, enable service identification without password – register ANI, etc.

- Call authorization per subscriber balance and destination number rate.
- Toll free calls with optional time limit even when the account balance is zero.
- Current balance and time-left for the call prompts (configurable).
- Mid-call warning – during the call, a time left prompt is invoked. The threshold is configurable.
- Long pound disconnect – by pressing the long pound key (e.g. “##”) the caller is able to end the call without being disconnected from the service. Using this service, the caller can originate another call, recharge the account, and perform another call. No re-authentication is required in this case.
- IVR return – In any case of call completion, except when the caller disconnects the call, the caller remains connected to the service and is able to make another call or perform any other action supported by the service application without re-authentication.

The advantages of the **MINDBill SIP Application Server** solution are:

- Fast deployment of prepaid services in their existing SIP VoIP networks, without the need to buy or integrate any other 3rd-party equipment.
- Seamless interoperability with leading SIP VoIP equipment vendors, enabling either a proxy or a re-direct mode of operation.
- Providing prepaid services for both: permanently registered subscribers and casual calling card owners.
- Providing IVR-based services in both native and foreign languages with flexible per-subscriber / per-service language selection options.
- Service creation environment – enabling development and deployment of new call control based services on the same platform (e.g. postpaid calling card, conferencing, voice mail).

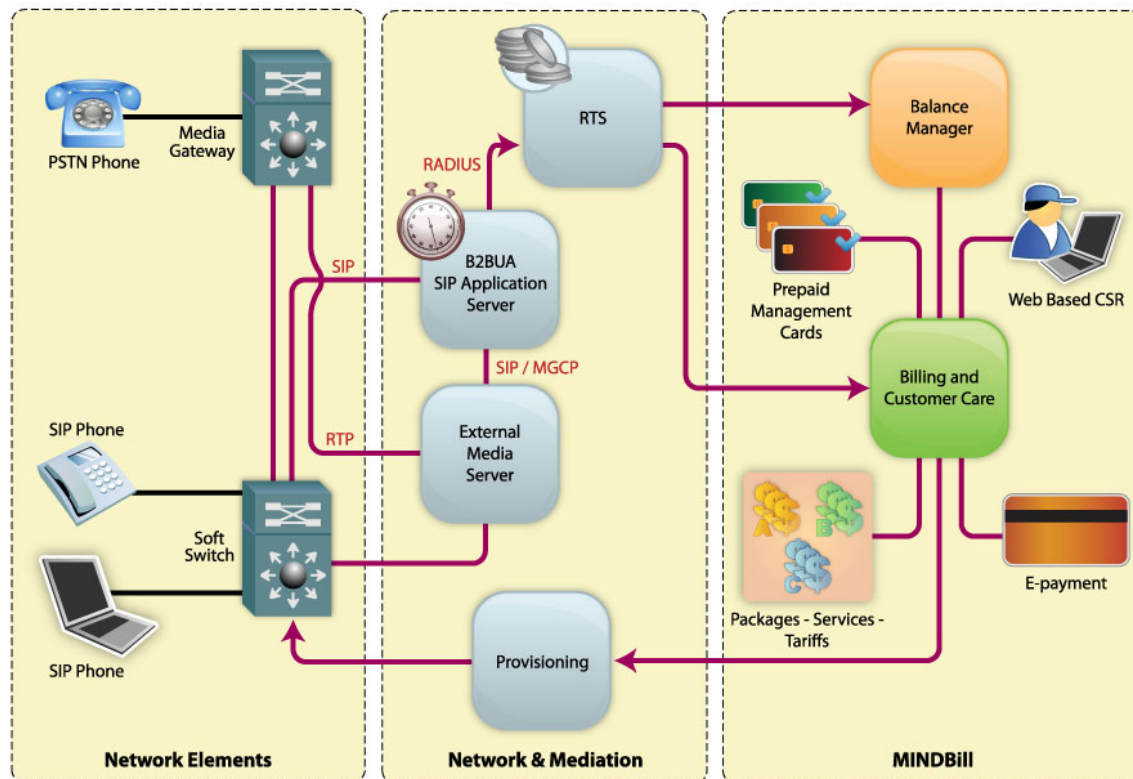


Figure 4 – MINDBill SIP Application Server solution

### Batch Processing

**MINDBill** also provides a reliable, flexible, and scalable offline (batch) mediation solution, allowing the service provider to offer high quality services and support the required business and revenue model.

The **MINDBill** offline mediation solution is built upon several components.

The **MINDBill Collector** is an online tool enabling batch mode retrieval of Usage Data Records (UDRs) from a huge variety of network elements and enhanced services servers. It is capable of utilizing TCP/IP, FTP, and SFTP, copying from the local/network drive or Cisco Net Flow as transport protocol. It collects UDR files as soon as they are available on the source, achieving Near Real Time mediation.

