Application Guide for Siebel Communications Billing Analytics

Version 5.1.1

Pub Date 1/2/2007

ORACLE®

Contents

1 Overview

Introduction to Communications Billing Analytics (CBA)

The Communications Billing Analytics (CBA) is the complete enterprise-class reporting solution of Siebel Self-Service for Communications Application Suite. Communications Billing Analytics allows business customers to analyze and understand their communication costs and usage by investigating trends and patterns across multiple views of their unique organizations.

This guide describes the use cases, user interface and architecture of Communications Billing Analytics and explains how Communications Billing Analytics meets the complex requirements and return on investment (ROI) goals of the world's largest communications providers.

Communications Billing Analytics Benefits

Communications business customers receive multiple invoices for many services that are managed, consumed, paid, budgeted, and approved by different individuals and organizations within large complex corporations.

Communications business customers typically receive unwieldy manual bills or bills on CDs which are difficult or impossible to manage. Communications service provider companies need to support hundreds of thousands of registered users making flexible queries against billions of transactions (CDRs) per month in a high-performance always-on environment.

Because of this:

- Internal CD or data warehouse services are expensive to maintain.
- Poor end customer relative satisfaction negatively impacts retention and new customer acquisition.
- Third party tools required to manage and analyze the data.
- Data is available in monthly silos rather than available over many billing periods.
- Business structure support is limited and often does not have historical versioning.

Siebel's Billing Analytics solution is optimized for Web based reporting and hierarchy structure management for telecommunications service provider's business customers to analyze and understand their communication costs and usage by investigating trends and patterns across multiple views of their unique organizations.

Billing Analytics delivers the following benefits to a telecommunications service provider:

- Reduce Costs
  - Eliminate the cost for preparation and distribution of custom CD's containing a business customer's billing summaries, details, and embedded analysis tools.

- Eliminate home grown or proprietary data warehousing solutions which may be extremely complex and expensive to build and maintain.

- Increase Customer Retention
  - Increase customer satisfaction through enhanced services.
  - Create a barrier to churn by providing customized business hierarchies that reflect their organizational structure and are loaded and maintained online. The easy-to-use web based UI allows access to a larger number of users to better manage usage and costs across an organization.
- Increase Revenue
  - Attract new customers with competitive differentiator. Online analytics are now typical expectations to acquire and maintain high-value business customers.
  - Incentive to acquire greater percentage of customer's telecommunications service purchases because the customer can use Communications Billing Analytics as their preferred tool for a consolidated view of al of their telecommunications service usage and costs.
  - Platform on which to up-sell new value added services by offering stepped pricing to a customer based on how much of Communications Billing Analytics functionality is being accessed.

The application delivers the following benefits to a telecommunication service provider's business customers:

- Reduced Costs.

  B2B customers will decrease the time it takes to distribute, review, and analyze their Communications service invoices.

- More Robust Analysis Tools to Confirm Appropriateness of Services and Usage

  B2B customers will be able to easily analyze how they are using telecommunications services by looking for exceptions and anomalies. In additions to giving them comfort against billing errors or personal use infractions, they will be able to consolidate and slice the data differently to assess whether they have the most cost-effective plans for their usage.

- Book Cost Accounting Entries

  Communications Billing Analytics allows you to perform complex cost allocations in order to book internal accounting entries.

Application Overview

Siebel's Communications Billing Analytics is the result of significant experience with our customers in deploying the largest and most complex telecommunications reporting applications in the industry.

Key differentiators are:

- **Versioned Hierarchy:** B2B reporting and analytics depends on a company's ability to make informed decisions over time. The hierarchy manager keeps historical versions of hierarchy such that all reports either for a single period, aggregated across periods, or trended over several periods are accurate based on the hierarchy structure for that period.
- **Improved Scalability and Performance:** Significant improvements have been made in the underlying data schema building upon the success of our first generation CBA product. These include improved data loading times, improved table partitioning, and improved management of aggregates and summarization points for better report performance with large data volumes.
- **Adoption of an "Open Standards" Based Architecture:** Prior versions of CBA relied upon complex XML templates for report definition, and did not offer optimal separation between business logic and presentation logic. The new release of CBA relies upon the open standards-based Apache Velocity template engine for report design, and Jakarta Struts and Tiles for the presentation layer architecture.
- **Faster Deployment Times:** The average time required to design, develop, and test custom reports has been reduced by a factor of 40% by virtue of utilizing a better defined report development approach, and improved separation between presentation, business logic, and data tiers.
- **Improved Personal Report Customization:** The ability for end users to create and save their own reports has been overhauled – streamlining the process and improving the available flexibility.
- **Improved Internationalization:** Support for multiple languages has been overhauled and further streamlined. CBA supports Unicode UFT-8 character encoding throughout the application. All language-specific code is bundled and can be easily translated without modifying the presentation layer. This feature dramatically reduces implementation times for multiple language deployments.

About Customer Self-Service and Siebel Tools

Siebel's Self-Service for Communications includes every application that communications service providers need to enable a complete online customer-Self-Service experience at their Web site. The suite includes software applications for:

- e-Billing and Payment
- Service and Order Management
- Point-of-Sale
- Reporting and Analytics
- Rate Plan Advice

Siebel's Self-Service applications for the telecommunications industry combine Siebel's unrivaled Customer Self-Service and e-Billing software suite with its extensive industry domain expertise. The packaged, out-of-the-box applications are tailored to solve communications service providers' distinct business problems and to meet communications industry-specific process requirements.

Siebel's Self-Service for Communications includes:

Communications Billing Manager

Communications Billing Manager is a complete e-billing application for communications service providers that gives business and consumer customers valuable and convenient access to their communications bills along with the ability to easily make online payments.

Communications Self-Service Manager

Communications Self-Service Manager enables customers of communications service providers to manage every aspect of their service relationship online. From a single convenient interface, customers can easily activate and manage subscriptions, change rate plans and features, and modify subscriber profile settings. Business customers are able to complete these activities for individual employees, as well as company departments and divisions, across their entire organization.

Communications Billing Analytics

Communications Billing Analytics is a reporting solution for business customers. It empowers both individual employees and business managers to analyze and understand their communications costs and usage by investigating and identifying trends and patterns across multiple views of their own unique organization.

Rate Plan Advisor

Rate Plan Advisor is a Web-based application that recommends the ideal rate plan for communications subscribers in real-time. Individual consumers as well as large businesses can analyze their actual historical voice/mobile/data usage, find the best-fit rate plans, and compare the features offered by those plans. With its intuitive wizard user interface, Rate Plan Advisor quickly guides end-customers or customer service representatives through the entire analysis process. In addition, a service provider's customer care and marketing groups can also use Rate Plan Advisor to identify pre-churn subscribers, simulate new rate plans, and run predictive analytics.

Browser Requirements

The CBA user interface is compatible with the following Windows-based browsers:

- IE 6.X and above
- Netscape 7.2 and above
- Firefox 0.9

2 Business Processes and Application Logic

Hierarchy Basics

Small to Medium Enterprise (SME) and Large Enterprise (LE) B2B customers typically receive multiple invoices from their service provider for the many services that are consumed, budgeted, paid, approved, and managed by different individuals throughout the organization.

Organizations are also very dynamic. Service contracts are added and removed each month and companies often reorganize for any number of reasons. Reports, especially those run against historical data or run as a trending report over several billing periods need to be sensitive to these changes to provide the most accurate reports possible.

In addition, B2B customers have traditionally received unwieldy stacks of printed bills or sent CDs containing the invoice summaries and usage record details which are often very difficult to manage using desktop software applications. Information provided to the customer in this form is also difficult to share or distribute throughout the organization in a timely manner. B2B customers in all verticals, but especially in Telecommunication companies, need to support hundreds of thousands of registered users with N-levels of hierarchy making flexible queries against billions call data records (CDRs) per month.

If an application fails to meet these requirements, it can result in:

- Internal hierarchy management, security and access control mechanisms, and data warehouse services are expensive to maintain.
- Inaccuracies in reports and structures may lead to unexpected results inhibiting effective decision support.
- Poor end customer user experience negatively impacts retention and new customer acquisition.

Siebel Self-Service develops an online hierarchy module that is seamlessly integrates across the company's billing, payment, analytics, and self service applications optimized for granting user access through a roles based access control security mechanism for managing and understanding the charges and usage information by modeling the complexity and tracking the changes to an organization's business structure and consolidating billing and payment information into an easy-to-use dashboard interface

This section provides a high level overview of hierarchy, defines how it impacts Billing Analytics, and delineates the hierarchy business requirements being fulfilled by Billing Analytics and by other systems (such as the Siebel hierarchy module or an external hierarchy system of record).

Overview

By creating different hierarchies, the user can define multiple views of the information in their invoices, such as by department, location, cost center, or any combination of different groupings the user wishes to assemble. These custom hierarchies are available to Communications Billing Analytics to enable a number of filter, subtotal, drilldown, and report access requirements described later in this document.

Within a named hierarchy, no node can have more than one parent within that named hierarchy. Also, the bottom leaves of the hierarchy must be unique within the hierarchy.

Hierarchy Types

Billing Hierarchies

Billing hierarchies are created automatically at the time the billing data is loaded. For instance, a simple billing hierarchy might include only three levels: company, account and service agreement (a service agreement is usually a contract or phone number in telecommunications). A complex billing hierarchy could contain an unlimited number of hierarchy objects above the account (such as divisions or corporate identifiers) or below the service agreements such as a charge types associated with a phone.

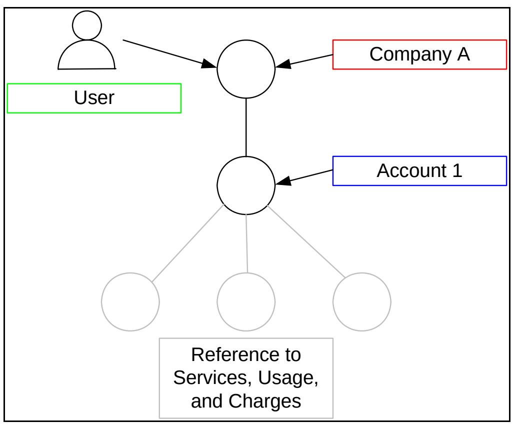


Figure 1 - Simple Billing Hierarchy

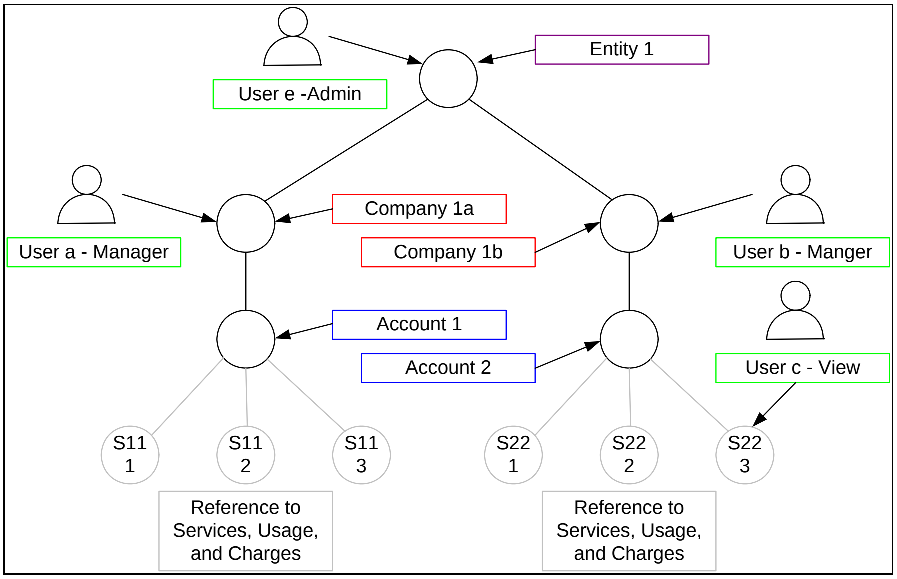


Figure 2 - Typical (Complex) Billing Hierarchy

Business Hierarchies

A user can create an unlimited number of Business Hierarchies in order to organize and view its usage and cost information differently (location, department, cost center, etc.). All bottom nodes of the Organization hierarchy must link to a node in a Billing hierarchy, such as service agreement, in order to contain any meaningful usage or cost information.

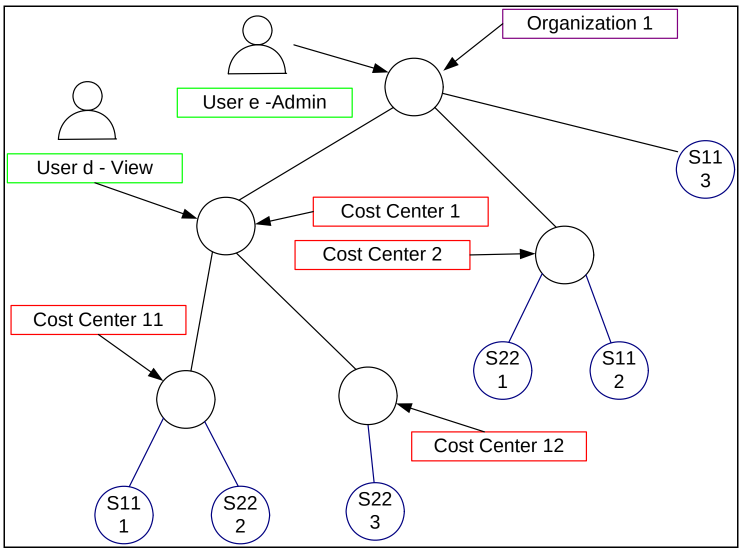


Figure 3 - Business (Organizational) Hierarchy

Enabled Functionality

The existence of these hierarchies enables the following Communications Billing Analytics functionality.

- **Report Scope**: The report scope is determined by the current hierarchy context. The context is specified by the Hierarchy Type (Billing or Business), the node within the named hierarchy selected and the reporting period to determine which version of the hierarchy to be reported on.
- **Change Hierarchy Context**: The hierarchy context may be changed by selecting a different hierarchy or different node within a hierarchy, or selecting a different period, or by drilling down through links in the report.
- **Report List Filter**: The user only sees reports in the report list that are relevant to both the selected hierarchy and the current position of the user within the hierarchy context. For example, if a user's current position is at the account level in the hierarchy, the user will not have the option to select a report whose rows are groups (for example, Group Spending Report), which would be a level above the for example, PS Department) that does not have an account level, the user will not see reports whose rows are accounts (Account Billing Detail Report).

- **Drilldown**: The user can interactively drill down from a parent node subtotal into the child nodes details. Knowing whether a particular child node level exists in the selected hierarchy dictates whether the drilldown is possible (e.g. a user should not be able to drilldown from a group report to an account report if the selected hierarchy links groups to sub-accounts bypassing the account level).
- **Versioning**: CBA reports that span multiple reporting periods (both trend and non-trend reports) use the hierarchy version which corresponds to the reporting periods selected to accurately represent the totals at that point in time.
- **Reporting Attributes**: If Communications Billing Analytics reports need to contain attribute values for different nodes within the hierarchy, CBA can include these values. The hierarchy module enables the creation of user defined attributes at different levels in the hierarchy and the creation and maintenance of values for these attributes, such as a budget value to be used in reports that just display exception budget variances.

  Note: This same synchronization dependency may exist for any other data required in the XAD that is maintained in another systems (for example, Personal Address Book, Corporate Address Book, User Profile Information, etc.).

Hierarchy Actions – Within Communications Billing Analytics

Beyond reporting on the hierarchy data, the Communications Billing Analytics application provides the following hierarchy actions.

- **Synchronize Hierarchy Data**: Whenever changes are made to any hierarchies, an interface is required to make those same changes within the CBA XAD OLAP (eXtensible Analytics Data mart) so that the CBA hierarchy data is always synchronized with those external OLTP systems (Siebel or others) that maintain it.

  Hierarchy synchronizer maintains coherency between the OLTP and OLAP databases. The OLTP database (transaction processing) is where all of the modifications to hierarchy structures and object attributes are made. The OLAP database (analytics processing) database is where the reports are run based on the current hierarchy context. When changes to the hierarchy structure are made in the hierarchy management screens the data is written to the OLTP database. In the background these changes are updated in the OLAP database. This allows the user to change the hierarchy in one screen and then immediately in real-time see the changes in the analytics reports. The user never sees the synchronizer work but it is a powerful tool to create a seamless and flexible environment.

  Note: This same synchronization dependency may exist for any other data required in the XAD that is maintained in another systems (for example, Personal Address Book, Corporate Address Book, User Profile Information, etc.).

Report Click-Through Basics

To create a flexible interactive experience for the end user many of the reports have been designed so that the user can click on the tabular report to run another report with the report query parameters set to those of the previous report plus a selection for what the user has clicked on. This experience creates an interactive experience allowing the user to “slice and dice” the data.

Any click-through experiences are listed as alternative paths on the report from which the user clicks through.

There are a number of different types of click-through actions described below:

- **Drilldown – Same Report**

  The user clicks on a hyperlink value on one of the rows of a report. The hierarchy context position is changed to the group on which the user clicks and the report is run again to show detail behind a summary number on a report.

- **Drilldown - Different Report**

  The user clicks on a hyperlink value on one of the rows of a report. The hierarchy context position is changed to that of the hierarchy object on which the user clicked and the relevant report with the detail just under the object is run.

  This shows the detail behind a summary number on a report. If a row displayed on a report has no child objects of the same type below it (such as any level in the billing hierarchy or the lowest node in a group hierarchy before it is related to a billing hierarchy object), the user must run a different report in order to see the more detailed records behind the values on the row (such as clicking through a Service Summary Report to an Call Detail Report).

- **Trend - Drilldown**

  The user clicks on a hyperlink “T” at the end of a row on a report. The hierarchy context position is changed to the object of the row on which the user clicked and the relevant trend report is run with all the same report parameters from the report that just ran.

  If a user identifies an anomalous value on a multi-period report, they can quickly run a trend report to see if the value was particularly high or low during one particular period or was trending in a manner they did not expect.

- **Trend – Same Level**

  The user clicks on a hyperlink “T” on the total at the bottom of a page. The relevant trend report is run with the same hierarchy position context and report parameters for the report just run.

  If the user suspects an anomaly or unusual trend, a trend report can be run for total value of all rows without having to pick one of the rows to drilldown into more detail. With this approach the user could identify a period that was out of line and then drilldown into that period to determine where the anomaly existed.

- **More Detail**

  In the case of the Billing Account Overview Report, the user may wish to display a different report (Billing Account Detail Report) with all the same query parameters and hierarchy position context. This type of click-through is useful when the user wishes to see different columns for all the same rows.

The following diagram uses the department group hierarchy from the above hierarchy section (Key Concepts) and is intended to describe how the user can launch new reports by clicking on drilldown hyperlinks and trend icons. More importantly, it illustrates how the standard reports are related to each other and how changing the hierarchy position context is critical to creating this “slice and dice” experience.

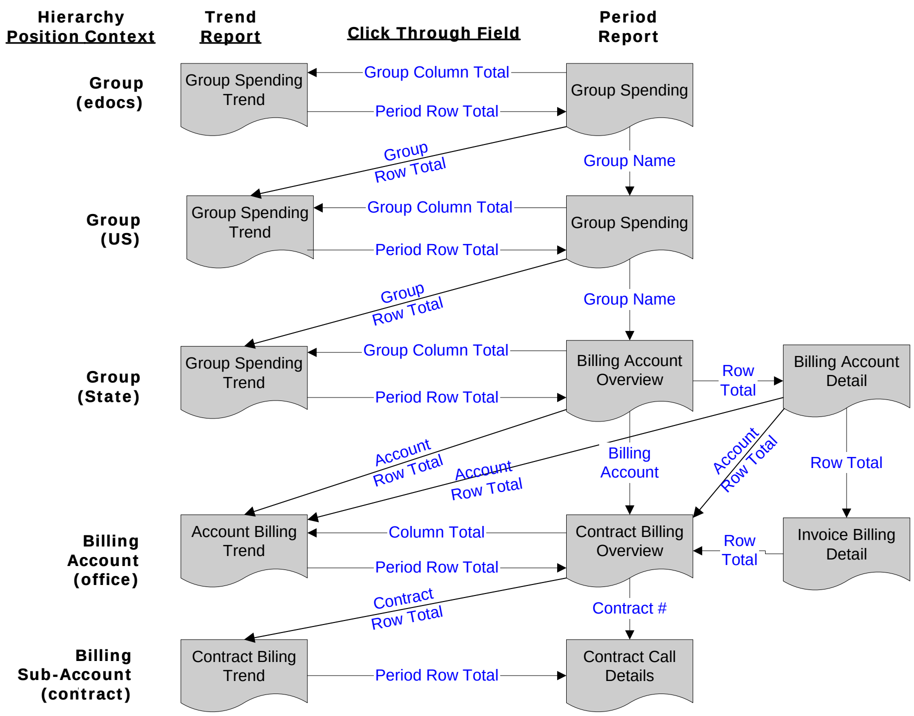


Figure 4 - Report Drilldown Illustration

Reporting Period versus Billing Period

Since many B2B customers have multiple billing accounts and the billing date is often different for each account the reporting period has been developed to allow the aggregation and reporting across billing accounts within a single reporting period context. In order to explain this statement, a couple terms and concepts need to be described:

Definitions:

Billing Period: The interval during which a telecommunications service provider accumulates a specific customer’s account usage details and related charges, and presents them in an invoice or statement requesting payment.

Bill Period End Date: The last day of the billing period, typically the day prior to the cycle processing date.

Reporting Period: Defined by the telecommunications service provider as the interval during which cost and usage detail and summary information is accumulated for reporting purposes. The telecommunications service provider can choose any interval, however this is typically specified as calendar months, which is equivalent to the frequency with which the company prepares and sends out invoices. The service provider's implementation needs to include the creation of a table (or some mechanism) that defines for each reporting period a name (for example, Jan, Feb, Mar…) a start date and an end date.

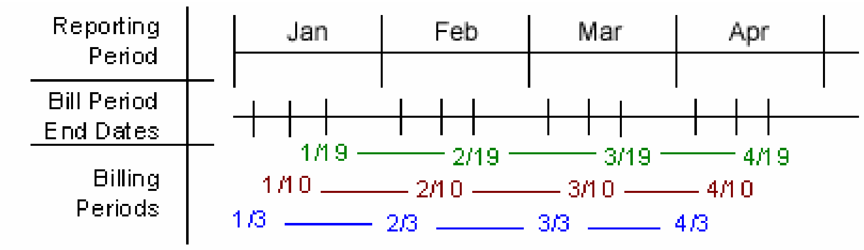


Figure 5 - Reporting Period Illustration

Application of Reporting Period

Selection Criteria and Customize: For any report that aggregates Call Detail Record information, the user can change the Period Range "From" and "To" query parameters to modify the scope of records that are returned to the report by selecting each reporting period name and year.

Example: if the user selected January 2005 to March 2005, the system would check the start date of the "From" reporting period and the end date of the "To" reporting period in order to determine which bills would be selected for the report. Only bills in which the Bill Period End Date falls between 1/1/05 and 3/31/05 would be selected to appear on the report. Note: The bill period start date does not impact the records returned to the report.

Rationale: By only querying against the Bill Period End Date, CBA eliminates the complexity of reporting on less than 100% of an invoice and having to prorate invoice level charges since those charges only apply to complete invoice statements. Fixed reporting periods also increases the implementation opportunities to quickly retrieve summary values.

For reports against the Call Detail Records, the applicable "From" / "To" ranges can be explicit calendar dates rather than Reporting Periods (typically seen in Find Calls Report). *Rationale:* Allows the user the ability to narrow the scope of a report to the specific date range of interest as in searching for a specific charge.

Trend Reports: When charting a trend report, the width of each bar (the interval of charted time based subtotals) will be the duration of each reporting period. *Rationale:* Simplicity of presentation and assumed performance improvement if subtotals are always across the same reporting period interval.

Example: B2B Multi-Account Customer

Each B2B customer has three accounts and is identified by a color: Purple, Rose, and Orange. These accounts are processed on different cycles: 6, 12, and 18 respectively. The 6th cycle always starts on the 8th of the month, the 12th starts on the 16th, and the 18th starts on the 24th. Billing data is grouped into a reporting period based on the billing period end date. The following table and calendar show three months of billing and maintenance activity.

Account	Billing Cycle	Bill Period Start	Bill Period End	Reporting Period
A	6	8-Jan	7-Feb	February
B	12	16-Jan	15-Feb	February
C	18	24-Jan	23-Feb	February
A	6	8-Feb	7-Mar	March
B	12	16-Feb	15-Mar	March
C	18	24-Feb	23-Mar	March
A	6	8-Mar	7-Apr	April
B	12	16-Mar	15-Apr	April
C	18	24-Mar	23-Apr	April

Table 1 - Billing Cycle Definition and Reporting Period

Each cell in the following calendar shows the date (black number), the customer billing cycle start (cell color and account letter below the date), and the day of the billing cycle for that month (red number) or maintenance (grey M).

Sunday	Monday	Tuesday	Wed	Thursday	Friday	Saturday
26	27	28	29	30	31	1 JAN 1
2 2	3 3	4 4	5 5	6 M	7 M	8 A
9 7	10 8	11 9	12 10	13 M	14 M	15 11
16 B	17 13	18 14	19 15	20 M	21 M	22 16
23 17	24 C 18	25 19	26 20	27 M	28 M	29 M
30 M	31 M	1 FEB 1	2 2	3 3	4 4	5 5
6 M	7 M	8 A 6	9 7	10 8	11 9	12 10
13 M	14 M	15 11	16 B	17 13	18 14	19 15
20 M	21 M	22 16	23 17	24 C 18	25 19	26 20
27 M	28 M	1 MAR 1	2 2	3 3	4 4	5 5
6 M	7 M	8 A 6	9 7	10 8	11 9	12 10
13 M	14 M	15 11	16 B	17 13	18 14	19 15
20 M	21 M	22 16	23 17	24 C 18	25 19	26 20
27 M	28 M	29 M	30 M	31 M	1 APR 1	2 2
3 3	4 4	5 5	6 M	7 M	8 A 6	9 7
10 8	11 9	12 10	13 M	14 M	15 11	16 B
17 13	18 14	19 15	20 M	21 M	22 16	23 17

Table 2 - Calendar showing Date, Billing Cycle Number, and Maintenance Days

Application of Reporting Period

Selection Criteria and Customize: For any report that aggregates Call Detail Record information, the user can change the Period Range "From" and "To" query parameters (for example, Dec '03 to Feb '04) to modify the scope of records that are returned to the report by selecting each reporting period name and year.

Example: If the user selects 2003 Dec to 2004 Feb, the system checks the start date of the "From" reporting period and the end date of the "To" reporting period in order to determine which invoice data to select for the report. Only invoice data in which the Bill Period End Date falls between 12/1/03 and 2/29/04 are selected to appear on the report. Note: The bill period start date does not impact the records returned to the report.

Rationale: By only querying against the Bill Period End Date, Communications Billing Analytics eliminates the complexity of reporting on less than 100% of an invoice and having to prorate invoice level charges. Fixed reporting periods also increases the implementation opportunities to quickly retrieve summary values.

Trend Reports: When charting a trend report, the width of each bar (the interval of charted time based subtotals) will be the duration of each reporting period.

Versioned Hierarchy

The billing structure is constantly changing due to the addition or removal of services within an account. Business structures often change as a result of shifts in responsibility within an organization. These changes can create inaccuracies that may have been inadvertently introduced into the effective dated hierarchies.

The following complications may arise:

1. When running a report that includes historical billing data, a customer would expect the report to use the hierarchy that was effective at that time.
2. When running a trend report containing the totals from several reporting periods, each reporting period should reflect the charges and the hierarchical structure that was effective at each point in time.
3. Customers expect to see their report results with a minimal amount of latency which creates implementation challenges to achieving this objective.

These complications can result in:

1. Customers become confused, spend time reconciling reports to hierarchy changes, and doubt the integrity of the application.
2. Long report result latency resulting in constant batch reporting.
3. All reports must be run as stored online or downloaded to preserve their integrity over time creating a storage and file management burden.

Siebel provides a solution by using versioned Hierarchies that maintain multiple instances of each hierarchy within the system including all billing and non-billing hierarchies. Each instance of the hierarchy corresponds to an effective dated reporting period. Each effective dated hierarchy is a snapshot of the structures in the billing data or a snapshot of organizational structures over time.

Each month's series of bill file loads, import updates, and manual modifications are collected into an effective dated hierarchy for the current month. On the first of each month the current month's hierarchy is stored and a copied for the next month's changes. This provides a hierarchical history on a monthly basis. A user may specify a previous month's hierarchy to make changes to historical effective dated hierarchies. The most recent version of the hierarchy for the current reporting period is used as a default.

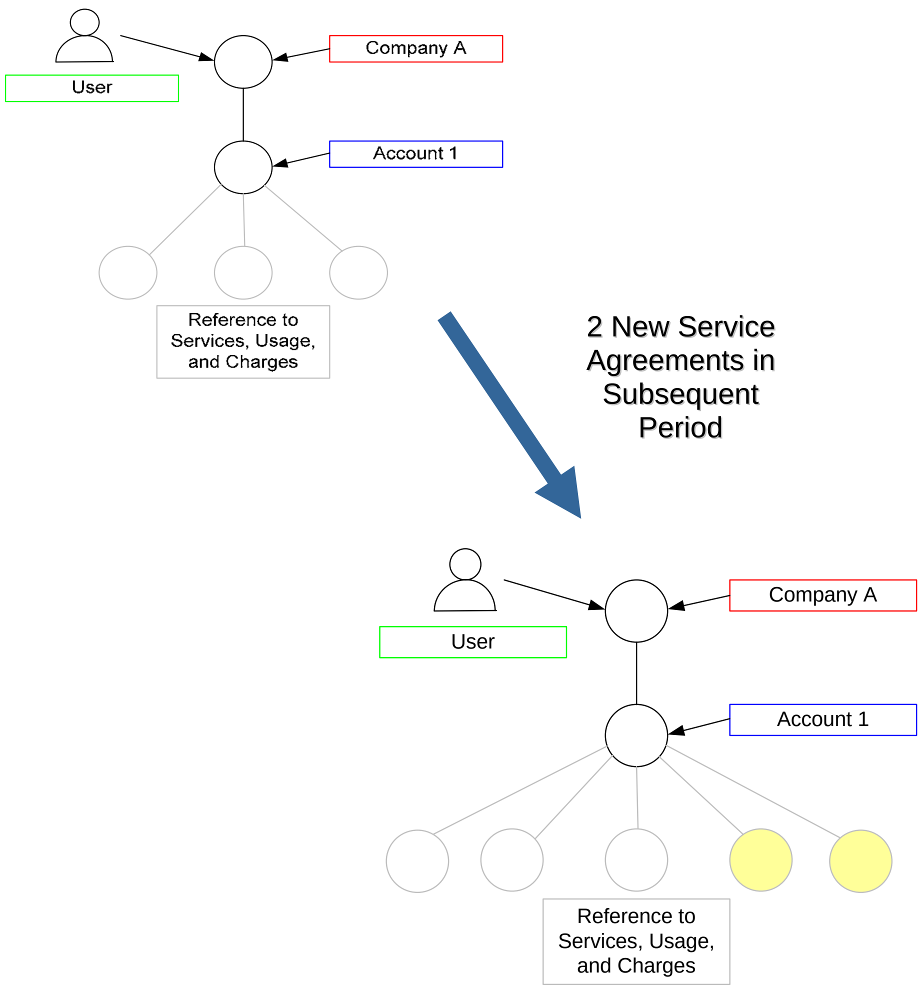


Figure 6 - Versioned Hierarchy Illustration

Hierarchy Site Map

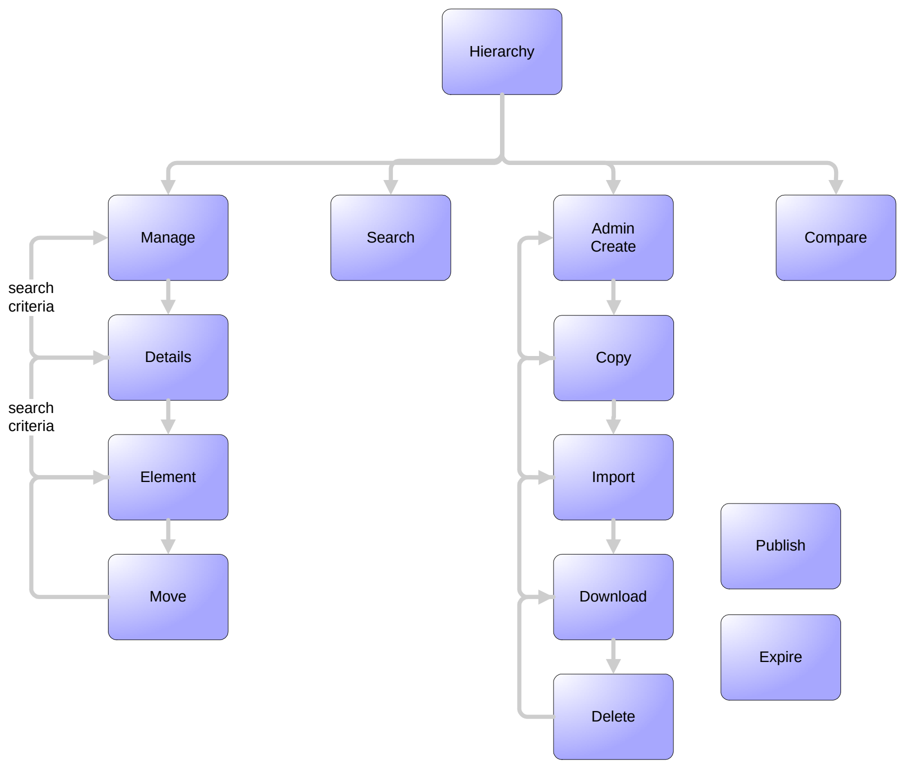
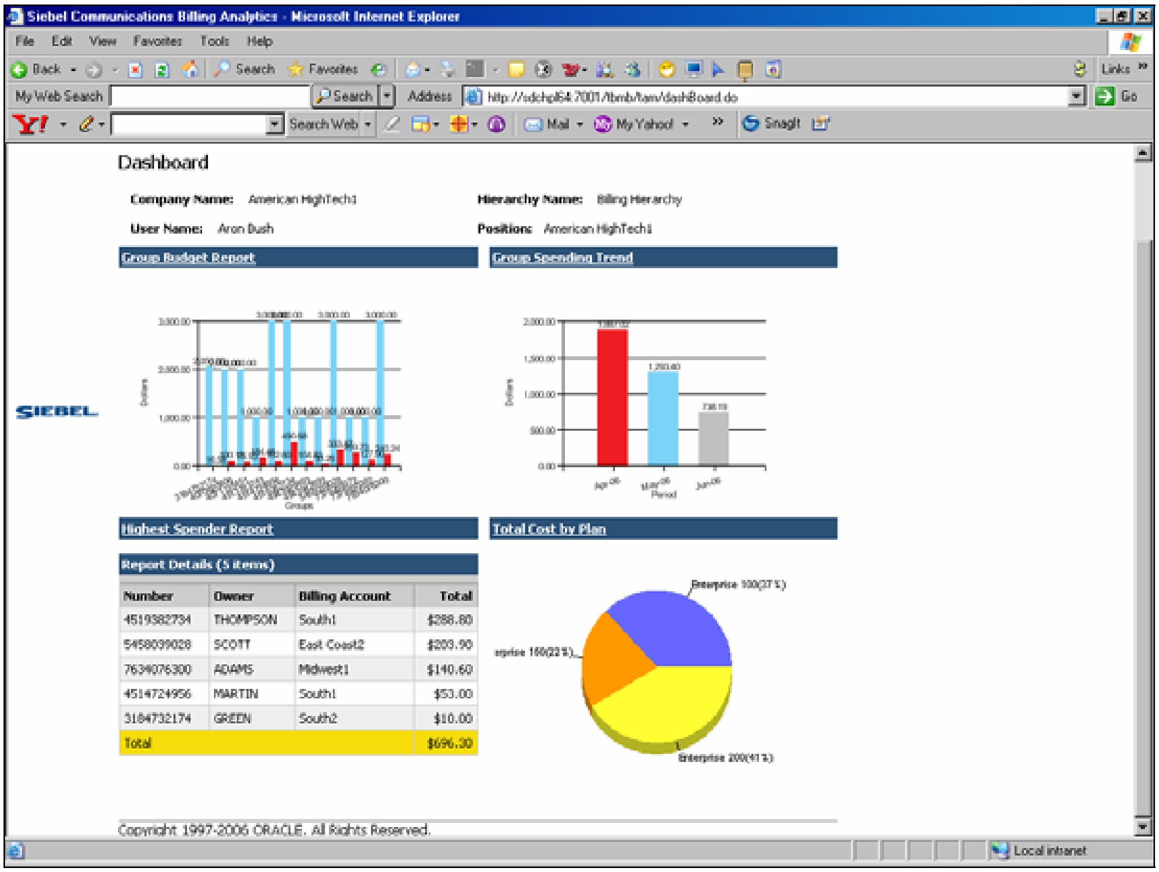


