

Terms360 Overview

Automated Post Pay, Prepay, Stop-Limit,
Debit & Credit Card Billing Management



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Introduction

Terms360 is an Advantage 360 software module that provides each of the following forms of fully automated payment terms management:

1. Post-Pay Past-Due Treatment
2. Stop-Limit / Metered Billing
3. Prepay Billing
4. Direct Debit Billing
5. Credit Card Billing

The following briefly describes each feature:

Past-Due Treatment

Terms360 includes a highly evolved past-due treatment engine that is designed to monitor and manage post-pay terms accounts. It is supported by nearly unlimited treatment categories that can be user-defined (Residential, Corporate, VIP, Government, Employee, etc.). Within any such category, users can create nearly unlimited treatment tiers that are each a combination a past-due amount, a number of past-due days and a risk factor (a composite of given account's credit score and its churn score).

By default, a treatment code consisting of treatment tiers is assigned at the account level either manually or by the automated credit scoring system. However, treatment tiers can also be assigned by feature group (i.e.: to treat certain features different than others (regulated charges vs. non-regulated charges, internet charges vs. voice charges, etc.).

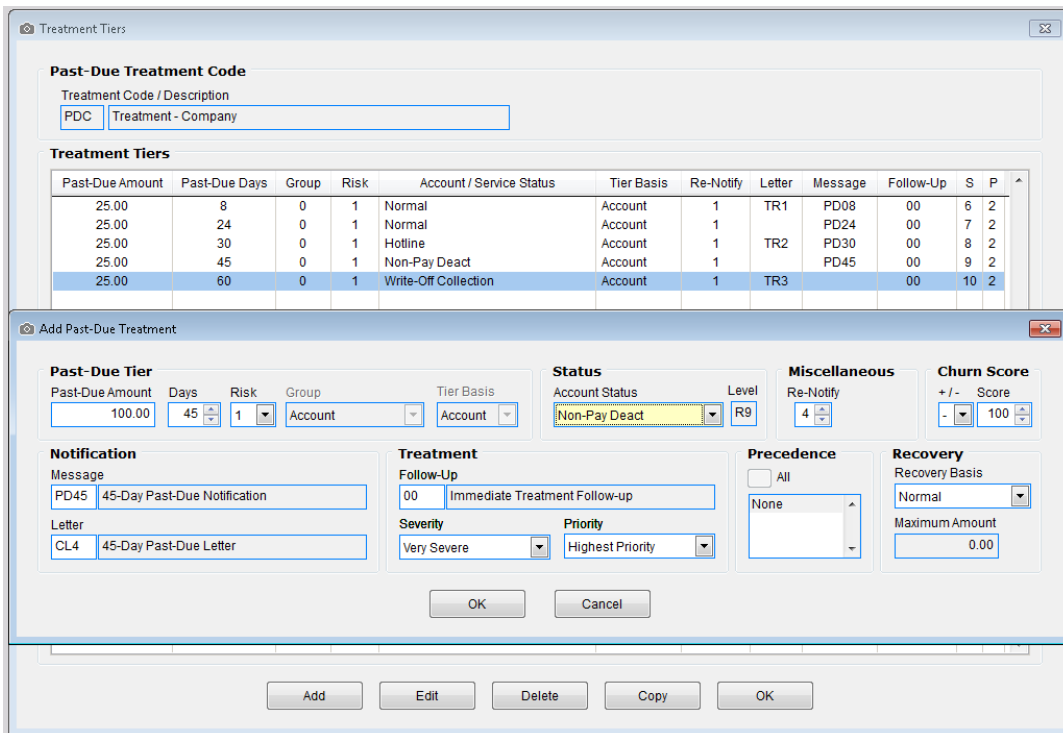
At each amount / days / risk tier, users can assign a message code (SMS, e-mail, IVR, etc.), a letter code (paper correspondence), an account status (Active, Hotline, Non-Pay De-Activation, etc.) that manages the switch and / or a follow-up code and associated minimum priority and minimum severity to alert collections personnel. Follow-up's, in turn, are managed by OSS360's automated task assignment and escalation system.

Each notification and / or punitive action type is closely integrated with other manual and automatic collections functions, as well as real-time payment commitment, payment arrangement, cash receipts and fulfillment functionality to insure that each account is managed in a consistent and even manner, as agreed (i.e.: in compliance with an agreed upon payment commitment) and within the exact scope determined by user-defined parameters.

Each tier also has a versatile choice of post-payment receipt recovery rules.

For example, if a given tier reduces an account’s normal service level (i.e.: to Non-Pay Deactivation), and the past-due amount is subsequently paid current, the account’s normal service will either be (a) automatically restored, (b) sent to a bulk activation queue for manual restoration or (c) held at its next most restrictive state. For example, an account its past due bill in full. However, service remains reduced (even inactive) until a credit representative can determine whether or not further credit worthiness is justified.

An example treatment tier configuration screen and add tier pop-up are shown below.



As can be seen in this example, the creation of a tier is a simple matter of assigning notification and service level rules to a combination of past-due factors and recovery rules.

In addition, these processes are fully multi-lingual. For example, the pop-up shown above has been assigned message code PD45 in order to send an SMS, e-mail or IVR intercept message whenever an associated account is at least \$100.00 past due for 45 days. Meanwhile, if users have subscribers who’s language preferences vary between English, French, Dutch and Spanish, etc., a version of PD45 can be created in each language. Then, when the tier is reached, the treatment process will automatically check the recipient’s preferred language and send the PD45 message in that language.

With debt collection capabilities that are unmatched, Terms360 gets results.

