

WTL Pre-Paid: The High Reliability Calling Card Platform

WTL Pre-Paid allows Operators to create a very wide range of pre-paid calling card services. The system is tremendously flexible with options to suit every kind of operator. There is a full set of Web-based and PC tools to help the Operator manage and run a successful Pre-Paid or Calling Card business.

Supports All Traffic Types

One of the unique points about the WTL Pre-Paid application is that it can support users entering the system via any means. This can be via conventional trunks and DDIs from the PSTN (ISDN or SS7) or as VoIP calls (SIP or H323). The application sits above the physical hardware platform so can be delivered as a SoftSwitch for 100% VoIP operators, as a totally TDM-based solution or any mixture of the two.

No Add-on Costs

All the multiple different types of service described here are included in the cost of our Pre-Paid software. Services can easily be added and removed and they can all be hosted on the same physical platform.

Enormous Capacity

The WTL Pre-Paid application is capable of supporting large traffic volumes – millions of minutes a month can be switched. The card population is virtually unlimited too – we have systems running with many millions of cards or accounts. The switch can be filled right to its limit – if you have 40 E1s or 1000 VoIP calls on the switch it will run reliably under full load. Also the capacity is not limited by the size of a single switch – multiple switches in many locations can share the Pre-Paid account database at the heart of the system.

The switch operator may have multiple resellers selling cards on the same switch. This is supported by associating batches of cards with different card providers.

Flexible Card Profiles

Operators can offer fixed value, pre-paid calling cards but there are many variants on how these cards should operate. WTL allows for this great variation by a system of 'profiles'. A batch of cards has a profile associated with it that specifies how it operates. An almost unlimited number of simultaneous profiles is possible per switch. The profile defines such information as: the language to be used for interactive voice response, the type of card in use, whether the maximum call time will be announced, the week day, Friday and week end rates to be charged, the life of the card after activation, an absolute 'drop dead' date for the card (regardless of remaining balance) and, naturally, the opening value of the card.

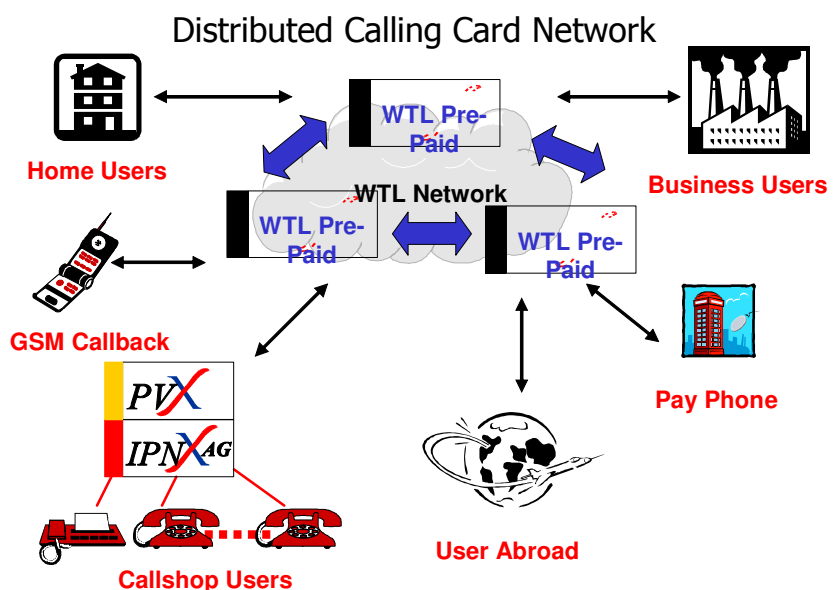
Many Service Options

- Choice of 16 languages
- Language fixed for the account or may be selected by DTMF or by the DDI called.