Figure 7 – Hierarchy Site Map

3 Site Web Flows

General Billing Manager Use Cases

Dashboard



Dashboard

Name:	View Dashboard
Brief Description:	This is a high-level view of the company's health. The Dashboard displays summary-level information in the following areas: 1. Total Budget vs. Total Spend by Group 2. Budget vs. Spend Trend 3. Top Spenders List 4. Total Cost by Plan
Entry Points:	This is the first page the user will see after logging in under the Analytics Tab under the Overview Sub Tab. You can also get to the Dashboard after you set your position in the Hierarchy or Billing tabs.
Primary Actor:	All Users. The type of content varies depending on the Hierarchy Position and Role. Admin User has the maximum access. (see below)
Query Parameters:	Depending on the User Context, such as user role and hierarchy position, a different set of reports would be shown. The user can also select a period from the drop down, such as quarter or year. a. If the User is in a Billing Root the Dashboard would show a set of charts pertaining to the Accounts in this Billing Hierarchy b. If the User is in a Billing Hierarchy-Account, then the Dashboard would show a set of charts pertaining to the Services (contracts) of that Account c. If a User is in a Billing Hierarchy-Service, then the Dashboard would show a set of charts pertaining to the Service d. If a User is in a Business Hierarchy Root (Group), then the Dashboard would show a set of charts pertaining to the Services or Sub Groups of that Root Group e. If a User is in a Business Hierarchy Sub Group, then the Dashboard would show a set of charts pertaining to the Services of this Sub Group f. If a User is in a Business Hierarchy-Service, then the Dashboard would show a set of charts pertaining to the Service
Report Content:	The Dashboard Report has four subsections. The user can select the period for which to show the content. 1) Total Budget vs. Total Spend 2) Budget vs. Spend Trend 3) Top Spenders List 4) Total Cost By Plan
Charts:	a) Budget vs. Spend Trend Chart b) Total Budget vs. Total Spend Chart c) Total Cost By Plan

Main Path:	1. User runs the View Dashboard operation by selecting the Analytics Tab and then the Overview sub tab. 2. System Displays the Dashboard with the following six components: a) Total Spend vs. Total Budget This report displays the Total Spend vs. Budget for each particular Sub Group (if you are in a Business Hierarchy) and Contract (If you are in a Billing Hierarchy) depending on the hierarchy context. If a User drills down into this report user will be taken to another more detailed report that shows more information at a sub group level. • Group Budget Tracking (7000) • Contract Budget Tracking (8000) b) Budget vs. Spend Trend. This report will display the Cumulative Budget and Spend for each month in a particular Quarter or Year (selected by user) for that particular Hierarchy Context. c) Top Spender List This report shows the top 10 Groups or Contracts in terms of Spend for the current period selected by the user sorted in descending order. User may click on this chart to go to a more detailed report. Depending on the user position in the hierarchy, this report will take you to the: • Top Spender Groups OR • Top Spender Accounts OR • Top Spender Contracts d) Total Cost By Plan This report is an existing report. This report shows the breakdown of the plan types we have for this Hierarchy Position. This report can also be viewed by going directly to the Billing Tab. 3. Use Case ends
Alternate Paths:	
Exception Paths:	**User encounters a system error:** System invokes Error Message use case if a user requests data for a period that does not exist
Business Rules:	Depending on the User Context (such as user role and hierarchy position), a different set of reports would be shown. The user can also select a reporting period from the drop down, such as quarter or year. a. If the User is in a Billing Root the Dashboard would show a set of charts pertaining to the Accounts in this Billing Hierarchy b. If the User is in a Billing Hierarchy-Account, then the

	Dashboard would show a set of charts pertaining to the Services (contracts) of that Account c. If a User is in a Billing Hierarchy-Service, then the Dashboard would show a set of charts pertaining to the Service d. If a User is in a Business Hierarchy Root (Group), then the Dashboard would show a set of charts pertaining to the Services or Sub Groups of that Root Group e. If a User is in a Business Hierarchy Sub Group, then the Dashboard would show a set of charts pertaining to the Services of this Sub Group f. If a User is in a Business Hierarchy-Service, then the Dashboard would show a set of charts pertaining to the Service
Notes:	

View List of Standard Reports

Name:	**List of Reports**
Brief Description:	User views a list of standard and custom reports. *Rationale:* Screen for viewing only those standard reports relevant to the user's hierarchy position, to modify common query parameters before launching a report, and to edit and delete custom reports.
Entry Points:	**1.** Analytics Tab [Default: Billing Reports"] a. Billing Reports Tab b. Top X Reports
Query Parameters	Report Tab **1.** Hierarchy Name & Position [Default: "Current Context"]
Report Content	List of Custom Reports [User defined custom reports listed in alphabetical order] Fields **1.** Description **2.** Last Modified (Custom Reports only) **3.** Actions (Custom Reports only)
Chart	None

Name:	**List of Reports**
Main Path:	**1.** User selects Billing Reports or Top X Reports tab. **2.** System returns List of Reports including: a. List of Standard Reports that are valid for the current context. b. List of [user defined] Custom Reports. **3.** User selects a standard report name. **4.** System determines query parameters based on report context or defaults and generates report and displays the result to the user. **5.** Use case ends
Alternate Paths:	**[A1] User selects the custom report sub-tab:** System displays the report customization page for the current report (see customize report use case). **[A2] User selects the batch report sub-tab:** **[A3] System displays the batch report management page (see batch report use case).**
Exception Paths:	**[E1] User encounters a system error:** 1. System invokes Error Message use case.
Business Rules:	**[B1]** The List of Reports displayed dependent upon which tab is selected, Billing Reports or Top X Reports, **[B2]** The user should only see reports in the report list that are relevant to both the selected hierarchy and the current position of the user within the hierarchy context. For example (using hierarchy examples from the Key Concepts section), if a user's current position is at the account level in the hierarchy, the user should not have the option to select a report whose rows are groups (e.g. Group Spending Report), which would be a level above the account. Also if the user's position is at the group level for a selected hierarchy (e.g. PS Department) that does not have an account level, the user would not see reports whose rows are accounts (Account Billing Detail Report).
Notes:	None

Sample Format of List of Reports

View List of Custom Reports

Name:	**List of Custom Reports**
Brief Description:	User views a list of standard and custom reports. *Rationale:* Screen in which to view only those standard reports relevant to the user's hierarchy position, to modify common query parameters before launching a report, and to edit and delete custom reports.
Entry Points:	a. Analytics Tab [Default: Billing Reports] b. Billing Reports Tab c. Top X Reports
Query Parameters	Report Tab **1.** Hierarchy Name & Position [Default: "Current Context"] **2.** Period Range [Default: "current context"] User selects a start and end reporting period from two dropdown boxes.

Name:	**List of Custom Reports**
Report Content	<u>List of Custom Reports</u> [User defined custom reports listed in alphabetical order] <u>Fields</u> **1.** Description **2.** Last Modified (Custom Reports only) **3.** Actions (Custom Reports only)
Chart	None
Main Path:	**1.** User selects Billing Reports or Top X Reports tab. **2.** System returns List of Standard Reports including: a. List of Standard Reports that are valid for the current context b. User selects the custom report sub-tab. **3.** System returns a List of Custom Reports saved by the user. **4.** User selects a custom report from the list. **5.** System determines query parameters based on report context or defaults and generates report and displays the result to the user. **6.** Use case ends
Alternate Paths:	**[A1] User selects Edit action on a custom report:** 1. System displays the saved report parameters. User modifies the report parameters and saves the report. System saves the updated parameters and returns to the List of Reports page. **[A2] User selects Delete action on a custom report:** 1. System displays a confirmation page for the delete action. User confirms the action by selecting the Delete action. System deletes the custom report and returns to the List of Reports page. **[A3] Reports Suppressed from the list:** 1. The user should only see reports in the report list that are relevant to both the selected hierarchy and the current position of the user within the hierarchy context. For example (using hierarchy examples from the Key Concepts section), if a user's current position is at the account level in the hierarchy, the user should not have the option to select a report whose rows are groups (e.g. Group Spending Report), which would be a level above the account. Also if the user's position is at the group level for a selected hierarchy (e.g. Department) that does not have an account level, the user would not see reports whose rows are accounts (Account Billing Detail Report).

Name:	**List of Custom Reports**
Exception Paths:	**[E1] User encounters a system error:** 1. System invokes Error Message use case.
Business Rules:	**[E1]** The List of Reports displayed and content are dependent upon which tab is selected: Billing Reports or Top X Reports.
Notes:	None

View List of Batch Reports

Name:	**List of Batch Reports**
Brief Description:	User views a list of batch reports. Rationale: Screen in which to view only those standard and custom reports relevant to the user's hierarchy position, to modify common query parameters before launching a report, and to edit and delete custom reports.
Entry Points:	a. Analytics Tab [Default: Billing Reports] b. Billing Reports Tab c. Top X Reports
Query Parameters	None.
Report Content	List of Standard Batch Reports **1.** Reports Completed **2.** Reports Pending
Chart	None
Main Path:	**1.** User selects Billing Reports or Top X Reports tab. **2.** System returns List of Reports including: a. List of Standard Reports that are valid for the current context **3.** User selects a standard report name. **4.** System determines query parameters based on report context or defaults and generates report and displays the result to the user. **5.** Use case ends

Name:	**List of Batch Reports**
Alternate Paths:	**[A1]** User selects a custom report name: 1. System displays the details of the report using the report parameters saved for the report. **[A2]** User selects Edit action on a custom report: 1. System displays the saved report parameters. 2. User modifies the report parameters and saves the report. 3. System saves the updated parameters and returns to the List of Reports page. **[A3]** User selects Delete action on a custom report: 1. System displays a confirmation page for the delete action. User confirms the action by selecting the Delete action. System deletes the custom report and returns to the List of Reports page. **[A4]** Reports Suppressed from the list. 1. The user should only see reports in the report list that are relevant to both the selected hierarchy and the current position of the user within the hierarchy context. For example (using hierarchy examples from the Key Concepts section), if a user's current position is at the account level in the hierarchy, the user should not have the option to select a report whose rows are groups (e.g. Group Spending Report), which would be a level above the account. Also if the user's position is at the group level for a selected hierarchy (e.g. PS Department) that does not have an account level, the user would not see reports whose rows are accounts (Account Billing Detail Report).
Exception Paths:	**[E1] User encounters a system error:** 1. System invokes Error Message use case.
Business Rules:	**[B1]** The List of Reports displayed and content are dependent upon which tab is selected: Billing Reports or Top X Reports. **[E2]** If there are no user defined custom reports, the module will not be displayed. **[E3]** If the last custom report on the list is deleted, the Custom Reports module will be suppressed. System will suppress the display of UI modules where no data exists.
Notes:	None

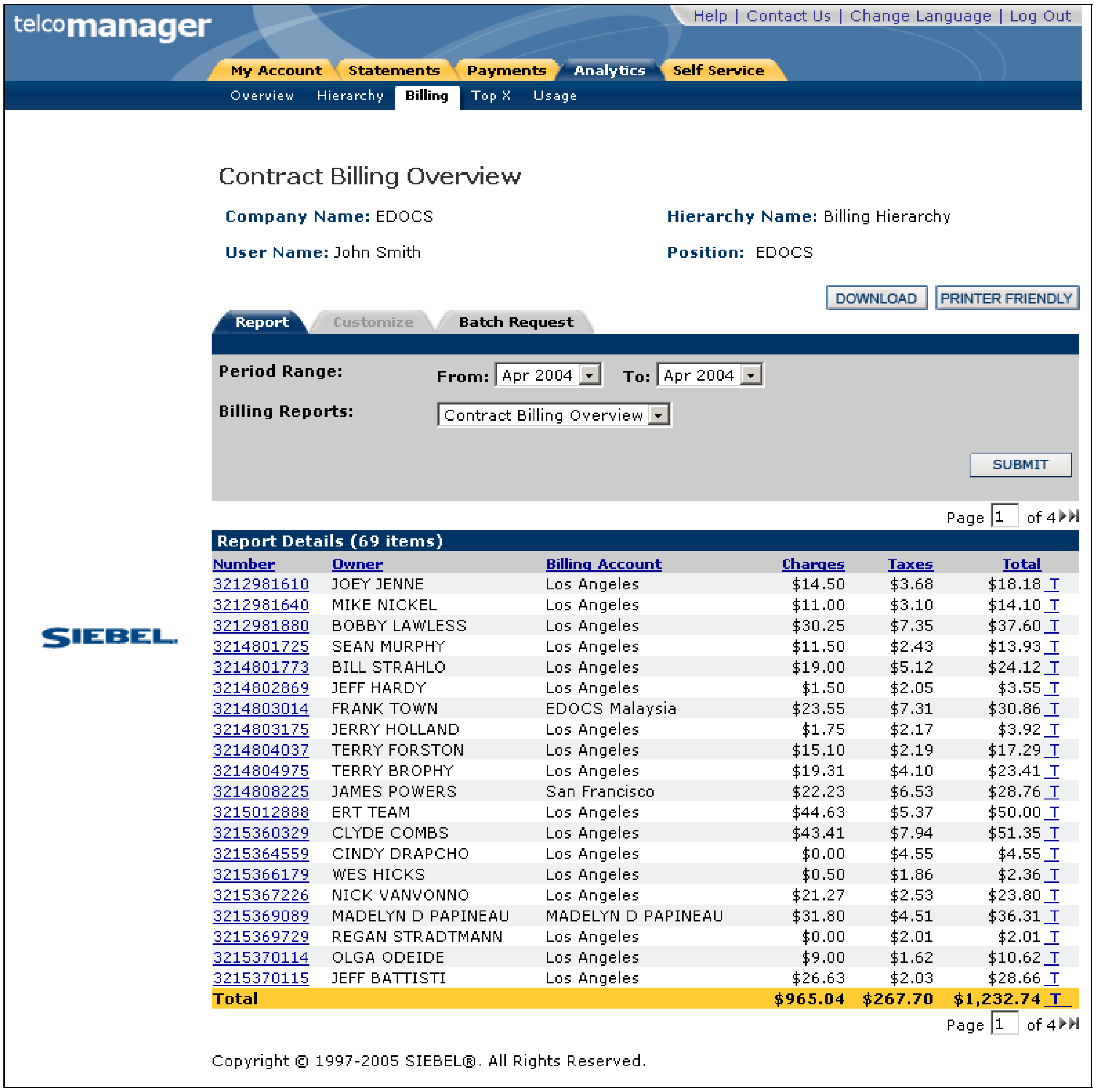
Navigate Hierarchy

Name:	**Navigate Hierarchy**
Brief Description:	User selects the name of the hierarchy, navigates its nodes, and selects a new position to be used on all subsequent reports. *Rationale*: Change the scope of the records returned on a report and the names of the available reports displayed on a report list.
Main Path:	**1.** User selects the Hierarchy sub tab. **2.** System invokes the hierarchy module **3.** User lands on the manage hierarchy screen with the default or current hierarchy and position displayed **4.** User selects a new hierarchy context by selecting a new position in the current hierarchy, changes the current hierarchy, or edits the current hierarchy. **5.** System automatically sets and persists the new hierarchy context in the session for use by Analytics or other Communications Suite Applications. **6.** User selects one of the report category sub tabs such as Billing, Top X, or Usage **7.** System invokes the appropriate report list use case. **8.** Use Case Ends.
Alternate Paths:	None.
Exception Paths:	**[E1] User encounters a system error:** 1. System invokes Error Message use case.
Business Rules:	None.
Notes:	None

Change Selection Criteria

Name:	**Change Selection Criteria**
Brief Description:	User changes the query parameters in the Report tab to alter a report and update the report context for all reports.
Entry Points	**1.** Any Report **2.** Any Report List
Query Parameters	**1.** Period Range **2.** Date Range **3.** Number of Results [Default: 10] Dropdown box of values [10, 25, 50, 100] **4.** Call Type **5.** Usage Type **6.** Report (see the Customize a Report use case for definitions of the above fields)
Report Content	N/A
Chart	N/A
Main Path:	**1.** User selects Report Tab from any report **2.** Values for the report context for all reports are displayed. **3.** The user changes one of the values. **4.** User selects display button to create report with the new values. **5.** Report context is updated with the most recently selected values.
Alternate Paths:	**[A1]** Click from Report List 1. The entry point of the use case is a Report List screen rather than a Report screen. Identical path except there is no display button. The display action from the basic path is initiated when the user clicks on a report in the list. **[A2]** User selects a different report from the Report dropdown box *Rationale*: User can quickly run another report without having to go to the Report List 1. User selects the “Report” dropdown field which displays the list standard and custom reports that display on the Report List page for this section of the menu (e.g. Billing Reports, Top X Reports, etc.) User selects a report and the Display action. The same report is run as if the user selected the report list screen and then selected the same report.
Exception Paths:	None
Business Rules:	

Name:	**Change Selection Criteria**
Notes:	None



Number	Owner	Billing Account	Charges	Taxes	Total
3212981610	JOEY JENNE	Los Angeles	$14.50	$3.68	$18.18 T
3212981640	MIKE NICKEL	Los Angeles	$11.00	$3.10	$14.10 T
3212981880	BOBBY LAWLESS	Los Angeles	$30.25	$7.35	$37.60 T
3214801725	SEAN MURPHY	Los Angeles	$11.50	$2.43	$13.93 T
3214801773	BILL STRAHLO	Los Angeles	$19.00	$5.12	$24.12 T
3214802869	JEFF HARDY	Los Angeles	$1.50	$2.05	$3.55 T
3214803014	FRANK TOWN	EDOCS Malaysia	$23.55	$7.31	$30.86 T
3214803175	JERRY HOLLAND	Los Angeles	$1.75	$2.17	$3.92 T
3214804037	TERRY FORSTON	Los Angeles	$15.10	$2.19	$17.29 T
3214804975	TERRY BROPHY	Los Angeles	$19.31	$4.10	$23.41 T
3214808225	JAMES POWERS	San Francisco	$22.23	$6.53	$28.76 T
3215012888	ERT TEAM	Los Angeles	$44.63	$5.37	$50.00 T
3215360329	CLYDE COMBS	Los Angeles	$43.41	$7.94	$51.35 T
3215364559	CINDY DRAPCHO	Los Angeles	$0.00	$4.55	$4.55 T
3215366179	WES HICKS	Los Angeles	$0.50	$1.86	$2.36 T
3215367226	NICK VANVONNO	Los Angeles	$21.27	$2.53	$23.80 T
3215369089	MADELYN D PAPINEAU	MADELYN D PAPINEAU	$31.80	$4.51	$36.31 T
3215369729	REGAN STRADTMANN	Los Angeles	$0.00	$2.01	$2.01 T
3215370114	OLGA ODEIDE	Los Angeles	$9.00	$1.62	$10.62 T
3215370115	JEFF BATTISTI	Los Angeles	$26.63	$2.03	$28.66 T
Total			**$965.04**	**$267.70**	**$1,232.74** T

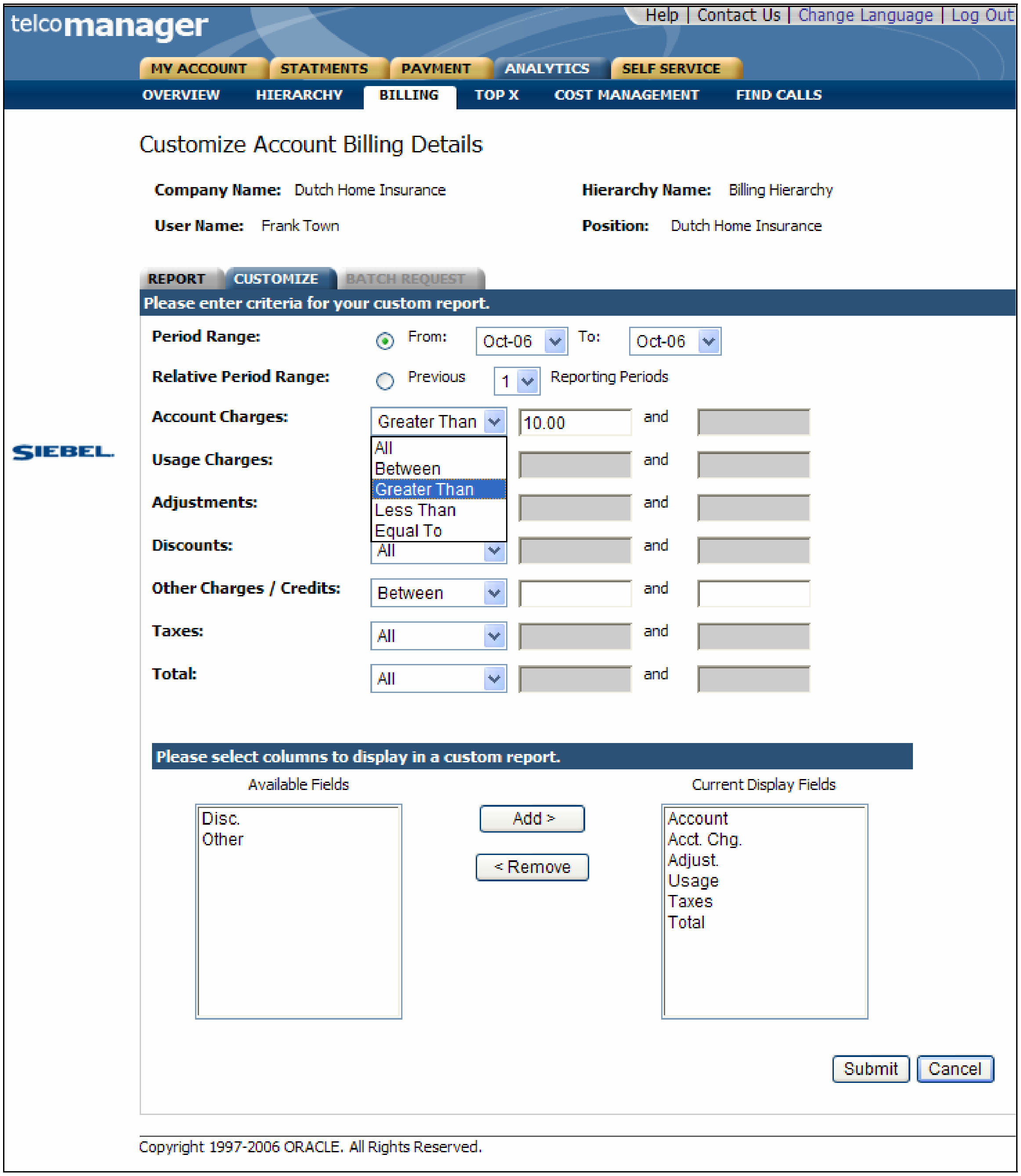
Sample Report

Customize a Report

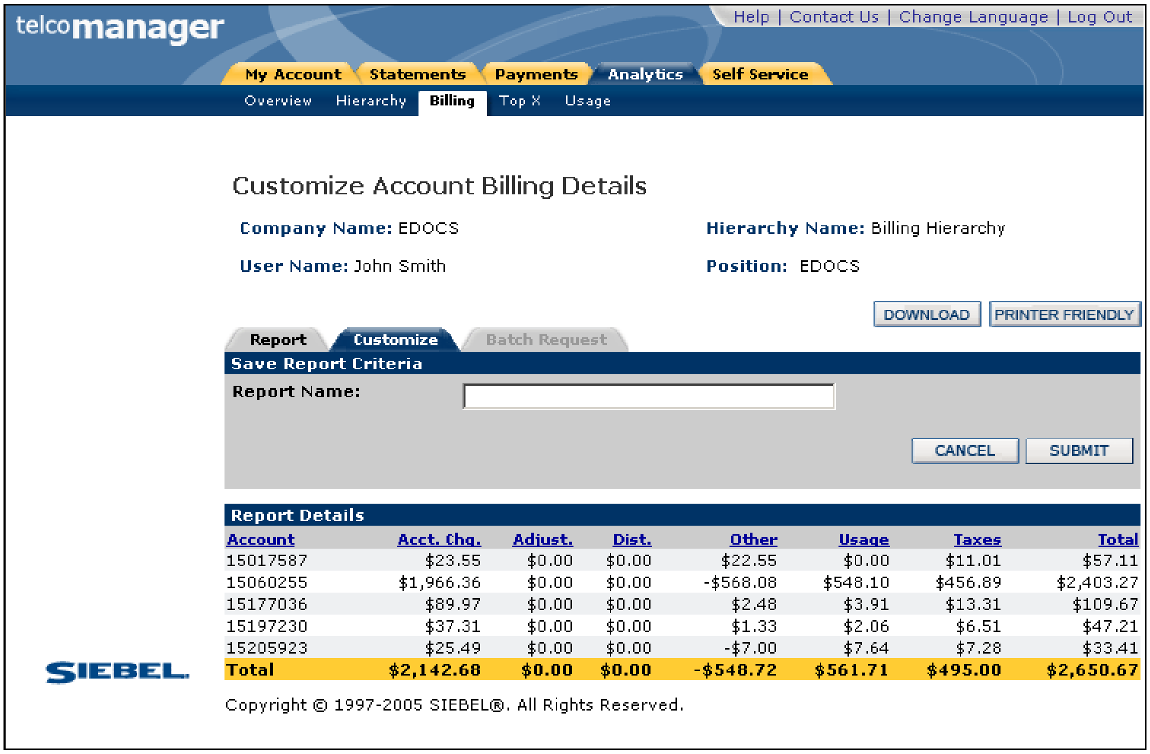
Name:	**Customize a Report**
Brief Description:	User creates and saves a custom report and selects the report content. Note: For tracking purposes, this generalized use case is considered complete when one custom report is completed. See each report's alternate path for whether customize functionality has been implemented for that report.
Entry Points	**1.** Any Report
Query Parameters	Report Selection Criteria Common Among Reports **1. Hierarchy Name & Position** [Default: "Current Context" or user's "Default Hierarchy" for start of a session] *Hierarchy Name Rollover Help:* "Change the selected hierarchy on which to report." *Hierarchy Position Rollover Help:* "Change the node location within the selected hierarchy." **2. Period Range** [Default "From": Current context or current reporting period if context not yet set] [Default "To": Current context or current reporting period if context not yet set] For all reports except Contract Call Details, this dropdown field displays the names and years from the reporting period table maintained by the service provider. See Key Concepts, Reporting Period section. *Rollover Help: "*Select a beginning and ending reporting period to have the report return invoice information whose bill period end date is within the selected reporting period range." **3. Relative Period Range** [Default: "none"] This option enables the user to save a custom report that always includes a range of periods ending with the current period. **4. Report** [Default: Report currently being displayed] This query parameter allows users to select a different report from a dropdown box. Maximum field lengths: Billing Reports: 25, Top X Reports: 40 **5. Usage Type** [Default: all] This query parameter is only available on Contract Call Details. **6. Specific Reports** All possible fields have been defined here in one place even though a subset of them is included in each report. See the report use case "Query Parameters" for the fields included in that report. Report specific customizable fields based upon defaults or user specified report fields.

Name:	**Customize a Report**
	1. Account Charges [Default: All] **2. Adjustments** [Default: All] **3. Billing Account** [Default: All] **4. Called Number** [Default: All] **5. Charges** [Default: All] **6. Countries** [Default: All] **7. Destination** [Default: All] **8. Discounts** [Default: All] **9. Duration** [Default: All] **10. Group** [Default: All] **11. Invoice** [Default: All] **12. Number** [Default: All] **13. Number of Calls** [Default: All] **14. Number of Contracts** [Default: All] **15. Other Charges/Credits** [Default: All] **16. Owner** [Default: All] **17. Plan** [Default: all] **18. Taxes** [Default: all] **19. Toll Charges** [Default: all] **20. Total** [Default: all]
Report Content	Fields Report specific.
Chart	N/A
Main Path:	**1.** User selects the Customize tab. **2.** System returns a page allowing User to build a custom report by specifying any or all of the current report's parameters. **3.** User specifies report parameters and selects Create action. **4.** System displays Customize Report results page containing details for the customized report. **5.** User optionally enters a report name and selects Save action to save the customized report. **6.** System displays confirmation page. **7.** User selects Save action to confirm. **8.** System saves the report parameters and displays the saved report name on appropriate List of Reports page. **9.** Report page is displayed with the current custom report **10.** Use Case Ends

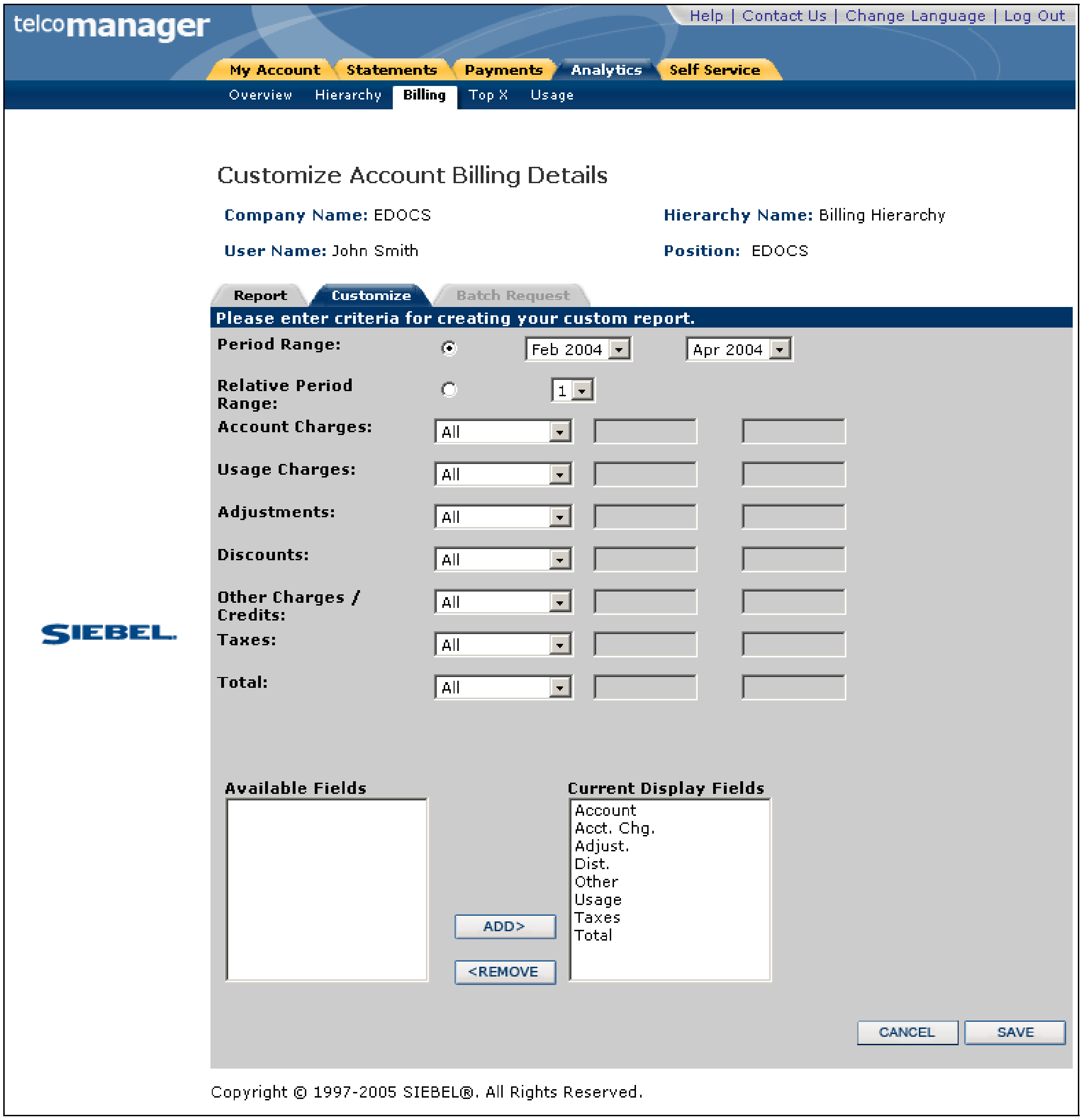
Name:	**Customize a Report**
Alternate Paths:	**[A1] User selects the Cancel action:** 1. System invokes Cancel use case. **[A2]** User Adds Column to Report 1. User highlights a field (or multiple fields with the control key) from the Available Fields box and selects the Add action: 2. System checks to make sure there is available width on the report and if there is not warns the user that the action can not be initiated until a field is first removed. 3. System adds the selected field to the list of Display Fields and removes it from the Available Fields box. 4. When the create action is selected, the new field is displayed on the report. Rationale: User is provided a mechanism to customize report display fields. **[A3]** User Removes Column from Report 1. User highlights a field (or multiple fields with the control key) from the Display Fields box and selects the Remove action: 2. System removes the selected field from the list of Display Fields and adds it to the Available Fields box. 3. When the create action is selected, the new field is not be displayed on the report.
Exception Paths:	**[E1] User encounters a system error:** 1. System invokes Error Message use case.
Business Rules:	**[B1]** Custom report parameters are based upon some or all of the available columns on the current report and bill period.
Notes:	None



Customize Account Billing Details Page



Save a Customized Report



Confirm Save of a Customized Report

Chart Unusual Values

Name:	**Chart Unusual Values**
Brief Description:	The objective of this use case is to generalize how charts perform in all reports. The main path describes charting negative and zero values and the alternate paths describe other requirements.
Entry Points:	**1.** Any report with a chart.
Query Parameters:	None.
Report Content:	N/A
Chart:	N/A
Main Path:	**1.** User displays any chart with an x and y axis (e.g. bar, line) where the negative and value needs to be plotted on the y-axis. **2.** The x-axis is always drawn with a y-axis value of zero. **3.** Negative values are charted below the x axis **4.** Zero values retain their label on the x-axis but show now bar.
Alternate Paths:	**[A3]** Cancel If the user selects the ‘cancel’ prompt instead of the ‘batch’ prompt, the user is returned to the previous screen in which they requested to run the report.
Exception Paths:	None.
Business Rules:	None.
Notes:	

Run Automatic Batch Report

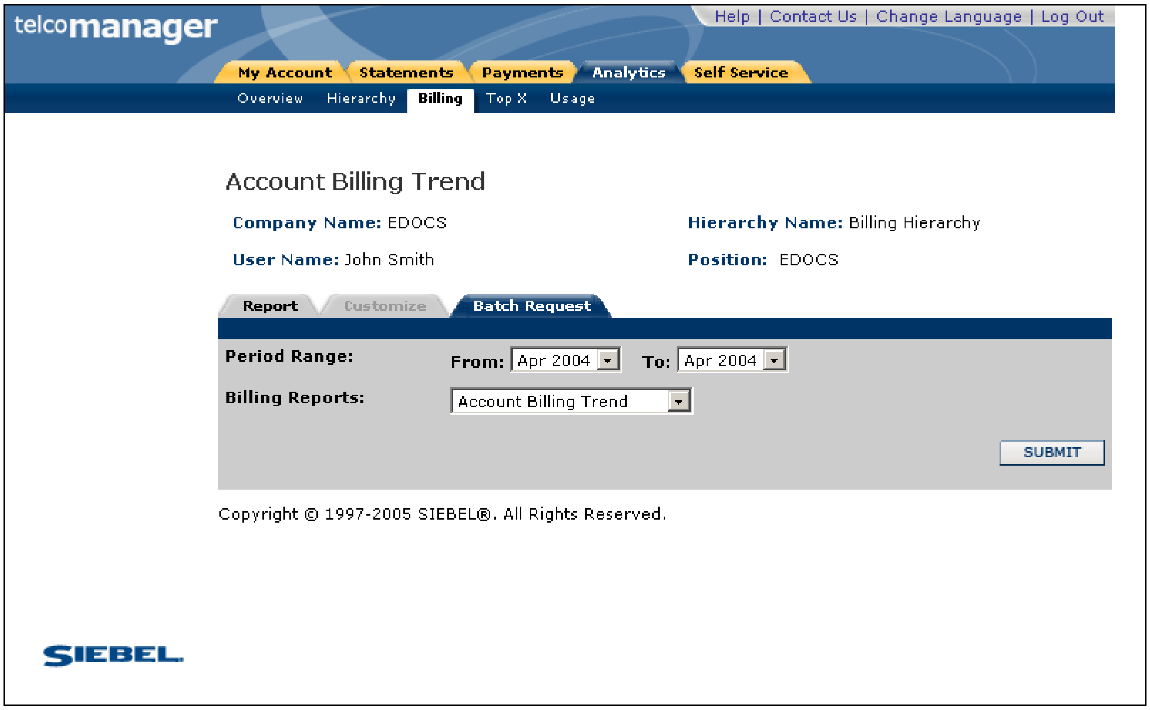
Name:	**Run Automatic Batch Report**
Brief Description:	When a user launches a report that will take longer than a user defined latency threshold to complete, the report is run in batch mode.
Entry Points:	**1.** Report List **2.** Report Screen **3.** Customize Report
Query Parameters:	N/A
Report Content:	N/A
Chart:	N/A
Main Path:	**1.** User launches a report from one of the above Entry Points **2.** After a system configurable threshold is exceeded based on a number of service agreements and number of reporting periods that will take longer than a prescribed amount of time, the system determines that the report must be run in batch mode to be completed. **3.** User receives prompt to run the report in batch mode or to cancel it. a. Prompt: “This report will take a long time to run. Select Batch to have it run at a later time in batch mode or Cancel to return to the report screen to change the report selection criteria. When later viewing the completed batch report, you will have the option to download all records in a CSV file or display the first X records in a formatted browser view” b. The “X” referenced in the above comment is replaced with a number from the report XML file **4.** User enters a name for the report (Default: “standard report name”_”from date”_”to date”) **5.** User selects the Batch action **6.** Report is run queued to process asynchronously (see system wide configuration parameters, Concurrent Queued Batch Reports) **7.** Report output is saved in two outputs: a. CSV file of all records b. HTML file similar to reports run online (only contains the first X records, where X is configured in the report XML file).
Alternate Paths:	**[A1]** Cancel If the user selects the ‘cancel’ prompt instead of the ‘batch’ prompt, the user is returned to the previous screen in which they requested to run the report.
Exception Paths:	**[E1] User encounters a system error:** 1. System invokes Error Message use case.