Prepay Billing

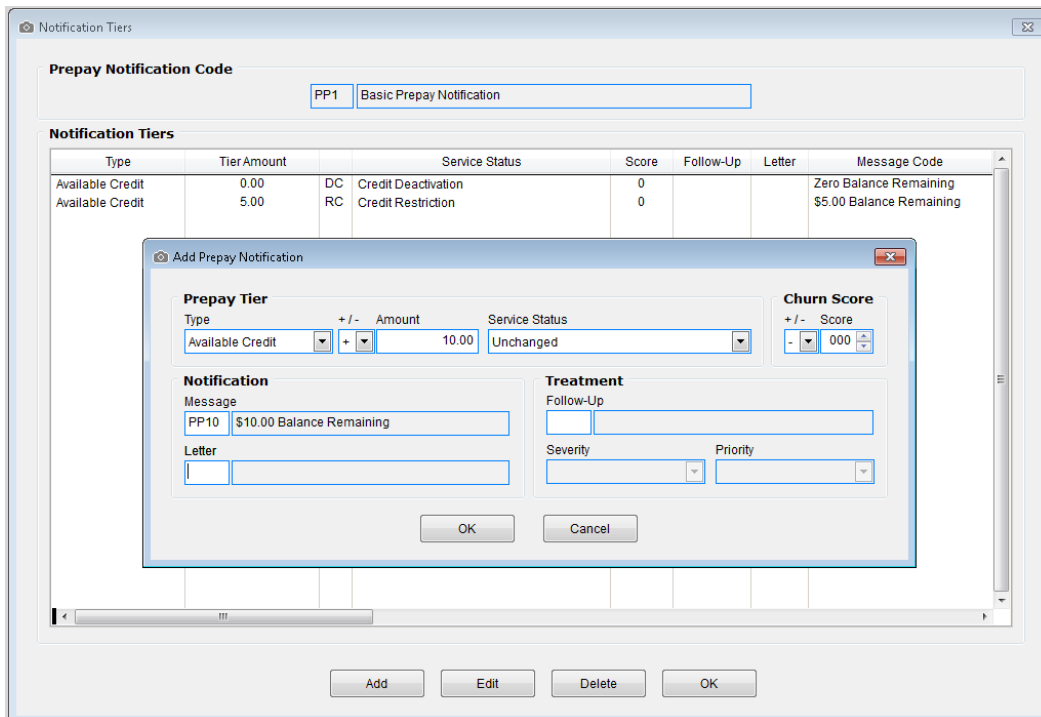
Terms 360 supports the following four prepay terms management types:

1. Post CDR / EDR
2. Interim CDR / EDR
3. Decrement Prepay
4. IN-Based Prepay

The following describes each of these functions:

Post CDR / EDR

Post CDR / EDR prepay is a process whereby CDRs / EDRs associated with a prepay terms subscriber are rated upon call / event termination and compared to its available access deposit. The rules for what happens next are determined by the subscriber's assigned prepay terms code, as user-defined in the screen and pop-up shown in the examples below.



Prepay Notification Code
PP1 Basic Prepay Notification

Type	Tier Amount	Service Status	Score	Follow-Up	Letter	Message Code
Available Credit	0.00	DC Credit Deactivation	0			Zero Balance Remaining
Available Credit	5.00	RC Credit Restriction	0			\$5.00 Balance Remaining

Add Prepay Notification

Prepay Tier
 Type: Available Credit +/- Amount: 10.00 Service Status: Unchanged
 Churn Score +/- Score: 000

Notification
 Message: PP10 \$10.00 Balance Remaining
 Letter:

Treatment
 Follow-Up:
 Severity: Priority:

Buttons: Add, Edit, Delete, OK

Post CDR / EDR prepay supports the same service level and notification management capabilities a past-due treatment. Each tier can be based upon an available access deposit balance remaining or that balance + a balance of free usage remaining (if any).

Pros: Post CDR / EDR prepay requires no additional processing hardware and it is very easy to set up and maintain. So, it can be very cost-effective.

Cons: Out-collect prepay roaming for foreign subscribers is not supported. Also a home subscriber's prepay balance is not checked until the network delivers the final start and termination data (CDR / EDR). Depending upon the termination point and network speed, this delay can range from seconds to days. As a result, there is a built-in vulnerability that, when termination occurs on a foreign network (i.e.: roaming), and CDRs / EDRs are processed in batch (i.e.: through a clearing house), the subscriber will be allowed to make calls, etc. well after its available prepay funds have been exhausted.

Terms360 includes a number of options that can partially mitigate this vulnerability. Please see Reducing Risk later in this Chapter.

Interim CDR / EDR

Interim CDR / EDR prepay is a process whereby CDRs / EDRs associated with a prepay terms subscriber are rated and accumulated at interim points during their progress (i.e. every 3 minutes). At each interval, the sum of these interim ratings is compared to the subscriber's available access deposit and held in reserve against that deposit until the final call / event termination record is received. The rated termination record (start through termination) then removes the interim amount held and charges the prepay balance accordingly.

Meanwhile, if the sum of the interim ratings determines that the subscriber lacks sufficient prepay funds to complete the next period, an SMS notification is sent and the call is torn down close to the point where those funds reach \$0.00 (network-dependent). The rules for what happens next are determined by the screen and pop-up shown in the examples on the previous page.

In addition, if the call terminates with a balance remaining, and that is insufficient to complete the first interim period of a new call, further calling is blocked until the balance is refreshed.

Pros: Interim CDR / EDR prepay requires no additional processing hardware, and it is very easy to set up and maintain. So, it can be very cost-effective and the risk of usage in excess of a subscriber's remaining prepay balance is greatly reduced. As a result, it can be an ideal solution for subscribers who do not generate roaming or foreign records. In addition, some systems force the in-collect roaming traffic of their local subscribers to be looped-back through their home switch. If this occurs, and the looped-back records can be extracted at interim intervals, this risk reduction applies to roaming as well.

Cons: Requires the ability of the home switch to provide interim records (i.e.: hot billing). This may be at extra cost.

In systems with hundreds of thousands of prepay subscribers, this could also result in excessive switch CPU and network processing requirements.

Out-collect prepay roaming for foreign subscribers is not supported. Also, unless loop-back can be implemented, a home subscriber's prepay balance is not checked until the network delivers the final start and termination data (CDR / EDR). Depending upon the termination point and network speed, this delay can range from seconds to days. As a result, there is a built-in vulnerability that, when termination occurs on a foreign network (i.e.: roaming), and CDRs / EDRs are processed in batch (i.e.: through a clearing house), the subscriber will be allowed to make calls, etc. well after its available prepay funds have been exhausted.

Terms360 includes a number of options that can partially mitigate this vulnerability. Please see Reducing Risk later in this Chapter.

