



# **Guide to Starting Your Own Voice Over IP Business**

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## ***Introduction***

This guide has been created as an introduction for persons looking to use Voice Over IP for a prepaid calling card business, for the wholesale long distance termination business, or for their inter-office communication requirements. Although there are many guides that explain these topics through a technical approach, this guide has been written for readers whose core business is not technical, but require a general background and overview of the technology.

This guide also explains how our products fit into the VoIP industry and how they can benefit your organization.

## **What is VoIP (Voice Over Internet Protocol)?**

Over the past few years, the acronym "VoIP" has become a household term. Anyone who has made an international phone call has probably heard the term used at one point or another. It has become a popular topic among "techies" discussing its numerous applications in today's society, as well as politicians discussing its growth and implications on the world's economy. Although most people have heard the term, very few actually know what VoIP is and what the hype is all about.

VoIP stands for Voice Over Internet Protocol, and it simply means what it implies: sending voice conversations through the internet. Rather than sending voice through the traditional telephone networks owned by the telephone conglomerates, VoIP uses the internet as its medium to send voice. Since voice is nothing more than data, any internet connection in the world can be used as a VoIP terminal for making calls with the use of a VoIP gateway or an IP Phone.

A great reference for gaining a better understanding of how Voice Over IP works as opposed to the traditional telephone network can be found on the *How Stuff Works* website at the following URL address:

**<http://computer.howstuffworks.com/ip-telephony.htm>**

## **What are the benefits of choosing VoIP?**

Everyday more and more organizations switch their communication networks partially or fully to VoIP. There are many benefits of choosing VoIP over the traditional telephone network. The major benefits that these organizations are realizing include cost of equipment and deployment, versatility, flexibility, interconnectivity, and time to market.

### **Cost Benefits of Choosing VoIP**

- VoIP equipment costs are generally cheaper than traditional telephone switches.
- VoIP in a direct point-to-point environment has no toll charge.
- VoIP technicians are usually more readily available and more cost-effective than standard telephone switch technicians.
- Billing & Call Management software for VoIP is generally less expensive than similar software for legacy technology.

## **Versatility**

VoIP allows your network to be extremely versatile. VoIP allows you to interconnect with multiple carriers (routes) very easily and quickly. Within a matter of minutes you can add additional carriers that will provide you with the lowest route to a particular destination. There is added flexibility so that if one route is down, your network can automatically re-route to another carrier.

## **Interconnectivity**

VoIP makes it easy to interconnect to multiple & redundant carriers. With traditional PSTN networks, interconnecting with multiple carriers required additional expensive hardware, and an extensive amount of time to setup the connection, sometimes taking several months. As well, there is a very high connection charge occurred per month to maintain the connection. With VoIP, the interconnection is very simple, taking only a matter of minutes, and without the need for additional hardware and no connection charges.

## **Time to Market**

VoIP allows your company to bring its solutions into service quicker than standard telecom. You can connect to different routes quickly and reliably. This allows you to bring new routes to customers at cost-effective pricing in a timely manner. You no longer need to wait for months to connect to new routes.

## **How does PEC fit into the VoIP Industry?**

PEC is a developer of software applications that integrate seamlessly with VoIP technology. PEC is also a proud partner and reseller of Quintum Technologies, developers of the popular Tenor VoIP Gateways. Combining the power of Quintum VoIP hardware with the versatility and robustness of our software, we have developed numerous products to take advantage of the benefits that VoIP offers. PEC develops the following products for the VoIP industry:

### **CardSaver™ VoIP Billing and Call Management**

- Prepaid Calling Card Industry
- Postpaid Calling Services
- Pinless Calling Services
- Call Shop Services
- Inter-office communications
- Wholesale Long Distance Termination

### **VoiceSaver™ Voicemail and Auto Attendant**

- Voicemail Message Bureaus
- Auto-attendant systems for offices

### **Insight IVR (Interactive Voice Response)**

- Allows customers to develop customized call flows
- Used in almost every industry

## ***Prepaid Calling Card and Pin-less Solutions***

In the prepaid calling card or pin-less calling business, like most other businesses, more startup companies fail than succeed. Our intention is not to deter you from starting your own prepaid calling card business; it can be and has been for many people an extremely lucrative business. Our intention is rather to explain to you the differences between a successful card business and a failing one so that you may learn from their mistakes.

PEC has a great deal of experience designing and integrating with products developed for the Prepaid Calling Card and pin-less calling industries. We have helped over 400 clients deploy VoIP and calling card solutions around the world. We have platforms running on 6 continents and in over 70 countries around the world. Through our day to day conversations with our clients, we learn a good deal about how the industry is changing and about new trends that are appearing in the market. If you have any questions, please do not hesitate to contact us.

### **Setting Up a Solid Infrastructure**

First and foremost, you must develop a solid infrastructure for your prepaid calling card system to run on. Without a solid infrastructure, you will be spending more time worrying about your system's integrity than marketing your product. The following is a list of equipment and services that you will require to start the business. We have also included recommendations that we feel will ensure a solid infrastructure.

#### **1. Billing, Card, and Call Management Software**

We list this item first not only because it is one of the products that we provide, but because it is the most vital on the list. Choosing a good billing software will ensure that every call made through your system is tracked and no call is left unbilled. CardSaver™ by PEC is not only a robust, dependable software package, but it is also the simplest and most user-friendly package in the industry. CardSaver enables you to view reports on traffic passing in and out of your system. CardSaver also gives you complete control over your calling cards, including PIN generation, usage fees, expiration dates, and much more. It also allows you to manage your agents/distributors and effectively sell your products through resellers. CardSaver is a vital component for developing a solid infrastructure.

#### **2. VoIP Gateway**

The VoIP gateway that handles all of the calls into and out of your system is the next vital component. If your hardware fails, your customers' calls will not go through. 98% of our customers use either Cisco or Quintum products. Some higher-end customers also use Nextone gateways. These two vendors have a large following and many online forums exist where you can go to receive answers to any questions that you may have regarding configuration or specifications.