The **MINDBill Processor** is responsible for parsing, filtering, and guiding the UDR records. It supports a wide variety of parsing formats (binary, text, AMA, ASN.1, FTAM, etc.) and can be easily customized using a dedicated **MINDBill** GUI-based Service Creation Environment (SCE). It can filter out unnecessary records according to pre-defined criteria and erroneous records, and thus minimize the overhead related to processing of redundant information and prevent erroneous charging. It is responsible for setting up the proper internal CDR structure within the **MINDBill DB**, verifying that each usage is associated and guided to the correct entity within the system.

The **MINDBill Processor** has a built in rejects handling mechanism for CDRs that failed to enter the database, where records are stored to disk and segregated per original UDR file and include a reject reason for troubleshooting. The provider can

easily reprocess rejected CDRs produced during the CDRs processing, after analyzing them and performing the proper corrections. Statistics are kept on original files to show the current status for successful and rejected records per UDR files.

## Provisioning and Service Fulfillment

The **MINDBill** customer database includes valuable information regarding the customers' personal data and identification parameters and the services provided. The information is crucial for other systems integrated with **MINDBill** to work properly. The **MINDBill Provisioning Server** can provide this information in real time, on demand, or when there is an information change to any external system, such as network elements or ERP systems. The provisioning is done through different methods, including XML, LDAP, CORBA and text files export or via specific vendor APIs and protocols.