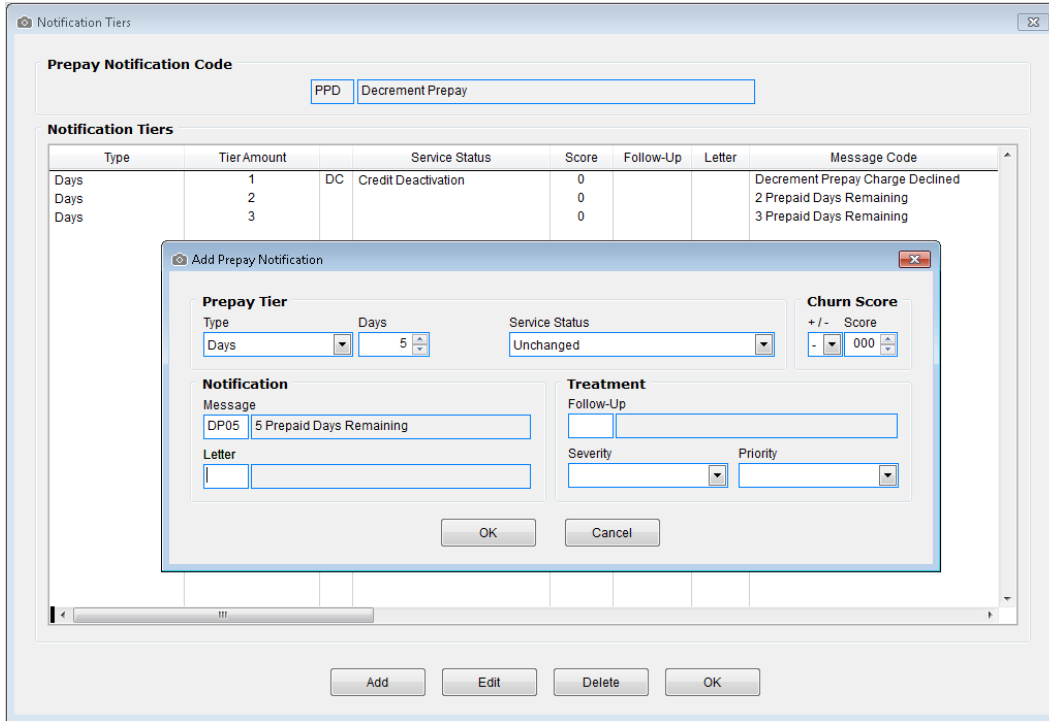
Decrement Prepay

Decrement prepay is designed for “all you can eat” plans where subscribers have unlimited usage for a flat amount. In a typical scenario, CDRs / EDRs are not rated. Instead, a subscriber pays a fee (i.e.: \$45.00 monthly) in advance for an associated service period (i.e.: 30 days). The pre-paid payment amount is then applied to a Terms360 access deposit bucket.

Every night, one day's service value (i.e.: \$1.50) is automatically charged to each such account (including any applicable taxes, license fees, etc.) and an equivalent amount is automatically moved from their access deposits account to their cash receipts account. From there, it is automatically applied to the associated charge and relevant GL and tax accounts.

Each tier is based upon a number of days remaining (if any). Otherwise, decrement prepay supports the same service level and notification management capabilities a past-due treatment. The rules for what happens next are determined by that subscriber's assigned prepay terms code, as user-defined in the screen and pop-up shown in the examples on the next page.

In addition, while users have the option of setting a minimum payment to be accepted (i.e.: \$45.00), any amount in excess of the minimum (if any) can be applied to the account. Also, additional charge types (including roaming charges) can be added during a billing period. For example, if a given subscriber's monthly fee is \$45.00, and they apply \$100.00 to their account, every night $\$45/30 = \1.50 will be debited to their access deposit balance, allowing 66 days of usage (only whole days are permitted). So, after 10 days, their remaining balance would be \$85.00 or 56 days of usage, with a \$1.00 access deposit balance remaining.



As a second example, let’s assume that, with 56 days / \$85.00 remaining, 3-way calling is added at a cost of \$3.00 per month. The nightly charging process would then debit $\$48/30 = \1.60 from their access deposit balance, reducing the days remaining to from 56 to 53. This would be calculated by the following formula: $\$100 - (\$45/30 \times 10 \text{ days}) = \85.00 , then by $(\$85/\$1.60) = 53$ (whole) days (with an unused \$0.20 access deposit) remaining. Charging in this way, also automatically prorates the \$3.00 monthly add-on over the 20 days remaining in the bill cycle. Essentially, \$2.00 is charged over the remaining period instead of the full monthly rate of \$3.00.

As a third example, let’s assume that, with 50 days / \$75.40 remaining on the same account, a roaming charge of \$22.50 is received. That night, the roaming amount would be subtracted from the access deposit $(\$75.40 - \$22.50) = \$52.90$. The remaining amount would then be debited the current \$1.60 daily rate, leaving \$51.30 or 32 days and a \$0.0625 access deposit amount remaining.

Pros: Decrement prepay is ideal for “all you can eat” rate plans. It requires no additional processing hardware and it is very easy to set up and maintain. So, it can be very cost-effective. While an amount is collected upfront on a monthly basis, it is held as a deposit until used (typically free of income and other taxation) and both revenue and tax liabilities are only recognized as they are earned (daily).

Cons: The draw-backs of decrement prepay are the same as those with post-CDR prepay. However, Terms360 includes a number of options that can partially mitigate these draw-backs. Please see Reducing Risk later in this Chapter.

IN Prepay

IN prepay is a process whereby SS7, WIN, CAMEL, ISUP and other such standards are used to manage prepay usage over an Intelligent Network (IN) gateway. As an attempt is initiated to place a call, a check is made of the subscriber's service status (active / inactive), its plan (international calling allowed / disallowed, etc.) and the destination status (line busy, invalid number, etc.). The per-minute call cost is then calculated and compared to the subscriber's available prepay balance. If the call is possible, and there is money to pay for it, it is allowed to proceed.

If prepay balance limits are reached during the call, tones and / or messages are sent to the subscriber's handset. Once the balance reaches \$0.00, the call is automatically terminated.

Because no call is authorized, placed or terminated without accompanying SS7 activity, it is inherently a real-time and a relatively risk-free prepay mechanism. Most systems can also support prepay roaming in both directions (in collect and out collect) when both carriers have implemented IN.

Terms360 does not currently include IN prepay. However, it does support Primal, Huawei, Alcatel and other IN prepay platforms as "black boxes". Essentially, OSS360 uses custom APIs to manage these platforms in a way that all fulfillment, plan selection, inventory, number inventory, CRM, provisioning, cash receipts, trouble ticketing, commission management, balance reporting and web self-help activities are performed in exactly the same manner as with post pay.