#### **3. Server(s)**

Server technology is constantly changing, and unless you are in the business, it is a challenge to stay abreast of the latest and greatest. For this reason, our recommendations on the right server to choose are based on the current technology available.

#### **Systems with 60 concurrent calls or less:**

Rackmount Server  
Intel Dual Core Processor  
1 GB RAM  
(2) 80 GB+ hard drives  
10/100/1000 Ethernet Adapter

#### **Systems with 60 to 240 concurrent calls:**

Intel Quad-Core Xeon Processor  
2 or 4 GB RAM  
Dual 10K SCSI hard drives (120 GB or more)  
Gigabit Ethernet Adapter

#### **Systems with 240 to 750 concurrent calls:**

(2) Intel Quad-Core Xeon Processor  
8 GB RAM  
Dual 15K SCSI hard drives (250 GB or more)  
Gigabit Ethernet Adapter

If you are handling more than 750 calls – we recommend using multiple servers.

## **4. Internet Service**

The Internet service that you choose is the backbone of your calling card network. Choosing a reliable Internet service will ensure that your billing server and VoIP gateways will stay online. If the Internet connection fails, calls will not go through. Ideally, you should place your servers in a co-location facility (i.e. 60 Hudson Street in New York). Internet service in a co-location facility is much less likely to go down than in your office or home. If you are placing your systems in a co-location facility, be sure to ask your Internet provider what kind of redundancy is available in case their service goes down. The provider will often use the backbone of another Internet provider in this event. If your Internet provider does not have a failover plan, you may want to consider selecting a second Internet service as a backup. Also, as Verizon FiOS becomes more widely available around the USA, many customers have decided to place their equipment at home or in their offices. Using Verizon's business-grade FiOS service – some customers have been able to achieve over 300 concurrent calls, affordably and reliably.

## **5. Phone Service**

The phone service that you choose is as important as the Internet service that you choose. If your phone lines are down, your customers cannot call into your system. In the USA and Western Europe, most of our customers purchase IP DIDs or SIP trunks. This provides you with access numbers and inbound phone lines through a reliable Internet connection. Outside of these areas, customers either choose digital E1/T1 lines, also called ISDN-PRI lines, or analog lines.

For USA, we recommend the following IP DID or SIP Trunk carrier:  
<http://www.didlive.com>

For Western Europe, we recommend the following providers:  
<http://www.ipcomms.net>  
<http://www.voxbone.com>

If you have any questions about which lines to order, the best idea is to contact your equipment vendor or PEC.

We have had many customers, usually in Africa, that have, after configuring everything properly, complained about the system not working properly. After digging deeper into their problems, we came to realize that their line quality was so poor that the VoIP gateway could not understand the digits that customers were keying in from their phones. After changing their lines, the system worked perfectly.

## **6. Power Service**

In most places throughout the world, power outages are a daily event. If your systems are located in a place where power outages are common, it is essential to have a power generator. Even if electrical outages are not an everyday in your location, it is still extremely important to consider the integrity of your power service. It is essential, regardless of your location, to have a UPS battery backup. It is recommended that your battery backup should last at least two hours in case of a power outage. Even if you are placing your equipment in a co-location facility, which will most likely be connected to a generator, it is still necessary to have a UPS battery backup.

## **Printing the Cards**

With CardSaver you will be able to generate an unlimited quantity of calling cards. CardSaver will export these cards to a comma delimited flat file, which can be given to a card printer. When searching for a company to print your calling cards, there are a few factors to consider: price, quality, and services offered.

### **Price**

Generally, it will cost you between 3 to 8 cents per calling card for printing, depending on volume and quality. The more you print, the better the rate will be per card. Keep in mind that most card printers require that you order at least 10,000 cards, in which case the cards should be about 7 or 8 cents each. Expect to pay a setup fee for the printing, as well as a design fee if you are not creating the design yourself. The following printers have been recommended by several clients:

<http://www.allstateprint.com>  
<http://www.tele-pak.com>

### **Quality of Printing**

Although price is an important factor, quality is often more important. If possible, view a sample of the card printer's work before placing the order to make sure that it is acceptable.

Pay attention to details such as material thickness, ink quality, and the quality of the silver scratch off area located on the back of the card. The card should be presentable, the color should be vibrant, and when you scratch the scratch-off area, the PIN should be clear.

## **Services Offered**

Some companies offer graphic design services as well as card printing. If you are not planning to create the card designs yourself, it is a great idea for the card printer to create the designs for you. You may want to consider unique designs and shapes to more easily attract customers in retail stores.

## **Connecting to Long Distance Providers**

When selecting long distance providers for your calling card system, it is usually best to select multiple carriers. Most calling card companies provide service to almost anywhere in the world, but focus on a particular region of the world. For this reason, it is best to have an A-Z long distance provider that can send your calls to anywhere in the world and also a regional long distance provider that focuses only on the region of the world that you are targeting. Although A-Z providers are convenient, their rates are usually higher than regional specialists. We recommend the following A to Z carriers.

**<http://www.bts-usa.com/>** (Focuses on South America, Morocco, and Europe)

**<http://www.tatacommunications.com/providers/voice/carrier.asp>**

We also have contacts that can provide you with direct routes to Dominican Republic, India, Pakistan, Sri Lanka, Syria, Egypt, and Nigeria.

When searching for a long distance company, there are four major factors to consider: price, quality, reliability, and capacity.

## **Price**

Just as in any other business, the idea is to buy low and sell high. Do your homework before selecting a carrier. Often, the price per minute will differ depending on which city you are calling. For example, calling Lagos, Nigeria is 3 cents per minute, while calling Abuja is 8 cents. Also, for many countries, mobile phone charges will be significantly higher than landline charges. For example, calling any landline in the United Kingdom may cost 1 cent per minute, but calling a mobile phone can cost upward of 25 cents per minute. Visit the sites listed above to get an idea of what rates are available. You may have to contact the company and fill out an NDA to get this information.