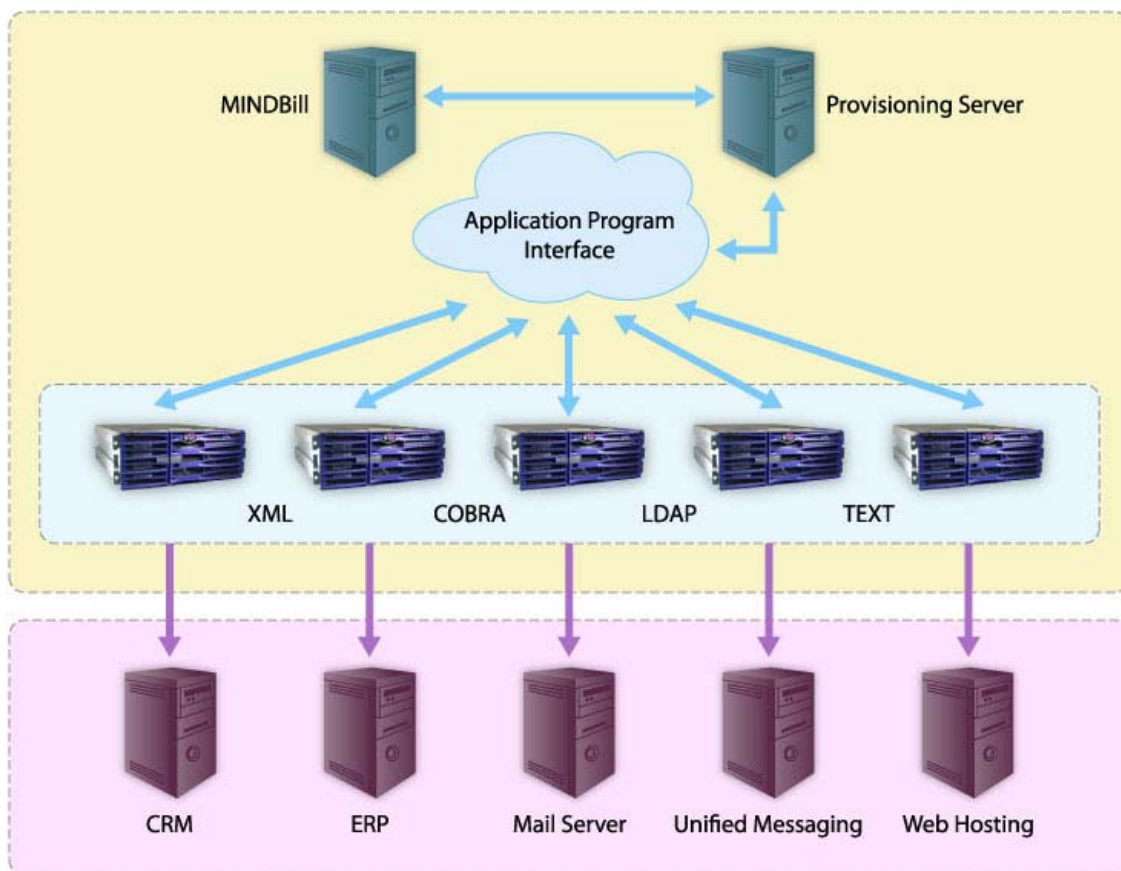


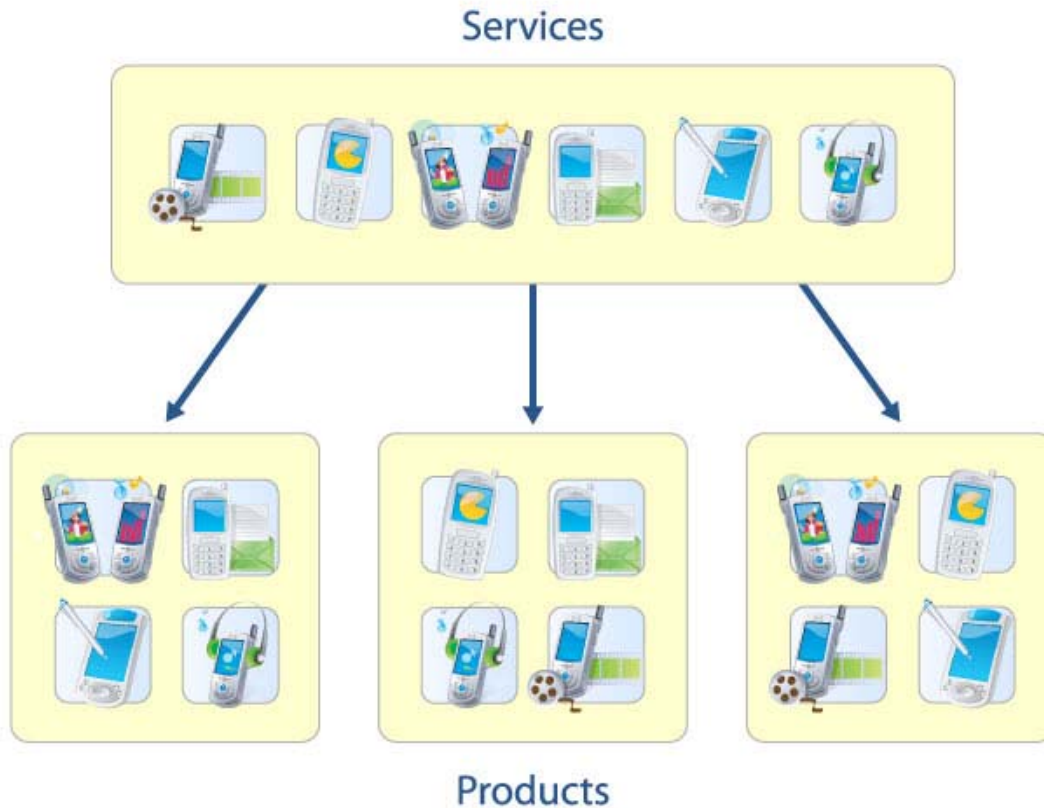
Figure 5 – MINDBill Provisioning Server

## Rating

### Product Catalog

The **MINDBill Product Catalog** allows service providers to define, configure, and deploy new products and services to suit any class of customer. A product is the bundle in which various services are supplied to a customer. **MINDBill** supports

various service types based on different technologies, including Internet telephony, traditional dialup, broadband (xDSL, cable, and others).



**Figure 6 – Various service & product types supported by MINDBill**

**MINDBill** comes packed with a comprehensive range of predefined service types to help providers set up their system in the shortest time. Service types can be easily customized and new ones added. Examples of predefined service types are voice, video, fax, messaging, data, dial-up, e-mail, e-mail alias, Web hosting, DNS, domain service, mail hosting, and many more.

Using the dedicated service types, service providers just have to define the tariff rate plans for the services bundled into subscriber product.

### **Tariff Structure**

**MINDBill** allows true convergence of prepaid and postpaid services. The same rate plan may be used for both prepaid and postpaid as the same engine does rating and charging. The full richness of postpaid features and capabilities is available in real time for prepaid services, including: multidimensional rating parameterized using a very user friendly GUI, distinguishing Air and Toll usage; Rating intervals: stepped (dropping rates), rating according to time of day (e.g. peak/off-peak), rating according to the access device (IP Phone, PSTN phone, Public phone, soft phone, etc.), pricing based on multiple metrics (origination and destination, duration, volume, events, units, increments), configurable discounts and surcharges, free unit

bundles, taxation, recurring and one-time charges, management of loyalty points, and many more.