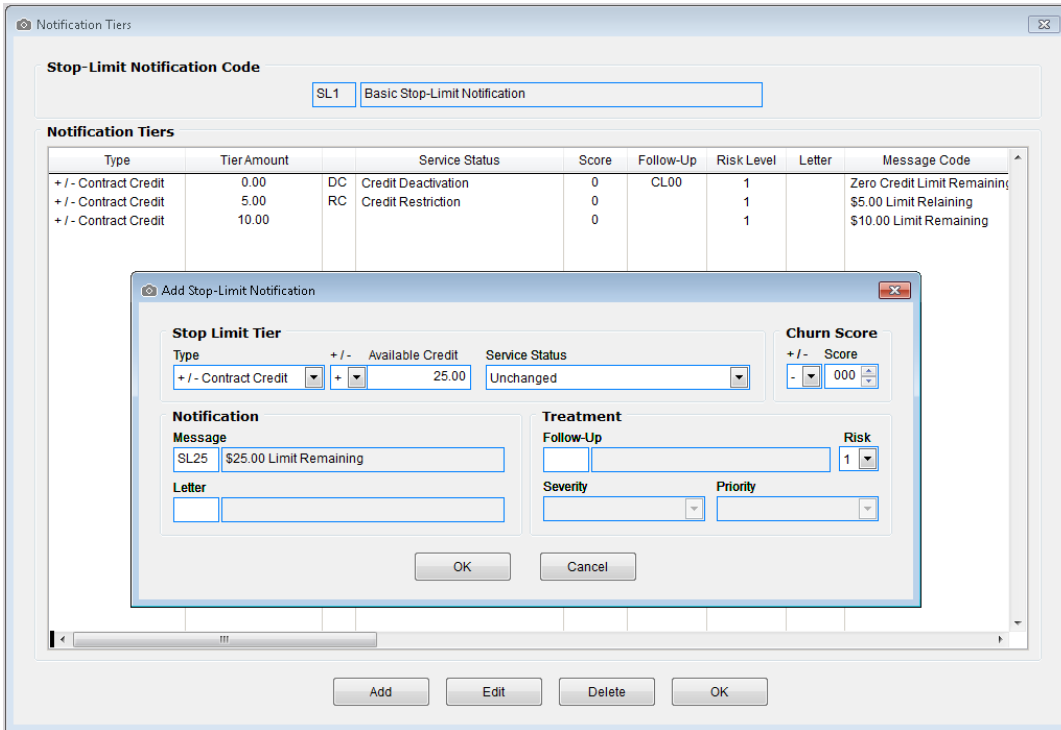
Pros: IN prepay is the most risk-free method of managing prepay subscribers. It is ideal for larger systems where variable rates are used (rather than "all you can eat") and where prepay is the primary method of payment in use and / or there is significant prepay roaming activity.

Cons: IN prepay systems require both additional hardware and switches that have IN interfaces installed. This can be expensive purchase and maintain, and must be justified by the level of risk that IN would ultimately mitigate vs. such costs. In addition, while all other Terms360 prepay variants are essentially hardware-free, a failure anywhere in the IN system can selectively affect prepay subscribers. So, IN redundancy is important and adds to the total cost of operation.

Stop-Limit / Metered Billing

Stop-limit billing (aka: Metered billing) is a Terms360 process that adeptly manages post pay subscriber credit limits. When used in conjunction with Terms360's past-due treatment processes, every combination of past-due, limit exceeded and their milestones can be fully controlled by user-defined rules.

Much like Terms360 prepay, CDRs / EDRs are rated upon termination. They are then compared to the credit limit assigned to associated subscribers. The rules for what happens next are determined by a subscriber’s assigned metered billing terms code, as user-defined in the screen and pop-up shown in the examples below.



Stop-Limit billing supports the same service level and notification management capabilities a past-due treatment. Each tier can be based upon either an amount or percentage of the credit limit assigned to associated subscribers.

These can be (+) positive amounts / percentages that are below a subscriber’s assigned credit limit ceiling and / or minus (-) amounts / percentages that are in excess of a subscriber’s assigned credit limit ceiling.

In other words, the credit limit can be “hard”, terminating service once reached. It can also be “soft”, and not necessarily result in service termination once reached. This is often used to detect fraud by alerting users of high usage without automatically affecting service levels.

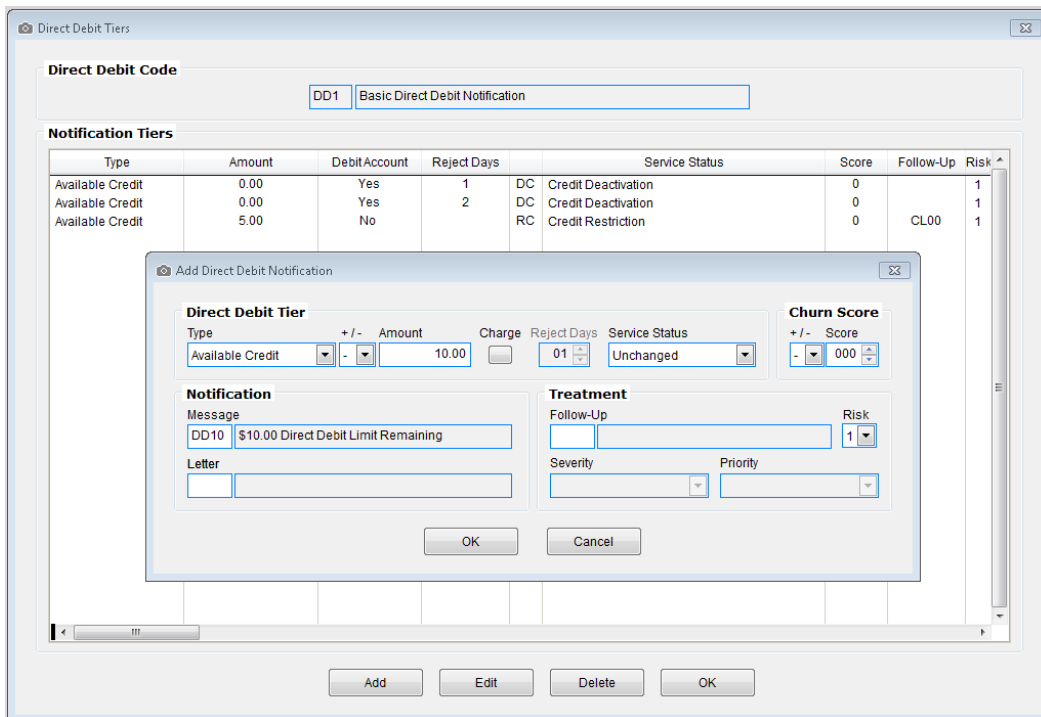
Pros: Stop-limit / metered billing requires no additional processing hardware and it is very easy to set up and maintain. So, it can be very cost-effective. When used in conjunction with service deposits, it can also be a very effective marking tool when the local competition relies heavily prepay in dealing with subscribers (see Reducing Risk later in this Chapter).

Cons: The draw-backs of stop-limit / metered billing are the same as those with post-CDR prepay. However, Terms360 includes a number of options that can partially mitigate these draw-backs. Please see Reducing Risk later in this Chapter.

Direct Debit Billing

Direct debit billing is a Terms360 process that begins with a terms code-based initial and minimum re-charge amount (i.e.: \$50.00) to be debited to a subscriber's bank account. This creates a credit limit in the form of an access deposit. It then uses PPD (Pre-arranged Payment National and Deposit entry) standards as defined in NACHA (National Automated Clearing House Association) operating guidelines to automatically establish and refresh a subscriber's available access deposit. This eliminates the need for prepay vouchers.

Much like Post CDR / EDR prepay, records are rated upon call / event termination and compared to the available access deposit amount of associated subscribers. The rules for what happens next are determined by a subscriber's assigned direct debit billing terms code, as user-defined in the screen and pop-up shown in the examples on the next page.