Also pay attention to the billing increments that the long distance company is charging you. As a calling card company, you should be receiving wholesale rates and wholesale billing increments. Generally, wholesale billing increments should not be greater than 30 seconds. Typically, however, the billing increments are 1 second. This means that on a 98 second call, you will be billed for 98 seconds.



## Quality of Voice

Long distance companies in the VoIP business differ tremendously when it comes to quality. Before signing any deal, make sure to ask the provider if you can test their service. Legitimate long distance providers will usually have a test environment in place for the purpose of quality assurance. Listen for excessive echoing and delayed response. You should feel that you would be able to carry on a long conversation with this voice quality without getting frustrated or having to repeat yourself many times.

## Reliability of Service

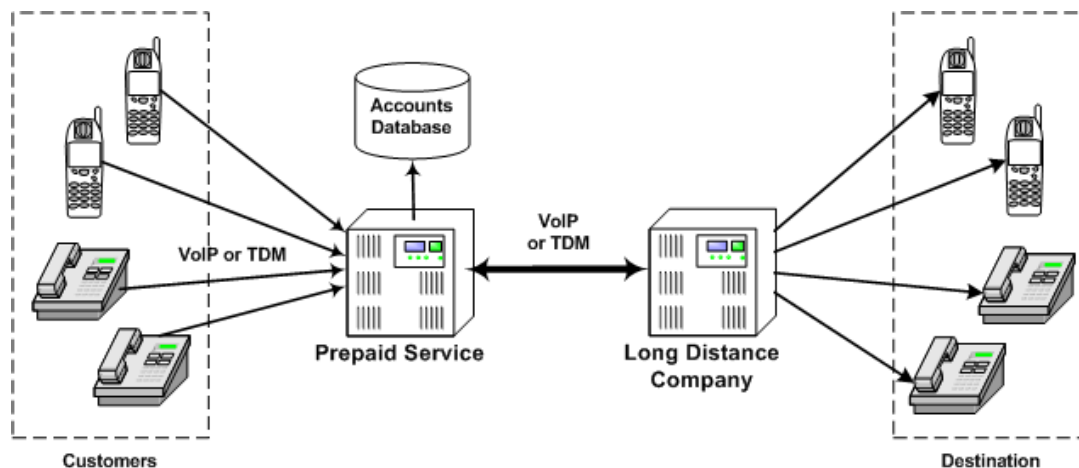
The reliability of your long distance providers' systems is just as important as the reliability of your own systems. If your long distance provider goes down, your customers' calls will not be completed. Before signing with a long distance provider, ask them what kind of equipment they use and what kind of failover plans they use. Unfortunately, no long distance provider is perfect, so it is always best to have a backup long distance provider in case the first one goes down. Also, be sure to ask your provider what their Post-Dial-Delay (PDD) is to different destinations. PDD refers to the time, in seconds, that it takes for the destination party's phone to ring after a customer has dialed that destination.

## Capacity of Service

You may be under the impression that your long distance provider can handle an unlimited capacity of voice traffic. However, this is often not the case. Make sure to ask the long distance provider about the amount of traffic they can handle to a particular destination before signing with them. If you estimate that you will be sending 20,000 minutes of traffic per day to India, for example, be sure that your long distance provider will not reject some calls because of lack of capacity.

## Network Topography

The following network diagram depicts what a typical prepaid calling card system layout would look like.



## Making Money in the Prepaid Calling Card Business

After setting up a solid calling card infrastructure and printing your calling cards, it is time to start making money. First, you need to set your selling rates, and then you need to market your product.

### Setting Your Selling Rates

There are many factors to consider when setting your selling rates. You need to consider your competition's prices, your expenses, and the buying rates per destination.

### Competition Pricing (The Hidden Fees)

Analyzing your competitor's pricing is not as straightforward as it may seem. Sure, they advertise 8 cents a minute to India, and 1 cent per minute within the USA, but how much are they really charging? The truth is that the profit for most companies is NOT made with the per-minute charge, but rather, with the various fees that they charge to their customers. Yes, there are many cards on the market that do not have fees, but these cards always charge a significantly higher rate per minute. Below are the different fees that CardSaver supports:

- **Activation Fee** – The first time a cardholder uses his card, he will be charged an activation fee.
- **Connection Fee** – Each time a cardholder makes a call, he will be charged a connection fee.
- **Disconnect Fee Factor** – Each time a caller makes a call, the total duration of the call will be reduced by the percentage specified by the Disconnect Fee.
- **Maintenance Fee** – After a specified period of time, whether it is 6 hours or 30 days, a cardholder will be charged a maintenance fee.
- **Toll Free Fees** – If a customer is calling into your service via a toll free number, the customer will be charged a surcharge per minute.
- **Expiration after First Use** – After a specified period of time following the first use of a card, the card will expire and become unusable.
- **Extended Billing Increments** – If the billing increment is set to 3 minutes, a call lasting 9 minutes and 3 seconds would be billed for 12 minutes.

So let's take a scenario where your competition is charging 8 cents a minute to India. Let us assume they have an activation fee of 39 cents, a connection fee of 39 cents, and a billing increment of 3 minutes. There is no disconnect fee or maintenance fee. Let us also assume that the customer's call lasted for 25 minutes (which rounds to 27 minutes if you are using 3 minute increments). The total cost of the call is as follows:

$(27 \text{ minutes} * \$0.08) + (\$0.39 \text{ activation fee}) + (\$0.39 \text{ connection fee}) = \$2.94$

The total charge per minute is actually 11.8 cents, NOT 8 cents. That's a 50% difference! Even if your cost is 9 cents per minute, which is more than the advertised price, this call would be profitable. So, as you can see, the profit is in the fees, not the charge per minute.

### **Set Different Rates for Different Customers**

In economics, the practice of setting different rates for different customers is called price discrimination. Almost every company takes advantage of this economic practice whether you realize it or not. The idea is to charge more to customers that are willing to pay more, and charge less to customers that are not. Put yourself in the following situation:

You are a resident of the United States, and you are on a business trip in France. You have just landed at an airport in Paris. Now, you need to find a way to call home and let your family know that you have arrived safely. You also need to call the office in the U.S. and confirm the time of your meeting tomorrow. Would you mind spending 30 cents per minute for this call? Probably not, especially if your company is paying the bill!