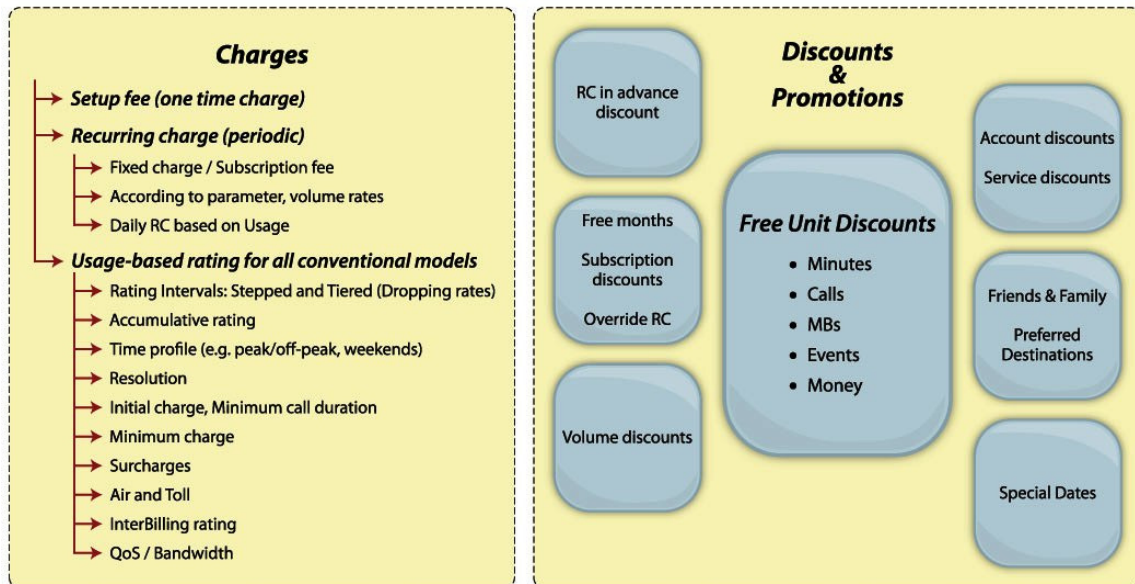


Figure 7 – MINDBill Tariff Structure

### Multiple Services Credit Control

The **MINDBill** platform supports multiple real-time protocols enabling consumption of multiple services simultaneously by a single subscriber: Voice, Data, Content, and more.

**MINDBill**'s multiple credit control mechanism, called **Balance Manager**, is a centralized quota management mechanism that in conjunction with the **MINDBill Real Time Server** concurrently supervises all the open sessions of the subscriber. It provides quota allocation that enables the simultaneous usage of multiple services while monitoring the consumption of a single account balance or a service wallet to avoid revenue leakage.