Type	Amount	Debit Account	Reject Days	Service Status	Score	Follow-Up	Risk
Available Credit	0.00	Yes	1	DC Credit Deactivation	0		1
Available Credit	0.00	Yes	2	DC Credit Deactivation	0		1
Available Credit	5.00	No		RC Credit Restriction	0	CL00	1

Direct debit billing supports the same service level and notification management capabilities as past-due treatment. Each tier can be based upon either a percentage or an amount of a subscriber-established per-debit limit (i.e.: \$50.00).

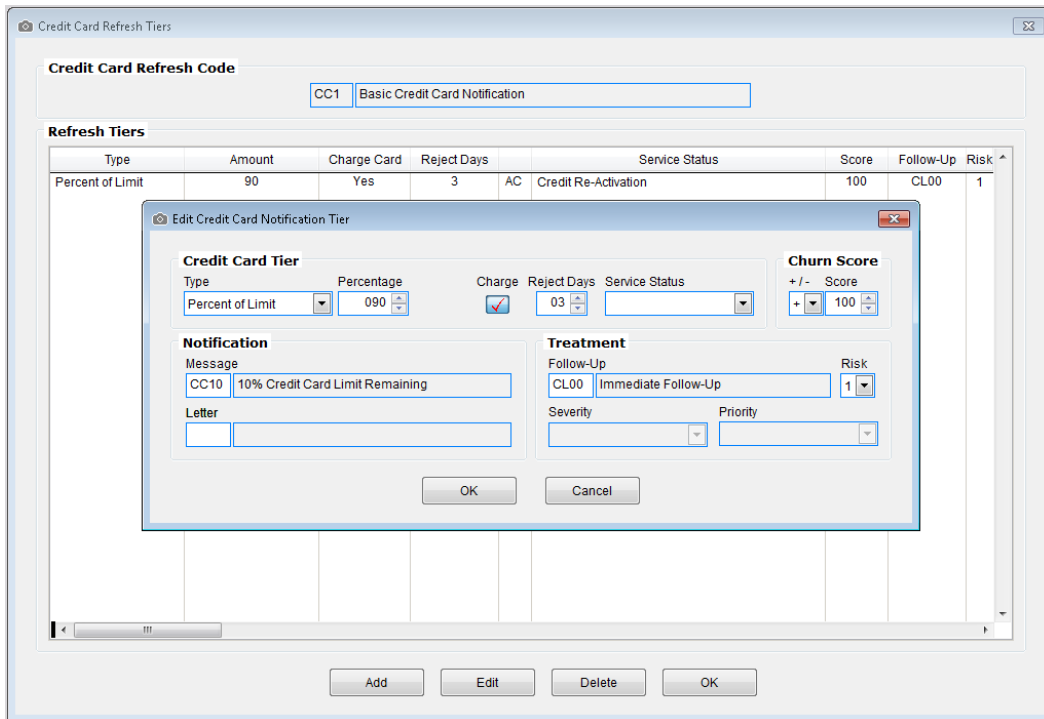
As can be seen in the pop-up above, a Charge check button is available at each tier. If selected, associated bank accounts will be debited the established recharge amount whenever the tier is reached.

Pros: Direct debit billing eliminates prepay vouchers, kiosks, etc. and, under certain circumstances, it can give subscribers the ability to manage their spending limits (i.e.: to cover roaming, etc.) though any branch office of their bank and / or even on-line. Furthermore, it requires no additional processing hardware and it is very easy to set up and maintain. So, it can be very cost-effective.

Cons: The draw-backs of decrement prepay are the same as those with post-CDR prepay. However, Terms360 includes a number of options that can partially mitigate these draw-backs. Please see Reducing Risk later in this Chapter.

Credit Card Billing

Credit card billing is a Terms360 process that begins with a terms code-based initial and minimum authorization amount (i.e.: \$40.00) to be charged to a subscriber’s credit card (also see Pre-Authorize & Charge Mode described later in this Chapter). This creates a credit limit in the form of an access deposit. It then uses PC Charge, IP Pay or other ACH (Automated Clearing House) interface to automatically establish and refresh a subscriber’s available access deposit. This eliminates the need for prepay vouchers.



Much like Post CDR / EDR prepay, records are rated upon call / event termination and compared to the available access deposit amount of associated subscribers. The rules for what happens next are determined by a subscriber's assigned credit card billing terms code, as user-defined in the screen and pop-up shown in the examples on the previous.

Credit card billing supports the same service level and notification management capabilities as past-due treatment. Each tier can be based upon either a percentage or an amount of a subscriber-established charge limit (i.e.: \$40.00).

As can be seen in the pop-up on the previous page, a Charge check button is available at each tier. If selected, associated credit cards will be charged the established recharge amount (i.e.: \$40.00) whenever the tier is reached.

Pros: Terms360 credit card billing is fully PCI-compliant. It supports a pre-authorize and charge mode (described later in this Chapter) and eliminates prepay vouchers, etc. Furthermore, it requires no additional processing hardware and it is very easy to set up and maintain. So, it can be very cost-effective.

Cons: The draw-backs of decrement prepay are the same as those with post-CDR prepay. However, Terms360 includes a number of options that can partially mitigate these draw-backs. Please see Reducing Risk later in this Chapter.

Notifications

Notifications are a key component in Terms360 past-due treatment, prepay, stop-limit, direct debit and credit card billing processes. Each past-due / balance remaining tier supports the ability to send an associated letter that is dynamically composed from a generous palette of user-selectable merge objects (past-due days, amount, last payment, etc.) and / or can generate a follow-up that can be automatically escalated according to versatile user-defined rules. Needless to say, these notification types are ideally suited for past-due treatment.

For all Terms360 processes, the following notification methods are also available:

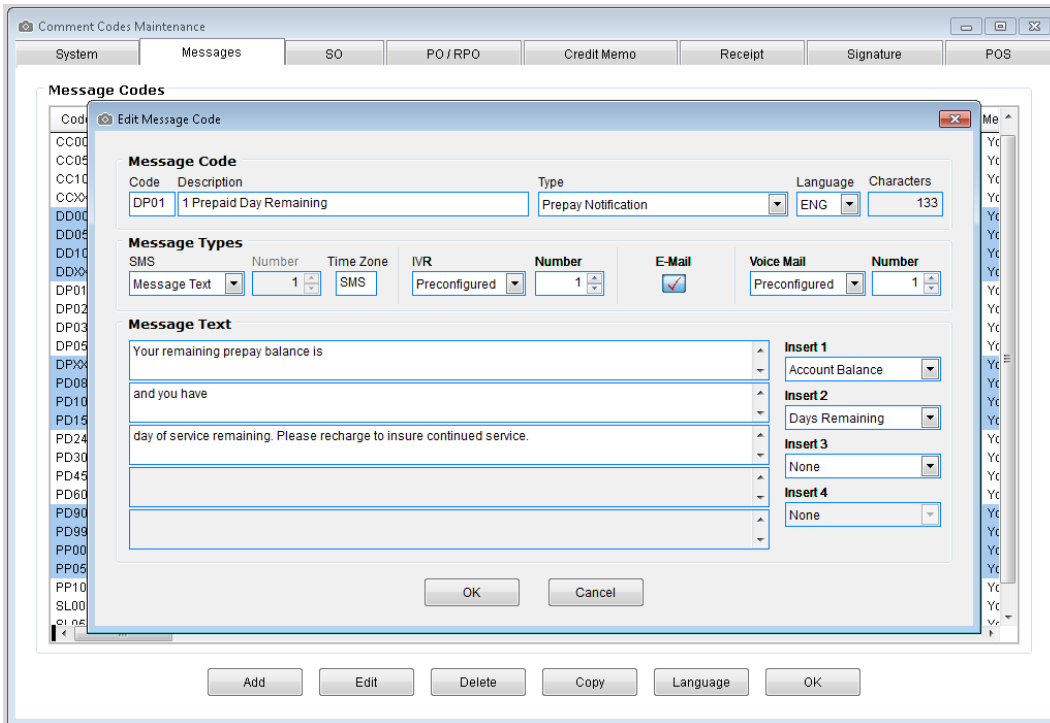
SMS – This allows users to insert up to 5 types of relevant data into an SMS that is sent directly to the user's SMSC for distribution. This process is also supported by an optional Time Zone code that can be used to schedule messages from a queue. For example, users may only wish send treatment SMSs from 7AM through 7PM every day except during days of religious observance, certain holiday days, etc. This can be easily accommodated. Also, punitive actions (i.e.: non-pay deactivations) are held until the SMSC confirms message delivery or until a user-defined wait period has passed (i.e.: 10 minutes) without delivery confirmation (i.e.: a period of temporary signal loss).

E-Mail – This allows users to insert up to 5 types of relevant data into an e-mail that is sent directly to the user’s SMTP server for distribution (see screen example below).

IVR – In systems with integrated Interactive Voice Response (IVR) that allows “canned” message codes to be queued from external sources, Terms360 can provide the appropriate code or .wav file automatically.

Voice Mail – In systems with integrated voice mail that allows “canned” message codes to be queued from external sources, Terms360 can provide the appropriate code automatically.

Each of these options is configured in the tab and pop-up shown below and can be used in any combination at any notification tier.



In addition, multiple language variants can be created for each message code. Whenever a notification tier is reached, Terms360 automatically checks the recipient’s preferred language and sends the message in that language.

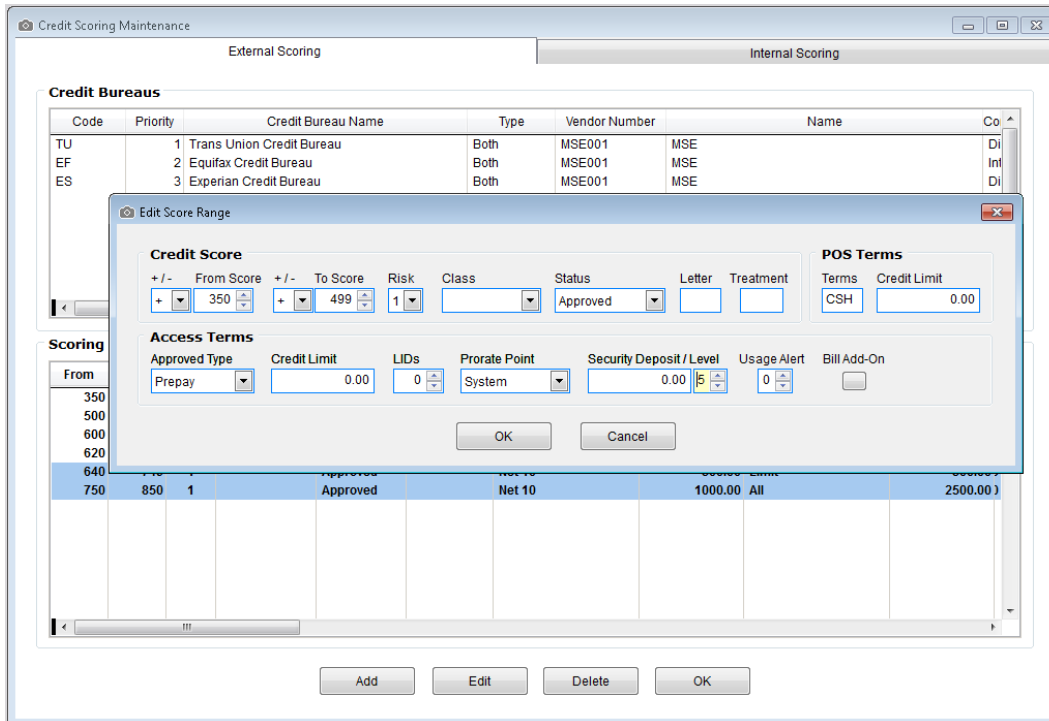
Reducing Risk

Past-due treatment and IN prepay are reasonably real-time processes that do not represent the same degree of uncollectable debt risk as post CDR prepay, interim CDR prepay, stop-limit billing or credit card billing.

When decrement prepay subscribers are allowed to roam, this risk is identical to other non-IN modes. However, both Terms360 and OSS360 include following functionality that is designed to reduce risk to the extent possible:

Credit Scoring

As part of the new account sign-up and on-going credit worthiness processes, OSS360 provides an interface with the scoring facilities of numerous major credit bureaus. It also allows users to create internal (non-bureau) scoring models that are typically used in locations where commercial scoring is not available. These are usually based upon factors of age, marital status, length of employment, payment history, banking information, etc. Score ranges within these models can be defined in the tab set and pop-up shown below.



Among other credit-related factors, for each range, users can assign a past-due treatment code, POS terms and credit limit, access terms (post pay or prepay) and credit limit, a security deposit amount, a (feature) deposit level and a usage alert level.

Usage Alerts

Each credit scoring range includes a Usage Alert spinner that can be set to any value from 0 through 3. At the same time, the Preferences tab of each rate code / feature includes Alert Amounts 1 through 3.

If an account’s usage alert is set to 0. No alerts will be generated, regardless of its daily usage. However, if it is set to 1, 2, or 3, and the daily usage of a given feature (i.e.: International Roaming Tolls) exceeds the amount specified in the matching level of that rate code / feature, a user-defined CRM group will be notified. This can be used to proactively identify runaway usage that might exceed a subscriber’s available prepay, stop-limit, debit or credit card access deposit before it is otherwise recognized.

Of course, this safeguard is subject to the same delayed record receipt vulnerability’s as post-CDR prepay while roaming. The difference is the possibility that a high-usage pattern will be identified in a record batch that is far enough ahead of access deposit depletion to avoid an overage.

Feature Deposits

Each credit scoring range includes a Level spinner to the right of the Security Deposit field. This can be set to any value from 0 through 6. At the same time, the Preferences tab of each rate code / feature includes deposit levels 1 through 6, as shown in the Roamer International Tolls rate code example below.