CardSaver allows you to brand different cards and set different rates for each card, thus allowing you to take advantage of price discrimination.

### **Charge More for Uncommon Destinations**

Generally, when calling card companies create a new brand of card, it is targeted toward a specific region of the world. For example, one of PEC's customers created a card called "Hello Africa" which targeted consumers wanting to call Africa. The rates for Africa were set so that it would yield a 10% profit. The rates for calling to USA and UK were set to 5 cents per minute, which is still a reasonable rate, yielding a profit margin of 400%. It turned out that this customer made more profit from the few customers that called USA and UK than from customers calling Africa. Although most people will call the destinations you are targeting, do not forget that people will need to call other destinations as well, and they are usually willing to pay a premium.

### **Consider Your Expenses**

By simply setting your selling rates higher than your buying rates, it does not guarantee that you will make a profit. You need to factor all of your recurring expenses into the equation, such as your line costs, Internet cost, printing costs, co-location fees, and any miscellaneous business expenses that you may have. The largest expense is usually the distribution expense. It is always best to exaggerate expenses to consider the worst-case scenario.

## **Marketing Your Product**

The methods by which to market your calling cards will differ from location to location.

### **Selling through Retail Stores**

In areas that are highly dominated by minorities, there tends to be a great deal of competition in the phone card business. However, competition does not mean that there is no money to be made. Be sure to read the section in this document entitled "Competition Pricing (The Hidden Fees)." Most customers in these minority-dominated areas tend to buy

phone cards from local ethnic retail shops. These stores are usually willing to carry new phone cards if they feel they can make money on them. Retail stores generally buy cards at about 75% of the face value of the card. For example, if you have a card that has a face value of \$5.00, the retailer will pay you \$3.75.

Areas that have a large number of international and business travelers tend to be more profitable for phone card companies than minority-dominated areas. Retail stores in these areas tend to take higher commissions, and the profit margins are also much higher (see the section of this document entitled "Set Different Rates for Different Customers"). Retail stores in these areas will usually pay less than 75% of face value for phone cards.

### **Selling through a Distributor**

Many phone card companies prefer not to sell directly to retail stores, but rather prefer to sell cards through a distributor. Phone card distributors usually distribute more than one brand of card and usually have an established relationship with the local retail stores. Selling through a distributor is the best way to sell a high volume of cards, however, there is a price to pay for this convenience. After paying the distributor and the retail store, you should expect to receive less than 70% of the face value of your card. Also, distributors usually do not pay you up front for your cards - they only pay you after they get paid themselves.

### **Selling Prepaid Services at an Internet Café**

Internet cafés are ideal locations to sell prepaid calling services. There is no need to purchase PSTN lines from the phone company, and the Internet infrastructure is already in place. Also, customers do not require a physical calling card, so there is no need to print any cards. Customers who are already using the Internet services will be aware that they can also make international calls from the same location.

### **Selling through the Internet**

Over the past few years, Internet phone card sales have increased tremendously. The Internet makes it convenient for customers to purchase and recharge cards. There are, of course, advantages and disadvantages to choosing this method of distribution:

#### **Advantages**

- Very convenient for customers
- Customers can view their balances and statements online
- Avoid distribution fees by allowing customers to recharge online
- No card printing charge – system automatically emails PIN
- If a customer is satisfied, it is easy for him to refer a friend
- Easy to market the product internationally

#### **Disadvantages**

- Difficult to obtain a merchant account if you are only selling phone cards
- Credit card merchant fees
- Higher probability of fraud online
- Many people who buy phone cards do not have a credit card
- Many people who buy phone cards do not have Internet at home

## **Selling to Existing Customers**

If a customer is satisfied with the quality of your service, chances are that you can convince him to buy from your company again. On the back of every card and in every email that you send to a customer, it is essential that you offer recharge capabilities. Recharge capabilities increase your profit margin by removing the distributor from the picture.

PEC offers customers two solutions to allow recharging capabilities. The first is via the web, and the second is via the telephone. Customers can use their credit cards to recharge their accounts instantly.

## ***Billing Solutions for VoIP Termination & Wholesale***

CardSaver can also be used as a billing and call monitoring solution for VoIP wholesale and termination providers. PEC understands that wholesale businesses can deal with high volumes of traffic and often very low profit margins, and thus has developed a product that can support the necessary requirements of the industry. With CardSaver you can terminate and track VoIP traffic for hundreds of customers at a time.

Since VoIP termination laws and regulations differ from country to country, it is difficult to recommend a definite solution. The best way to develop a successful business infrastructure is to mimic that of another successful business and correct their oversights.

### **Setting Up a Solid Infrastructure**

First and foremost, you must develop a solid infrastructure for your wholesale termination system to run on. Without a solid infrastructure, you will be spending more time worrying about your system's integrity than marketing your services. The following is a list of equipment and services that you will require to start the business. We have also included recommendations that we feel will ensure a solid infrastructure.

#### **1. Billing and Call Management Software**

We list this item first not only because it is one of the products that we provide, but because it is the most vital in the list. Choosing a good billing software will ensure that every call made through your system is tracked and no call is left unbilled. CardSaver™ by PEC is not only a robust, dependable software package, but it is also the simplest and most user-friendly package in the industry. CardSaver enables you to view reports on traffic passing in and out of your system based on the IP address and channel or the destination called. CardSaver is a vital component for developing a solid wholesale infrastructure.

#### **2. VoIP Gateway**

The VoIP gateway that handles all of the calls into and out of your system is the next vital component. If your hardware fails, your customers' calls will not go through. Thus, we recommend choosing one of two brands for your VoIP gateway: Cisco or Quintum. Although we are a proud reseller of Quintum hardware, CardSaver fully integrates with Cisco VoIP gateways. These two vendors have a large following and many online forums exist where you can go to receive answers to any questions that you may have regarding configuration or specifications. For the wholesale industry, if you are accepting IP traffic and terminating to PSTN lines, then you will require a standard VoIP gateway. However, if you are accepting IP traffic and terminating to another IP address, you will need a Call Relay gateway.