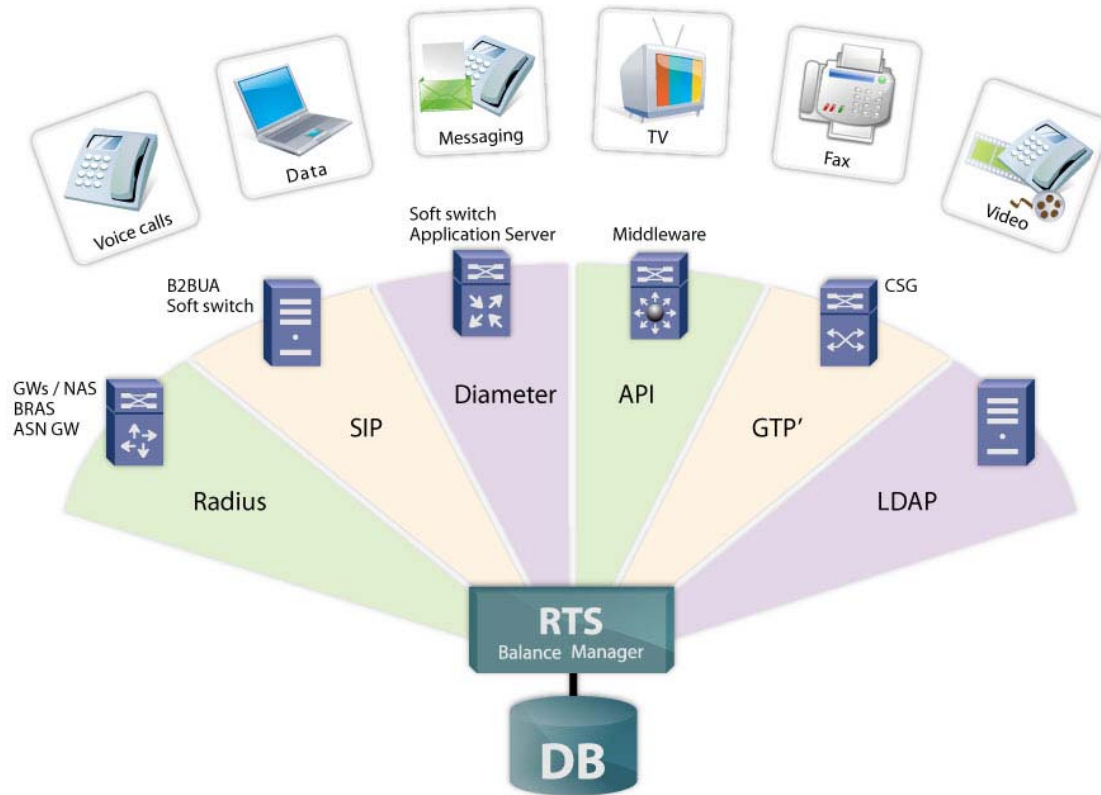


Figure 8 – MINDBill Multiple Credit Control Mechanism

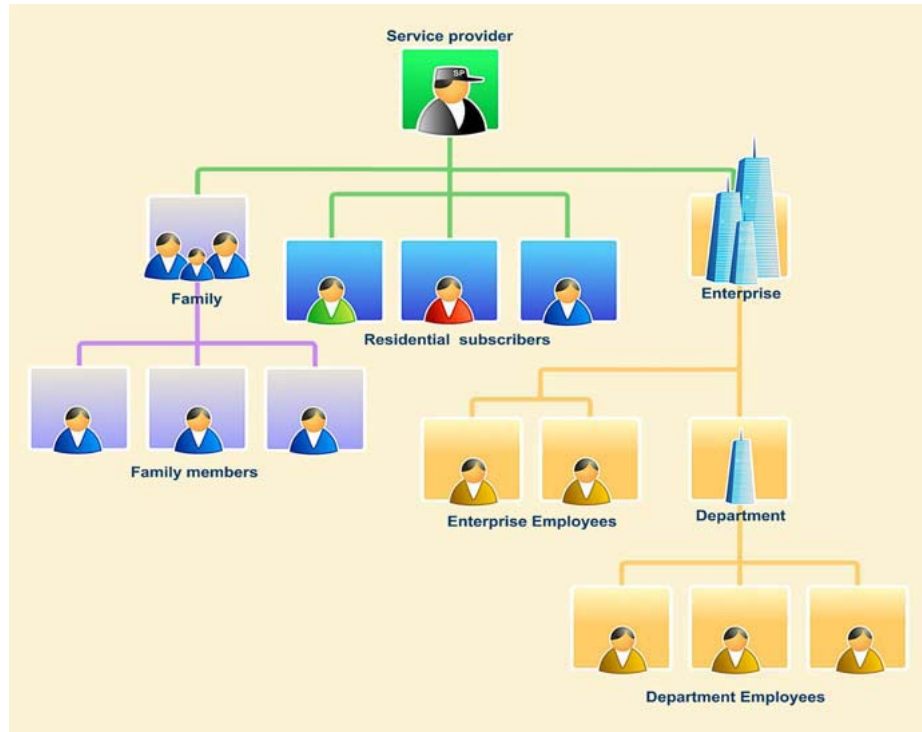
## Customer Care and Billing

### Accounts Management

In the **MINDBill** system, an account is a consuming entity of services and resources. The **MINDBill** system supports both prepaid and postpaid accounts distinguishing various account types:

- Postpaid Credit – No limit to services consumption; they are invoiced periodically.
- Postpaid Limited Credit – Limited to a predefined credit amount calculated based on open invoices and non-billed charges and usage.
- Prepaid Debit – Allowed to use the service for specific amount paid up front.
- Prepaid/Postpaid Hybrid – Part of the services are prepaid and part are postpaid.
- Prepaid Debit Card – Disposable and rechargeable cards.

The **MINDBill** system is suited for both residential and commercial customers as it supports an unlimited hierarchy of accounts, thus allowing mirroring of the organization structure and allowing the distribution of rating and billing within and between layers of hierarchy, generation of separate or common bills per business units, allowing split billing between entities, etc.



**Figure 9 – MINDBill Accounts Hierarchy**

### **Customer Care and Customer Self-Care**

The **MINDBill** web interfaces provide up-to-the-minute account information for both subscribers and customer service representatives (CSRs).

By using the powerful **MINDBill CSR**, customer service representatives can:

- View customer balance;
- View customer account details;
- Create, search, and adjust accounts;
- Timeline customer activity;
- Upgrade to new products or orders;
- View and modify the account hierarchy;
- Review non-billed calls;
- Review invoices and call details;
- Accept and review payments;
- Use a multilingual user-friendly interface.