Name:	**Run Automatic Batch Report**
Business Rules:	
Pre-Conditions	1. Configurable (by Communications provider) latency threshold entered [UC 0230] 2. Batch Run Rules Batch run rules established as to when batch reports run by either configuring the command center for batch reports to run in a fixed window or setting the "Concurrent Queued Batch Reports" setting in UC 0230 – System Wide Configuration Parameters. *Rationale:* Enable client to defer system resource intensive reports to run during off-peak hours.
Notes:	

Run Manual Batch Report

Name:	**Run Manual Batch Report**
Brief Description:	A user may choose to run any report in batch mode.
Entry Points:	**1.** Report List **2.** Report Screen **3.** Customize Report
Query Parameters:	N/A
Report Content:	N/A
Chart:	N/A

Name:	**Run Manual Batch Report**
Main Path:	**1.** User selects the Batch action **2.** User enters a name for the report (Default: "standard report name"_"from date"_"to date") **3.** Report is run queued to process asynchronously **4.** Report output is saved in two outputs: a. CSV file of all records b. HTML file similar to reports run online **5.** User selects the Batch action **6.** User requesting the batch report receives an email notification that the report is available. The email should contain the following information a. Date/Time stamp of request and completion time b. Report Name c. Request date/time d. Hyperlink to view the report (or the report list of the archived report if a hyperlink to the actual report is significantly more difficult to implement).
Alternate Paths:	**[A1]** Cancel If the user selects the 'cancel' prompt instead of the 'batch' prompt, the user is returned to the previous screen in which they requested to run the report.
Exception Paths:	**[E1] User encounters a system error:** 1. System invokes Error Message use case.
Business Rules:	
Pre-Conditions	1. Batch Run Rules Batch run rules established as to when batch reports run by configuring the command center for batch reports to run in a fixed window. *Rationale:* Enables the client to defer system resource intensive reports to run during off-peak hours.
Notes:	

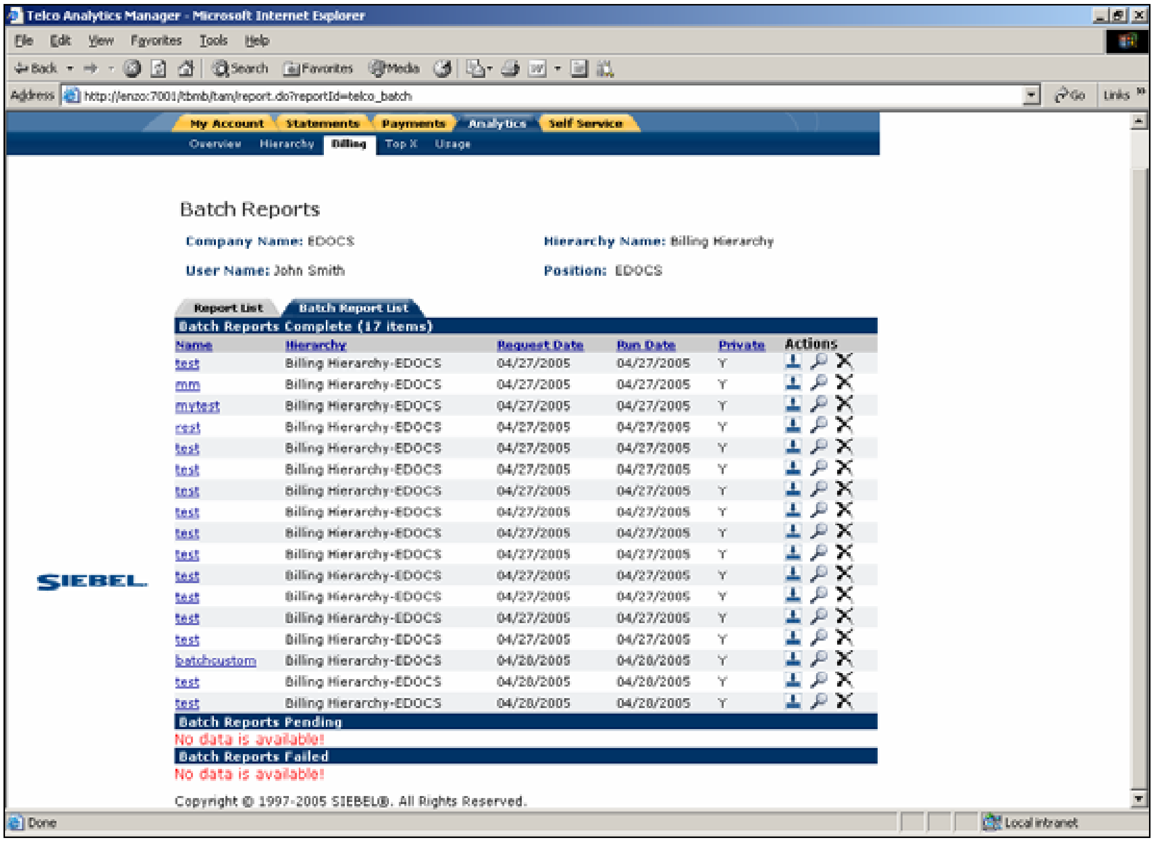


Confirm Batch Report

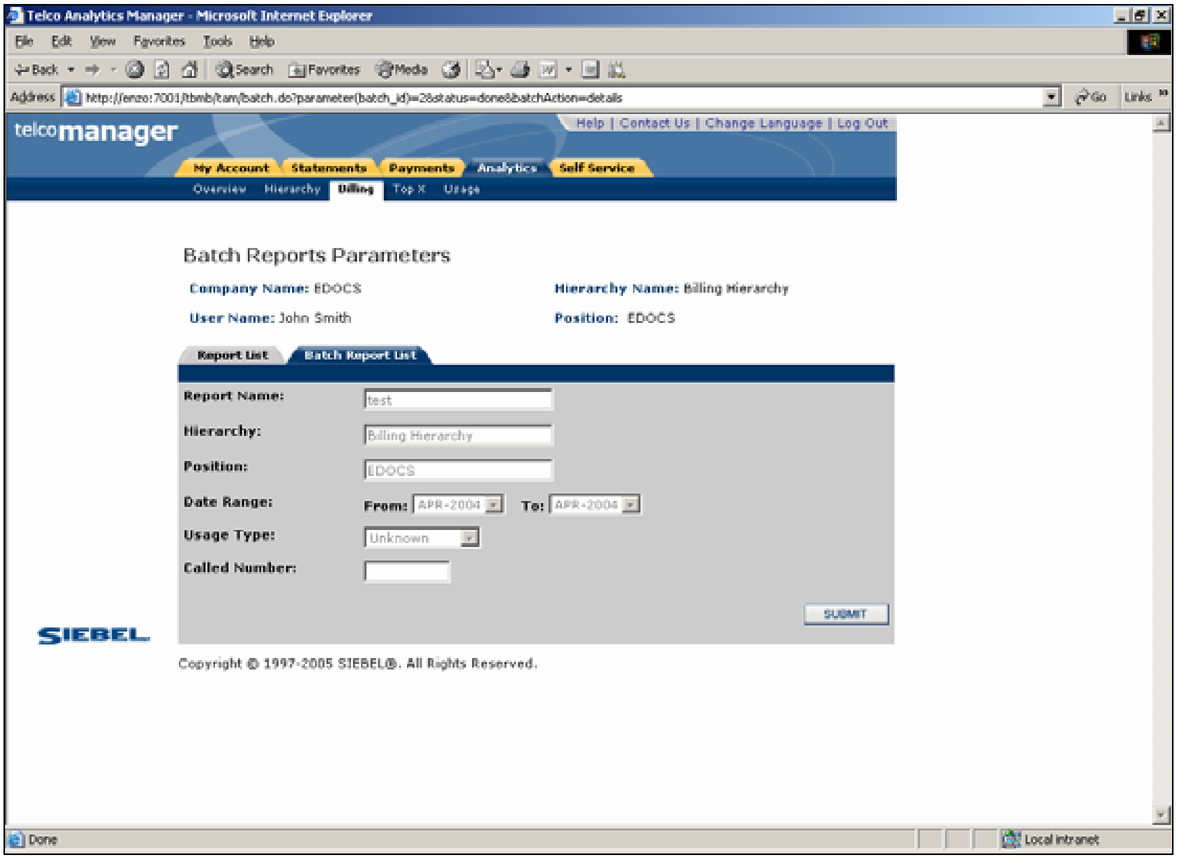
View Batch Reports

Name:	**View Batch Reports**
Brief Description:	The user views the list of saved batch report output and selects one to view.
Entry Points:	Report List
Query Parameters:	
Report Content:	COLUMN HEADINGS **1.** Name [secondary sort] (name user assigned the batch report) **2.** Hierarchy [3rd Sort] (Hierarchy name/position) **3.** Request Date **4.** Run Date **5.** Shared [Primary Sort, descending] ("Private", "Shared", "Shared *") (where "Shared *" indicates the user is the owner of the shared report) **6.** Actions SECTION HEADINGS **1.** Batch Reports - Complete **2.** Batch Reports – Pending **3.** Batch Reports – Failed
Chart:	
Main Path:	**1.** User selects one of the report tabs (Billing, Top X, Usage) **2.** User selects the "Batch Reports" tab from the report list screen. **3.** All batch reports run from the selected report list (Billing, Top X, Usage) are displayed **4.** User clicks on column heading to sort on the values in that column **5.** User selects a report to display its results in a format similar to how the report would display if run online.
Alternate Paths:	**[A1] Download CSV File** If a user selects the download action, the user receives a windows dialog box to save the CSV file. See 5.0.1 PRD use case # 0040. **[A2] View Pending Batch Reports List** This is identical to the main path, except "Run Date" are "Request Date" and the report is not hyperlinked. Also "shared" pending batch reports are only visible to the users who requested them. **[A3] View Failed Batch Reports List** This is identical to the main path, except "Run Date" is "Request Date", the report is not hyperlinked (because it can not yet be launched), and the share action is not available. Also "shared" failed batch reports are only visible to the users who requested them. **[A4] View Report Query Parameters**

Name:	**View Batch Reports**
	User clicks on Query Parameters action (currently a magnifying glass) to view another screen with the report query parameters (and/or context) displayed. From this screen the user can select an action to view the saved batch report or return back to the batch report list screen. **[A5] Report Name Exceeds Space Limit** If the report name is longer than the space provided it word wraps to the next line. **[A6] API to Failed Reason** Make API available to retrieve the reason why a batch report failed. *Rationale:* Make reason for report failure available to PS team to modify UI to display this information. **[A7] Records Exceed Browser Threshold** If the number of records in a batch report exceed the threshold limit defined in the report XML file, than only the first X records are display in the HTML report. In this case, a red warning message is displayed at the top of the screen stating "The number of records in this report exceeds the number that can be displayed in your browser. To view all results, select the download action." **[A8] Auto-Delete Batch Reports** Completed batch reports and failed batch reports are deleted from the batch report list x days after their completion date, where x is the auto-delete parameter entered in the system wide configuration (uc0230).
Exception Paths:	
Business Rules:	
Notes:	None



View Batch Reports



View Batch Report Parameters

General User Interface Behavior

The following use cases show general user interface behavior across Communications Billing Analytics.

Cancel

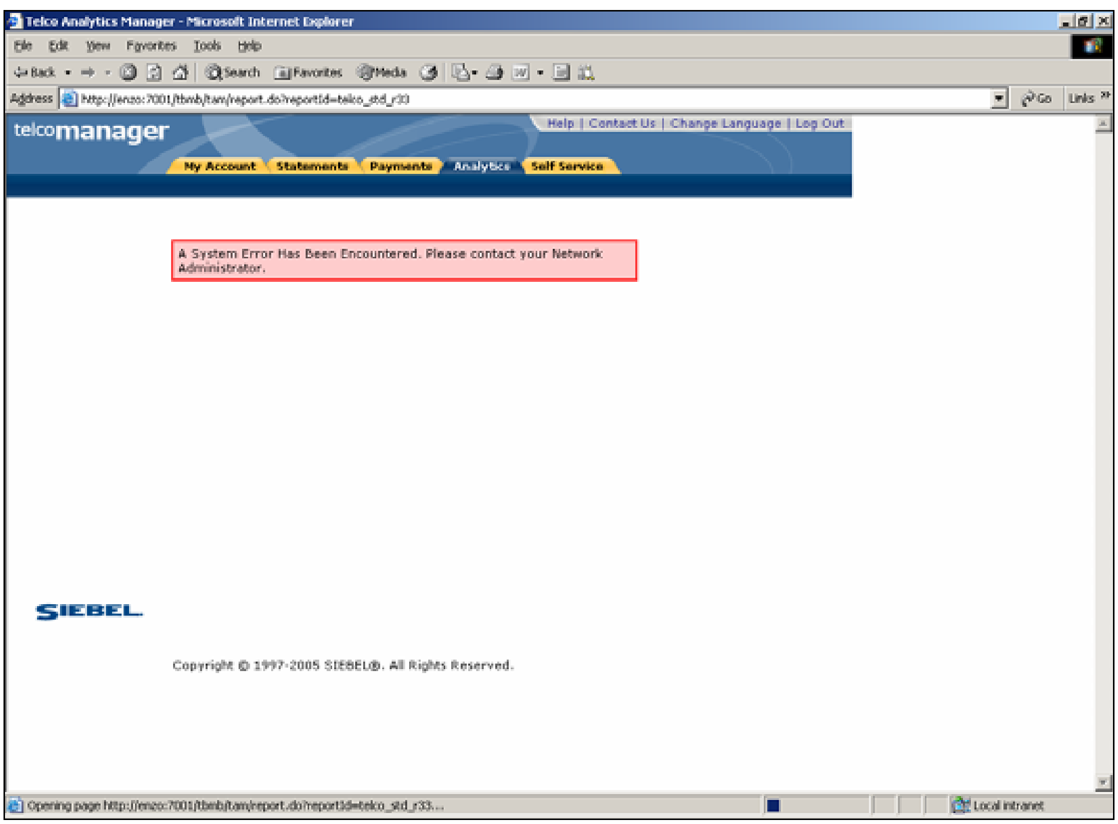
Name:	**Cancel**
Brief Description:	Describes the navigational experience when a Cancel action is selected.
Main Path:	**1.** User selects a Cancel action. **2.** System returns User to previous screen. (Returning to the previous screen restores the report context settings to those of the previous screen so that the user can perform any action previously possible when the user was in the screen). **3.** System clears any data or selections made by the User. **4.** Use Case Ends.
Alternate Paths:	None
Exception Paths:	**User encounters a system error:** System invokes Error Message use case.
Business Rules:	None
Notes:	Note that all the use cases defined in this release are two step use cases so selecting cancel has the same effect as clearing the data and selecting the browser back button.

Change Language

Name:	**Change Language**
Brief Description:	Communications Billing Analytics is certified in English. The change language feature enables the user to change the language of the application that is displayed on each screen. Currently the application can support any Unicode UTF8 character set.
Entry Points:	From Any Report
Query Parameters:	
Report Content:	N/A
Chart:	Not applicable
Main Path:	1. User Clicks on the Top Nav Button called "Change Language" 2. Use then selects a language from the drop down 3. System will change the language in all the underlying reports to this language 4. Use Case Ends
Alternate Paths:	**[A1]**
Exception Paths:	**[E1]** User encounters an application error: Application invokes Error Message use case.
Business Rules:	**[B1]** None
Configuration:	The customer must supply the specific language translations for their application deployment.

Display Error Message

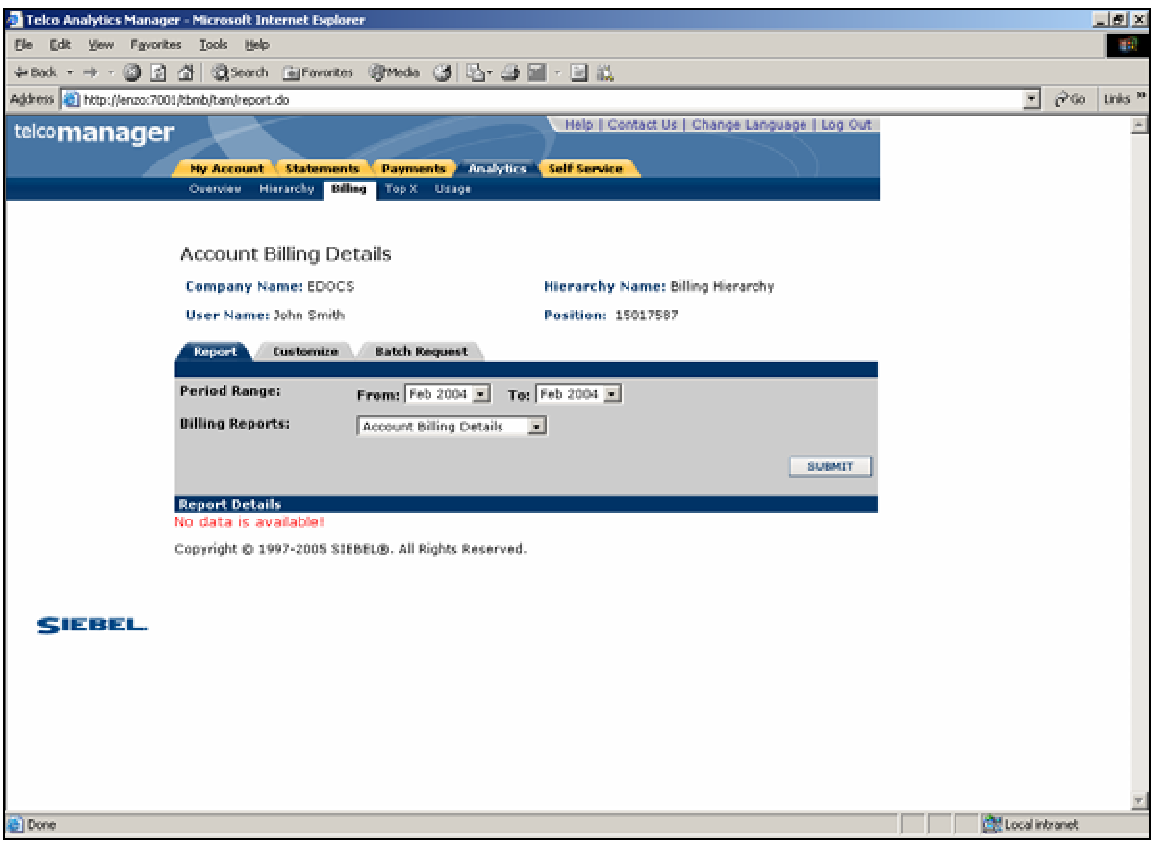
Name:	**Display Error Message**
Brief Description:	System redisplays page with an error message.
Main Path:	**1.** User performs an action that cannot be completed. **2.** System determines required error actions. **3.** System reads error message text from a configuration file. **4.** System re-displays page with error message (displayed in Red) below navigational bars. **5.** Use Case Ends.
Alternate Paths:	None
Exception Paths:	None
Business Rules:	None
Notes:	None



Error Message Page

Display No Data Message

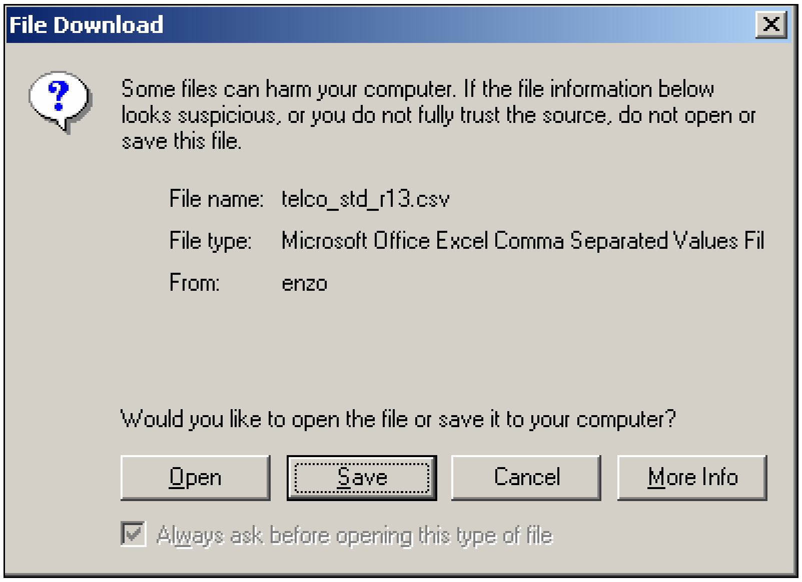
Name:	**Display No Data Message**
Brief Description:	System displays no data message when the report or UI module contains no data set.
Main Path:	**1.** User selects a report. **2.** System determines report has no available data. **3.** System displays the page with message stating that No data is available (displayed in Red) below the Report Name module. **4.** Use Case Ends.
Alternate Paths:	None
Exception Paths:	None
Business Rules:	**[B1]** System suppresses the display of UI modules where no data exists.
Notes:	None



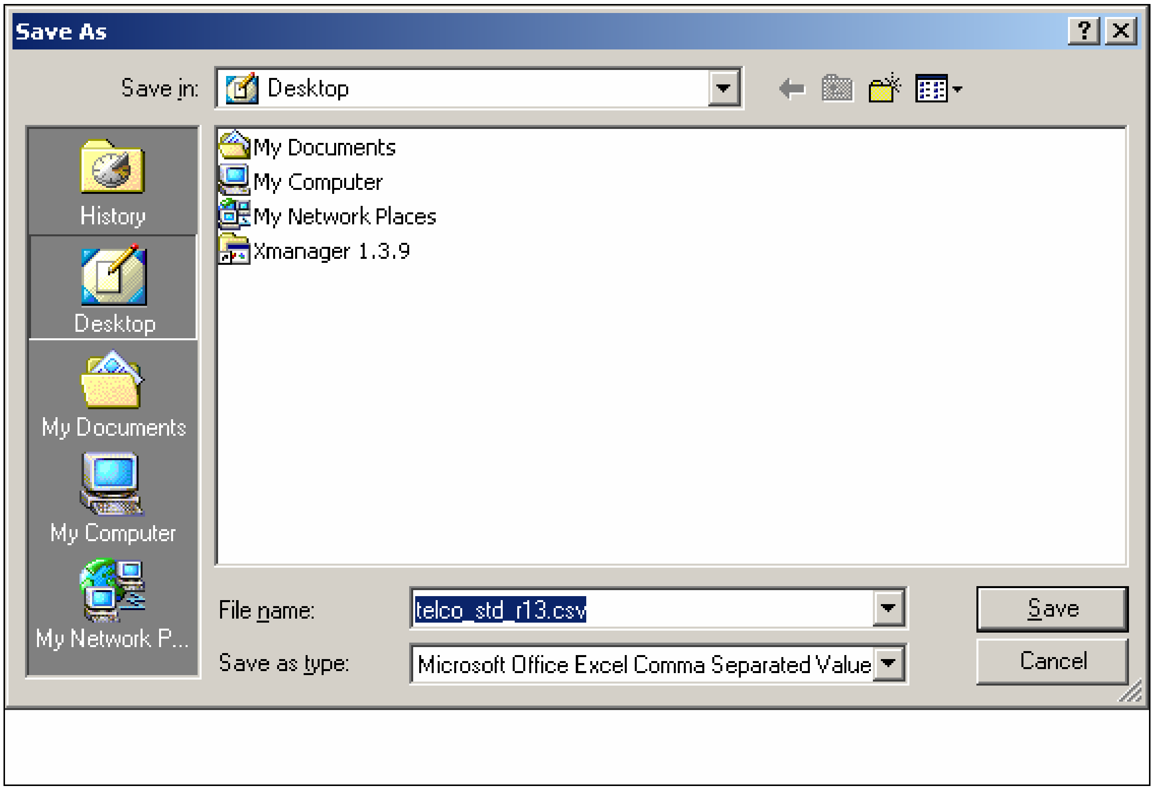
Display No Data Message

Download

Name:	**Download**
Brief Description:	User downloads the current report.
Entry Points	**1.** Any Billing or Top X Reports **2.** Find Calls
Query Parameters	Download Type [DEFAULT: CSV]
Report Content	Fields Downloaded Report Fields
Chart	None
Main Path:	**1.** User selects download action. **2.** User's browser displays a dialog box with the options for download. **3.** User selects browser Save function. **4.** User's browser returns a dialog box for Save function. **5.** User enters a name for the file and selects Save to complete download function. **6.** System returns User to the page that download was selected from.
Alternate Paths:	
Exception Paths:	**[E1] User encounters a system error:** System invokes Error Message use case.
Business Rules:	**[B1]** The data format in the CSV file exactly mirrors the report details and includes the report name and column headers. **[B2]** The Period Range, Hierarchy Name, and Hierarchy Position are not included in the download.
Notes:	Uses standard browser download function. The CSV format supported in the current release is in de facto format, which is not recognized by Microsoft Excel. Generating the Excel format can be supported by Siebel Professional Services. Additional formats will be supported in future releases. Download functionality is available on all reports.



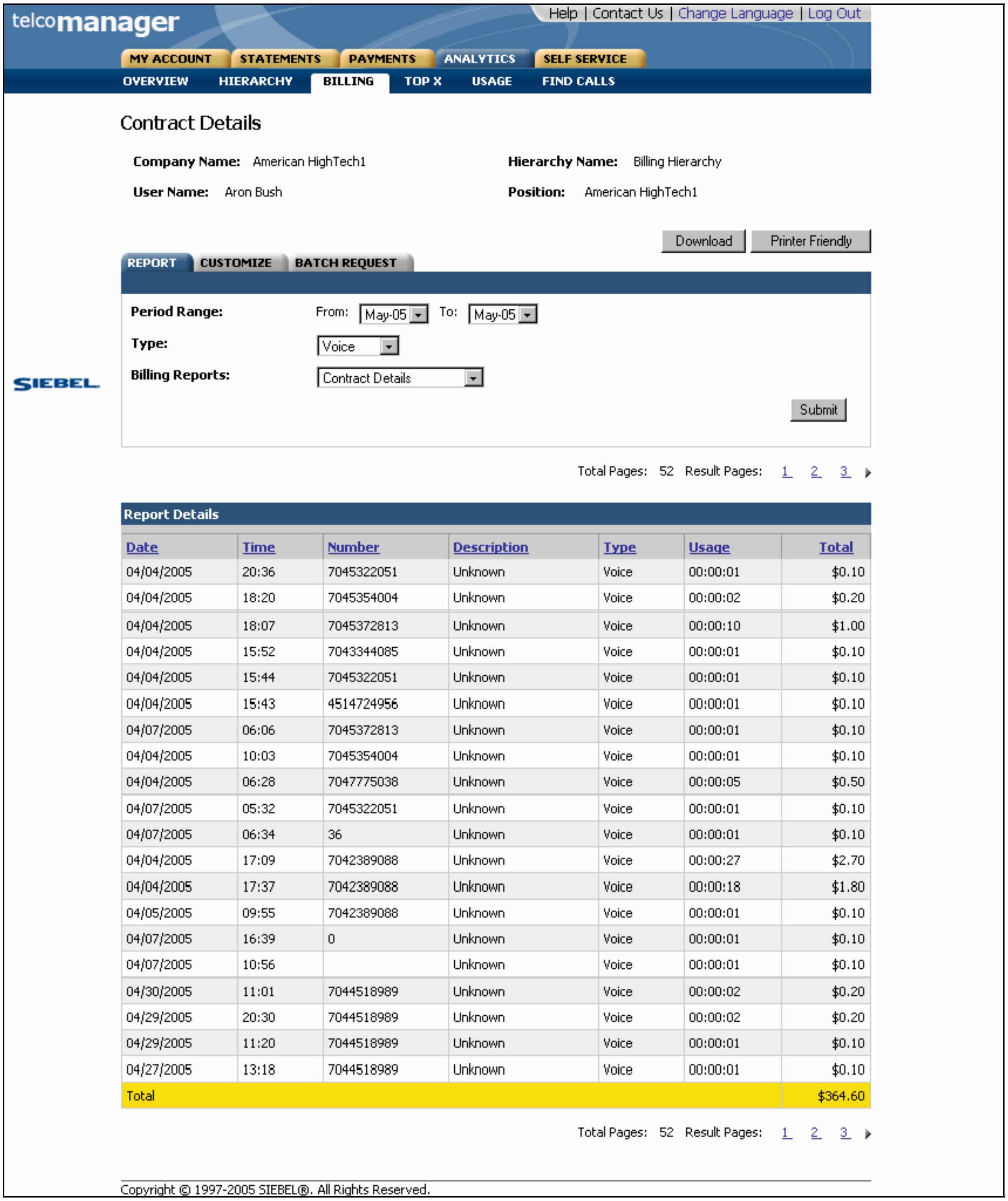
Browser Download Options



Browser Download Save Function

Paging with Caching

Name:	**Page through a very large data set in a table.**
Brief Description:	Large amounts of data are divided into page sets and each page set is presented on a single view.
Main Path:	**1.** User selects a page number. **2.** System returns the selected page of data. **3.** User selects single right arrow. **4.** System returns the next set of pages of data. **5.** User selects single left arrow. **6.** System returns the previous set of pages of data. **7.** Use Case Ends.
Alternate Paths:	None.
Exception Paths:	**[E1] User encounters a system error:** • System invokes Error Message use case.
Business Rules:	**1.** For a data set that is divided into two or more pages, the page must display the total number of pages, e.g. 52, and the page numbers for the pages in the current cached set, e.g. 1, 2, 3. If the data set results in multiple sets, the right arrow and left arrow navigation is shown. **2.** Report Total line is always displayed at the bottom of the table on each page and is the total for the entire report (not just for the displayed page or group of cached pages). **3.** The number of lines displayed on each page is configurable and will be set initially to 20. **4.** The number of pages in each cached set of pages is configurable and will be set initially to 3.
Notes:	None