#### **3. Server(s)**

Today, you can purchase a Dell system for \$499 with monitor included. That is a definitely a great deal, but unless you are only planning to use the system for Internet browsing and word processing, we do not recommend using these type of systems for your mission critical

applications. Ideally, we recommend that your wholesale termination platform is broken into three separate servers, the RADIUS server which communicates directly with your VoIP gateway, the database server which maintains all of the call data, and the web server which allows you to view reports and manage users. Having three separate servers is not always an option, so in the scenario that you are using only one server, we recommend the following specifications:

### **3. Server(s)**

Server technology is constantly changing, and unless you are in the business, it is a challenge to stay abreast of the latest and greatest. For this reason, our recommendations on the right server to choose are based on the current technology available.

#### **Systems with 90 concurrent calls or less:**

Rackmount Server  
Intel Dual Core Processor  
1 GB RAM  
(2) 80 GB+ hard drives  
10/100/1000 Ethernet Adapter

#### **Systems with 90 to 300 concurrent calls:**

Intel Quad-Core Xeon Processor  
2 or 4 GB RAM  
Dual 10K SCSI hard drives (120 GB or more)  
Gigabit Ethernet Adapter

#### **Systems with 300 to 1000 concurrent calls:**

(2) Intel Quad-Core Xeon Processor  
8 GB RAM  
Dual 15K SCSI hard drives (250 GB or more)  
Gigabit Ethernet Adapter

If you are handling more than 1000 calls – we recommend using multiple servers.

### **4. Internet Service**

The Internet service that you choose is the backbone of your calling card network. Choosing a reliable Internet service will ensure that your billing server and VoIP gateways will stay online. If the Internet connection fails, calls will not go through. Ideally, you should place your servers in a co-location facility (i.e. 60 Hudson Street in New York). Internet service in a co-location facility is much less likely to go down than in your office or home. If you are placing your systems in a co-location facility, be sure to ask your Internet provider what kind of redundancy is available in case their service goes down. The provider will often use the backbone of another Internet provider in this event. If your Internet provider does not have a failover plan, you may want to consider selecting a second Internet service as a backup. Also, as Verizon FiOS becomes more widely available around the USA, many customers have decided to place their equipment at home or in their offices. Using Verizon's business-grade FiOS service – some customers have been able to achieve over 300 concurrent calls, affordably and reliably.

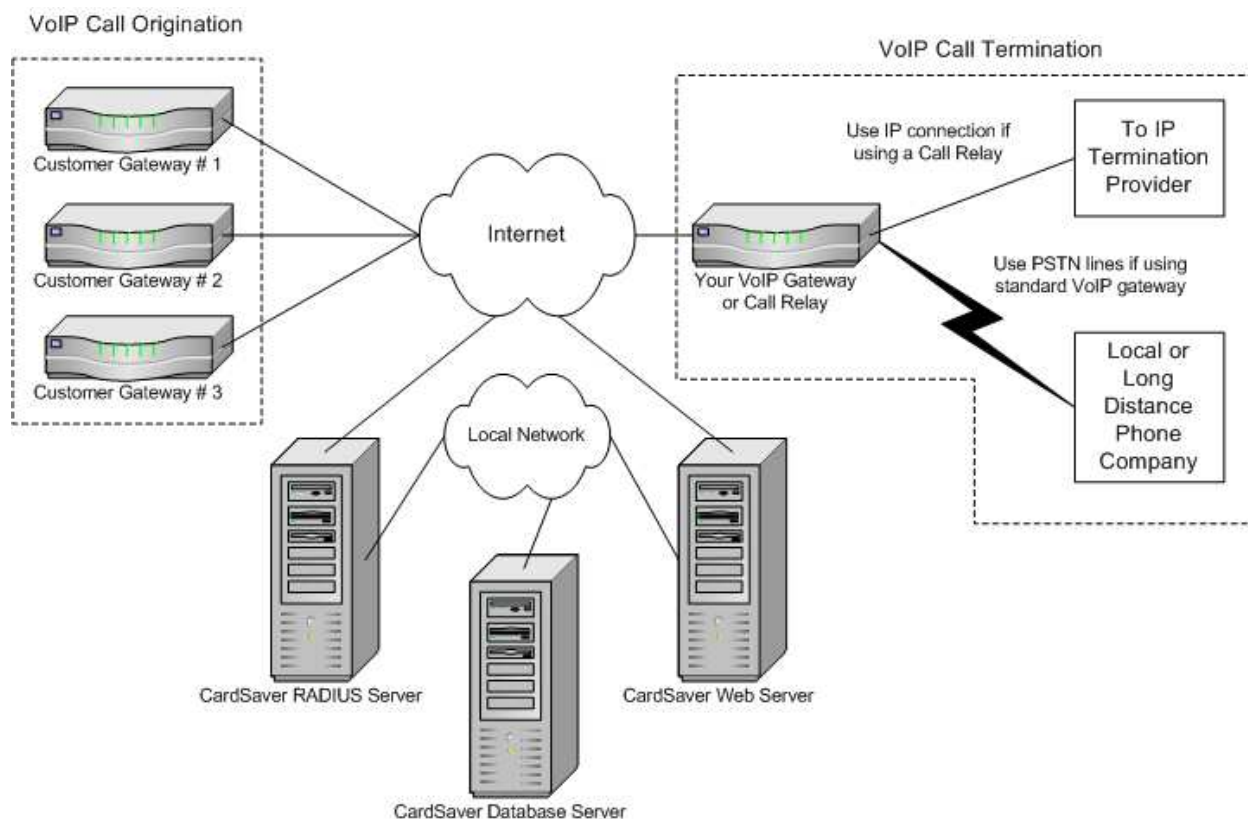
## **5. Power Service**

In most places throughout the world, power outages are a daily event. If your systems are located in a place where power outages are common, it is essential to have a power generator. Even if electrical outages are not an everyday in your location, it is still extremely important to consider the integrity of your power service. It is essential, regardless of your location, to have a UPS battery backup. It is recommended that your battery backup can last at least two hours in case of a power outage. If you are placing your equipment in a co-location facility chances are that you will be connected to a generator, however, it is still necessary to have a UPS battery backup.