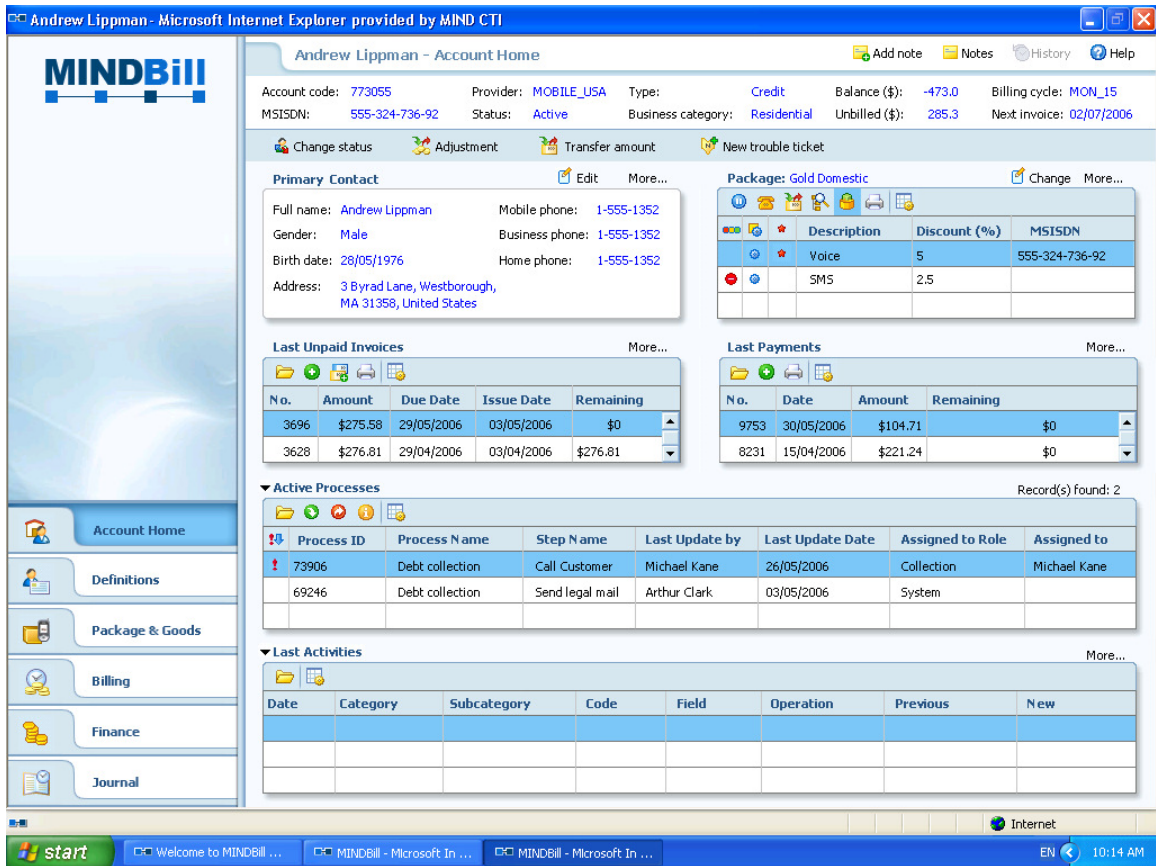


Figure 10 – MINDBill Web Interface

The **MINDBill Customer Self-care** application enables cost reduction for service providers through the following operational efficiencies:

- Replacing paper bills with paperless bills;
- Rerouting bill queries calls from the call center to the Web;
- Automating dispute resolution through the trouble ticket process;
- Online payment for reducing the subscriber interest loss due to delayed payments.

**MINDBill Customer Self-care** can be easily customized from the form of a controlled 'secure window' application into the underlying OSS systems used by the customers to view and pay their invoices to a complete portal where the customers can manage their entire relationship with the operator.

**MINDBill Customer Self-care** provides a level of security to protect both the customer's data and the integrity of the underlying systems. Subscribers access the application by entering their credentials.



**Figure 11 – MINDBill Customer Self-Care login**

Default configuration of the **MINDBill Customer Self-care** application:

- Account management (such as contact attributes)
- Service management (such as PIN and password changes)
- Review invoices
- View unbilled charges
- Add payments
- Journaling events.

### **Debit Cards and Voucher Cards Management**

**MINDBill** provides an integrated prepaid cards lots management easy to use and with a user-friendly web GUI application called **MINDBill Prepaid Management**.

**MINDBill Prepaid Management** supports:

- Creation of cards in large batches for printing house efficiency;
- Debit Cards (disposable or rechargeable) and Voucher Cards;
- Setting cards face value and expiration policy (fixed date and/or relative to first use, recharge, etc.);
- Exporting cards details (PIN, S/N, etc.) to the printing house (can be also encrypted);
- Importing cards details from an external system;
- Splitting batches/lots to groups for more flexible management;
- Activating, deactivating, and giving promotions at the Lot and Group level;
- Assigning lots and groups to agents.

| Lot Code | Lot Description | Lot Status | Agents  | Number of Cards | Issue Date | Lot Expiration Date | Package       | Provider | Current | Cards Origin    |
|----------|-----------------|------------|---------|-----------------|------------|---------------------|---------------|----------|---------|-----------------|
| 1        | NISTOR          | Active     | CRISAG2 | 5               | 09/07/2008 | 31/07/2050          | Voice2        | MDL      | MDL     | Generated Cards |
| 3        | test-luci       | Active     |         | 3               | 09/07/2008 | 30/07/2008          | Voice2        | MDL      | MDL     | Generated Cards |
| 5        | luci1           | Empty      |         | 3               | 10/07/2008 | Unlimited           | Voice2        | MDL      | MDL     | N/A             |
| 6        | luci2           | Empty      |         | 8               | 10/07/2008 | Unlimited           | PackMobile    | MDL      | MDL     | N/A             |
| 7        | test1           | New        |         | 2               | 10/07/2008 | 29/11/2008          | voice package | AMOUNT   | EURO    | Generated Cards |
| 8        | test2           | New        |         | 3               | 10/07/2008 | 31/07/2008          | voice1        | MDL      | MDL     | Generated Cards |
| 9        | test3           | Empty      |         | 3               | 10/07/2008 | 31/07/2008          | voice1        | MDL      | MDL     | Generated Cards |
| 13       | nistor2         | New        |         | 10              | 10/07/2008 | 10/07/2008          | Voice2        | MDL      | MDL     | Generated Cards |
| 14       | test14          | New        |         | 5               | 11/07/2008 | 31/07/2008          | Voice2        | MDL      | MDL     | Generated Cards |
| 16       | test14          | New        |         | 5               | 11/07/2008 | 30/07/2008          | Voice2        | MDL      | MDL     | Generated Cards |
| 17       | TRYIT           | Active     |         | 5               | 14/07/2008 | 31/07/2008          | Voice2        | MDL      | MDL     | Generated Cards |
| 20       | RUPT            | New        |         | 4               | 14/07/2008 | 31/07/2008          | Voice2        | MDL      | MDL     | Generated Cards |
| 21       | RUPT2           | New        |         | 5               | 14/07/2008 | 31/07/2008          | Voice2        | MDL      | MDL     | Generated Cards |
| 22       | desc            | Empty      |         | 20              | 15/07/2008 | 29/07/2008          | PP            | AMOUNT   | EURO    | N/A             |
| 26       | desc            | Empty      |         | 2               | 16/07/2008 | Unlimited           | PP            | AMOUNT   | EURO    | N/A             |
| 27       | desc 27         | Archived   |         | 23              | 16/07/2008 | Unlimited           | PP            | AMOUNT   | EURO    | N/A             |
| 28       | dfd             | Empty      |         | 12              | 16/07/2008 | Unlimited           | voice package | AMOUNT   | EURO    | N/A             |
| 29       | sss             | Empty      |         | 3               | 16/07/2008 | Unlimited           | PP            | AMOUNT   | EURO    | N/A             |