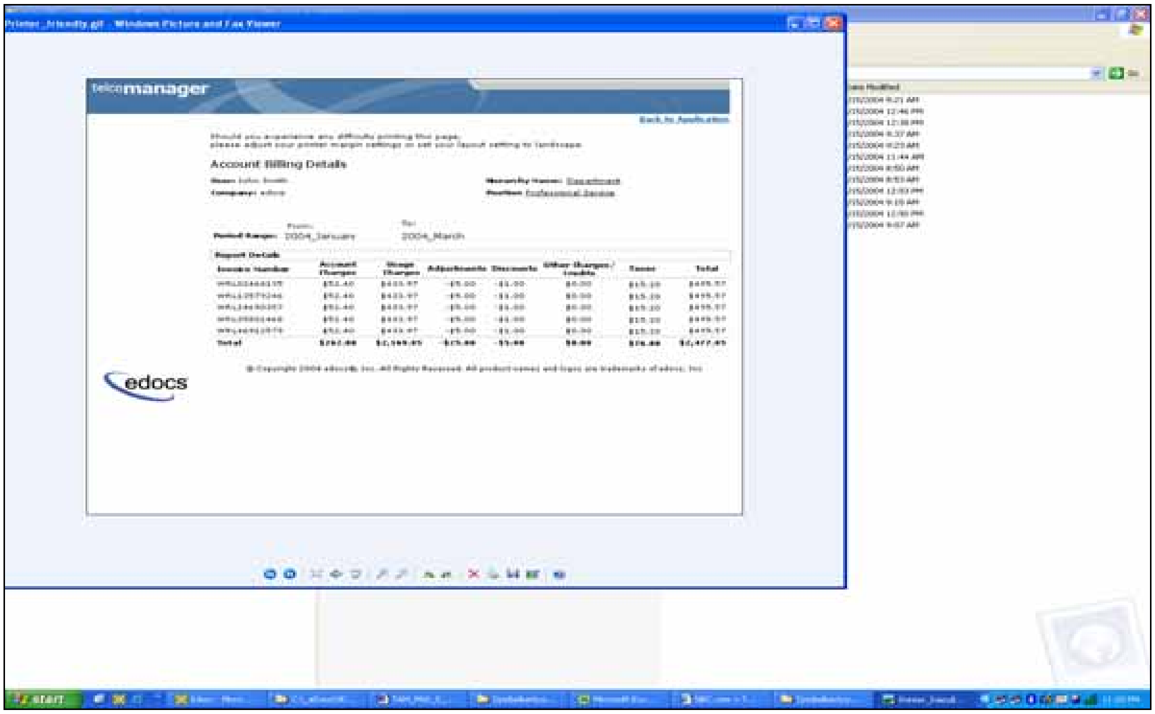


Date	Time	Number	Description	Type	Usage	Total
04/04/2005	20:36	7045322051	Unknown	Voice	00:00:01	$0.10
04/04/2005	18:20	7045354004	Unknown	Voice	00:00:02	$0.20
04/04/2005	18:07	7045372813	Unknown	Voice	00:00:10	$1.00
04/04/2005	15:52	7043344085	Unknown	Voice	00:00:01	$0.10
04/04/2005	15:44	7045322051	Unknown	Voice	00:00:01	$0.10
04/04/2005	15:43	4514724956	Unknown	Voice	00:00:01	$0.10
04/07/2005	06:06	7045372813	Unknown	Voice	00:00:01	$0.10
04/04/2005	10:03	7045354004	Unknown	Voice	00:00:01	$0.10
04/04/2005	06:28	7047775038	Unknown	Voice	00:00:05	$0.50
04/07/2005	05:32	7045322051	Unknown	Voice	00:00:01	$0.10
04/07/2005	06:34	36	Unknown	Voice	00:00:01	$0.10
04/04/2005	17:09	7042389088	Unknown	Voice	00:00:27	$2.70
04/04/2005	17:37	7042389088	Unknown	Voice	00:00:18	$1.80
04/05/2005	09:55	7042389088	Unknown	Voice	00:00:01	$0.10
04/07/2005	16:39	0	Unknown	Voice	00:00:01	$0.10
04/07/2005	10:56		Unknown	Voice	00:00:01	$0.10
04/30/2005	11:01	7044518989	Unknown	Voice	00:00:02	$0.20
04/29/2005	20:30	7044518989	Unknown	Voice	00:00:02	$0.20
04/29/2005	11:20	7044518989	Unknown	Voice	00:00:01	$0.10
04/27/2005	13:18	7044518989	Unknown	Voice	00:00:01	$0.10
Total						$364.60

Paging with Caching Function

Printer-Friendly Version

Name:	**Printer-Friendly Version**
Brief Description:	A version of the page that is printer-friendly is generated.
Entry Points	**1.** Any Billing or Top X Reports **2.** Find Calls
Query Parameters	None
Report Content	Fields Fields for the report where printer-friendly is invoked
Chart	Report specific
Main Path:	**1.** User selects Printer-Friendly action in the application. **2.** System redisplays the report as follows: Without HTML header or navigational elements except for Back to Application action on the top right hand corner. Below the Back to Application link, the following text is added: "If you experience any difficulty printing this page, please adjust your printer margin settings or set your layout setting to landscape. " Period Range, Hierarchy Name, Hierarchy Position, and Report Details are to be included in the printer-friendly version. **3.** User selects **File>Print** to print the report. **4.** User browser displays a dialog box containing printing options. **5.** User selects the Print action. **6.** System prints the report without Back to Application action. **7.** User selects the Back to Application action on the top. **8.** System displays the report with HTML header and navigational elements. **9.** Use Case Ends.
Alternate Paths:	None
Exception Paths:	**[E1] User encounters a system error:** System invokes Error Message use case.
Business Rules:	**[B1]** If the data set is large, which causes paging to be enabled on the HTML view, the printer-friendly version displays the entire data set without paging. **[B2]** When printing a printer-friendly page, the system removes the Back to Application action on the top right hand corner. **[B3]** When a user sorts a page and then selects the printer-friendly action, the printer-friendly version returned is sorted.
Notes:	



Printer-Friendly Version

Reset

Name:	**Reset**
Brief Description:	Describes the navigational experience when a Reset action is selected.
Main Path:	User selects a Reset action. System clears any data or selections made by the User. Use Case Ends.
Alternate Paths:	None
Exception Paths:	**[E1] User encounters a system error:** 1. System invokes Error Message use case.
Business Rules:	None

Sort Data in a Table

Name:	**Sort data in a table**
Brief Description:	User sorts the data in a specific table.
Main Path:	**1.** User selects a sorting link (a column header that supports sorting). **2.** System sorts the data in the table by the selected column in ascending order. **3.** User selects the same sorting link. **4.** System sorts the data in the table by the selected column in descending order. **5.** User selects a different sorting link. **6.** System sorts the data in the table by the newly selected column in ascending order. **7.** Use Case Ends.
Alternate Paths:	None
Exception Paths:	**[E1] User encounters a system error:** • System iinvokes Error Message use case.
Business Rules:	**[B1]** If the data set is large, which causes paging to be enabled, the sort occurs over the entire data set. **[B2]** When a column on the second page or beyond of a report with multiple pages is sorted, the sorted report returned will always be on the first page, regardless of what page the sorting was invoked on by the user.
Notes:	All tables that display details have ability to sort on column headings.

Submit

Name:	**Submit**
Brief Description:	Describes the navigational experience when a Submit action is selected.
Main Path:	**1.** User selects a Submit action. **2.** System executes the desired action. **3.** System clears any data or selections made by the User. **4.** Use Case Ends.
Alternate Paths:	None
Exception Paths:	**[E2] User encounters a system error:** 1. System invokes Error Message use case.
Business Rules:	None

4 Hierarchy Use Cases

General Hierarchy Management

Manage Interface

Name:	**Manage Interface**
Brief Description:	Describes the user interface for managing hierarchy and behavior of associated actions.
Actors:	CSR, Admin, Manager
Entry Points	**1.** My Account Tab: Hierarchy Sub-Tab **2.** Manage Tab
Form Elements:	<u>Top Pane: Hierarchy Search Criteria</u> If there is no user specified default hierarchy type and hierarchy name, the system uses the first billing hierarchy in the hit list as the default 1. Hierarchy Type [Required: Default: Current Context or user's Default Hierarchy for start of session – if no default is specified then the dropdown is populated with 'Billing'] Dropdown Options: a. Billing [DEFAULT] b. Organization 2. Hierarchy Name [Required: Default: Current Context or user's Default Hierarchy for start of session– if no default is specified then the dropdown is populated with 'Select'] a. Dropdown populated with hierarchy names stored in the system 3. Period [Required: Default: Current Context Default: Current Month a. Dropdown Options: [monthly, up to 12 periods, configurable for more or fewer periods] b. Unpublished is displayed in the period dropdown for unpublished hierarchies. 4. Element: [Optional: Default: Select] Types of elements that can be assigned to the hierarchy. Dropdown Options: a. When Billing Hierarchy Type is selected: Accounts, Services, Users, Company, Group. b. When Organization Type is selected: Groups (including optional groups), Services, and Users

5. Status: [Optional: Default: Select – Required if Element type is specified]
   Status of elements that can be assigned to the hierarchy.
   Dropdown Options:
   a. When Groups Element is selected: Assigned only
   b. When Users Element is selected: Assigned, Unassigned, Authorized, and Unauthorized
   c. When Accounts/Services Element are selected: Assigned, Unassigned
6. Attribute: [Optional: Default: Select]
   Selections in this dropdown will be repopulated dependent upon what attributes are available to Element chosen.
   Dropdown Options:
   a. When Element is specified the list of Attributes is updated to display all attributes both standard and custom to be used in filtering the hierarchy search values
7. Keyword: [Optional: Default: Blank]
   Freeform text field that enable further filtering of search results. The list is queried with a “starts with” action.
8. Search Radio buttons: [Default: From Current Location]
   Specifies the scope of the search, entire hierarchy or from the current position and below. Options:
   a. Entire Hierarchy
   b. From Current Location
9. Instructional text: “Please select hierarchy criteria”

<u>Bottom Left Pane</u>

1. Hierarchy Info
   a. Modified Date: [the date last modified]
   b. Modified By: [the username that made the last modification]
   c. Position: [displays current position link focus] Set Position Button.
2. New [Default: Select]
   a. Dropdown Options: [Default: Group]
      i. [OPTIONAL; Cost Center. Others as required by the customer and defined in OMF and defined for use in the current hierarchy type. Each new group type will also be available in the Elements search criteria dropdown list.

<u>Bottom Right Pane: Details Sub-Tab</u>
* All fields are pre-populated with previously stored information.

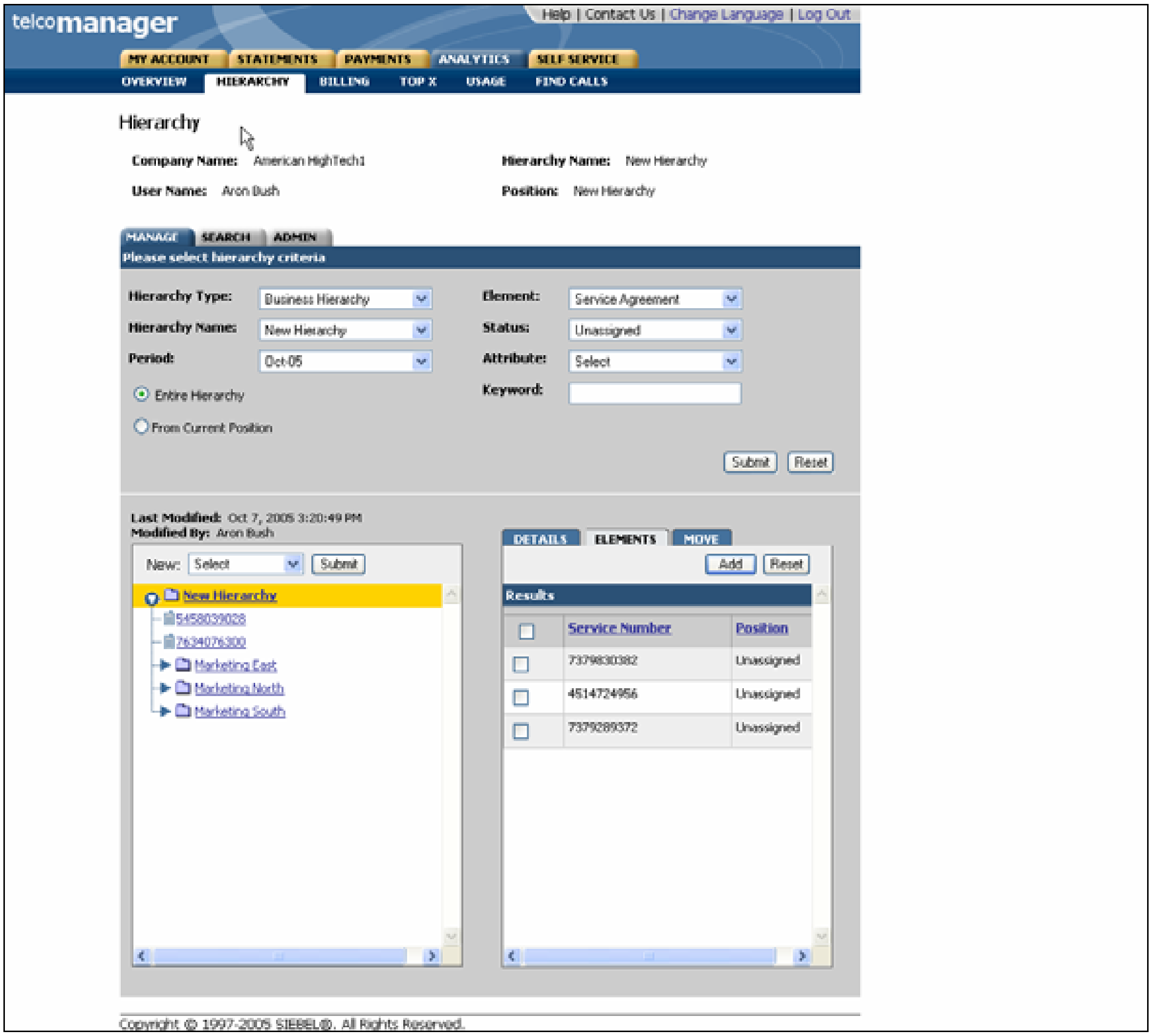
1. List of Attributes and values that correspond to the selected link target object. The attributes contain both default and custom fields.
2. The Attribute Labels included in the list contain both standard and custom attributes
   a. If the labels for the attributes are fixed then the default attribute label will be ‘Custom 1’, ‘Custom 2’, etc.

	b. If the labels are customizable then the customer specified label will be displayed in place of the default labels. 3. Attribute values may be displayed as [The editing method is configurable on an individual link target object and attribute level]: a. Text – the value is fixed and may not be changed by the user b. Text entry box – the value may be changed by the user by erasing and entering a new value or editing the current value. Submit action writes the changes to the database. c. Dropdown list – the value may only contain predefined values that are displayed as a dropdown list <u>Bottom Right Pane: Elements Sub-Tab</u> 1. Checkbox [header row] Selects all rows 2. Checkbox [row value] Selects the individual row 3. Results [number] Number of search results returned <u>Bottom Right Pane: Move Sub-Tab</u> 1. Checkbox [node] Selects all rows 2. Checkbox [child branch] Selects all the nodes from that node to the bottom the individual branch
Report Content:	<u>Results Fields Element Sub-tab</u> **1.** Name (Display name of element type) **2.** Position (The name of the hierarchy node one level above)
Main Path:	**1.** User selects Manage tab. **2.** System returns a page displaying: a. Top Pane: current context or defaults. b. Bottom Left Pane: Graphical view of current hierarchy tree opened to current position context if applicable and expanded to show one level below the current position. Otherwise blank with a message prompting the user to specify a hierarchy and select Submit action to display a hierarchy c. Bottom Right Pane: Details tab containing the node details for current hierarchy context. Otherwise blank with a message prompting the user to specify a hierarchy and select the Submit action to display details **3.** User specifies search criteria and selects the Submit action. **4.** System checks to make sure that the required fields are specified as a search parameter. **5.** System validation passes. **6.** System determines query parameters based upon the specified hierarchy search criteria and redisplays page as follows:

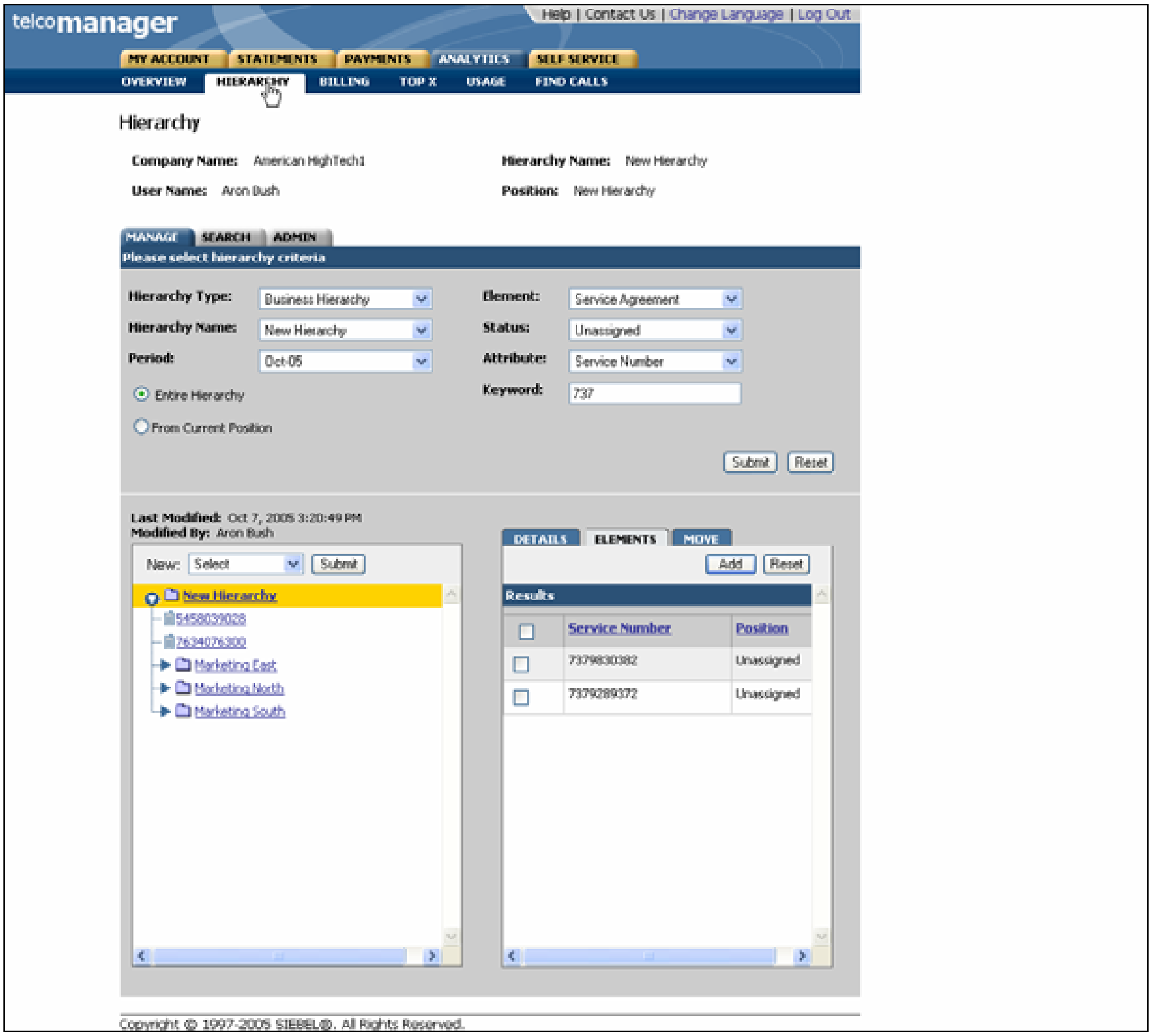
	a. Top Pane: context updated by specified search criteria. b. Bottom Left Pane: Graphical view of current hierarchy tree opened to current position context. c. Bottom Right Pane: Elements tab containing the fields for specified element and status with the total count for the search result set. (For field information, see Report Content section of this use case.) **7.** Use Case Ends.
Alternate Paths:	User enters search parameters for Attribute, and/or Keyword and selects the Submit action to refine search criteria and filter down the results: System searches the hierarchy tree returning a list of all nodes in the Elements sub-tab on the lower right pane that matches the search criteria showing the fields for specified element and status. User selects link of the display name in the Elements sub-tab: System returns the user to the Details sub-tab displaying attributes and values for the selected link target or user. User selects link of a position in the Elements sub-tab: System highlights the position of the selected item in the graphical view of the hierarchy and sets the node as the current hierarchy focus. If the position is Unassigned and the Display Unassigned in Hierarchy checkbox is not checked, the “Unassigned” position is not linkable. User expands and collapses the hierarchy branch by selecting on the arrow in the graphical view of the current hierarchy: System invokes **Collapse and Expand Hierarchy** use case. User selects New Group and the Submit action: System invokes **Create Group** use case. User selects Details sub tab: System returns the user to the Details sub-tab displaying attributes for the link target or user that is the current hierarchy focus User selects Delete or Remove action in the Details or Element sub-tabs: System invokes **Remove Element** use case. User modifies attributes in the Details sub-tab: System invokes **Modify Element Attributes** use case. User selects Add action in the Element sub -tab: System invokes **Add Element** use case. User selects column header links in the Element sub-tab: System invokes **Sorting** use case. User selects Move sub-tab: System invokes **Move Group** use case. User selects Reset action: System invokes **Reset** use case.
Exception Paths:	**User encounters a validation error:** System invokes Validation Error Message use case.

	User encounters a system error: System invokes Error Message use case.

<table>
<tr><td>Business Rules:</td><td>
General
The current Position including the Hierarchy Type, Hierarchy Name, Period, and Position are carried throughout the session and is accessible by other applications after the user selects the set position action. The Position is automatically updated each time a new position is selected by the user.
Hierarchy Access Control: Users can only view hierarchies to which they have been assigned and positions at or below the positions to which they have been assigned. User can not view hierarchy nodes to which they have not been granted view access privileges
Any unassigned users, accounts, and services are displayed as if they are assigned to a group called “Unassigned” linked to the root node of the hierarchy. Unassigned Users do not get displayed as linked into the “Unassigned” folder.
If user enters the Manage Tab with the hierarchy as the current position, the graphical view of the hierarchy contains the hierarchy as the top node and its nodes one level below it.
<u>Bottom Left Pane: Graphical View of Hierarchy</u>
If the hierarchy is modified, the fields “Last Modified” and “Modified By” are updated.
If a position is selected, the position is highlighted and set to the current hierarchy focus for actions. The bottom right pane is updated to show that element’s details
If the expand or collapse icon is selected, the position is highlighted and set to the current hierarchy focus and the group expands or collapses opposite action to the status when selected
If a node is empty, there will be no expand or collapse arrow next to the node.
<u>Bottom Right Pane: Details/Element/Move Sub-Tabs</u>
If user selects the checkbox in the row of the column headers of the search results, all items of the search results become selected.
If user selects the checkbox next to a node in the Move sub-tab, all elements below it are selected.
If Element is unassigned, it can be added to the hierarchy.
If element is assigned, it can be removed from the hierarchy.
• If Element is a Group type [created using the create function in hierarchy] the Delete action is available. For all other elements, Remove action is available since billing elements may not be deleted from the system only removed from the current organizational hierarchy.
If text field box exists (or a dropdown presented), the attribute is editable otherwise the field is fixed and can only be update through billing data or attribute data load files.
[E2] Results field for the search criteria specified is updated according to action performed.
</td></tr>
<tr><td>Notes:</td><td>A Cost Center, Location, and Region are optional link-target types similar to the default Group element.</td></tr>
</table>



Manage User Interface Step 1: Specify Hierarchy Search Parameters

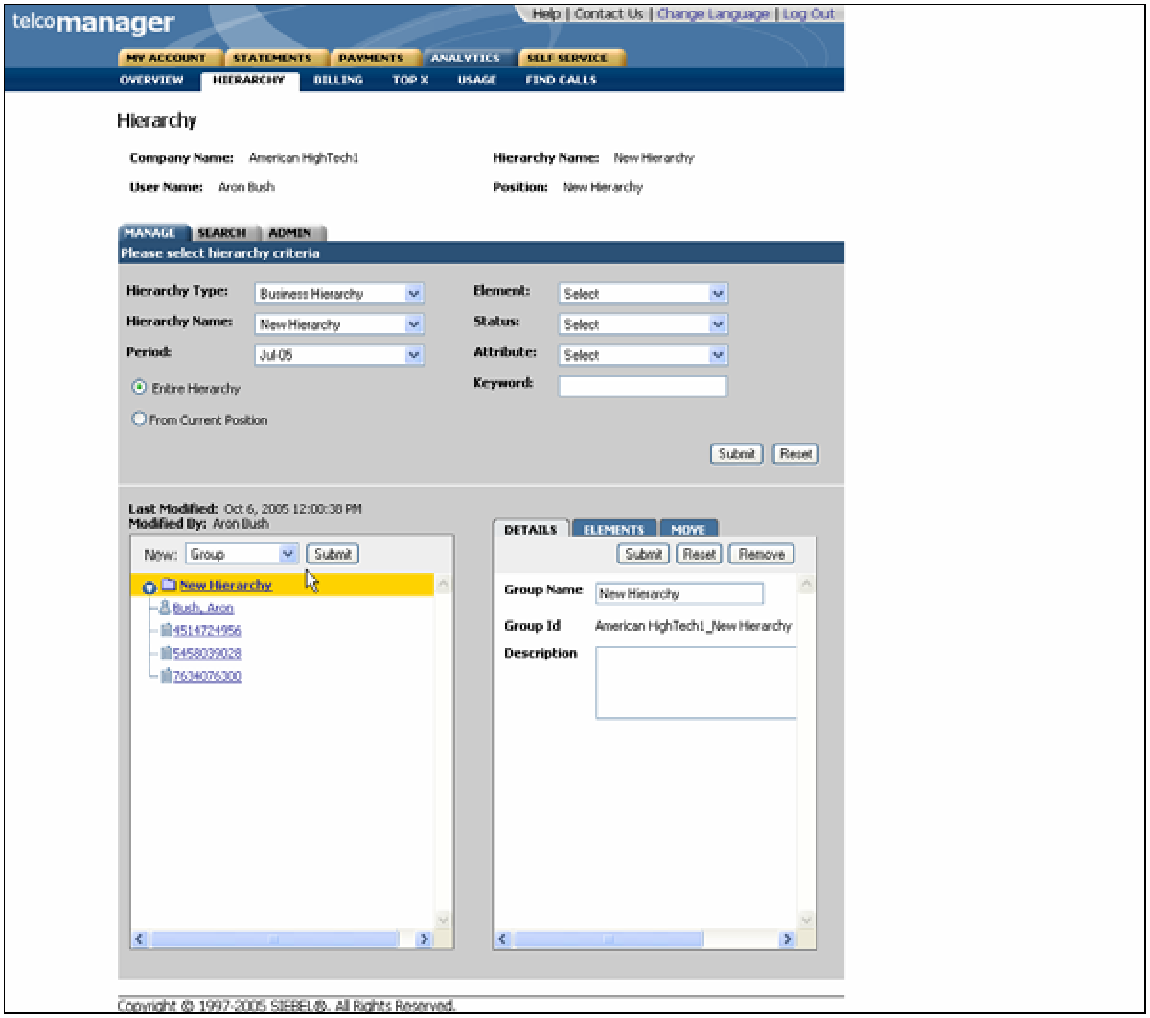


Manage User Interface Step 2: Specify Filters

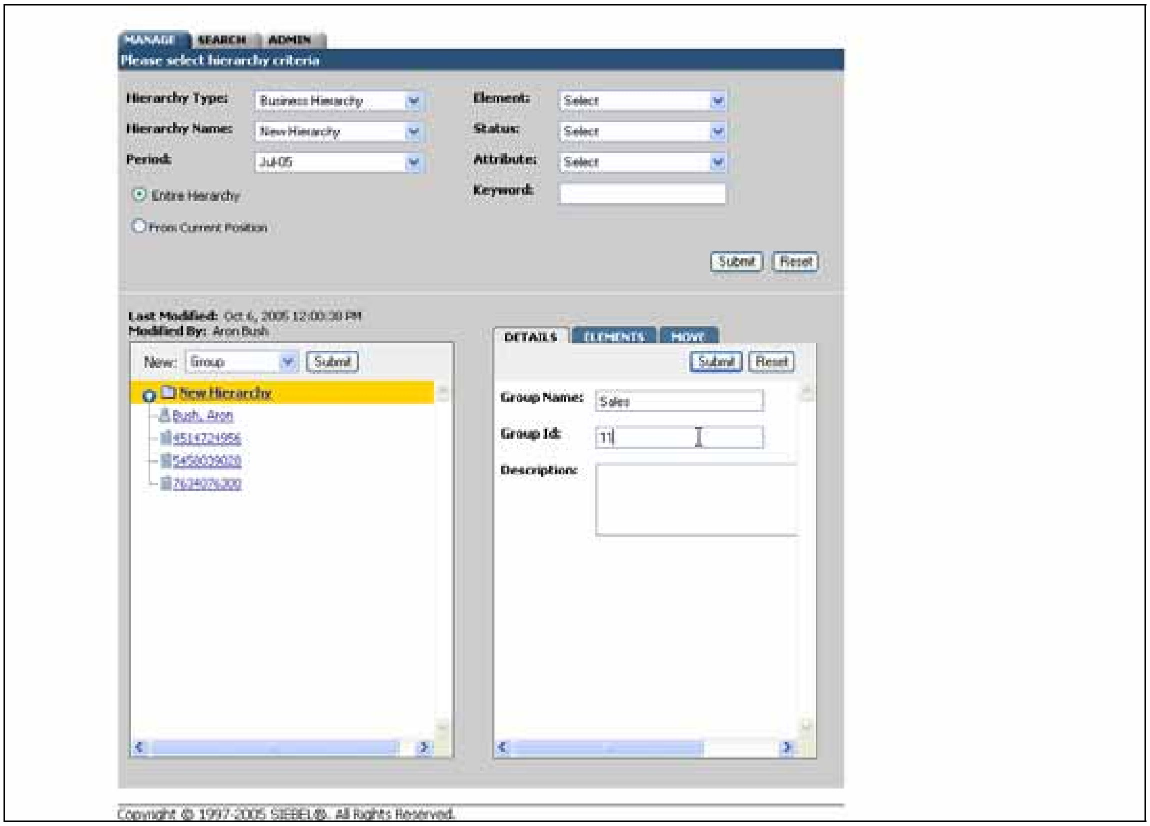
Create Group

Name:	**Create Group**
Brief Description:	Describes the mechanism whereby Groups are created.
Actors:	CSR, Admin, Manager
Entry Points	**1.** Manage Tab
Form Elements:	**<u>Hierarchy Search Criteria</u>** If there is no user specified default hierarchy type and hierarchy name, the system uses the first billing hierarchy in the hit list as the default 1. Hierarchy Type 2. Hierarchy Name 3. Period 4. Element 5. Status 6. Attribute 7. Filter [future] 8. Keyword 9. Radio buttons: entire hierarchy or only the current position down. 10. Instructional text: “Please select hierarchy criteria” *For more information regarding fields and their defaults, refer to Manage User Interface Use Case. **<u>Create New Group</u>** 1. Name [Required] 2. Description [Optional]
Main Path:	**1.** User selects New Group and submits action. **2.** System page displaying: a. Top Pane: Hierarchy Search Criteria Form with current search criteria context. b. Bottom Left Pane: Graphical view of current hierarchy as the top node. c. Bottom Right Pane: Details sub-tab with the Create New Group Form. **3.** User inputs data to create the group and selects the Submit action. The group id has to be unique. **4.** System validation passes. **5.** System redisplays the page as follows: a. Top Pane: Hierarchy Search Criteria Form with current search criteria context.

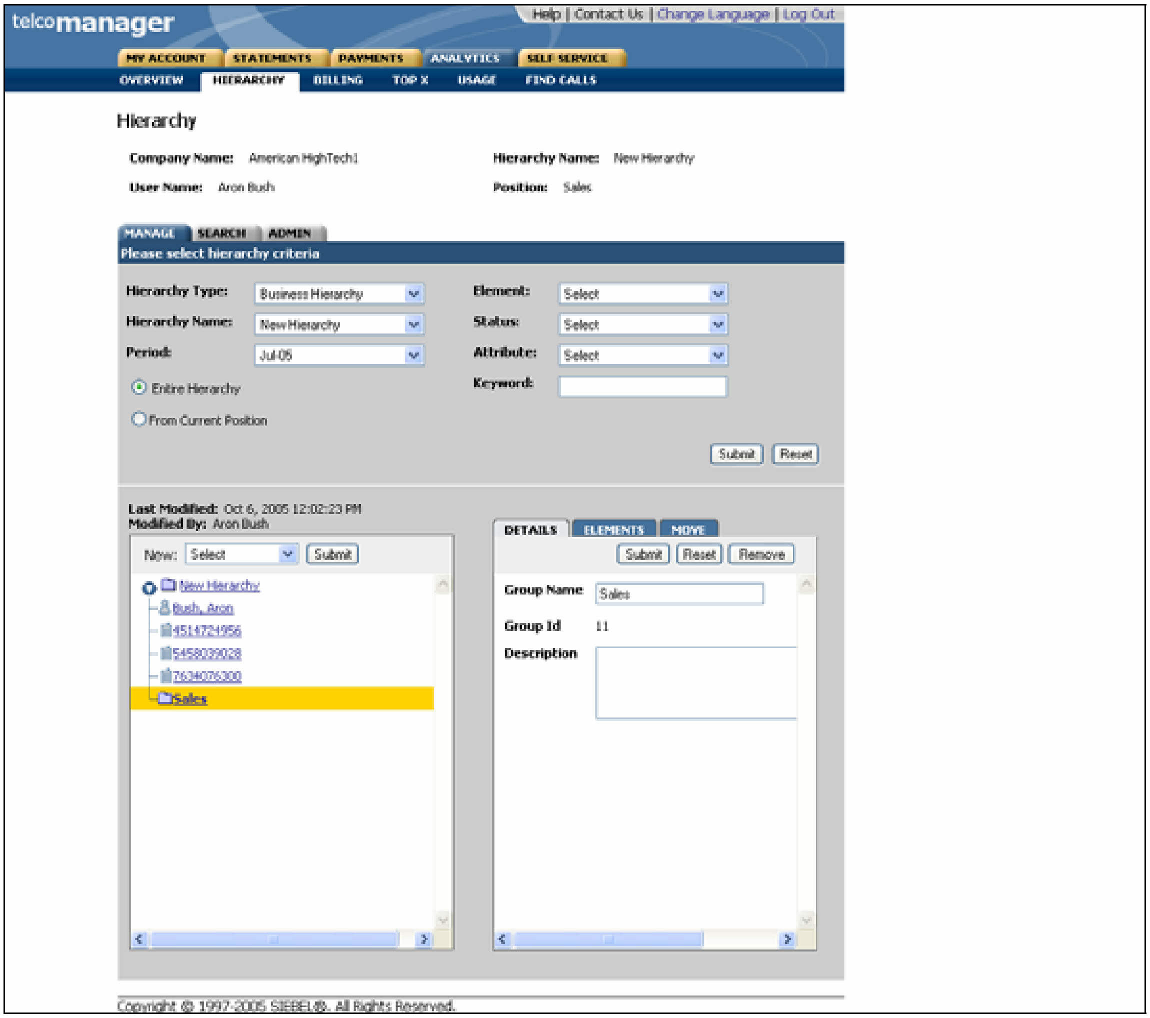
	b. Bottom Left Pane: Graphical view of the current hierarchy with the new Group created as a node under the hierarchy. c. Bottom Right Pane: Details sub-tab with the attributes for the newly created Group. **6.** Use case ends.
Alternate Paths:	User modifies Group details in the Details sub-tab and selects the Submit action: System invokes **Modify Element Attributes** use case. User selects Reset action: System invokes **Reset** use case. User specifies a search criteria before performing the Submit action for the creation of the new group: System returns the result for the specified search criteria.
Exception Paths:	**User encounters a validation error:** System invokes Validation Error Message use case. **User encounters a system error:** System invokes Error Message use case. **User selects Cancel action:** System invokes Cancel use case.
Business Rules:	None
Notes:	A Cost Center, Location, and Region are optional link-target types similar to the default Group element.