The screenshot shows the 'Edit Rate Code' window for 'Roamer International Tolls'. The 'Rate Properties' section is expanded, showing a table of deposit levels:

Parameter	Property
Section ID	Wireless Monthly Itemized Charges
Usage Alert Amount	100.00
Deposit Level 1	150.00
Deposit Level 2	250.00
Deposit Level 3	500.00
Deposit Level 4	1000.00
Deposit Level 5	1000.00
Deposit Level 6	1000.00

In this example, Deposit Level 1 is set to \$150.00. Deposit Level 2 is set to \$250.00, Deposit Level 3 is set to \$500.00, etc.

If the account of a given subscriber is set to Deposit Level 0 (via credit scoring, manual assignment, etc.), no deposit is required to enjoy the associated feature.

However, regardless of whether that account's terms are post pay, prepay, stop-limit, direct debit or credit card billing, if its Deposit Level is set to 1, and it adds the example feature shown on the previous page to its rate plan, the process will be instantly invoke an invoice that includes a feature-specific deposit of \$150.00. If its Deposit level is set to 2, the charge will be \$250.00, etc. This amount can then be increased / decreased manually by the user. Furthermore, the feature will not be enabled until the required deposit amount is paid in full.

Multiple feature deposits can also be assessed to multiple feature selections. For example, if roaming and international calling are both added to a subscriber's rate plan that does not normally include these features, and each requires a separate deposit, the subscriber will be charged and must pay each deposit amount in full before the associated feature is enabled.

As each feature that required a deposit is removed from the plan (i.e.: the roamer returns home), the deposit amount(s) can either be applied to the account balance or refunded.

While not a perfect solution, feature deposits do provide an excellent means of mitigating excess usage risk while roaming, etc.

Service Level Control

When setting up past-due tiers for treatment and / or usage tiers for prepay, stop-limit, etc., in addition to active and two deactivation service levels, users have the option of choosing between any of up to seven intermediate levels, such as Block Roaming, Block International Calling, Block Roaming + International Calling, etc.

In cases where a given feature is a normal part of a given subscriber's rate plan, the availability of this feature can be over-ridden by a tier-driven change in service level. For example, as the past due days / available access deposit amount of a home user with roaming and international calling capabilities reaches a certain tier, Terms360 could be configured to block roaming. As it reaches the next tier, it could be configured to block both roaming and international calling, etc. Meanwhile, it could be configured to generate a warning notification of the pending block(s) at interim past-due / balance remaining tiers.

Pre-Authorize & Charge Mode

In addition the straight-forward use of a credit card to perpetuate an account's access deposit balance, Terms360 supports a pre-authorize & charge mode. In this mode, the card is authorized (but not charged) for an anticipated amount.

That authorization is then held open until just before it expires or the authorized amount is reached and / or the bill cycle date is reached. Except on the bill cycle date, where the card is automatically charged, a new authorization is attempted for the sum of the previous amount plus an additional amount.

If the attempt fails, the lesser of the original authorization amount and the account's actual current balance is charged to the card. A second attempt is then made at authorizing the additional amount alone. If that attempt fails, the relevant access deposit balance remaining tier (i.e.: \$0.00) determines the service change (i.e.: credit Deactivation) to be applied.

For example, if the authorization of a given card is valid for 10 days, and the account's assigned pre-authorization amount is set to \$50.00, once an authorization is received, Terms360 accumulates rated CDRs / EDRs against that amount for up to 9 days or until a tier near \$50.00 that set to Charge is reached. It then attempts to re-authorize for \$100.00. At, 9 days or \$50.00 later, it repeats this process until either an attempt fails or the bill cycle date is reached.

In this way, regardless of additional charges during the bill cycle (i.e.: roaming, on-line purchases, etc.), if all re-authorizations are successful throughout that cycle, only one charge amount is assessed to the card and that amount exactly matches the charges incurred. Meanwhile, the risk factor is relatively low.

IN Prepay vs. Post-CDR / EDR Billing

Though of less benefit in fixed, wireline, internet, IPTV and other non-wireless systems, IN prepay is clearly the current state-of-the-art method for accepting wireless pre-paid roamer traffic and for minimizing debt risk for home subscribers who roam. However, this comes with a price. As industry standards, such as Near Real-Time Roamer Data Exchange (NRTRDE), and major carriers, such as Cingular, demand shorter record exchange cycle delays, the need for IN prepay is a simple matter of Cost vs. roamer revenue + risk prevention.

Cost is the price of the installed and operational solution + operating costs + maintenance costs. Roamer revenue is the amount to be gained over the life of the system by accepting prepaid roamers. Risk is the uncollectable debt that is actually saved by IN prepay vs. other forms of non-post pay terms management.

For example, let's assume that the initial cost for an end-to-end IN platform (hardware, software, installation, etc.) that can manage 250,000 subscribers is \$700,000, operating costs (power consumption, T1 / E1 circuits, floor space, insurance, maintenance, etc.) is \$100,000 per year and support is \$126,000 (18%) per year. Also, that the life of the system is 7 years (could be significantly shortened by future technology). The Total Operating Cost (TOC) for this system would be \$2,156,000 or \$308,000 per year or \$25,667 per month (excluding any cost to add IN capabilities to the switch).

If the potential for pre-paid out-collect revenue significantly exceeds these amounts within the period of eventual obsolescence, IN prepay is probably a very good choice.

Now, let's look at risk prevention. Assuming that no other Terms360 functions (treatment, stop-limit billing and credit card billing) will be used, with typical discounts, the purchase price for post-CDR / EDR prepay is approximately \$40,000. There are no real monthly operating costs, and support is approximately \$11,250 per year. So, the total 7-year TOC is \$118,500 or \$16,929 per year or \$1,411 per month, regardless of the subscriber count.

Here is how the costs of the two 250,000 subscriber prepay solutions compare:

	Initial Cost	7-Year TOC	Annual Cost	Monthly Cost
IN Prepay	\$700,000	\$2,156,000	\$308,000	\$25,667
Terms360 Prepay	40,000	118,500	16,929	1,411
	=====	=====	=====	=====
Terms360 Savings	\$640,000	\$2,037,500	\$291,071	\$24,256

Let's assume that the average prepay subscriber uses 1,000 minutes per month, and the average call length is 3.25 minutes. This equates to 286 calls per month x 250,000 subscribers = 71,500,000 calls per month. Not everyone roams every month, so let's assume that 5% of the calls are made while roaming (3,575,000), and the average price of a roaming call is \$5.00 x 3,575,000 = \$17,875,000 that would appear to be at risk. However, let's assume that 85% of this amount gets charged-back as an in-collect before the associated subscribers run out of funds. This leaves \$2,681,250 at risk.