## Network Topography

The following network diagram depicts what a typical wholesale termination system layout would look like. Please keep in mind that the CardSaver RADIUS Server, the CardSaver Web Server, and the CardSaver Database Server can be combined into one system.



## Finding Companies to Send You Traffic

If your rates and quality of termination are competitive, finding companies to send you traffic is fairly easy. Posting your rates and payment details on different VoIP forums will get you a good deal of response.

Another surefire method of obtaining traffic is to become a member of Arbinet ([www.arbinet.com](http://www.arbinet.com)), which is an exchange of long distance providers and companies that are originating calls. Arbinet essentially handles the task of finding companies to send you traffic. Presently, the Arbinet membership fee is approximately \$1,500.

Also – be sure to call us (PEC) at 1-732-290-1900 to let us know about your route. We often have customers that would be interested.

## **Making Money in the Termination Business**

Although the methods by which to make profits in the termination business are more straightforward than in the prepaid calling card business, there are still some general practices that we recommend to ensure that your company is profitable.

### **Maintain a High Quality Voice**

In the termination business, if the voice quality of your service is poor, you will not be able to sell it. For a list of concerns that your customers will have regarding the quality of your service, please refer to the section of this document entitled "Connecting to Long Distance Providers" on page 8.

### **Sell for More than You Pay**

The heading of this section may seem self-explanatory and maybe even insulting, but there is a reason we remind you to sell your services for more than you pay. When calculating the cost of your termination, it is extremely important to consider the cost of your Internet service, your telephone lines, your co-location space, local and long distance charges, and any technician salaries that you may be paying. For example, if your total monthly expenses are \$5000, and you are terminating 250,000 minutes of VoIP traffic per month, you should add 2 cents per minute to your per-minute cost.

### **Collect, Collect, Collect**

In many cases, whole termination is provided to customers as a postpaid service. We recommend that you do some research on any company that is proposing to send postpaid traffic to you. If you do not feel comfortable accepting postpaid traffic from this customer, propose prepayment or use an escrow service. Remember, most companies that fail in the termination business fail because they cannot collect the money that is owed to them.

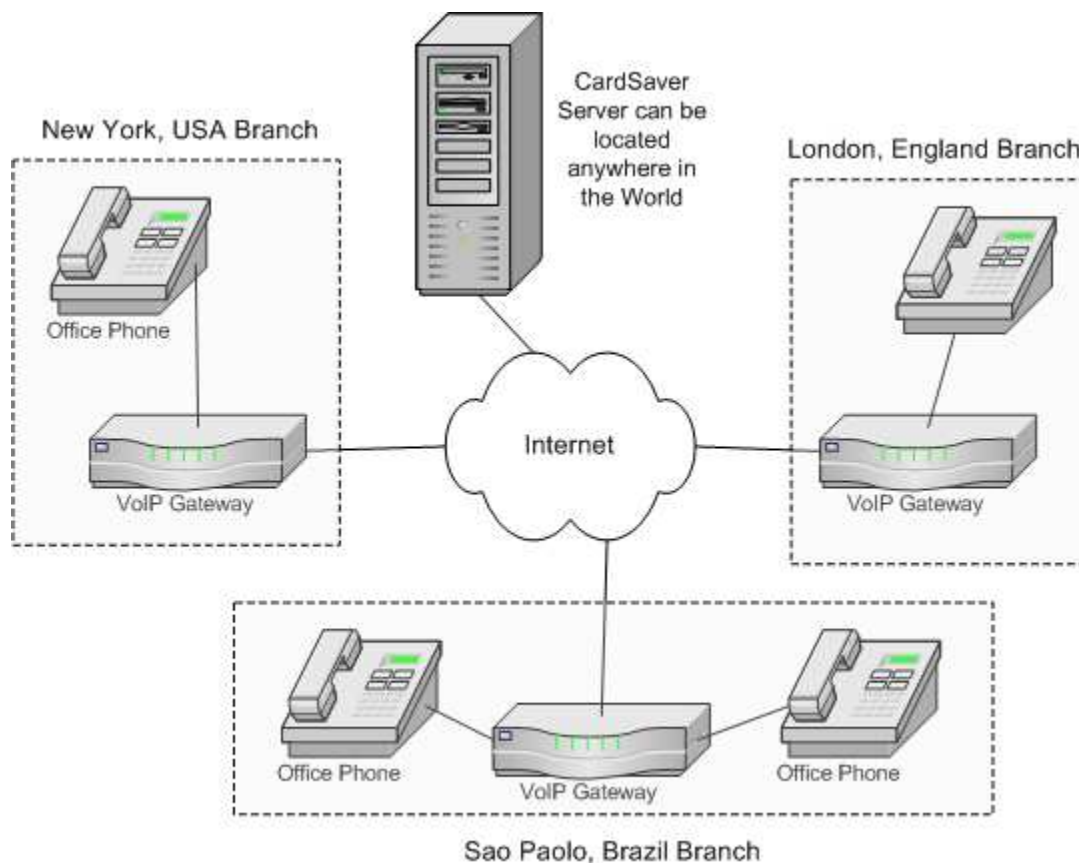
## VoIP Solutions for Inter-Office Communications

As VoIP becomes more widely accepted as a viable alternative to standard telephone lines, more and more offices are switching to VoIP for their inter-office and international communication needs.

### Connect International Branches

Companies that communicate frequently with offices or partners in different countries can benefit immediately by using VoIP for their business. By placing a VoIP gateway at each end of the conversation, VoIP allows you to bypass the long distance company's network and use the Internet as your medium of conversation, thus allowing either party to call the other without any long distance charge whatsoever. Extending this concept further, companies can place VoIP gateways in multiple office locations allowing toll-free communication between any of the branches.