Create Group Step 1: Select New Group



Create Group Step 2: Specify Parameters



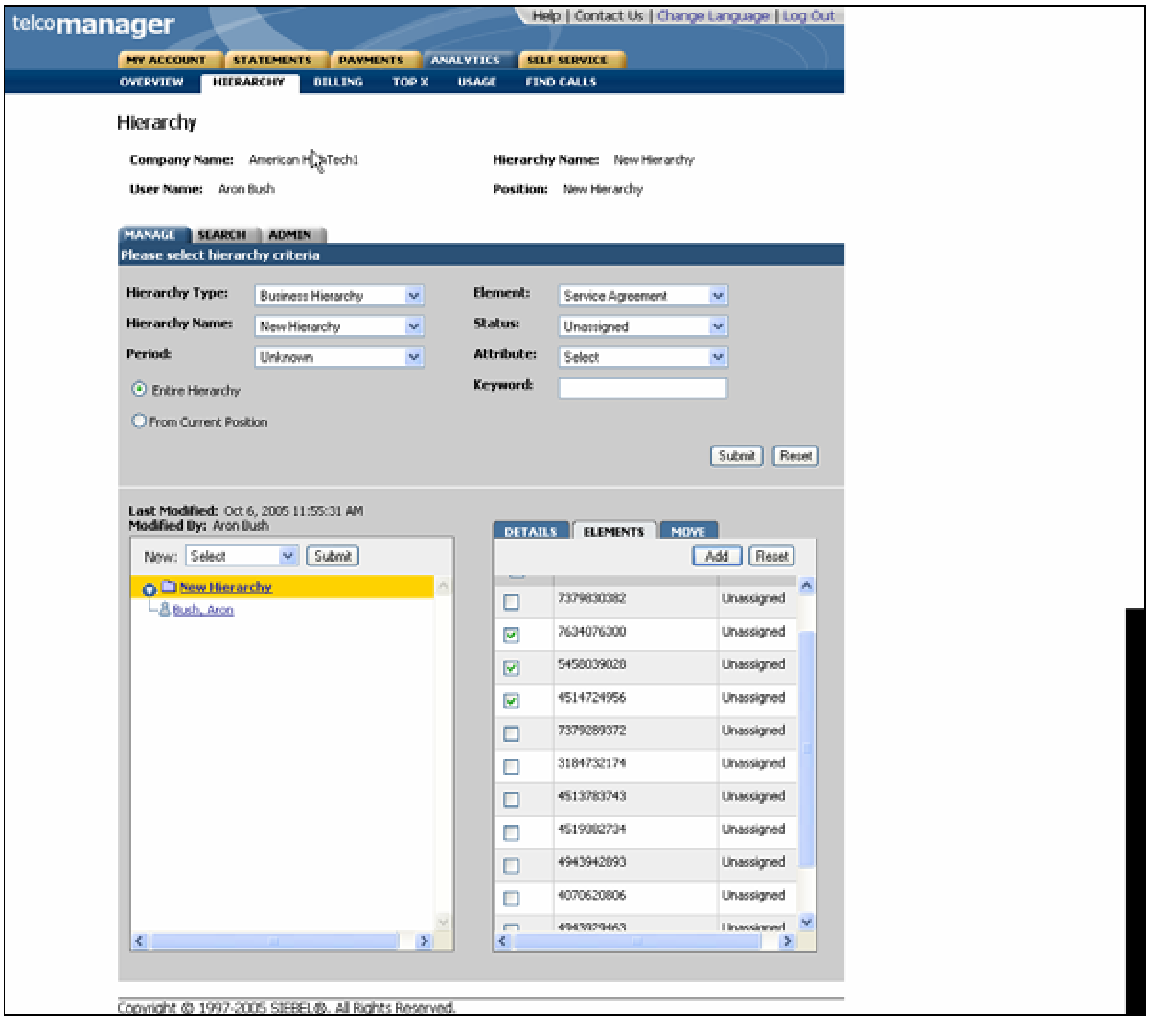
Create Group Step 3: Group Created

Add Element

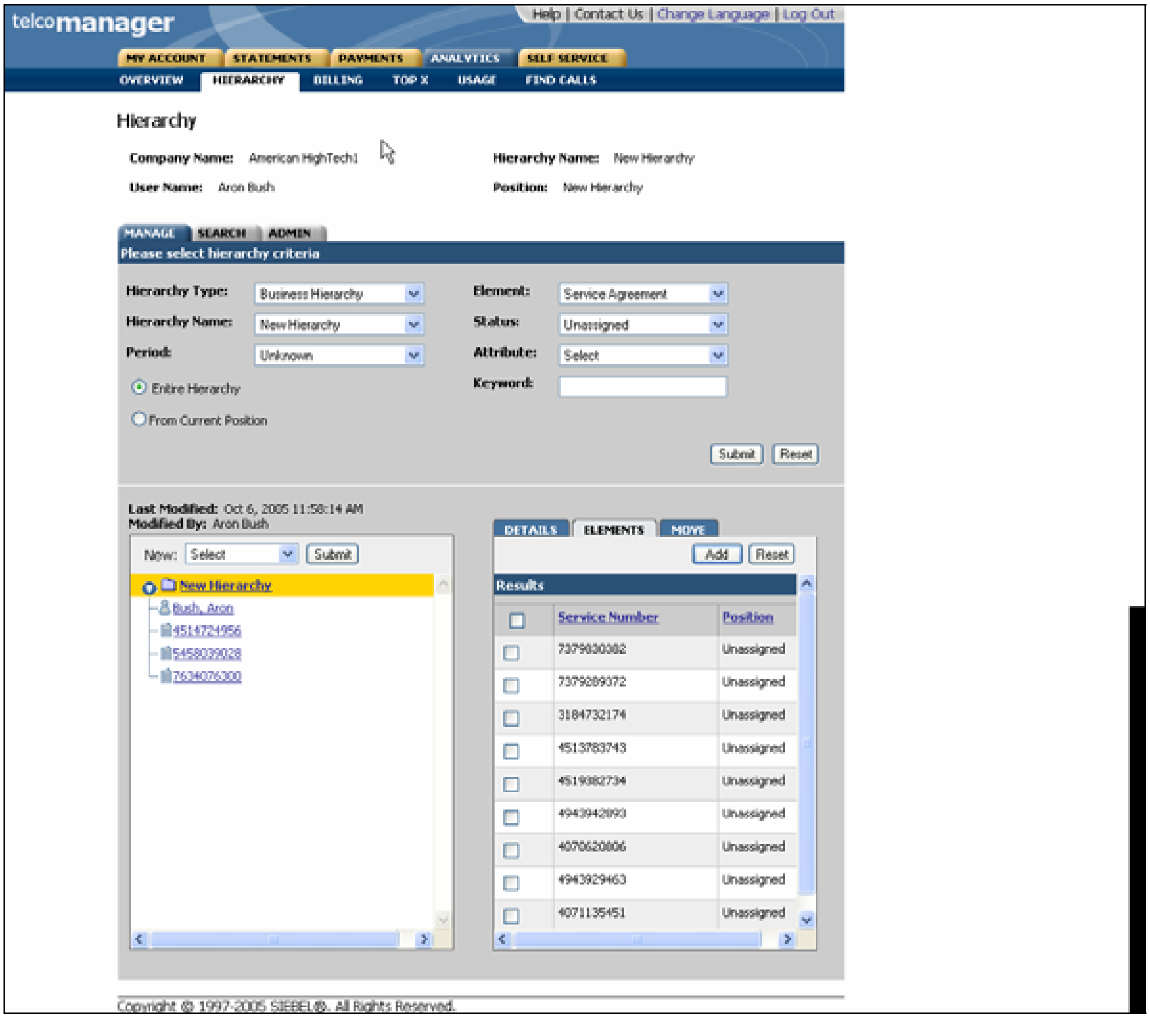
Name:	**Add Element**
Brief Description:	Describes the mechanism of adding users, accounts, and services.
Actors:	Admin, CSR, Manager
Entry Points	Manage Tab: Element Sub-Tab
Form Elements:	Hierarchy Search Criteria If there is no user specified default hierarchy type and hierarchy name, the system uses the first billing hierarchy in the hit list as the default 1. Hierarchy Type 2. Hierarchy Name 3. Period 4. Element Types of elements that can be assigned to the hierarchy. Dropdown Options: [[When Billing Hierarchy Type is selected: Users] [When Organization Type is selected: Users and Services] 5. Status Status of elements that can be assigned to the hierarchy. Dropdown Options: [When Users Element is selected: Assigned, Unassigned, All] [When Accounts/Services Element are selected: Assigned, Unassigned] 6. Attribute 7. Keyword 8. Radio buttons: entire hierarchy or only the current position down. 9. Instructional text: “Please select hierarchy criteria” *For more information regarding fields and their defaults, refer to Manage User Interface Use Case. Bottom Right Pane: Elements Sub-Tab 1. Checkbox [header row] Selects all rows 2. Checkbox [row value] Selects the individual row 3. Results [number] Number of search results returned
Report Content:	Results For Element Sub-tab **1.** Name (Display name of element type) **2.** Position (The name of the hierarchy node one level above)
Main Path:	**1.** User navigates to the position in the hierarchy where the desired object is to be added to specify the focus for the action **2.** User specifies a type of Element [A1]

	3. User selects the "Unassigned" status in the Hierarchy Search Criteria **4.** User selects Submit action. **5.** System returns a list of Elements that are not assigned to any node within the current hierarchy in the Element sub-tab displaying the Name and Position in hierarchy. **6.** User selects the checkbox or checkboxes next to desired item or items to be added to the hierarchy. **7.** User selects Add action **8.** System adds selected element to the hierarchy below the current focus. **9.** System redisplays page showing: a. Top Pane: Hierarchy Search Criteria Form with current search criteria context. b. Bottom Left Pane: Graphical view of the current hierarchy with the new elements added to the hierarchy. c. Bottom Right Pane: Updated list of elements with the Elements added to the hierarchy removed from the list in the Element sub-tab and Number of Results field updated **10.** Use case ends.
Alternate Paths:	
Exception Paths:	**The number of results exceeds a threshold amount for the number of rows in the Elements window [Default = 1000]** System displays an error message "too many results – refine the search criteria and select submit to filter the list" **User encounters a validation error:** System invokes Validation Error Message use case. **User encounters a system error:** System invokes Error Message use case.
Business Rules:	The Add action assigns Elements into the current version of the hierarchy specified by the Hierarchy Period only. User can only add Users when a Billing Hierarchy Type is selected. User can only add Users and Service Agreements when an Organization Hierarchy Type is selected. User can only add Users and Companies when a Consolidation Hierarchy Type is selected. Companies, Accounts and Service agreements can only be added to the same hierarchy once. Users can be added to multiple locations within the same hierarchy and can only be added to the same node once. Element Display Name links to Details sub tab for the view. Element Position in hierarchy link highlights the position in the graphical view of the hierarchy and sets the current focus.

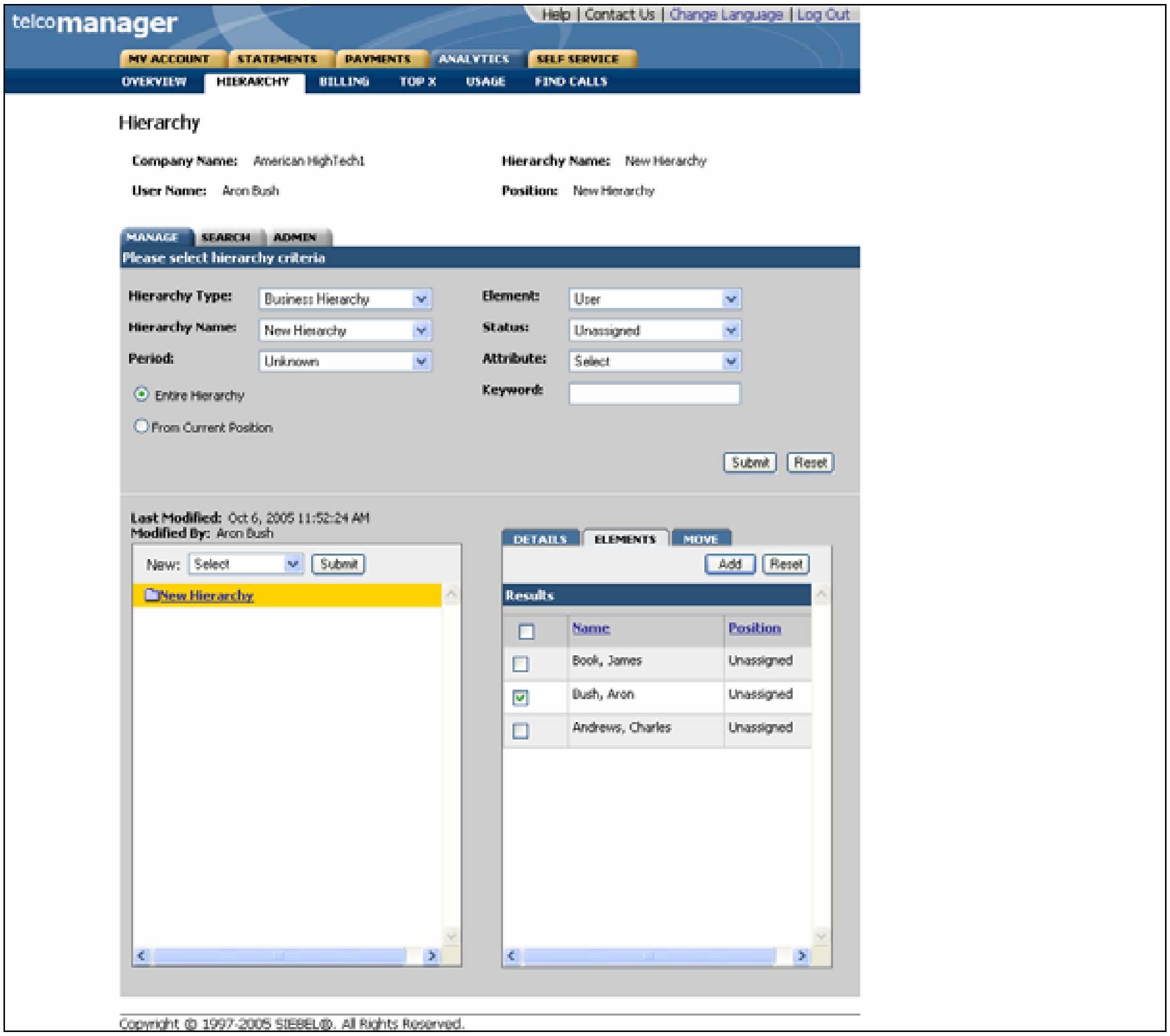
	When elements are assigned to the hierarchy, the fields “Last Modified” and “Modified By” are updated. The only option when Groups element is selected in the Hierarchy Search Criteria is “Assigned”. Groups are never unassigned. If user selects the radio button for “Entire Hierarchy”, the scope of the search is all the nodes in the hierarchy. If user selects the radio button for “From Current Position”, the scope of the search is relative to and limited by the nodes below the current position.



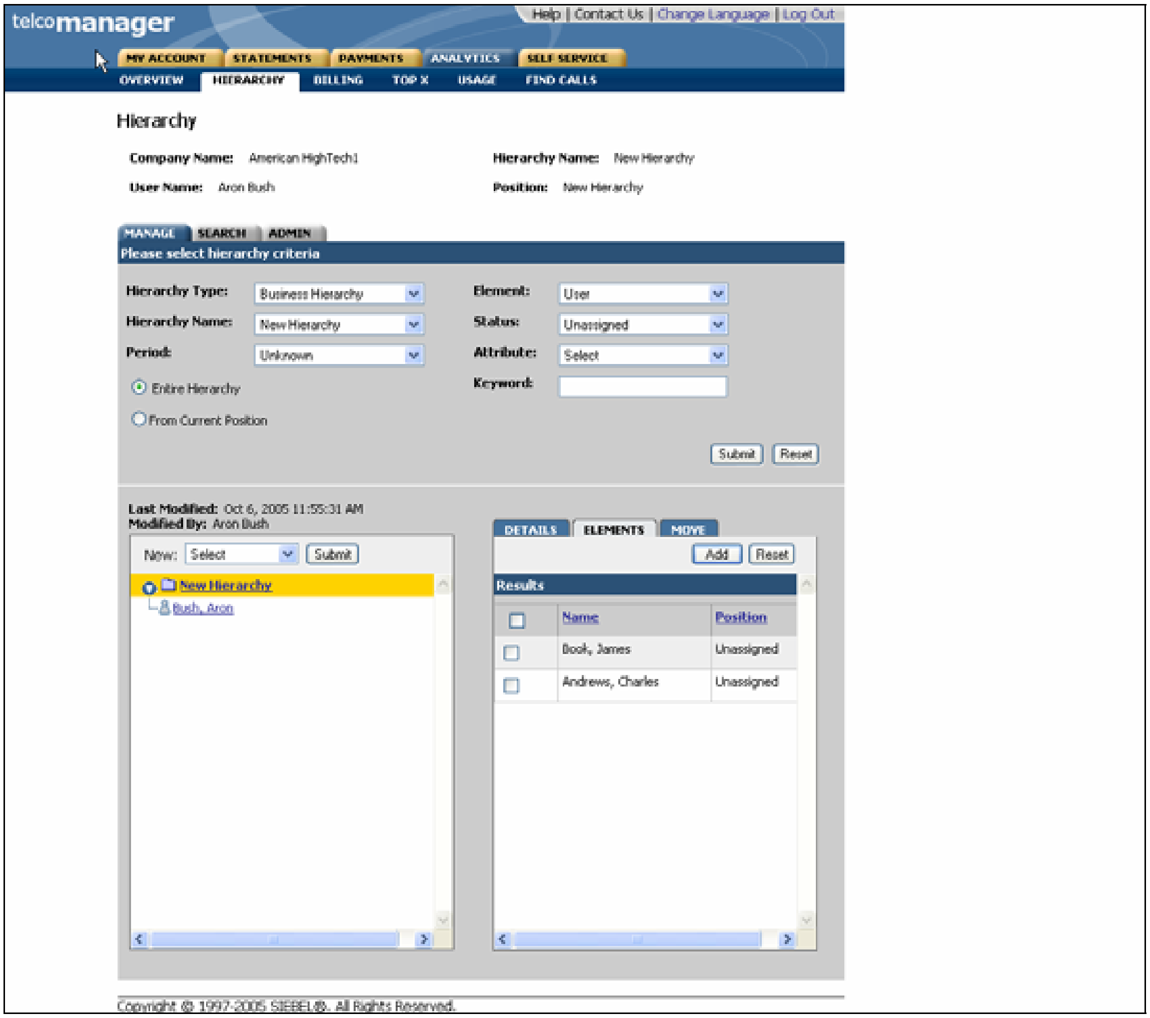
Add [Services] Element Step 1: Select Items to Add



Add [Services] Element Step 2: Added Services



Add [Unassigned Users] Elements Step 1: Select Items to Add



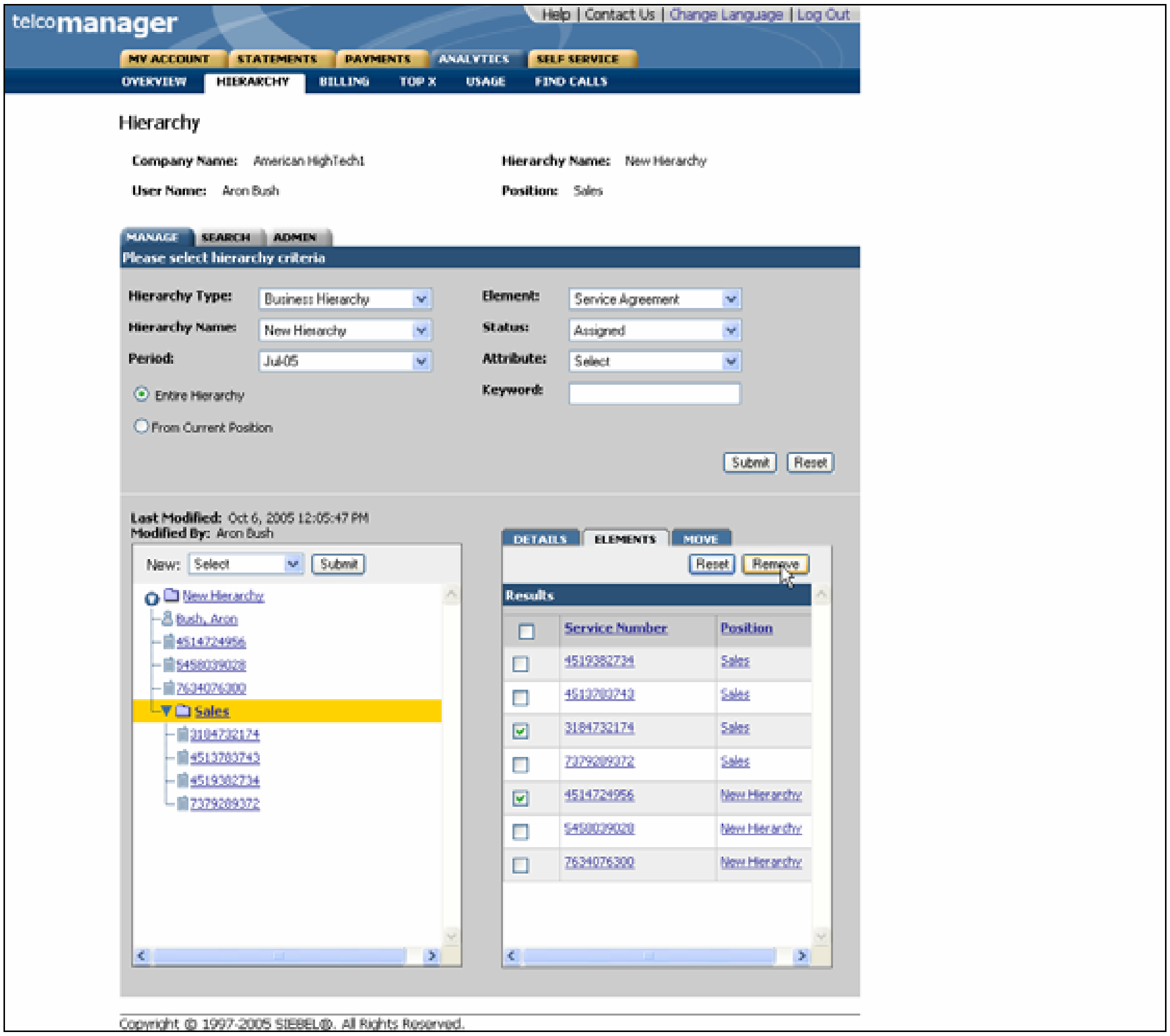
Add [Unassigned Users] Element Step 2: Added Unassigned Users

Remove (Delete) Element

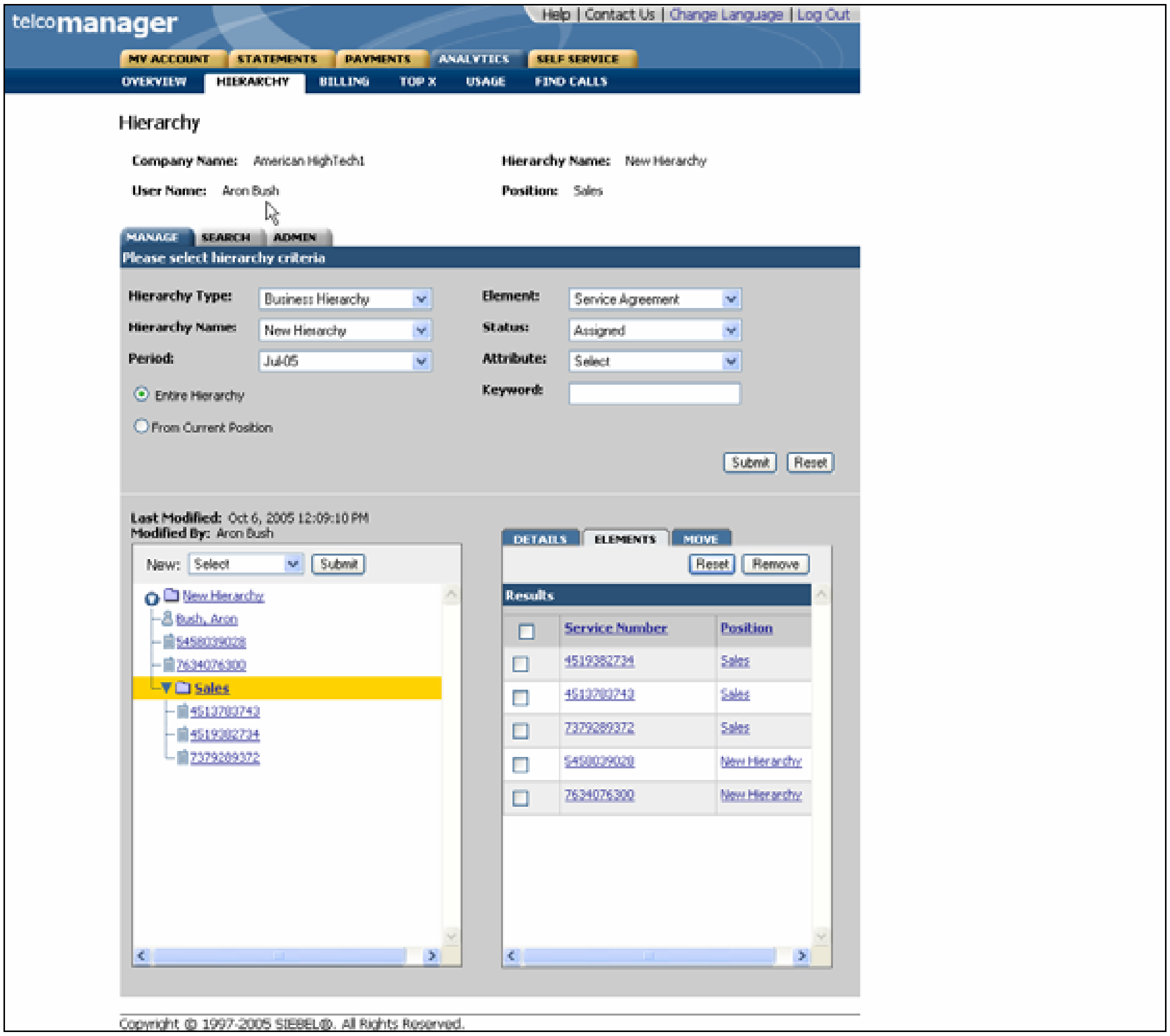
Name:	**Remove or Delete Element**
Brief Description:	Describes the mechanism of removing users, accounts, and services or deleting groups.
Actors:	Admin, CSR, Manager
Entry Points	**1.** Manage Tab: Element Sub-Tab **2.** Manage Tab: Details Sub-Tab
Form Elements:	Hierarchy Search Criteria If there is no user specified default hierarchy type and hierarchy name, the system uses the first billing hierarchy in the hit list as the default 1. Hierarchy Type 2. Hierarchy Name 3. Period 4. Element Types of elements that can be assigned to the hierarchy. Dropdown Options: [[When Billing Hierarchy Type is selected: Users] [When Organization Type is selected: Users and Services] [When Consolidation Type is selected: Groups, Users and Accounts] 5. Status Status of elements that can be assigned to the hierarchy. Dropdown Options: [When Groups Element is selected: Assigned] [When Users Element is selected: Assigned, Unassigned, Authorized, and Unauthorized [When Accounts/Services Element are selected: Assigned, Unassigned] 6. Attribute 7. Keyword 8. Radio buttons: entire hierarchy or only the current position down. 9. Instructional text: “Please select hierarchy criteria” *For more information regarding fields and their defaults, refer to Manage User Interface Use Case. Bottom Right Pane: Elements Sub-Tab 1. Checkbox [header row] Selects all rows 2. Checkbox [row value] Selects the individual row 3. Results [number] Number of search results returned
Report Content:	Results Fields For Element Groups Element Sub-tab **1.** Name (Display name of element type Groups) **2.** Position (The name of the hierarchy node one level above)

	<u>Results Fields For Element Accounts Element Sub-tab</u> Account No. (Display name of element type Accounts) **1.** Position (The name of the hierarchy node one level above) <u>Results Fields For Element Services Element Sub-tab</u> **1.** Number (Display name of element type Services) **2.** Position (The name of the hierarchy node one level above) <u>Results Fields For Element Users in Element Sub-tab</u> **1.** Name (Display name of element type User) **2.** Position (The name of the hierarchy node one level above)
Main Path:	**1.** User specifies a type of Element and “Assigned” status in the Hierarchy Search Criteria and selects Submit action. **2.** System returns Element sub-tab displaying: a. Top Pane: Hierarchy Search Criteria Form with current search criteria context. b. Bottom Left Pane: Graphical view of the current hierarchy and position. c. Bottom Right Pane: the Display Name and Position in hierarchy for the specified Element type and “Assigned” status. **3.** User selects the checkbox next to desired item to be removed from the hierarchy and selects Remove action. **4.** System displays the following confirmation message on the right pane: a. For all element types except Group: “Performing this operation will permanently remove the item(s)from this location in the hierarchy. The item(s) will be unassigned. Do you want to continue?” b. For Group element: “Performing this operation will permanently delete the group(s) and cannot be reversed. Items contained within the group will be unassigned. Do you want to continue?” c. User clicks submit **5.** System redisplays page showing: a. Top Pane: Hierarchy Search Criteria Form with current search criteria context. b. Bottom Left Pane: Graphical view of the current hierarchy with the elements removed from the hierarchy. After removal, the next element below is highlighted. If the element removed is the last one, the highlight jumps up to the next element. c. Bottom Right Pane: Updated list of elements with removed or deleted elements removed from the list in the Element sub-tab and Results field updated as elements are removed from the list. **6.** Use case ends.
Alternate Paths:	None.
Exception Paths:	**User encounters a validation error:** System invokes Validation Error Message use case.

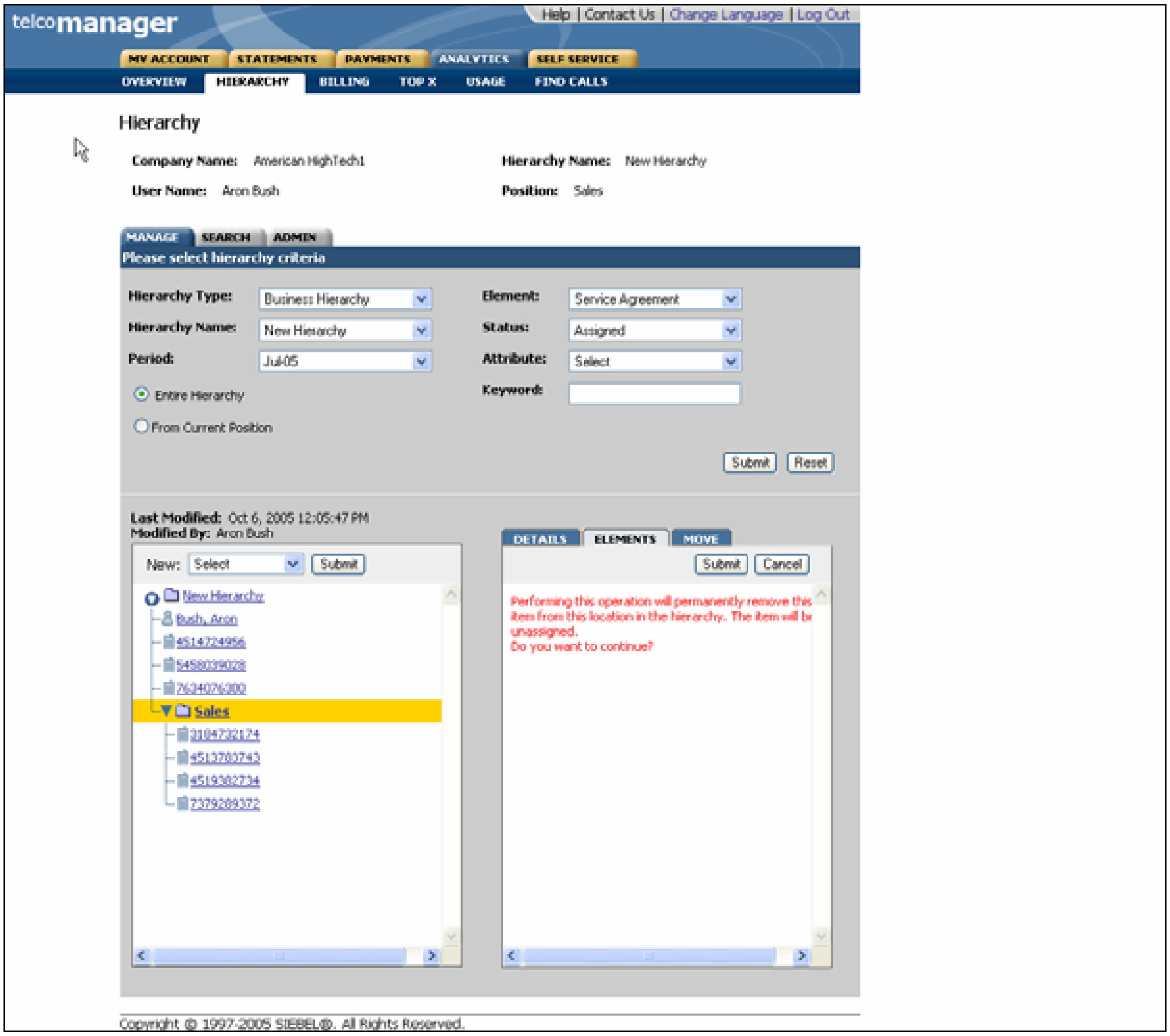
	User encounters a system error: System invokes Error Message use case.
Business Rules:	The Remove action and the Delete action applies to Elements in the current version of the hierarchy specified by the Hierarchy Period only Users assigned to removed group(s) are unassigned from group and will still appear elsewhere if assigned and will not be unassigned from accounts or services contained in the group. Accounts that are unassigned from a removed group are moved to unassigned status but maintain any user settings. Services that are unassigned from a removed group are moved to unassigned status but maintain any user settings. Element Display Name links to Details sub tab for the view. Position in hierarchy highlights the position in the graphical view of the hierarchy. Element dropdown toggles between the choices user (Billing) OR user and services (Organization) OR user and accounts (Consolidation) depending upon type of hierarchy selected. When elements are unassigned from the hierarchy, the fields “Last Modified” and “Modified By” are updated. If user selects the checkbox in the row of the column headers of the search results, all items of the search results become selected. Results field for the search criteria specified is updated according to action performed. The only option when Groups element is selected in the Hierarchy Search Criteria is “Assigned”. Groups are never unassigned. If user selects the radio button for “Entire Hierarchy”, the scope of the search is all the nodes in the hierarchy. If user selects the radio button for “From Current Position”, the scope of the search is relative to and limited by the nodes below the current position.