Figure 12 – MINDBill Prepaid Management

## Invoicing

MINDBill gives providers the possibility to spread the billing and invoicing of the client base through the month, ensuring a steady flow of revenue. Multiple billing cycles can be predefined and assigned to customers according to the company policy. In addition, MINDBill gives providers the possibility to personalize invoices by adding logos, taglines, and special offers within the invoice with the invoice layout options.

Here are some of the many advanced invoicing features:

- A single bill for all services;
- Billing cycles frequencies per account (weekly, monthly, quarterly, etc.);
- Post calculations (volume discounts, fixed charges, adjustments);
- Invoices are exported in XML format and can be shipped by means of one or more of the following ways:
  - Regular mail (hard copy);
  - E-mail;
  - Exported file;
- A minimum amount required to issue and/or ship an invoice can be set;
- There is an option to include/exclude usage (call) details;
- Special charges for call details can be set;
- Special charges for hard copy can be set per invoice and/or per page;

- Multilanguage invoice.

## Account Receivables (A/R) and Debt Collection

The **MINDBill** system manages all A/R activities, monitors the A/R status online and ensures a continuous cash flow. Multiple methods of payments are supported by system (Cash, Check, Credit card, Direct Debit), with pre-integrated interfaces with major financial institutions, banks, clearinghouse and credit bureaus. Management of deposits life cycle, including payments and refunds, is easily done. Disputes can be managed and solved, resulting in the appropriate adjustments.

The **MINDBill Collection** facility provides flexibility in defining the collection policy using different collection paths. The solution provides full monitoring and control of the collection treatment (dunning process). It identifies customers with past due debts and ensures that they are handled in accordance with the company policy. This increases efficiency through the automation of the majority of the collection functions, and helps maximizing the success ratio.

## Revenue Assurance

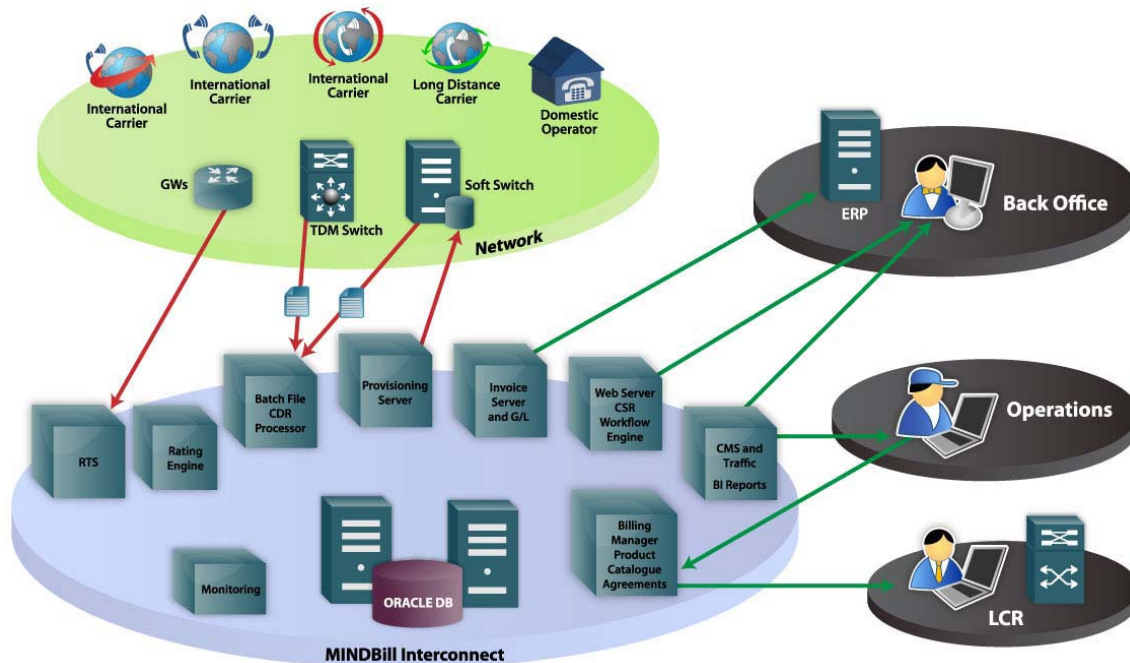
**MINDBill** allows service providers to accurately bill all revenue generating services. Comprehensive audit-trail tools provided by the system guarantee that all CDRs are processed and rated. In addition, it verifies the complete and correct billing of services, ensuring that the billing is made according to the defined tariff, therefore guaranteeing no loss of revenue.