Once the in-collects received exceed the associated access deposits, Terms360 terminates service and would record the usage overages as a negative access deposit amount against associated phone numbers. Using the formulas above, this would average \$2,681,250 / 250,000 subscribers = \$10.73 per subscriber.

Because the excess use amount beyond \$0.00 is not normally communicated to Terms360 prepay subscribers until they refresh, and most such subscribers would not change their phone / phone number over \$10.73, the actual risk is likely to be much smaller. Let's say 5% x \$10.73 = \$0.536 per subscriber month.

The example cost of IN is \$25,667 / 250,000 subscribers = \$0.103 per subscriber month. Now, add data while roaming (if allowed) risk prevention at the excessive amounts currently being charged to roamers to receive voice mail and to send text and e-mails, etc. and IN continues to hold a strong advantage in larger systems.

Even so, let's consider the use of feature deposits as described earlier.

Let's assume that each subscriber who wishes to roam is charged a \$50 feature deposit for roaming and a \$100 feature deposit for international calling while roaming (an additional deposit could be charged for data, etc.). If $250,000 \times 5\% = 12,500$ roaming subscribers, and each makes 286 call per month / 30 = 9.5 calls per day x 3 days of in-collect record transit time = 29 calls x \$5.00 = \$145 in charges that are fully covered by \$150 in access deposits.

Now, let's assume a 5-day roamer record transit time. This would result in 9.5 calls x 5 days = 48 calls x \$5.00 = \$240. This means that \$250 in feature deposits would be necessary.

Will prepay subscribers agree to pay feature deposits?

This is a regional question. However, the same subscriber on an IN-based prepay system would, in fact, need to either continually refresh or begin with a prepay balance of at least \$240 to make the calls in the examples above. This is spent money. As an access deposit, if the money is not used, associated subscribers could look forward to a refund of the unused portion. Meanwhile, as NRTRDE and other standards push the record receipt times towards 1 day or less, 9.5 calls x \$5.00 = \$47.50 at risk, and the required deposit amount will become almost insignificant.

Prepay vs. Stop-Limit Billing

Users who are considering Terms360 prepay as an alternative to IN prepay may wish to consider stop-limit / metered billing as well for certain subscribers. Its "we trust you" image can have a significant competitive advantage in a marketplace where everyone else only offers post pay and prepay as choices. This is because it treats traditional prepay subscribers almost exactly like they have a post pay account. They pay a security deposit up front and get a bill once a month unless their usage exceeds their security deposit + prepaid monthly recurring charge (MRC) amount. Meanwhile, as long as the bill is paid on time, the security deposit will remain un-touched and the associated subscriber will continue to enjoy use in the manner as a post-pay subscriber.

Let's assume an MRC of \$45 for 500 minutes per month, with an excess usage fee of \$0.10 per minute. If the security deposit is \$100, and the subscriber uses 1,000 minutes, $500 \times \$0.10 = \50.00 , its next bill will be \$45 MRC + \$50.00 excess usage = \$95. Meanwhile, if the terms are net 10, the subscriber will incur 1,000 minutes / 30 days x \$0.10 = \$34 in additional charges before payment is due. Because the sum of these amounts (\$129) is less than the sum of the prepaid MRC + security deposit (\$145), service will continue normally.

If the bill is not paid on time, all amounts due will be charged to monies on account, and service will be terminated. Reactivation of service will then require the payment in advance of the MRC + security deposit amounts.

As for roaming, the same risk and risk mitigation options exist for stop-limit billing as do for Terms360 prepay.

Prompt-Pay Awards

The point of automated terms management is to get subscribers to pay their bills for service promptly. Prompt-Pay Rewards are a Terms360 tool that can automatically apply a discount or free usage bonus to subscribers who consistently pay on-time. This is perfect for subscribers who are retired and others who routinely pay their bills at the same time every month and would appreciate some form of reward for doing so.

The process begins by creating an awards code in the screen and pop-up shown below and defining the award tiers and fallback rules that apply when an associated account pays promptly over time and / or fails to do so.

Once this is completed, and users [LC] on the [Members] button, the tab set shown on the next page will appear. This allows users to choose one or more rate plan features and specify a discount percentage for each propmt-pay tier and / or a free usage bonus for one or more usage types at each tier.

Prompt-Pay Discount Tiers

Prompt-Pay Award

Award Code: PR Prompt-Pay Award - Residential Customer

Tier 1: 6, Tier 2: 12, Tier 3: 18, Tier 4: 24, Tier 5: 36, Tier 6: 60 Months

Rate Code Discounts | Free Use Bonuses | Points / Price Books

Discount Tiers

System	Rate	Rate Code Description	Period	Initial Rate	Tier 1	Tier 2	Tier 3	Tier 4	Tier 5	Tier 6
CNTG1	Fixed in Advance	300R Digital 300 Monthly Access Fee Rollover	Monthly	75.00	1.00000	1.50000	2.00000	2.50000	3.00000	5.00000
				0.00	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
				0.00	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
				0.00	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
				0.00	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
				0.00	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Edit Discount

Discounted Rate

System: CNTG1, Rate Type: Fixed in Advance, Rate Code: 300R Digital 300 Monthly Access Fee Rollover

Discount Tiers

Initial Rate	Tier 1	Tier 2	Tier 3	Tier 4	Tier 5	Tier 6
75.00	1.00000	1.50000	2.00000	2.50000	3.00000	5.00000
0.00	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.00	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.00	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.00	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.00	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

OK Cancel

Add Edit Delete OK

Prompt-Pay Discount Tiers

Prompt-Pay Award

Award Code: PR Prompt-Pay Award - Residential Customer

Tier 1: 6, Tier 2: 12, Tier 3: 18, Tier 4: 24, Tier 5: 36, Tier 6: 60 Months

Rate Code Discounts | Free Use Bonuses | Points / Price Books

Free Usage Bonus Tiers

System	Plan Value	Service Cycles	Tier 1	Tier 2	Tier 3	Tier 4	Tier 5	Tier 6	Carry Over Cycles
CNTG1	Universal GSM System	1	Home 1						3
			Home 1						
			Home 1						
			Home 1						
			Home 1						
			Home 1						

Add Usage Award

Usage Award

System: CNTG1, Universal GSM System, Value: 1, Service Cycles: 1, Carry-Over Cycles: 3

Category: Home 1, Bonus Code:

Tier	Category	Bonus Code
Tier 1	Home 1	
Tier 2	Home 1	
Tier 3	Home 1	
Tier 4	Home 1	
Tier 5	Home 1	
Tier 6	Home 1	

OK Cancel

Add Edit Delete OK

As long as associated accounts continue to pay on time, the discounts / bonuses will continue to be awarded automatically. Once a payment date is missed, they will be discontinued for a user-defined time period and will resume either from the beginning or from the last tier earned, per user-defined rules.