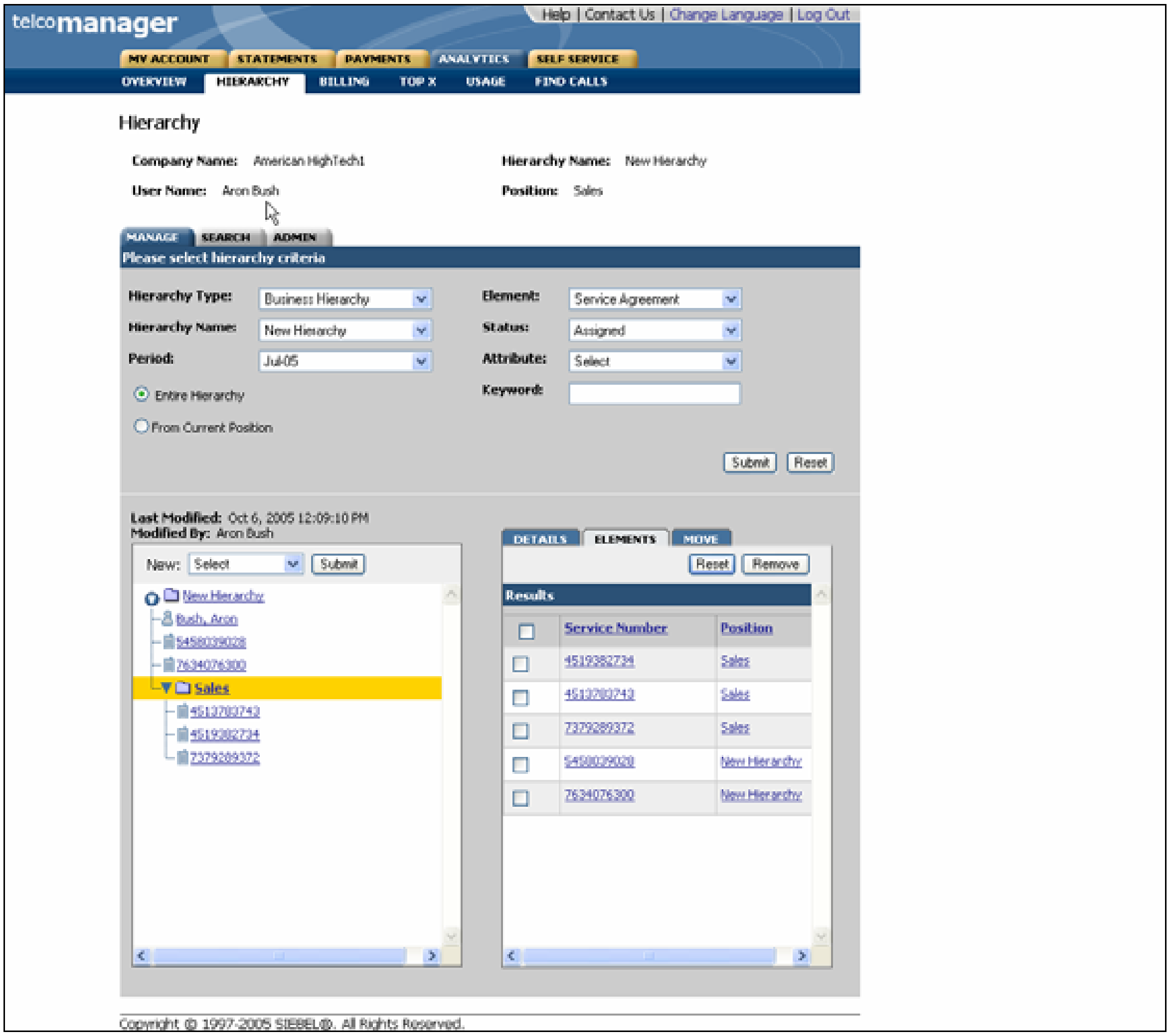
Remove (Services) Element Step 2: Remove Confirm Page



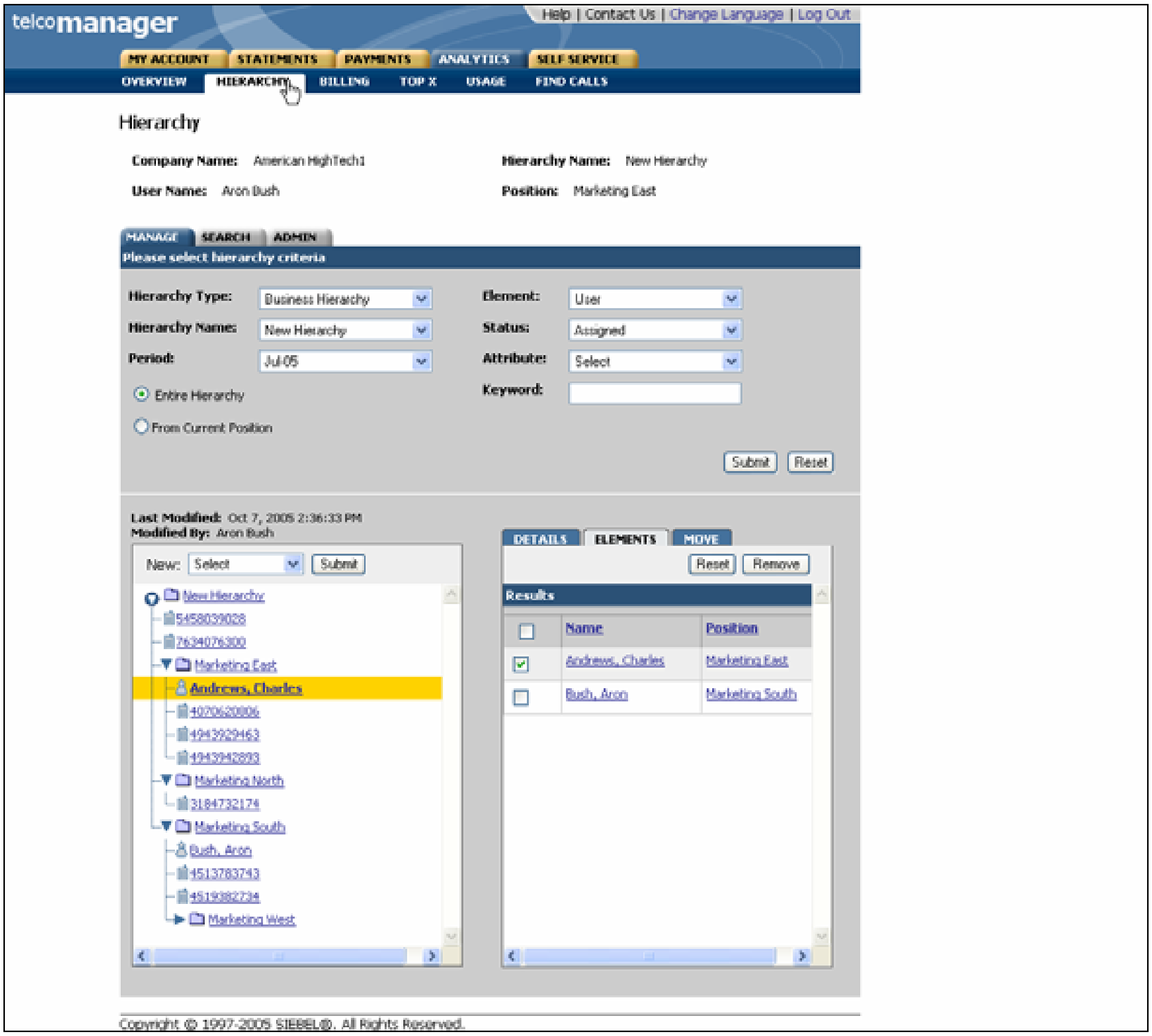
Remove (Services) Element Step 3: Remove Success



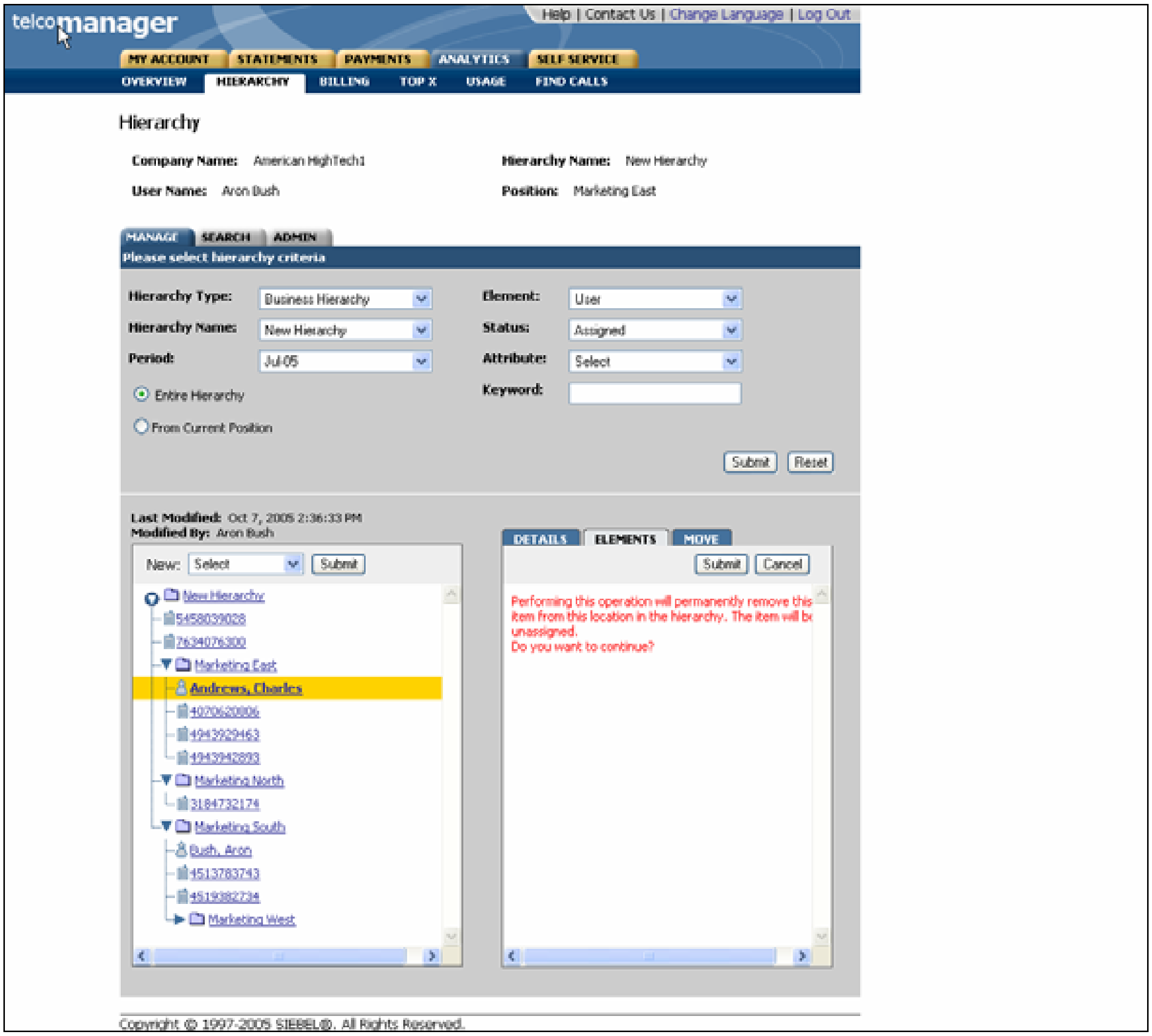
Remove (Service) Element Step 2 (Details Tab): Remove Confirm Page



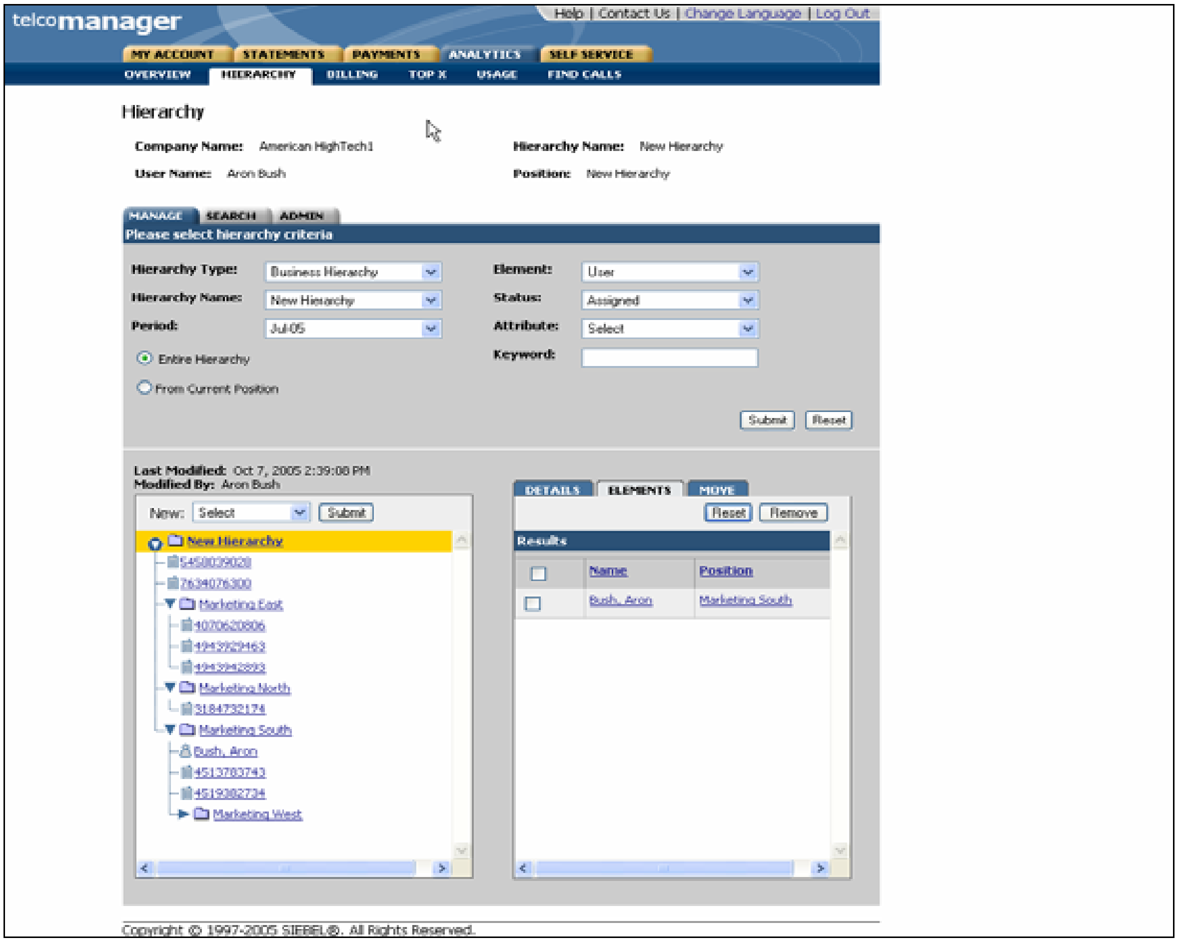
Remove (Service) Element Step 3 (Details Tab): Remove Success



Remove (User) Element Step 1 (Details Tab): Select Position



Remove (User) Element Step 2 (Details Tab): Remove Confirm Page

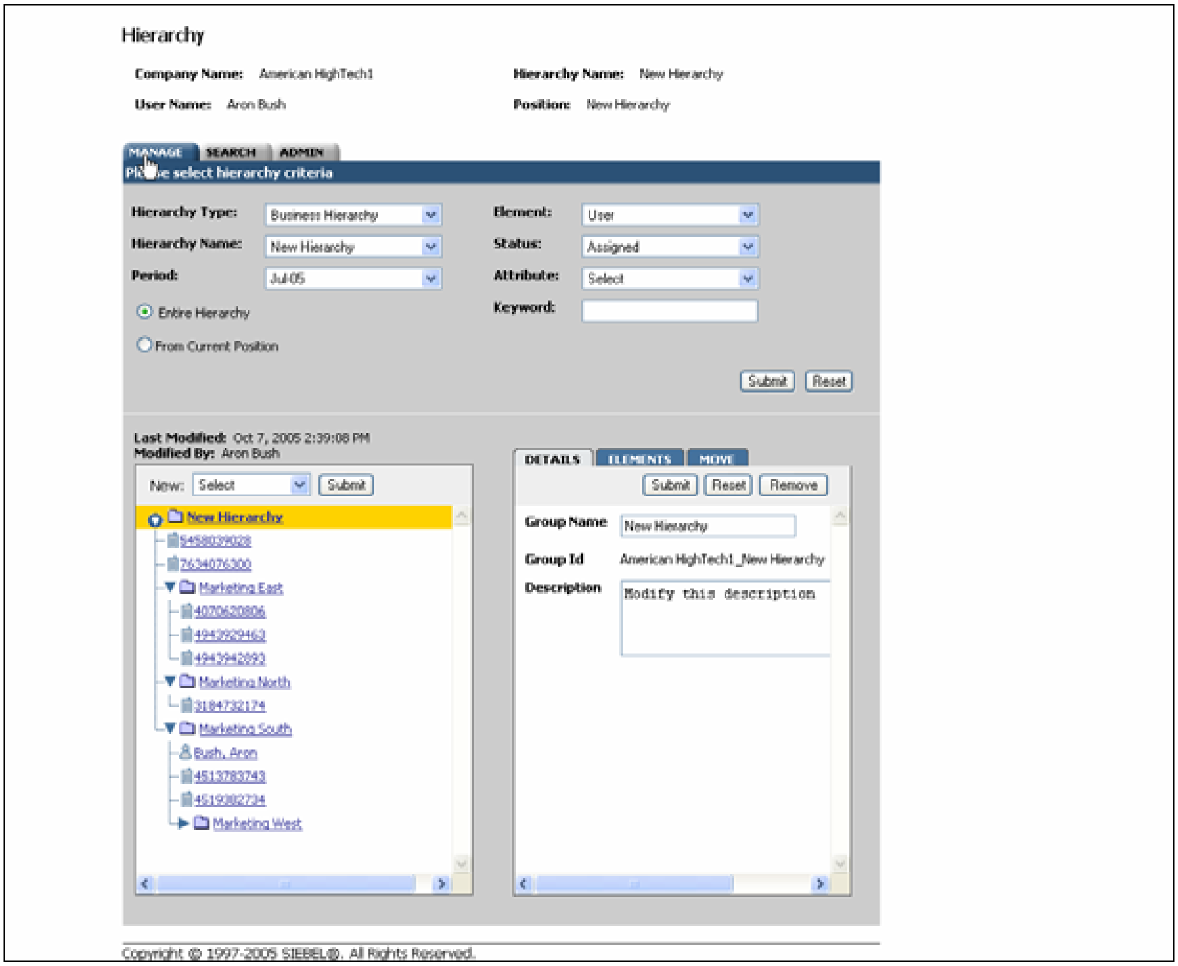


Remove (User) Element Step 3 (Details Tab): Remove Success

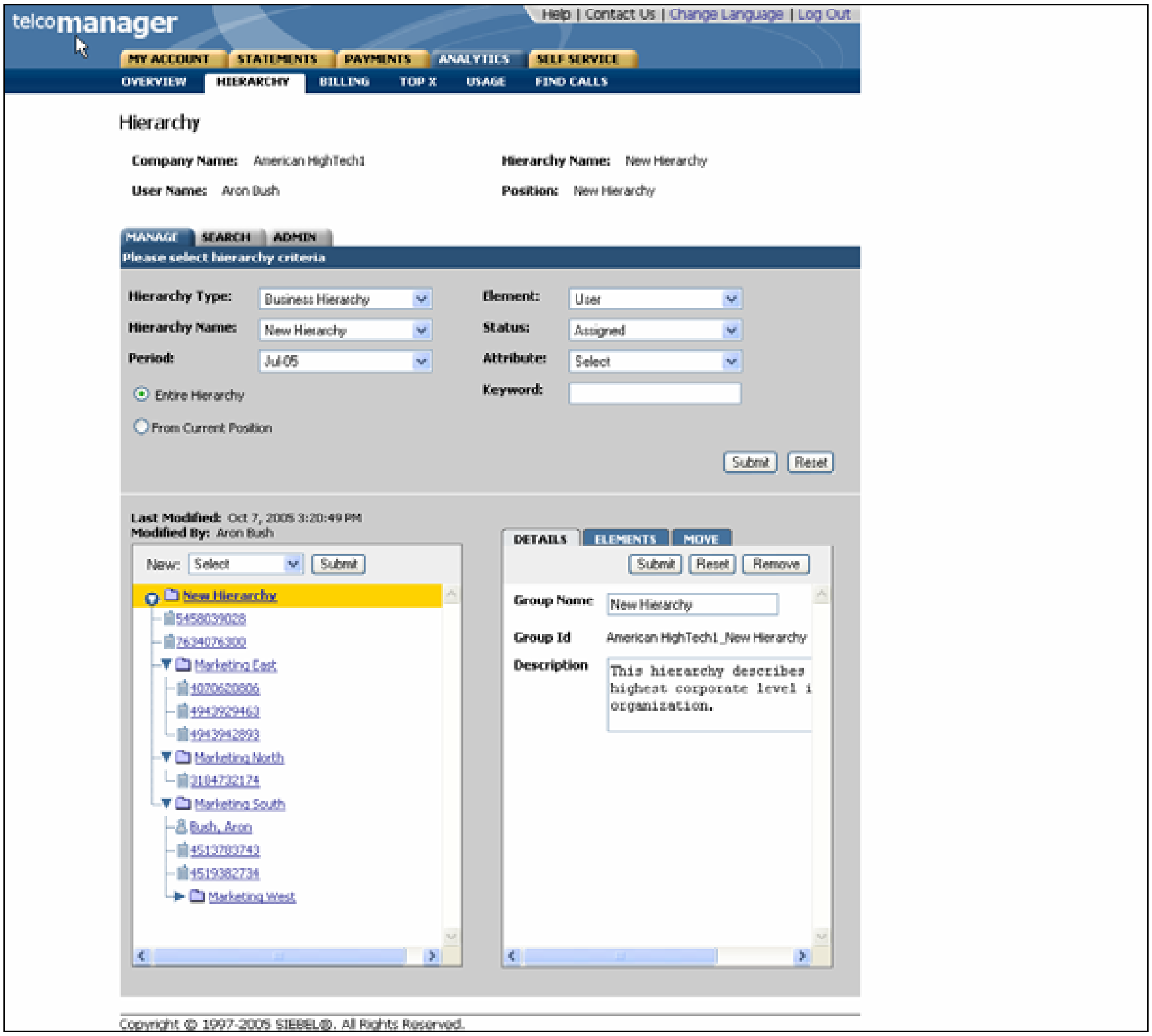
Modify Element Attributes

Name:	**Modify Element Attributes**
Brief Description:	Describes the mechanism of modifying element attributes.
Actor:	CSR, Admin, Manager
Entry Points	Manage Tab: Details Sub-Tab
Form Elements:	<u>Hierarchy Search Criteria</u> If there is no user specified default hierarchy type and hierarchy name, the system uses the first billing hierarchy in the hit list as the default 1. Hierarchy Type 2. Hierarchy Name 3. Period 4. Element 5. Status 6. Attribute 7. Keyword 8. Radio buttons: entire hierarchy or only the current position down. 9. Instructional text: “Please select hierarchy criteria” *For more information regarding fields and their defaults, refer to Manage User Interface Use Case. <u>Bottom Right Pane: Details Sub-Tab</u> * All fields are pre-populated with previously stored information. 1. Attributes for a Hierarchy: Hierarchy Name [Editable] Description [Editable] 2. Attributes for Groups: Hierarchy Name [Editable] Description [Editable] 3. Attributes for Accounts: Account No [Hard coded] Position [Hard coded] Contact [Editable] Address [Editable] City [Editable] State [Editable] Zip [Editable] 4. Attributes for Services: Number [Hard coded] Position [Hard coded] Subscriber [Editable] Rate Plan [Hard coded] Device [Hard coded] 5. Attributes for Users: Name [Editable]

	Position [Hard coded] Role [Hard coded] Username [Hard coded] Number [Editable]
Main Path:	**1.** User selects Manage Tab. **2.** System returns a page displaying: a. Top Pane: Hierarchy Search Criteria Form with current context and defaults. b. Bottom Left Pane: Graphical view of current hierarchy tree opened to current position context. c. Bottom Right Pane: Details tab containing the details for current hierarchy context. **3.** User modifies attributes of current hierarchy context in the Details tab and selects the Submit action: **4.** System updates the Details with the new information entered by the user. **5.** Use case ends.
Alternate Paths:	User selects Reset action: System invokes **Reset** use case.
Exception Paths:	**User encounters a validation error:** System invokes Validation Error Message use case. **User encounters a system error:** System invokes Error Message use case.
Business Rules:	Not all attributes can be modified. Refer Form Elements section of this use case for more information. Attributes from other sources (i.e. billing system) are display only and cannot be modified.



Modify Element Attributes Step 1: Select Position to Modify

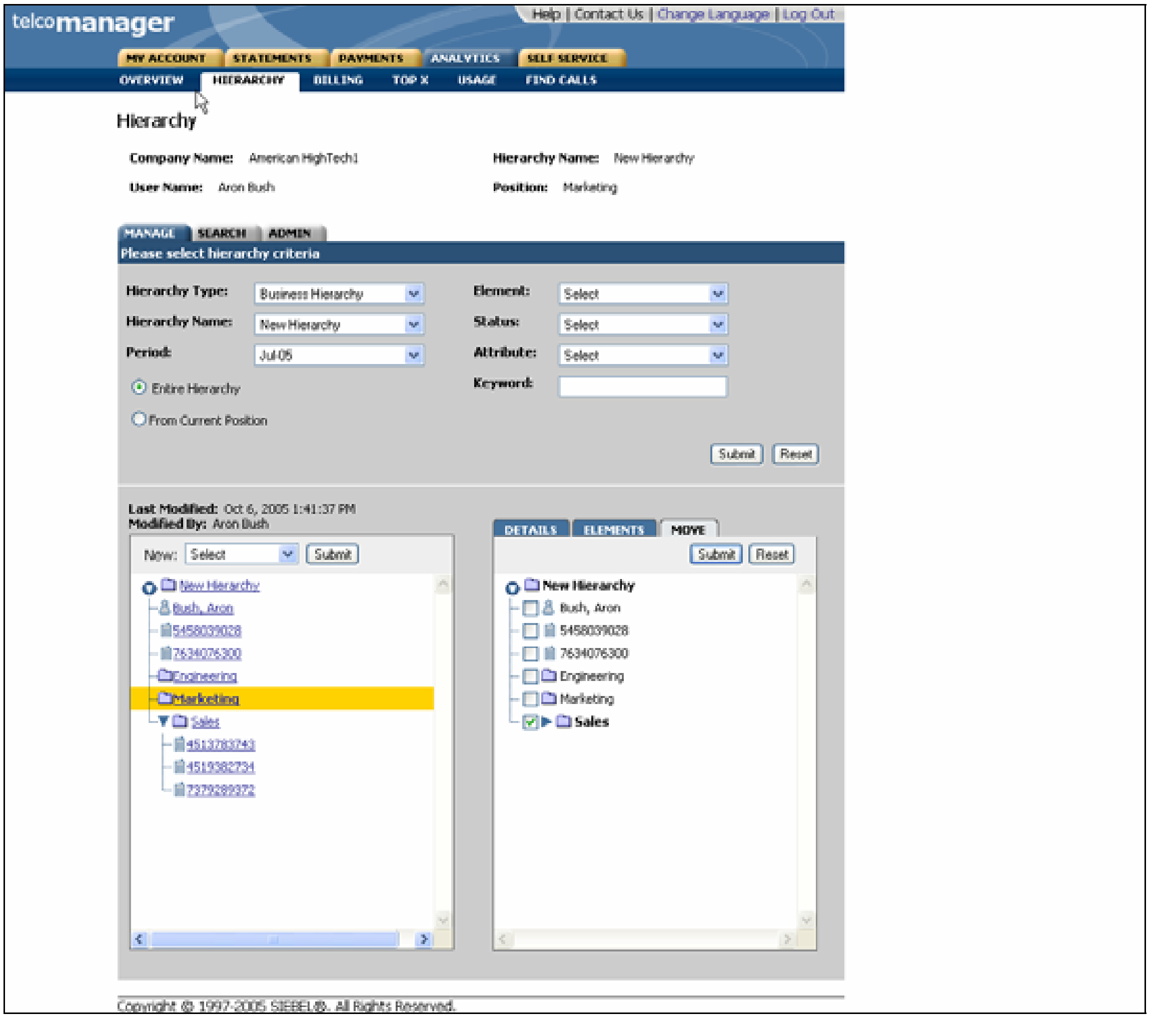


Modify Element Attributes Step 2: Successfully Modified

Move Elements

Name:	**Move Elements**
Brief Description:	Describes the mechanism of moving a group from one node to another within the same hierarchy.
Actors:	CSR, Admin, Manager
Entry Points	Manage Tab: Move Sub-tab
Form Elements:	<u>Hierarchy Search Criteria</u> If there is no user specified default hierarchy type and hierarchy name, the system uses the first billing hierarchy in the hit list as the default 1. Hierarchy Type 2. Hierarchy Name 3. Period 4. Element 5. Status 6. Attribute 7. Keyword 8. Radio buttons: entire hierarchy or only the current position down. 9. Instructional text: “Please select hierarchy criteria” *For more information regarding fields and their defaults, refer to Manage User Interface Use Case. <u>Bottom Right Pane: Move Sub-Tab</u> 1. Checkbox [node] Selects all rows 2. Checkbox [child branch] Selects the individual branch
Main Path:	**1.** In the Manage tab, User navigates to the parent node of the structure where the desired group(s) to be moved are. **2.** User selects Move sub-tab. **3.** System displays a screen showing: a. Left pane: Graphical hierarchy display of the current hierarchy b. Right pane: Graphical hierarchy display of the current hierarchy with checkbox next to each node to permit specifying the nodes to be moved **4.** User selects the focus Node in the left pane where the selected nodes are to be moved **5.** User selects the checkbox next to all desired nodes to be moved to the focus node a. If the focus node is a group then any type of node or user may be selected in the right move pane

	b. If the focus node is not a group then only Users may be selected in the right move pane **6.** User selects the Move action. **7.** System moves all selected nodes under the focus node in hierarchy. **8.** System redisplays page displayed a screen showing: a. Left pane: Updated hierarchy structure with parent mode where move was executed. b. Right pane: updated graphical display of all the groups in the current hierarchy. **9.** Use case ends.
Alternate Paths:	User selects Reset action: System invokes **Reset** use case
Exception Paths:	**User encounters a validation error:** System invokes Validation Error Message use case. **User encounters a system error:** System invokes Error Message use case.
Business Rules:	The Move action changes the structure of the current version of the hierarchy specified by the Hierarchy Period only If user selects the checkbox next to a Group node, all elements below it are also selected. When elements are moved within the hierarchy, the fields “Last Modified” and “Modified By” are updated. Move Action can only take place within an Organization Hierarchy. Move cannot happen in a billing hierarchy.