- Selected language automatically registered in the account record
- PIN number length can be specified
- Debit card number length can be specified
- Different weekday, Friday and weekend profile can be set
- Conversion of pre-paid balance to post-paid account
- Possibility to retype the account number in case of mistake
- Possibility of centralized database shared by several switches for "national cards" with local access.
- Optional expiry date and maximum validity period set on first use
- Subscriber balance and/or maximum possible call duration may optionally be announced at start of call
- Subscriber can call to query balance left on call
- Last number redial facility for subscriber
- Card balance can be automatically reduced to zero if value remaining is less than threshold
- Optional operator assisted call in case of a) pulse phone, b) too many errors, c) manual request or d) route straight to operator
- Optional interactive voice menu for subscriber to create, verify, delete a personal speed dial list
- Possibility of extending the duration of one call by entering another card number before card expiry
- Possibility of interrupting a call with ## or ** to enter another destination number
- Common balance: Several card numbers can share a single account stored in the provider table, useful for users who can have different CLIs.

Network Layout

Pre-Paid support may be located wherever it is convenient to use it in the network. This may mean a central switch that is accessed from many smaller PoPs. The Calling Card support is also fully integrated with the VoIP and LCR capabilities of the switch so that the subscriber call can always be routed to its destination over the cheapest possible route.



Extra User Services

- Immediate short code: A calling card can be forced to use a specific short code skipping the DTMF entry for the first call. This is useful to provide direct transfer to a predefined destination, such as a helpdesk. Calls to the same DDI may be transferred to different destinations based on the card provider.
- Restricted short codes: The caller can choose from only a set of short codes, useful for calling card with dedicated functions (listen to an advert, call a help desk, recharge only, etc). For example, "Enter 0 # to recharge your account, 1 # to check your balance, 2 # to speak to one of our sales representatives"
- Card accounts which allow multiple calls can be useful in some situations. For example, cards may be given to several members of staff of a company with a single balance controlling all of them. A family account may be created with a card for each family member.
- Calls may be identified by entering a job number at the start. This could be used, for example, by a professional to bill calls to different clients.
- Special "recharge" services exist to transfer Calling Card balances to CLI based accounts. These services allow Calling Card customers to be easily developed into more long term subscribers.

Call Charging Possibilities

Many variants exist in how the user can be charged for the call:

- A-leg charge
- Variable A-leg charge based on where call originates
- Special charge for call from pay phone
- Connection charge
- Successive different charging periods during call
- Choice to charge or not for short, failed or disconnected calls
- Special rates for particular cards (for example, an 'America card' which offers good rates for calls to the USA but high rates for other calls)
- Charge by route used. Allows Dual quality / Dual tariff cards – use one DDI for best quality/higher cost calls or second DDI for lower quality/cheaper route
- Minimum call charge time
- 7 different rating periods available per day
- Optional 'free calling' time at start of call
- Special rate per DDI
- Rates accuracy down to 1/100th of a cent

RADIUS Support

WTL switches offer RADIUS support and are able to act as a RADIUS Client or Server. This gives extra flexibility of network design allowing WTL equipment to be a billing or Pre-Paid server for 3rd party gateways.

This means that a WTL Pre-Paid service could be offered to a VoIP network based only on RADIUS messages. There is no need for the calls themselves to go through the WTL Soft IVR, only the call control messages. Therefore there is no capacity limit on the number of simultaneous calls that could be supported.

RADIUS support means that combined voice and data Pre-Paid services can be hosted on the WTL platform.

Account Top Up

The WTL Pre-Paid application has a feature which allows the user to top up their account by calling a Premium Rate number for a given length of time. This call is billed by the public operator to the user's account and the charge is passed on to the calling card operator (minus the public operator's margin) for top up of the card. Alternatively, a user may buy top up cards to add value to their original account (this means that they do not lose the residual value that remains on the first card and they do not have to learn a new PIN number).

Anti-Fraud features

Security is always an important issue but with the features implemented by World Telecom Labs, risk is kept to a minimum.