CardSaver can be used in this scenario to monitor and log every call being made to and from each office. Just one CardSaver system can handle the call monitoring for up to 1000 branches. The network diagram below depicts three offices connected via VoIP:



## **Offer Offshore Phone Numbers**

There are a few reasons why companies choose to have offshore phone numbers. For one, having international phone numbers gives companies a sense of international presence. Secondly, it allows the company to market its products internationally by giving international customers a local telephone number to call when they are in need of customer service. One example in which this application is extremely useful is for late-hours offshore support. Many companies based in the U.S. offer their customers a toll-free phone number, which gets transferred via VoIP to the international branch office (India or Philippines, for example) during late hours.

## **Control and Monitor Employee Calls**

CardSaver allows companies to control and monitor calls made by employees. Companies can give each employee a 3 to 10 digit security code that they must dial before making any call out of the office. After entering the security code, the employee can dial the destination number as he normally would. In the CardSaver interface, employers can specify which destinations to allow each employee to call. For example, managers may be allowed to call anywhere in the world, while trainees may be allowed to call only within the country. If an employee is not permitted to call a certain destination, the call will not go through. Using CardSaver's extensive reporting utilities, managers can view daily and monthly call reports for each employee.

## ***CardSaver Demo Site***

If you are a prospective customer and want to gain a hands-on experience of the CardSaver Billing & Call Management software, PEC has provided a live demo system for your convenience. You can access this system with your Internet Explorer web browser by visiting the following URL:

**<http://cardsaver.voicesaver.com/cdr>**

**Login:** demo

**Password:** demo

The web interface manual will help you if you are having difficulty understanding what you are seeing:

**<http://www.parwan.com/CardSaverManual.pdf>**

## ***The “Pay As You Grow” Program***

At PEC we understand that new companies are usually overwhelmed with the expenses that are involved in starting a new business. Rental space deposits, office furniture, computers, software, and all of the miscellaneous expenses that accompany the start of a new business can run a business to the ground before it even begins, if not managed properly. It is for this reason that PEC offers all its customers the “Pay as You Grow” program.

Other companies usually charge a very high flat fee regardless of the capacity that your system will handle. But why should you be required to pay such a large sum when you are starting with only minimal capacity? “Pay as You Grow” addresses this question by allowing you to buy PEC software with a minimal software license and upgrading as your company grows - at no additional charge. For example, if the 8 line license is \$2,000 and the 24 line license is \$4,000, regardless of when you upgrade from 8 lines to 24 lines, the upgrade price will be \$2,000.

The “Pay as You Grow” program has allowed many of our customers to steadily grow their businesses to the top of their industries. The following success stories represent just a couple of our customers who have succeeded with the aid of our software and the “Pay as You Grow” program.

## ***Success Stories***

### **NYMail, Inc.**

In 1990, NYMail purchased a four-line PEC VoiceSaver system. The system was installed in the closet of a small Queens, New York apartment. Taking advantage of “Pay as You Grow” and PEC’s comprehensive knowledge of the voicemail industry, NYMail expanded rapidly by offering more services to its customers and expanding its capacity. Between 1990 and 1994, NYMail increased its capacity from 4 lines to over 200 lines. Today, NYMail is located

on prestigious 5<sup>th</sup> Avenue in Manhattan and is the single largest voice mail service bureau in New York City handling over 40 million calls per year.

**Telecom Lesotho (<http://www.telecom.co.ls>) Lesotho, AFRICA**

As the sole provider of land line and Internet services in Lesotho, a country of two million people, Telecom Lesotho is both at an advantage and a disadvantage. Its advantage is that it has no competition. Its disadvantage is that it has the sole responsibility of keeping the country and its people connected. In 2005, Telecom Lesotho came to PEC Telecom in search of a Prepaid Calling Card solution to add to its portfolio of products. After seeing a few demonstrations on the Internet, the company decided to purchase the solution and requested that one of our senior engineers travel to Lesotho to do the installation and train the company's staff. The installation and training were successful, and the company sold its first calling card one week later. Today, more than two years later, Telecom Lesotho is running strong with 240 ports, handling more than 100,000 minutes of traffic per day.

**Universal-Call.com ([www.universal-call.com](http://www.universal-call.com)) (Virginia, USA)**

Founded in 2003, Universal Call, LLC, has become one of the most recognized names in the Bangladeshi community in the United States. Rather than approaching the business with a broad market focus, founder and owner, M. Siddique decided to focus on the niche market of his native country, Bangladesh. Mr. Siddique realized that over 220,000 Bangladeshis live in the United States today, and majority of that population calls back home on a regular basis. Initially, when he purchased the solution from PEC, his intention was to sell a no-fee, honest calling card product to his community. Although the calling card product still sells well, majority of his customers today are taking advantage of Universal Call's Pinless Calling system, a service realized by the features provided by the PEC billing system. 95% of Mr. Siddique's customers purchase and recharge their accounts directly on his website. The name Universal Call has become synonymous with excellent service, call quality, and honest rates.

**Color Broadband ([www.colorbroadband.com](http://www.colorbroadband.com)) Los Angeles, California, USA**

Color Broadband Communications, Inc. is the largest private fixed wireless provider serving the greater Los Angeles area, a metropolitan area of more than 10 million people. CBC is also one of the largest, privately owned wholesale US termination company in the United States. In 2003, CBC came to PEC in search for a billing system to handle 250,000 calls and over 1 million minutes of traffic per day within the United States. Together, CBC and PEC built a network architecture that was not limited to their existing capacity, but instead could grow with the company. Today, CBC handles more than 1 million calls and 4 million minutes of traffic per day to over 140,000 different rate centers around the US. Using PEC's billing system in conjunction with Nextone, Cisco, and Quintum VoIP Gateways, Color Broadband was able to sustain its growth and increase its profitability.