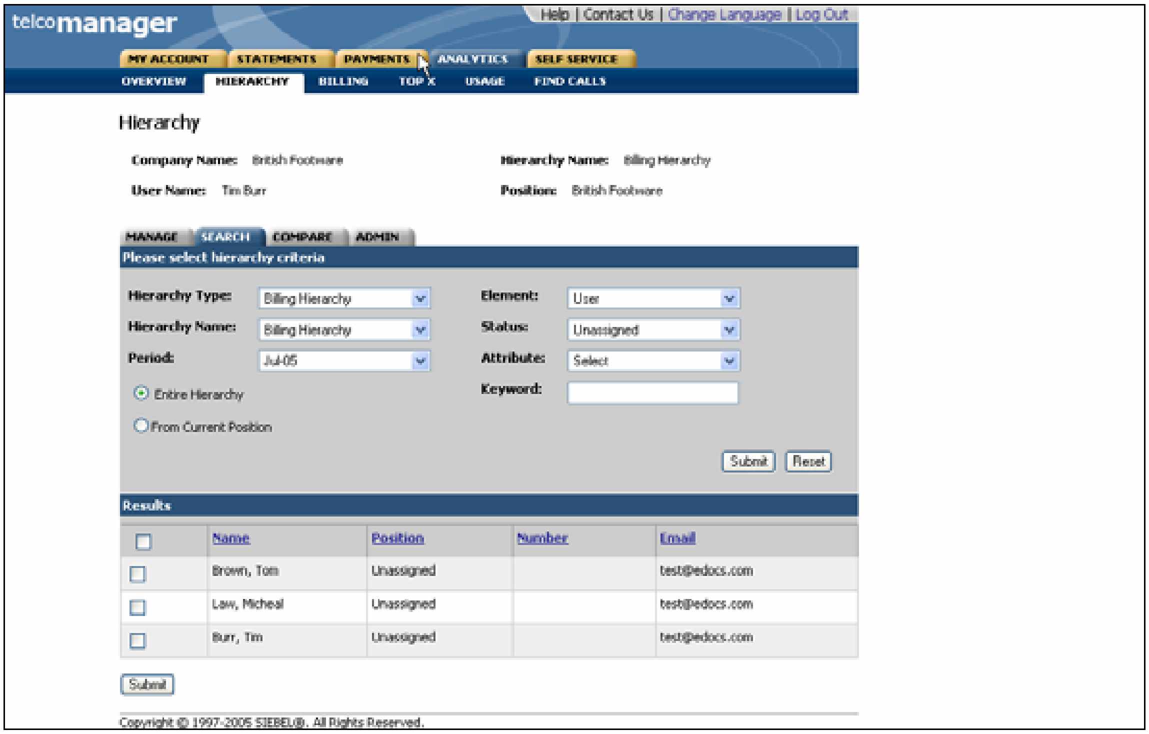
Move Group Specify Items to Move (right pane) and Location (highlighted in yellow in left pane)

Search Hierarchy

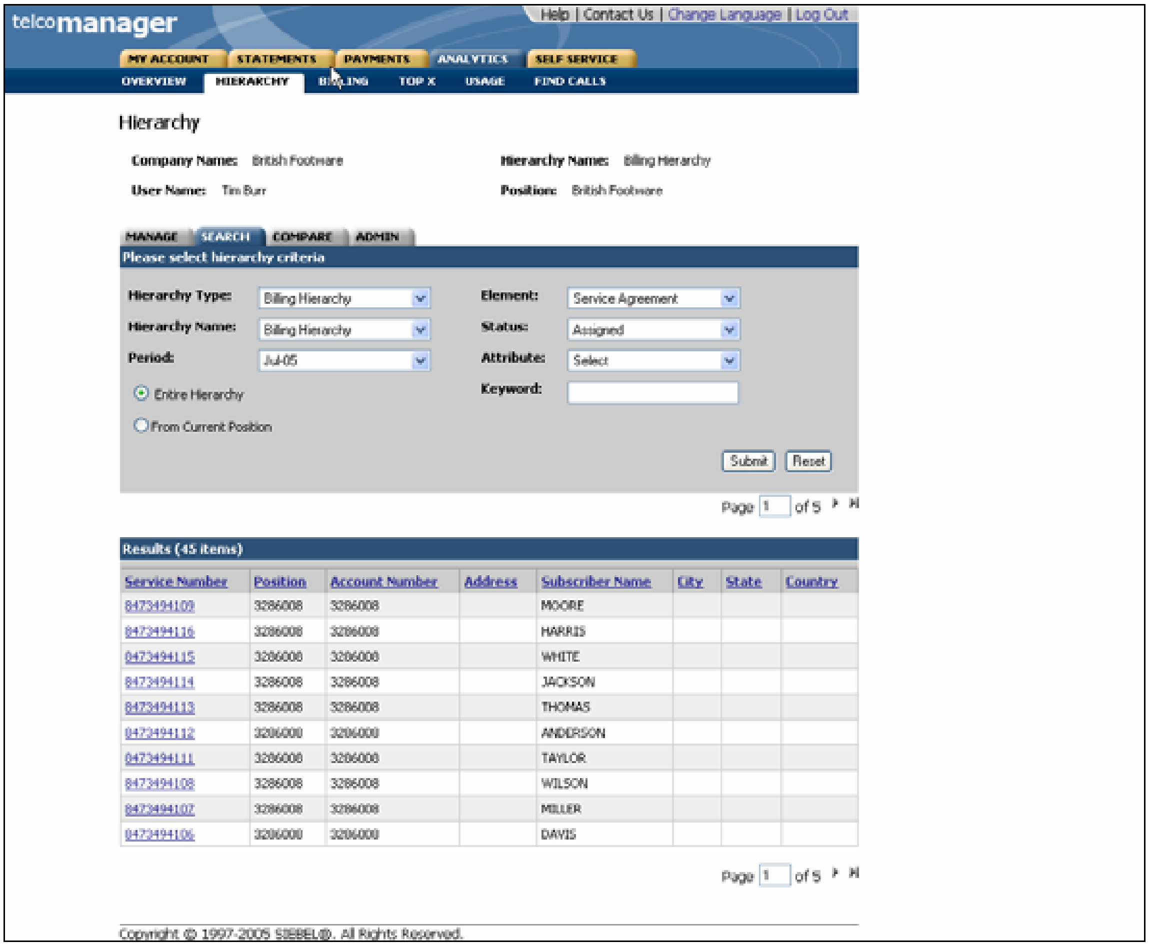
Name:	**Search Hierarchy**
Brief Description:	User finds a particular group, account, services, and/or attributes for any node or leaf within a hierarchy.
Actors:	CSR, Admin, Manager
Entry Points	**1.** Search Tab
Form Elements:	**Hierarchy Search Criteria** If there is no user specified default hierarchy type and hierarchy name, the system uses the first billing hierarchy in the hit list as the default 1. Hierarchy Type 2. Hierarchy Name 3. Period 4. Element 5. Status 6. Attribute 7. Keyword 8. Radio buttons: entire hierarchy or only the current position down. 9. Instructional text: “Please select hierarchy criteria” *For more information regarding fields and their defaults, refer to Manage User Interface Use Case.
Report Content:	Search Results Fields For Element Groups **1.** Name (Display name of element type Groups) **2.** Position (The name of the hierarchy node one level above) **3.** Display Name **4.** Description Search Results Fields For Element Accounts **1.** Account No. (Display name of element type Accounts) **2.** Position (The name of the hierarchy node one level above) **3.** Account Name **4.** Contact Name **5.** Address **6.** City **7.** State **8.** Country **9.** Zip Search Results Fields For Element Services

	1. Service Number (Display name of element type Services) **2.** Position (The name of the hierarchy node one level above) **3.** Account Number **4.** Address **5.** Subscriber Name **6.** City **7.** State **8.** Country <u>Search Results Fields For Element Users</u> **1.** Name (Display name of element type User) **2.** Position (The name of the hierarchy node one level above) **3.** Role (in future release) **4.** Number **5.** Email
Main Path:	**1.** User selects Search Tab. **2.** System displays Hierarchy Search Criteria form with current context and defaults. **3.** User inputs search criteria by selecting an Attribute from the Attribute drop down and entering a key word OR by specifying other criteria such as Period, Status or Element and selects the Submit action. **4.** System checks to make sure that the required fields are specified as a search parameter. **5.** System validation passes. **6.** System displays a tabular search results report with the total count for the search result set and all attributes for the selected element type [A1] **7.** Use case ends.
Alternate Paths:	**[A1]** After the search results have been displayed, the User selects one or more checkboxes and selects the Submit action: 1. System returns the user to the Manage tab displaying: i. Top pane: Hierarchy Search Criteria with specified search criteria context. ii. Bottom Left Pane: Graphical view of current hierarchy tree opened to current position context. iii. Bottom Right Pane: Elements tab containing the display name and position of the selected elements. **[A2]** User selects link of the display name of the specified element type for the search criteria: 1. System returns the user to the Manage tab displaying: i. Top pane: Hierarchy Search Criteria with specified search criteria context.

	ii. Bottom Left Pane: Graphical view of current hierarchy tree opened to where the element selected is located in the tree in the bottom left pane. iii. Bottom Right Pane: Details tab containing the details for the selected element. **[A3]** User selects Sorting action: 1. System invokes Sorting use case. **[A4]** User selects Paging action: 1. System invokes Paging use case.
Exception Paths:	**User encounters a validation error:** System invokes Validation Error Message use case. **User encounters a system error:** System invokes Error Message use case.
Business Rules:	Checkbox selections are persisted when paging. Selections are aggregated across pages. If user selects the radio button for “Entire Hierarchy”, the scope of the search is all the nodes in the hierarchy. If user selects the radio button for “From Current Position”, the scope of the search is relative to and limited by the nodes below the current position.



Search (Users) Step 1: Specify Parameters and Search Results



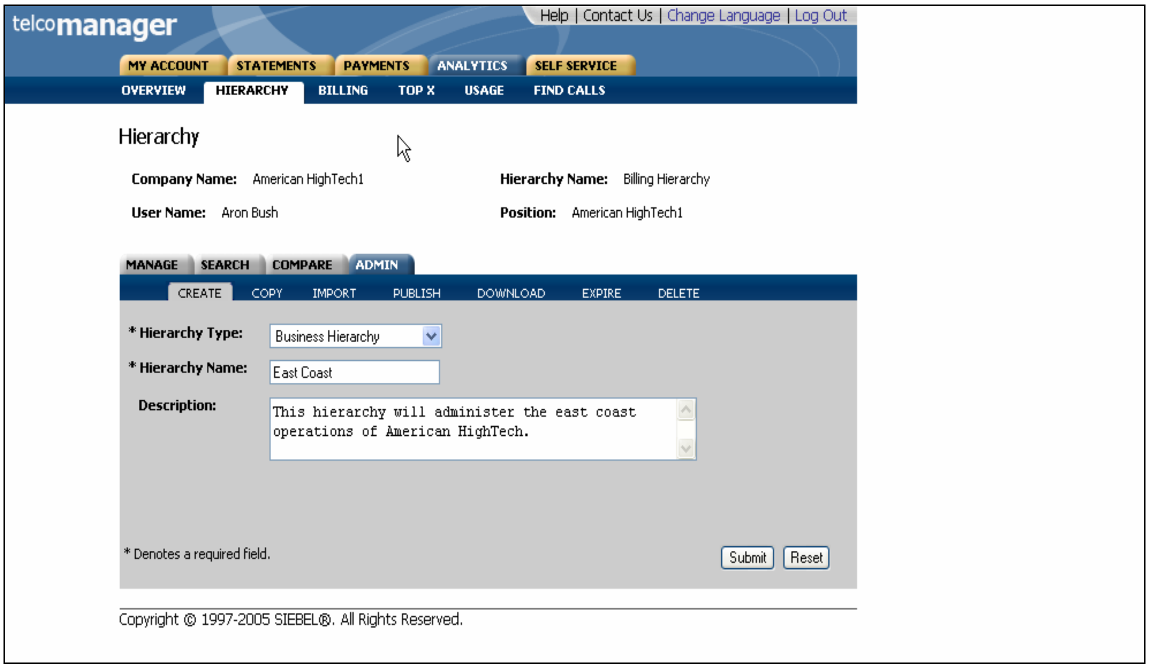
Search (Services) Step 1: Specify Parameters and Search Results

Hierarchy Admin

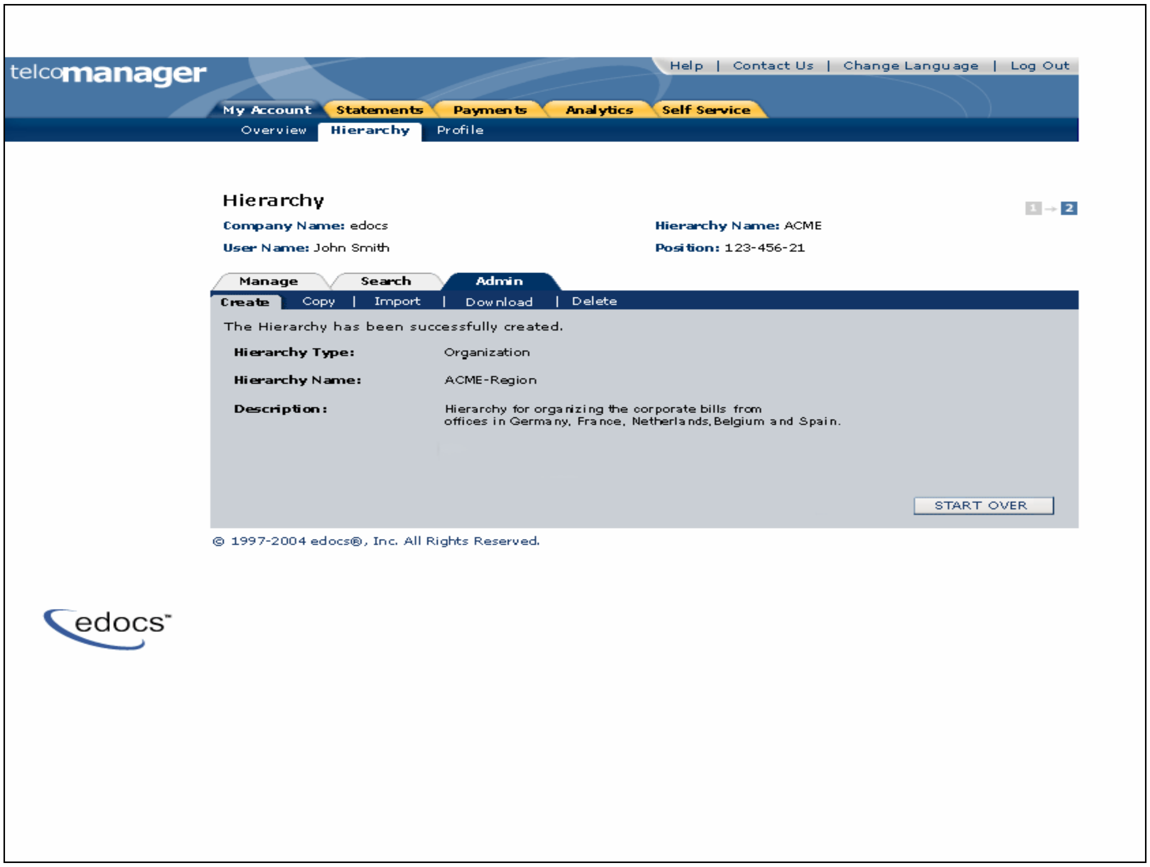
Create Hierarchy

Name:	**Create Hierarchy**
Brief Description:	Describes the mechanism whereby a user can create a non-billing hierarchy (Organization or Consolidation).
Actors:	CSR, Admin, Manager
Entry Points	Admin Tab: Create Sub-tab
Form Elements:	Create Hierarchy Form 1. Hierarchy Type [Required: Default: Current Context] Dropdown: Default: Organization 2. Hierarchy Name [Required, Default: None, Length of field limit: 20] 3. Description [Optional, Default: None, Length of field limit: 80].
Main Path:	**1.** User selects Admin tab **2.** User selects the Create sub-tab **3.** System displays a create hierarchy form **4.** User inputs data to create the hierarchy and selects the Submit action. **5.** System checks to confirm that the entered hierarchy name does not already exist. **6.** System validation passes. **7.** System returns a message indicating the Hierarchy was Successfully created **8.** Use case ends.
Alternate Paths:	A billing hierarchy is automatically created when invoice data is loaded into the system with a status of Published. User selects Reset action: System invokes **Reset** use case User selects Submit action: System displays message: Please enter Hierarchy Name to create hierarchy.
Exception Paths:	**User encounters a validation error:** System invokes Validation Error Message use case. **User or CSR encounters a system error:** System invokes Error Message use case.

Business Rules:	Only Organizational and Consolidation hierarchies can be created by a User Consolidation hierarchies group together multiple billing hierarchies into a single hierarchy. The structures within the billing hierarchies are completely preserved.



Create Hierarchy Step 1: Specify Non-Billing Hierarchy Parameters

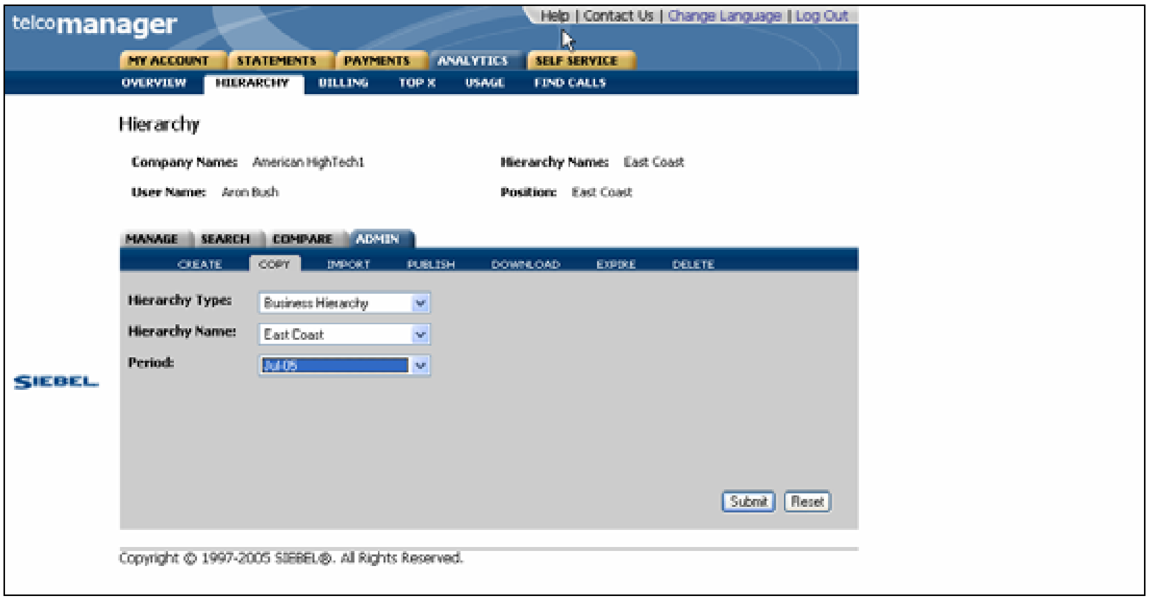


Create Hierarchy Step 2: Non-Billing Hierarchy Created

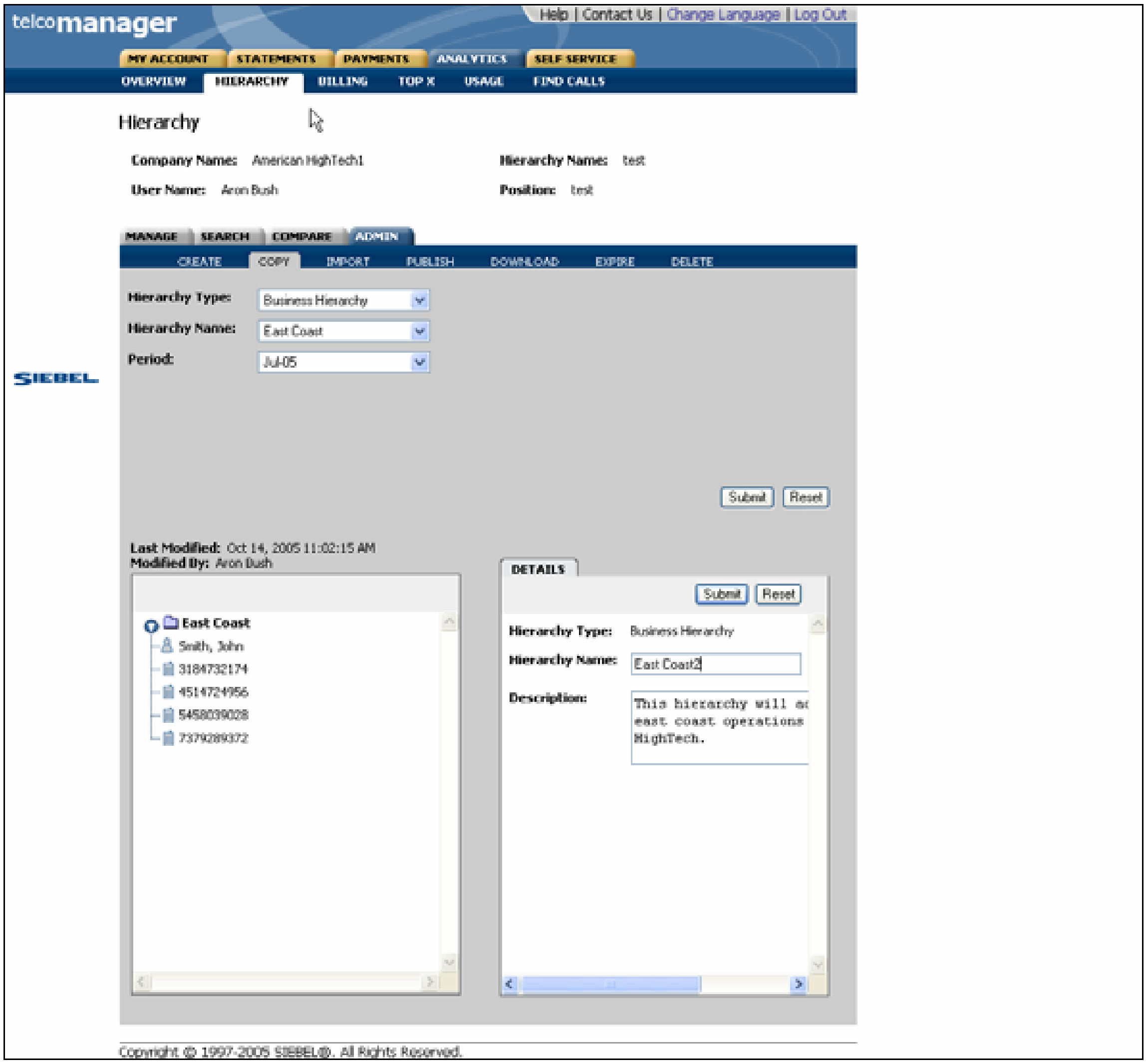
Copy Hierarchy

Name:	**Copy Hierarchy**
Brief Description:	Describes the mechanism whereby a user can copy an entire hierarchy to create a new hierarchy.
Actors:	CSR, Admin, Manager
Entry Points	Admin Tab: Copy Sub-tab
Form Elements:	**Hierarchy Search Criteria** 1. Hierarchy Type Dropdown: [Organization, Consolidation] 2. Hierarchy Name 3. Period: [Current Period] Dropdown: up to 12 months, configurable *For more information regarding fields and their defaults, refer to Manage User Interface Use Case. **Copy Hierarchy Form (Details Sub-tab)** 1. Hierarchy Type [Default: Current Context, Hard coded] 2. Hierarchy Name [Required: Default: Blank] 3. Description [Optional, Default: Blank] 4. Instructional Text: “Please select the Hierarchy or Group you want to copy to a new Hierarchy”
Main Path:	**1.** User selects Admin tab **2.** User select Copy sub-tab **3.** User selects a hierarchy to be copied from the Hierarchy Drop down. **4.** User selects Submit Button [A1] **5.** User specifies new name for the hierarchy to be copied and selects the Submit action. **6.** System checks to confirm that the entered hierarchy name does not already exist. [A4] **7.** System validation passes. **8.** System creates a new hierarchy with a status of Unpublished **9.** System returns the success page displaying “The Hierarchy has been successfully created” and the following information: a. Top pane: [Hierarchy Search Criteria pre-populated with copied hierarchy information] b. Left pane: [Graphical view with copied hierarchy as the top node] c. Right pane: [Details tab hard-coded with information entered by user for the copied hierarchy]

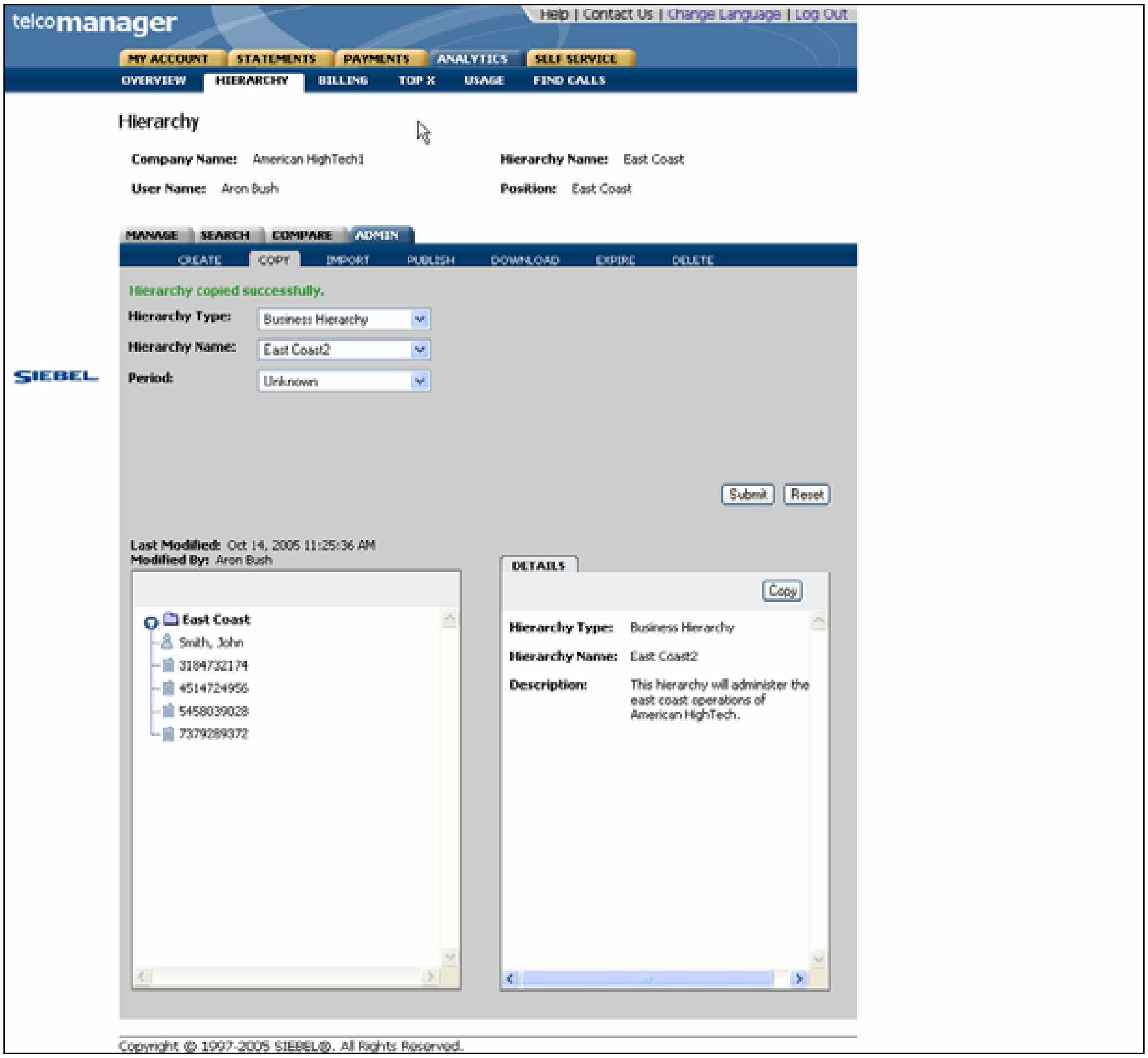
	10. Use case ends.
Alternate Paths:	System invokes **Reset** use case. System displays message: Hierarchy Name already exists.
Exception Paths:	**User encounters a validation error:** 1. System invokes Validation Error Message use case. User encounters a system error: 1. System invokes Error Message use case.
Business Rules:	Only non-billing hierarchies or groups can be copied and can only be copied into a new hierarchy. A Hierarchy need not be published in order to use the Copy function



Copy Hierarchy Step 1: Select Hierarchy to Copy



Copy Hierarchy Step 2: Specify Parameters for Hierarchy to be copied

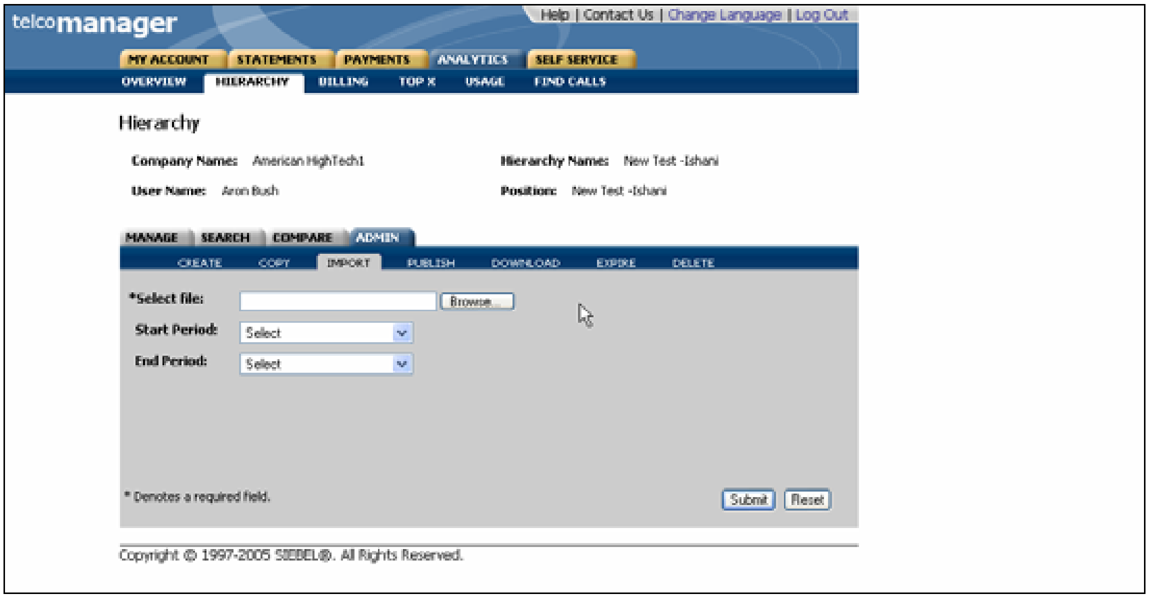


Copy Hierarchy Step 3: Hierarchy Copied

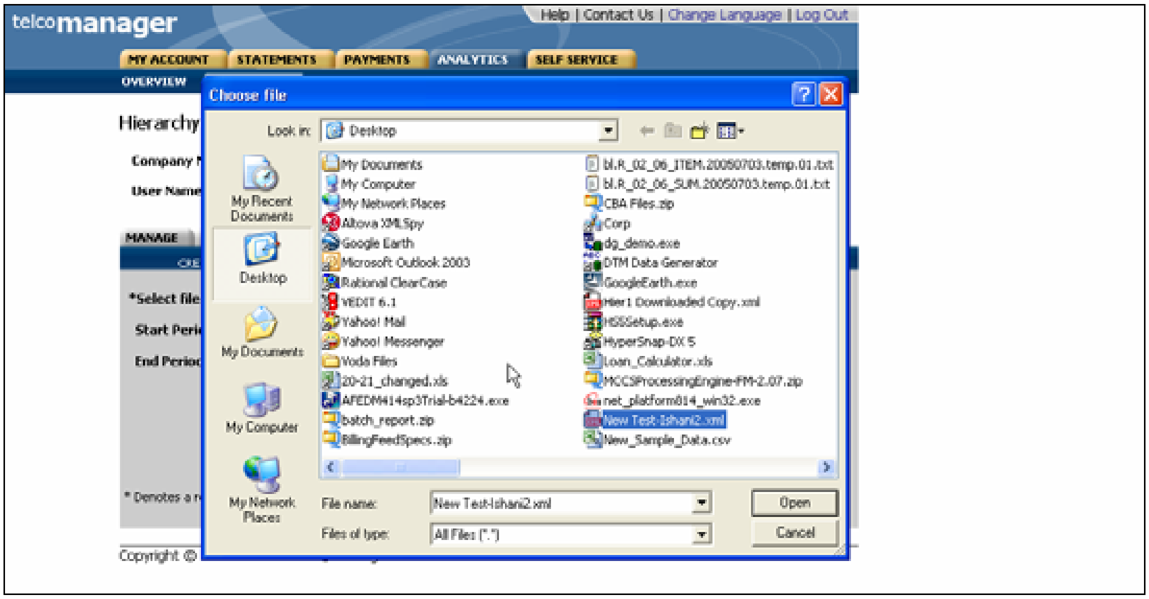
Import Hierarchy

Name:	**Import Hierarchy**
Brief Description:	Describes the mechanism whereby a user can import a hierarchy.
Actors:	CSR, Admin, Manager
Entry Points	Admin Tab: Import Sub-tab
Form Elements:	Import Non-Billing Hierarchy Form 1. Select File [Required: XML file type only]
Main Path:	**1.** User selects Admin tab **2.** User selects Import sub-tab **3.** System displays Import Hierarchy Form. **4.** User specifies file to be imported and selects the periods from the drop down box and selects Submit action. **5.** System reads hierarchy meta data including hierarchy type, hierarchy name, and description data (if available) contained in the specified file a. System checks to confirm that the hierarchy name does not already exist **[A1]** b. System hierarchy validation passes c. System refreshes page with the graphical view of the hierarchy on the left pane and the hierarchy attributes on the right pane with the confirmation message stating “Performing this operation will import the Hierarchy **6.** User confirms the import by selecting the Submit action **7.** System creates a new hierarchy from the imported data in an Unpublished status if no period is being selected. **8.** System refreshes the Import page with the success page stating “The Hierarchy has been successfully imported” and the following information: a. [Hierarchy Import Criteria pre-populated with information read in or entered by user to create the imported hierarchy] with Start and End Periods b. Import Status: Displays the new name of the Imported Hierarchy along with the folder information and service agreements **9.** To re-confirm the imported Hierarchy, go to the Manage Tab. **10.** Use case ends.
Alternate Paths:	User Imports a hierarchy that already exists in the system System displays a message “A hierarchy of the same name already exists. Select submit to update the hierarchy” User selects Submit action System updates and saves the hierarchy

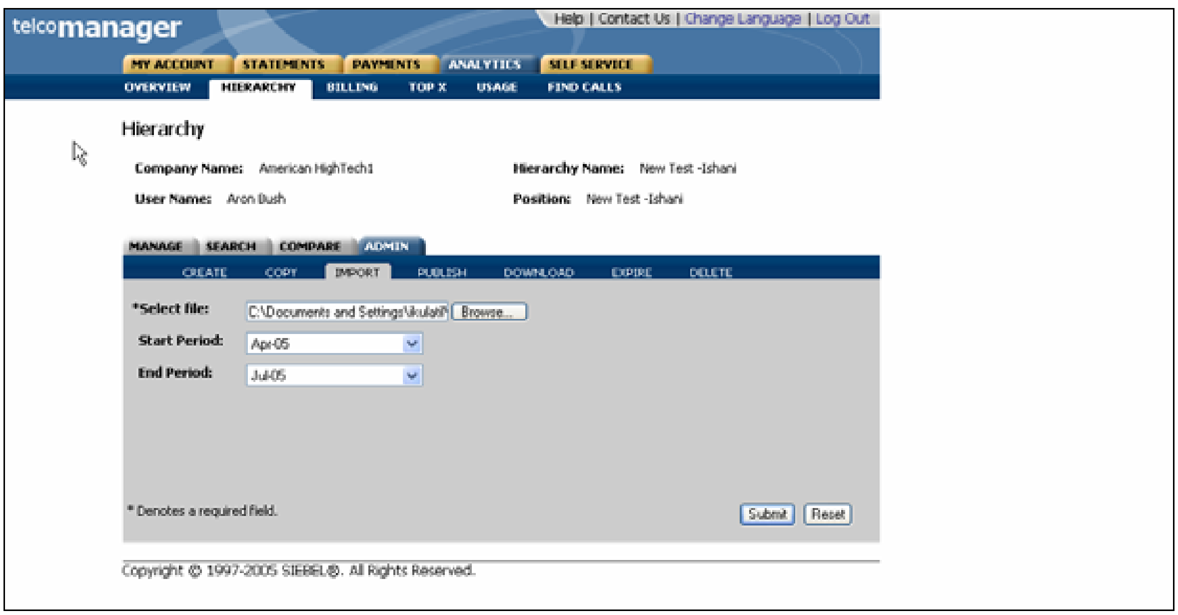
	System invokes **Cancel** use case and does not save the imported hierarchy. User selects Reset action: System invokes **Reset** use case. User selects Start Over action:
Exception Paths:	**User encounters a validation error:** System invokes Validation Error Message use case. **User or CSR encounters a system error:** System invokes Error Message use case.
Business Rules:	Only non-billing hierarchies can be imported. This includes both organization and consolidation hierarchy types. Only XML file types can be imported that comply with the hierarchy load data format specification. Name, Type, and Description of the hierarchy information must be contained with the file being imported. Validation of the XML source compliance with the definition of the hierarchy type specified within the file. The user who initiates the hierarchy import is automatically assigned to the root node of the hierarchy if user's role is not Admin.