A high level of security is implemented via the profiles that are set up by customer, corporate group or carrier. This means that different levels of security can be applied to different types of customer. Pre-Paid accounts include the following security features:

- Cards only available for use once validated by checking on database records.
- Cards can be assigned 'invalid' whilst unsold, and validated after sale.
- Length of card life after activation can be specified
- Multiple simultaneous users of a card can either be prohibited or a limit set on the maximum simultaneous use
- Outstanding balance is checked before a call is made; once destination is identified the time balance to that destination is announced to the customer. If this is below a programmable limit the call is refused.
- Two stage security check is an option (PIN followed by Password).
- Alarm raised if the number of bad PINs entered in an hour exceeds a configurable limit
- Alarm raised if the number of zero length calls in an hour exceeds a configurable limit
- CLI Blacklisting – the switch contains a table of CLIs which are banned from making calls. Call attempts are immediately disconnected with no announcement. The operator has access to this table to add or remove numbers.
- Call Restrictions - calls may be filtered on a number of criteria. Individual accounts may be limited by:
 - time (only call off-peak)
 - day (only call at weekends)
 - destination (only call certain countries or only call nationally, for example)
- Maximum Call Duration – the maximum time allowed for a single call may be set. When it is reached the call is cut.
- Sophisticated number filtering – the switch checks dialled numbers carefully. This avoids tricks like the user entering a pseudo-international number. For example, entering 0032049xxx in Belgium would make the switch drop the 0032 because it is the international code for Belgium (and therefore not required within the country). Normally the switch would also insert a 0 to turn the number back into a national number but in this case that would cause a fraudulent international call to Germany but charged at the local rate.

- Balance limits – limits are possible on the cost of calls per card per day both during the week and at the weekend.
- Balance Monitoring – If a call is in progress when the balance reaches zero, call is cut.
- Balance Monitoring for multiple user cards – Restrictions come into force on multiple cards that share a single balance when the balance is low.
- There is the option to set up a call time balance (as opposed to a cost balance) for a customer. Calls will be refused after this balance drops below a programmable limit.
- Network-Wide Card Blocking – If a card reaches any of the limits described above it will automatically be marked as blocked by all switches in the network. This prevents fraud from cards that are copied and used by multiple people or in multiple locations.

Tailored Messages

A unique marketing tool is available to existing card providers to manage and design their own IVR systems. A powerful feature of the WTL system is the ability to customise messages received by incoming callers. We supply 99 pre-set voice trees per profile (999 profiles available).

In addition to providing calling card facilities to their customers, credit card or store card operators can tailor the welcoming when the cards are used as calling cards.

This presents many opportunities. For example, store card operators can announce 'special offers' and then give the caller the choice to connect to customer services, special offers help line or check the balance of their account. This facility is also often combined with the creation of low value calling cards as a promotional giveaway.

The service may be set up to play the message in one of several languages depending on the card number.

Management Tools

A comprehensive set of tools is available for the Operator to successfully manage their Pre-Paid business:

SW Admin has been designed to simplify the management of Calling Cards. It allows the creation of batches of cards and gives every card in the batch a unique random PIN (PIN length is configurable). Batches may contain any number of cards from 10 to hundreds of thousands. Every detail of the card batch may be specified, or, by the use of pre-set profiles a repeat batch may be created just like an earlier one. This application also generates the Printer file containing all the card serial numbers and PINs which is needed for the manufacture of the cards themselves. Once created batches of cards are sent to the IPNx and individual cards or whole batches can then be activated at any time. Activated cards can be monitored (check remaining balance for example). Cards can even be blocked (and later restored) and cards or batches may be completely deleted.

SW HelpDesk is an application that is used to handle customer queries. It allows balances to be checked and modified, call logs to be examined per user, by time, by destination, by carrier and failed or zero length calls to be checked.

SW Check is a real time monitoring tool that keeps an eye on the current status of the switches, the carriers and the traffic that is being carried.