## Interconnect Billing

Managing the settlement agreements between network and communication providers becomes more and more challenging as new technologies, services, and partners are involved, and more complex settlement models are in use. Both incumbent carriers, using legacy non-flexible systems, as well as new entrants, require new interconnect management systems that can cope with the new challenges.

The **MINDBill** system offers a complete end-to-end solution for managing interconnect agreements with partner service providers that includes billing and settling of incoming/outgoing/transit traffic, volume discounts, accumulative monthly stepped/tiered rating, minimum billing, and flexible rating parameters.

The **MINDBill Interconnect Solution** includes the appropriate tools for rating interconnect traffic, applying flexible rating parameters with a distinction per destination prefix, analyzing traffic with BI tools, exchanging and comparing traffic with the partner, adjusting traffic divergences, generating invoices, tracking payments, and reporting finance transactions to back-end systems.



**Figure 13 – MINDBill Interconnect Solution**

The features provided by **MINDBill Interconnect Solution** cover:

- Statements, invoices, reconciliation, and credit notes issuing for interconnect partners.
- Comprehensive settlement reports issuing.
- Dispute handling mechanisms using GUI Based application.
- Revenue sharing schemes implementation.

## Resilient Billing Infrastructure

**MINDBill** is built using best-of-breed object-oriented technologies such as Java, CORBA and XML and it is J2EE compatible. The various functional modules that implement the provisioning, mediation, and billing functions are easily accessed using industry standard Application Programming Interfaces (APIs) enabling seamless integration with third-party applications. The multi-layered, modular software architecture supports real-time distributed processing, achieving performance, scalability, and high-availability.

### Open APIs

The **MINDBill** platform is built as an open platform, for easy integration with the existing Operations and Business Support Systems (OSS/BSS). The solution is equipped with a comprehensive set of APIs that cover all CRM needs, business rules and reference data. The interfaces are based on open standards, such as SOAP/XML and J2EE, and out-of-box middleware support (CORBA, Tibco, etc.). In addition, import and export utilities enable en-mass updates toward external systems. These characteristics enable easy integration with multiple OSS/BSS, including Billing, Fraud, Lawful interception, and Data warehousing.

## Scalability and High Availability

The **MINDBill** solution is designed in a modular and scalable architecture, which allows the system to grow with the service providers; scalability is achieved by adding more servers or by upgrading the hardware of the existing servers.

**MINDBill** offers a real-time solution with built-in redundancy and high-availability architecture, being reliable and ensuring no single point of failure and guaranteeing uninterrupted service for mission-critical applications.

## Summary

**MIND** (NASDAQ: MNDO) is a global provider of real-time mediation, rating, billing and customer care solutions for prepaid and post-paid voice, data, video, and content. The company's solutions are deployed by telecommunication companies, ITSPs, ISPs, ASPs, enterprises, governmental bodies, and financial institutions.

As a NGN billing pioneer, the **MINDBill** solution for NGN services covers all aspects of a billing operation for providers of any size. The scalable and reliable carrier-grade solution ensures non-stop operation and high performance. Incumbent carriers can launch a full VoIP operation easily, as a side-by-side solution with their legacy systems. The **MINDBill** NGN solution is an all-in-one package for prepaid and postpaid services, including real-time AAA and mediation, comprehensive customer care, rating and billing capabilities, and full A/R and revenue assurance management.

The **MINDBill** solution ensures fast ROI due to the fast deployment and minimal integration efforts required. A lower total cost of ownership is achieved thanks to the low maintenance costs and our pay-as-you-grow pricing model, allowing new entrants to start with a minimal configuration, and add components and functionalities as they grow.

**MIND** provides sales and support to its worldwide customers from offices in the United States, Europe, China and Israeli headquarters. **MINDBill** has a track record of over 70 successful installations. Service providers working with **MINDBill** found it to be a reliable tool that offers a fast return on investment and gives them the flexibility needed to meet any market demand. All these, together with the constant commitment toward quality and efficiency, make **MINDBill** the solution they need to move forward.

To learn more about MIND CTI, please visit [www.mindcti.com](http://www.mindcti.com) or call a MIND representative.