**Uniphone, Inc ([www.uniphone.net](http://www.uniphone.net)) Mexico City, Mexico**

Mr. Cardenas was a successful coffee farm owner and exporter, and he decided to use his business skills and financial backing to venture into the telecom arena. In early 2003, he purchased a telecom license from the government and purchased a calling card solution from a vendor in the United States (for legal reasons we cannot mention the name). Three months later, as his business was expanding, he began to realize that the system he had purchased could not keep up with his growth. He found himself rebooting the system 20+ times per day, and he lost a significant amount of customers and money in the process. At this point, Mr. Cardenas did his research and called PEC in search of a robust calling card solution. When we spoke with him, we could hear that he was frustrated with the absurd prices controlled by the monopoly, Tel Mex. PEC assured him that our solution would handle

his call capacity and would allow him to focus on the growth of his business. In fact, we were so positive that our solution would work for him that we supplied an evaluation version at no cost and even moved all of the data from his existing system to the new system. Mr. Cardenas evaluation version was to last for one month, however, in one week, we received a wire transfer from Mr. Cardenas for the full amount of the system. He called one of senior engineers to thank him and said, I haven't slept more than 2 hours in the past 3 months thank you for giving me my sleep back! Today, Uniphone's system handles over 75,000 minutes per day on 120 ports, and it generates nearly \$2 million dollars of profit per year.

### **Technologia Digital (DG-Tec) ([www.dgtec.com](http://www.dgtec.com)) - Santo Domingo, Dom. Rep.**

In 2003, Mr. Frank Diaz of DG-Tec came to PEC's New Jersey office in search of a robust calling card solution for his company in Dominican Republic. At the time, the company was primarily an import/export company with an office in Santo Domingo and Miami. One month later, one of our senior engineers took a trip to Santo Domingo to do the installation and training. The initial solution that was implemented was a 24-port, standard, prepaid calling card system. While in Santo Domingo, our engineer realized the potential of the Dominican market, and worked with DG Tec to develop a potential growth plan. The calling card platform turned out to be an instant success, and DG Tec launched a calling card system in Miami two months later. A month or so after that, DG Tec expanded each of their calling card systems to 240 ports each.

Less than one year later, our senior engineer received a call from Mr. Diaz to fly down to Dominican Republic to discuss their new acquisition. In response to their great success in the calling card business, DG Tec purchased one of five telephone companies in the country to obtain the telecom license to expand even further. Since then, DG Tec has become known as the most cutting edge telephone company in Dominican Republic. After the acquisition, DG Tec began to offer wholesale termination services, with which it handles over 10 million minutes per month into Dominican Republic. DG Tec also expanded its calling card services and now owns the short codes 211 and 511 which can be dialed anywhere in Dominican Republic to access the system. In addition, DG Tec introduced Plan 809 which allows customers in the United States to maintain a Dominican Republic phone number. The product has become the most popular telephony product amongst Dominicans in the United States, a population over 1 million strong. To date, DG Tec has purchased over 2,000 ports from PEC, and is continuing to expand.

## ***About PEC***

Founded in 1984, Parwan Electronics Corporation (PEC) is located in Aberdeen, New Jersey, a corporate center just outside of New York City. In 2002, PEC's international office was founded in New Delhi, India, in order to cater to the growing demand throughout the Far East, Africa, Australia, and the Indian subcontinent.

PEC provides innovative information technology solutions to the telecom industry by providing added services to their customer base. PEC's goal is to make the telecom companies more successful by providing them with useful communications software that will make them more competitive and profitable.

Throughout PEC's history, we have stayed ahead of the constant and innovative changes of the communications industry. As important decisions impact the industry, PEC introduces solutions to keep our customers competitive and meet the challenging needs of the industry.

From local to international, using wireless or wire line technologies, PEC offers a full portfolio of products as well as management and consulting services, ranging from traditional telecommunications products to comprehensive design, security, and professional services.

PEC has 20 years of experience in the telecommunications software industry and has researched and developed feature-rich, cost-efficient, and cost-effective products. PEC's products not only meet all industry standards, but go beyond them to offer you the latest in groundbreaking telecommunication technology. PEC's knowledgeable technical support staff is always available and ready to answer all of your questions and meet any of your demands.

## Installations

Over the past 20 years, PEC solutions have been installed in over 10,000 sites throughout the world, from small companies to large corporations. Here is a small list of the clients that have used our solutions:

- 3Com Corporation, Guatemala
- AAA, USA
- Bombay Cellular, India
- Boston Natural Gas, USA
- BPL Telecom, India
- Budweiser, Czech Republic
- Canadian Western Natural Gas, Canada
- Coca Cola International, India
- El Paso Electric, USA
- Fort Mead Army Base, Maryland, USA
- GamTel, Gambia
- General Motors, Chevrolet Division, USA
- Hutchinson Telecom, India
- LaunchFax.com, USA
- LILCO (Keyspan), New York, USA
- Lipton Tea, USA
- Motorola Corporation, USA
- Northern Utilities, Ltd., Canada
- NYMail, Inc., USA
- Oracle Corporation, India
- Palau Cellular Phone Company, Republic of Palau
- Ramada Hotels, USA
- San Diego Gas & Electric, USA
- Sheraton Hotels & Resorts, India
- Sony Electronics, USA
- Tecnologia Digital, S.A., Dominican Republic
- The New York Public Library, USA
- TouchTel, India
- United Emirates Telephone Company, U.A.E
- United States Air Force, Delaware, USA
- United States Department of Labor, USA
- Venezuela Telephone, Venezuela
- Volvo Corporation, Kuwait



## Visiting PEC

PEC welcomes you to visit our offices in Aberdeen, New Jersey, USA and in New Delhi, India. Our New Jersey office is located just 35 miles south of New York City, and our New Delhi office is conveniently located in Greater Kailash Part I.

If you are in the New York or New Delhi areas, please contact us at least one day before visiting so that we may better prepare ourselves for your visit.

For directions to either of our locations, please contact us or visit our website at **<http://www.voicesaver.com>**