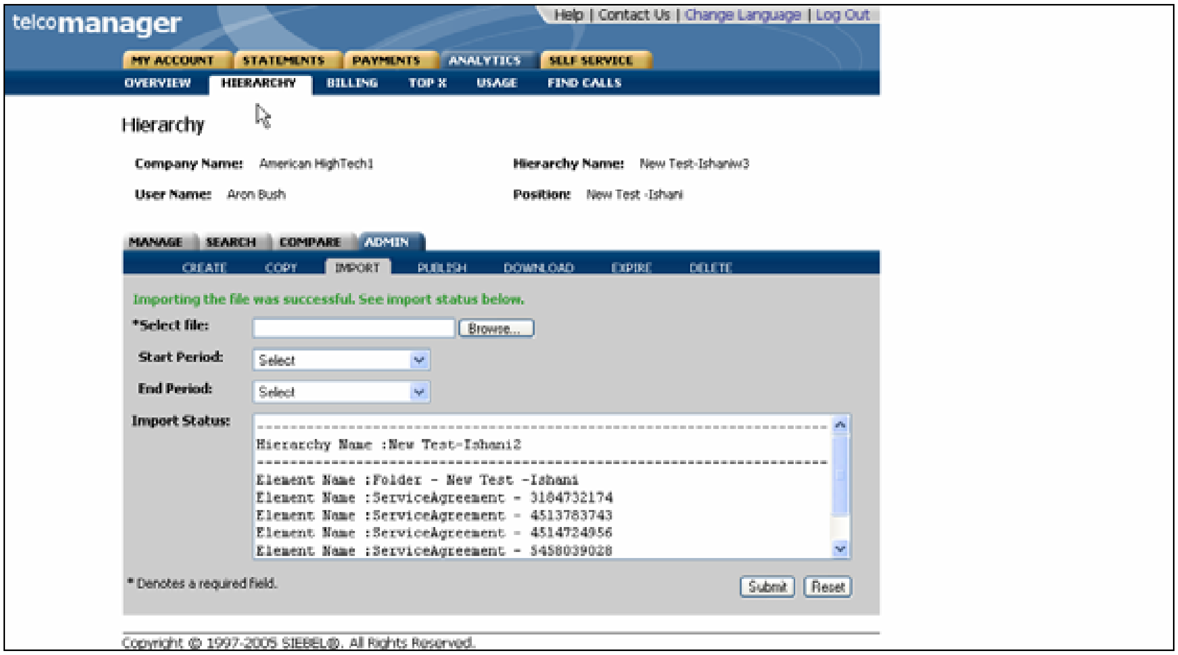
Import Hierarchy Step 1: Import Form



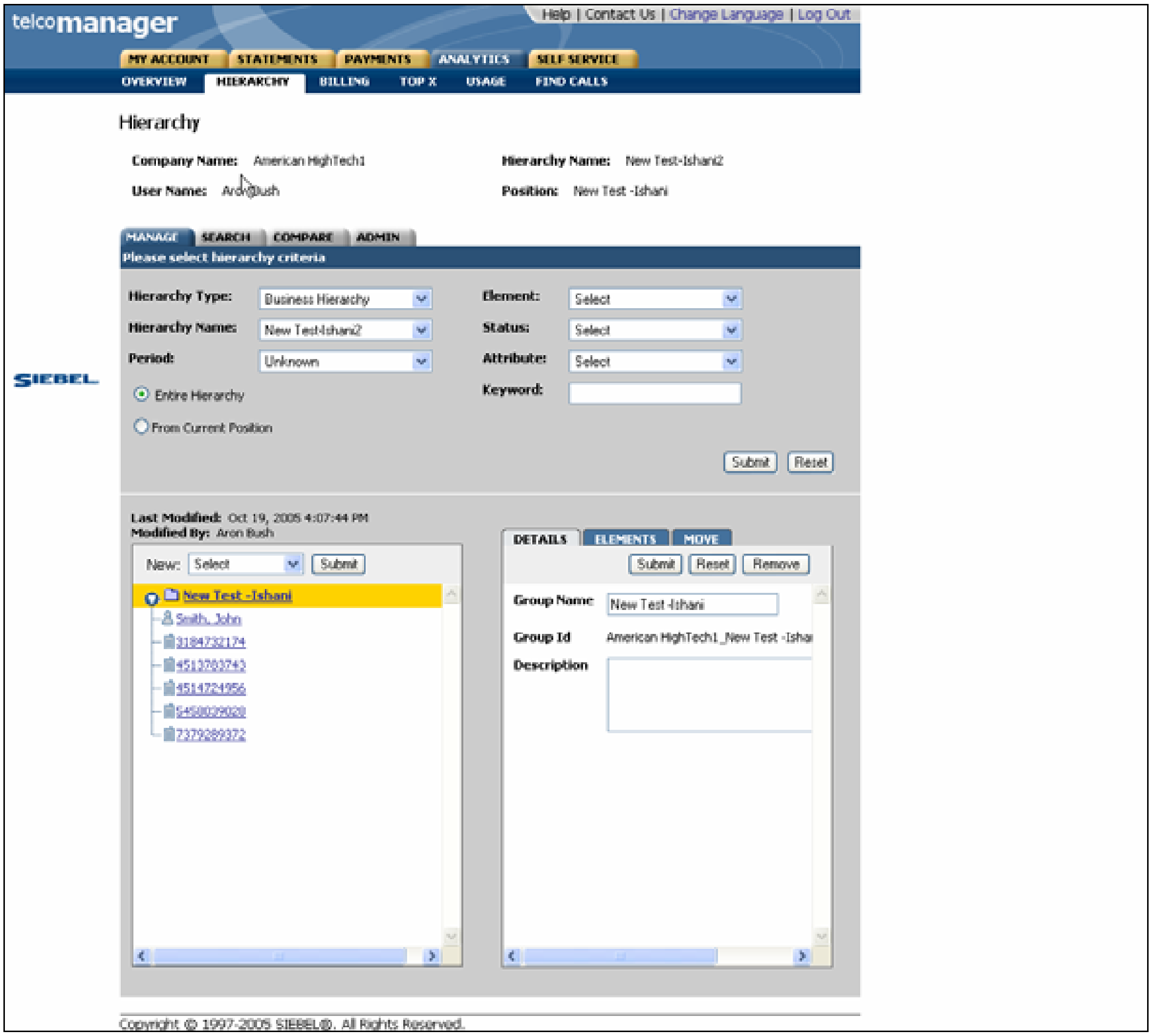
Import Hierarchy Step 1: Browse for File to Import



Import Hierarchy Step1: Specify Parameters



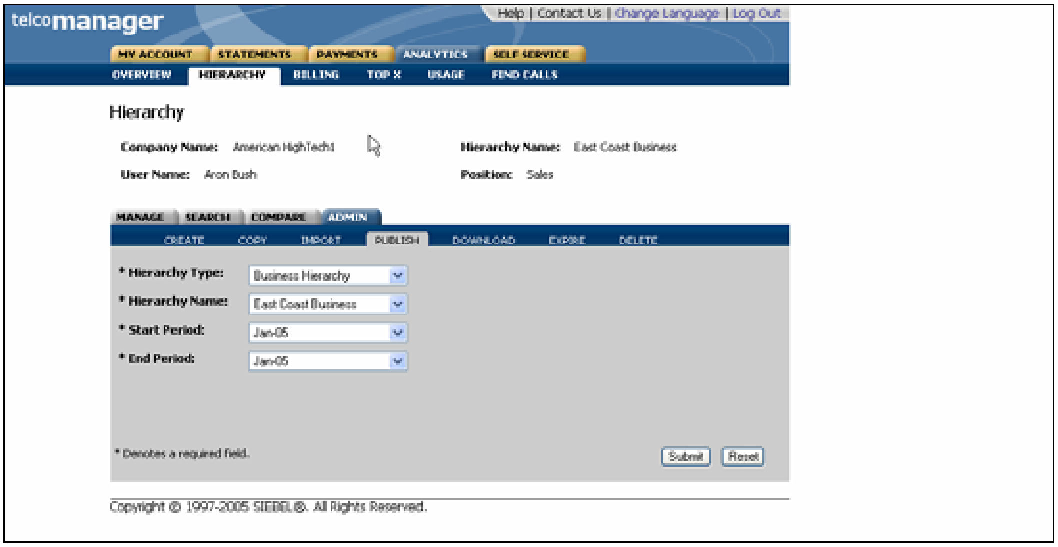
Import Hierarchy Step 2: Imported Hierarchy Confirm Page



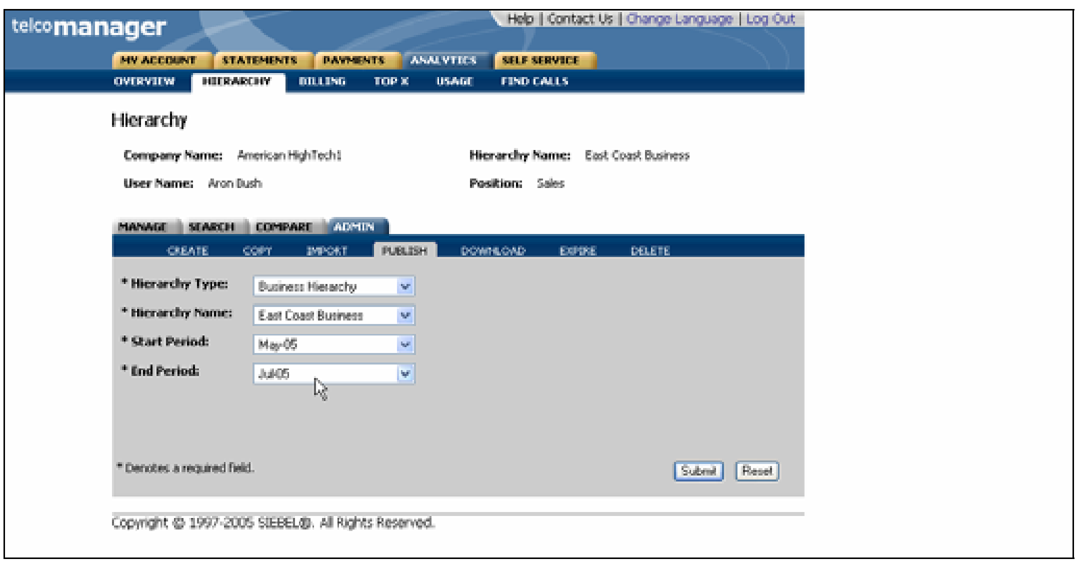
Import Hierarchy Step 3: Imported Hierarchy Success

Publish Hierarchy

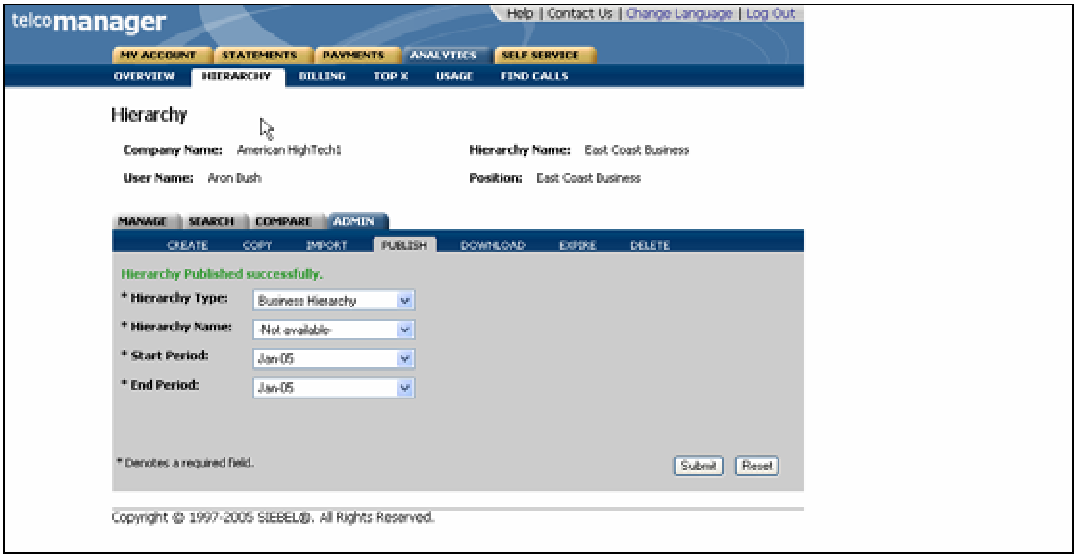
Name:	**Publish Hierarchy**
Brief Description:	Describes the mechanism whereby a user can publish a hierarchy.
Actors:	CSR, Admin, Manager
Entry Points	Admin Tab: Publish Sub-tab
Form Elements:	Publish Hierarchy Form 1. Hierarchy Type [Required: Default: Current Context] Dropdown: [Billing, Consolidation, Organization] 2. Hierarchy Name [Required: Default: Current Context] Dropdown: [{Hierarchy Names stored in the system] 3. Period Start [Required: Default: Current Context] 4. Period End [Required: Default: Current Context]
Main Path:	**1.** User selects Admin Tab and Publish sub-tab **2.** System displays Publish Hierarchy Form. **3.** User selects the Hierarchy name from the drop-down that needs to be published and the appropriate dates from the drop down and press Submit action. **4.** System displays a status message of “Hierarchy Successfully Published” **5.** User selects the submit action **6.** Use case ends.
Alternate Paths:	User selects Reset action: System invokes **Reset** use case.
Exception Paths:	**User encounters a system error:** System invokes **Error Message** use case.
Business Rules:	**[B1]** Any Organization hierarchy that is created should be publishable. The user will have to ensure there is data for the period that the hierarchy is published. **[B2]** If a Hierarchy is already published it will not show up in the drop down. **[B3]** The End Period has to be greater than the Start Period **[B4]** A Hierarchy cannot be published after it expires and can only be published once.
Notes:	



Publish Hierarchy Form



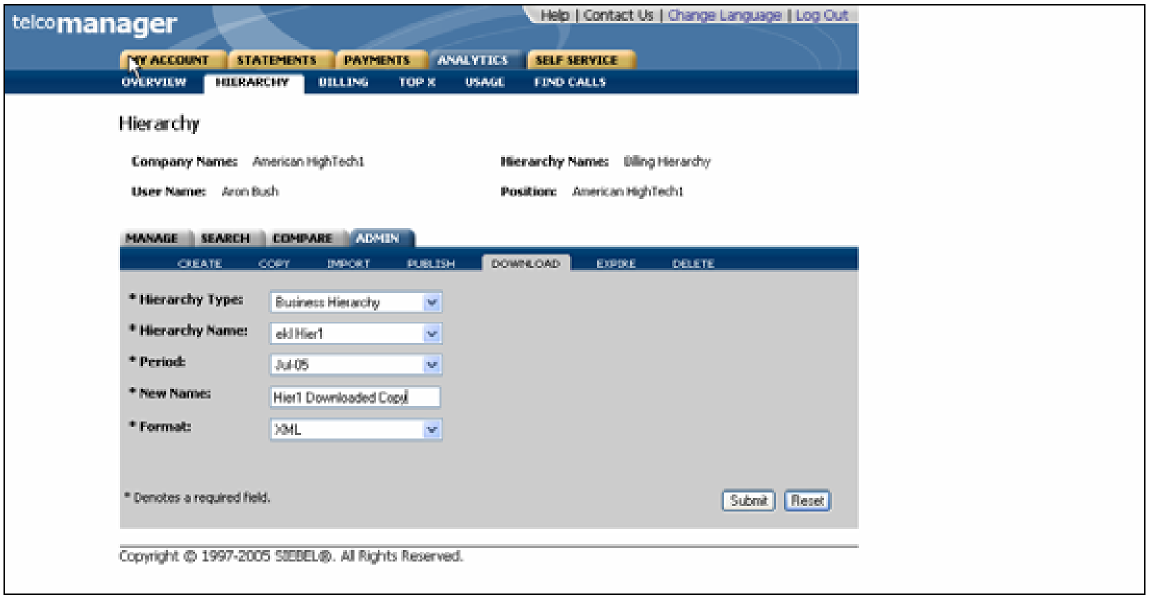
Publish Hierarchy Step 1: Specify parameters



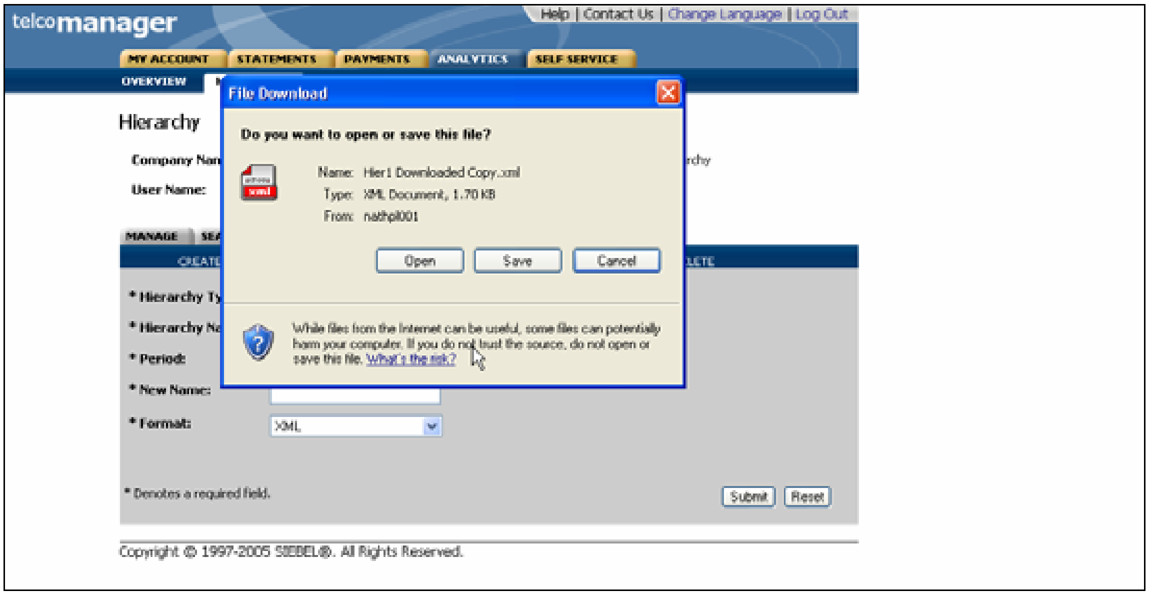
Publish Hierarchy Step 2: Success

Download Hierarchy

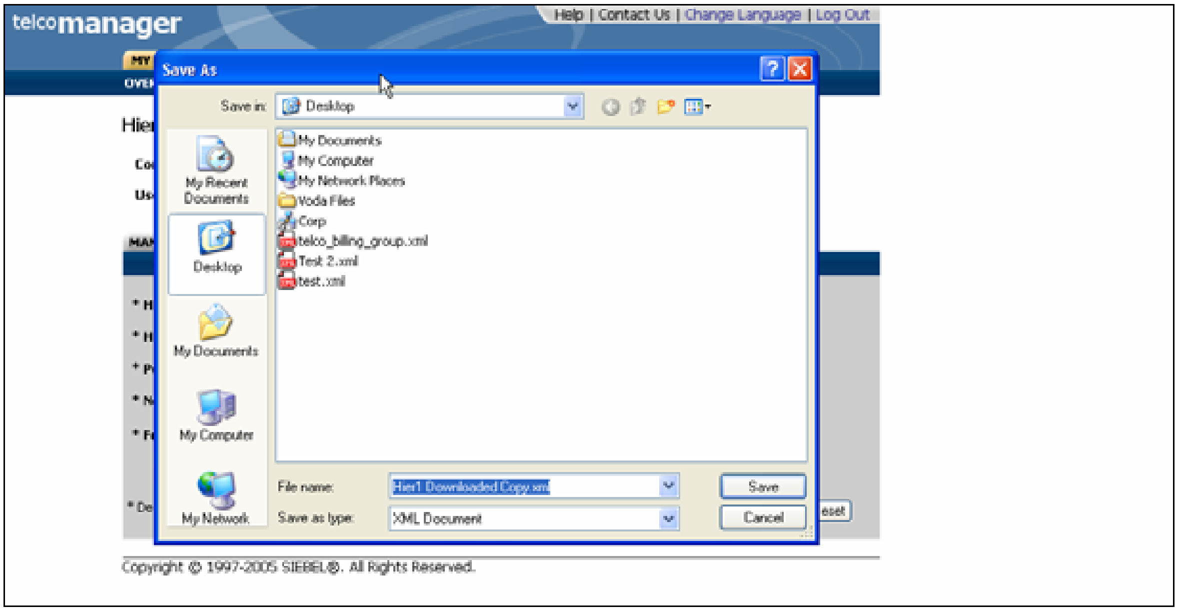
Name:	**Download Hierarchy**
Brief Description:	Describes the mechanism whereby a user can download a hierarchy.
Actors:	CSR, Admin, Manager
Entry Points	Admin Tab: Download Sub-tab
Form Elements:	Download Hierarchy Form 1. Hierarchy Type [Required: Default: Current Context] Dropdown: [Billing, Consolidation, Organization] 2. Hierarchy Name [Required: Default: Current Context] Dropdown: [{Hierarchy Names stored in the system] 3. Period [Required: Default: Current Context] 4. New Name [Required: New name for the file]
Main Path:	1. User selects Admin Tab and Download sub-tab 2. System displays Download Hierarchy Form. 3. User specifies the data for the download and selects the Submit action. 4. User browser displays a dialog box with the options for download. 5. User selects browser Save function. 6. User browser returns a dialog box for Save function. 7. User enters a name for the file and selects Save to complete download function. 8. System returns the user to the download hierarchy form defaulted to the current context. 9. Use case ends.
Alternate Paths:	User selects Reset action: System invoked Reset use case.
Exception Paths:	**User encounters a system error:** System invokes **Error Message** use case.
Business Rules:	**[B1]** Any type of hierarchy can be downloaded. **[B2]** Download is only available in XML format.
Notes:	Uses standard browser download function. XML format supported in the current implementation. The Download format is equivalent to the Import format. Other formats will be supported in future releases.



Download Step 1: Specify Parameters



Download Step 2: Select Save As Option

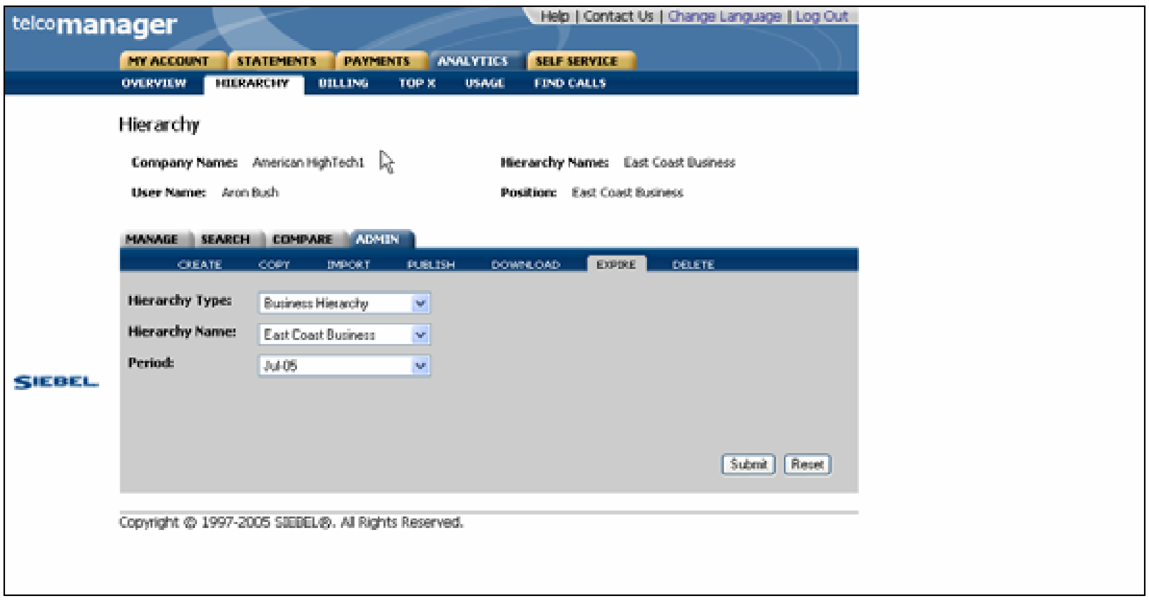


Download Step 3: Specify Location

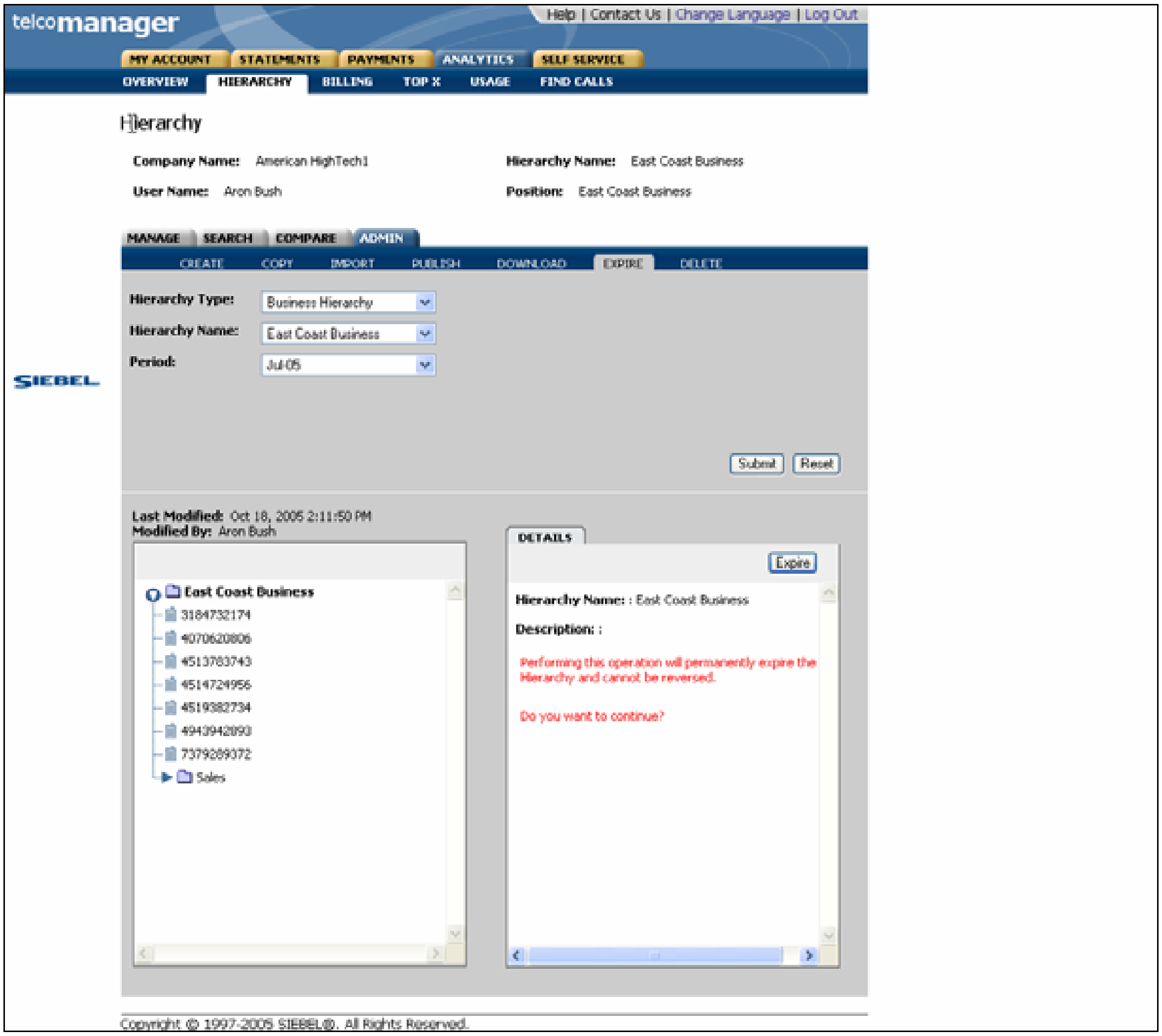
Expire Hierarchy

Name:	**Expire Hierarchy**
Brief Description:	Describes the mechanism whereby a user expires (stops version replication) of a non-billing hierarchy.
Actors:	CSR, Admin, Manager
Entry Points	Admin Tab: Expire Sub-tab
Form Elements:	Expire Hierarchy Form 1. Hierarchy Type [Required: Default: Current Context] Dropdown: [Consolidation, Organization] 2. Hierarchy Name [Required: Default: Current Context] Dropdown: [Hierarchy Names stored in the system] 3. Period [Required: Default: latest period in hierarchy]
Main Path:	**1.** User selects Admin tab and Expire sub-tab **2.** System displays Expire Hierarchy Form. **3.** User specifies the hierarchy and the period for the hierarchy to be expired and selects the Submit action. **4.** System validation passes. **5.** System returns a page displaying: a. Top pane: Hierarchy Name and Period of the Hierarchy to be expired b. Left pane: [Graphical view of the hierarchy to be expired] c. Right pane: [Details tab pre-populated with information for the hierarchy about to be expired] System displays the following confirmation message on the right pane: "Performing this operation will permanently expire the hierarchy and cannot be reversed. Do you want to continue?" **6.** User selects Expire action. **7.** System expires the selected hierarchy and all nodes below it. **8.** System returns a success page stating: "The Hierarchy has been successfully expired." **9.** Use case ends.
Alternate Paths:	User selects Reset action: System invokes the **Reset** use case.
Exception Paths:	**User encounters a validation error:** System invokes Validation Error Message use case. User or CSR encounters a system error: System invokes Error Message use case.

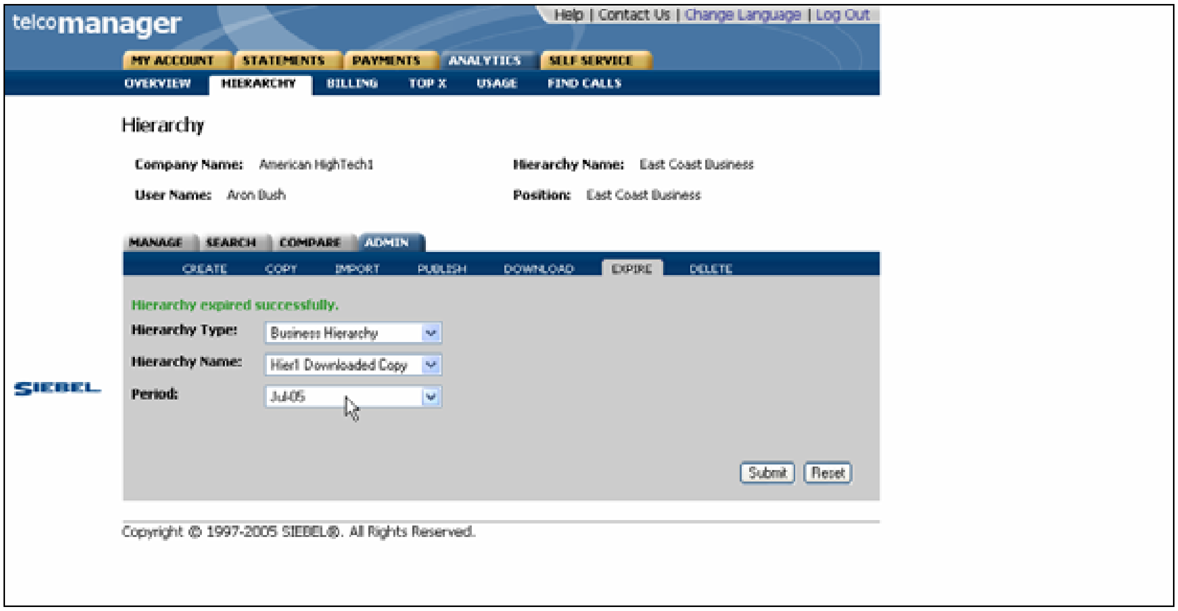
Business Rules:	Only non-billing hierarchies can be expired. Users assigned to expired hierarchies remain assigned. Services are unassigned from hierarchy expired and are moved to unassigned status but maintain any user settings (in consolidation only). Managers [only if they create the hierarchy], admin [regardless of who created the hierarchy] but Subscribers cannot Expire Hierarchies
Notes:	None



Expire Hierarchy Form



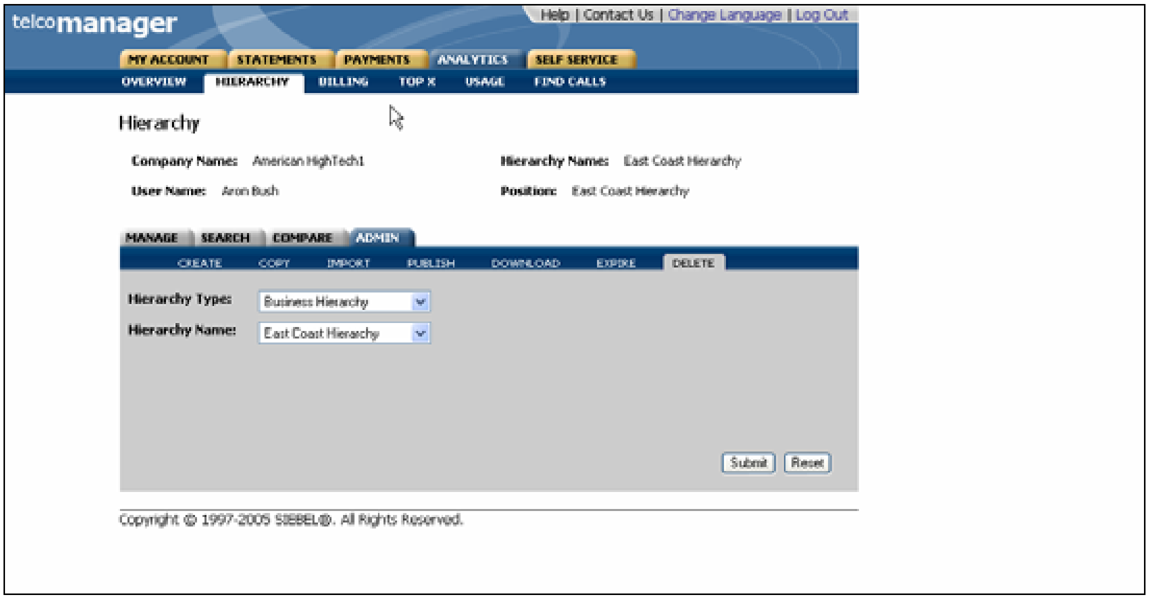
Expire Hierarchy Step 1: Select Hierarchy and Period to Expire



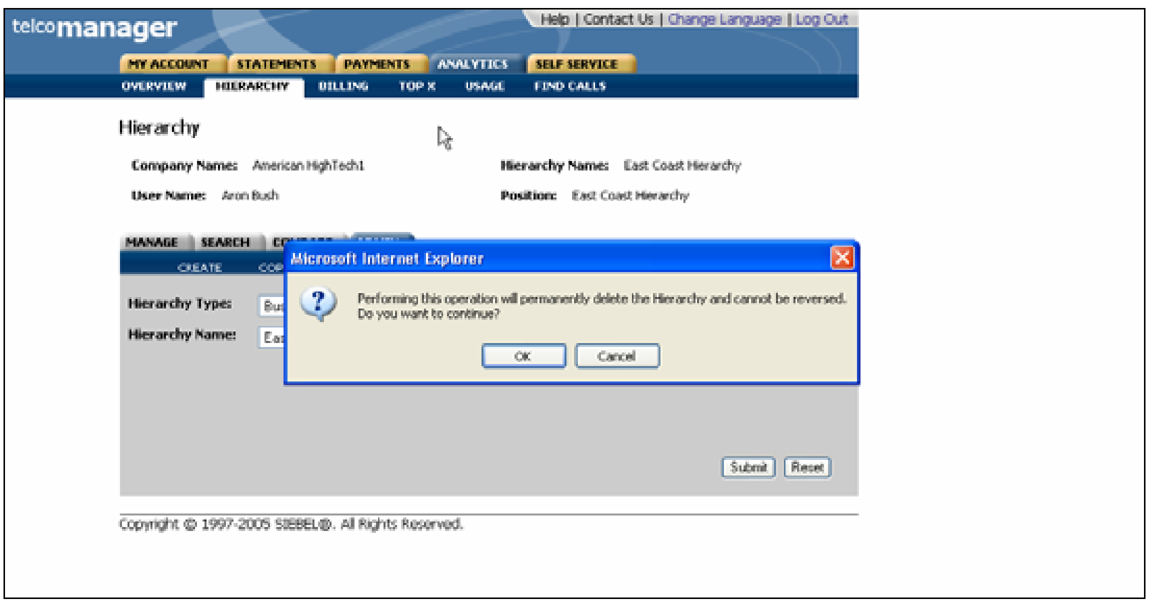
Expire Hierarchy Step 2: Success Page

Delete Hierarchy

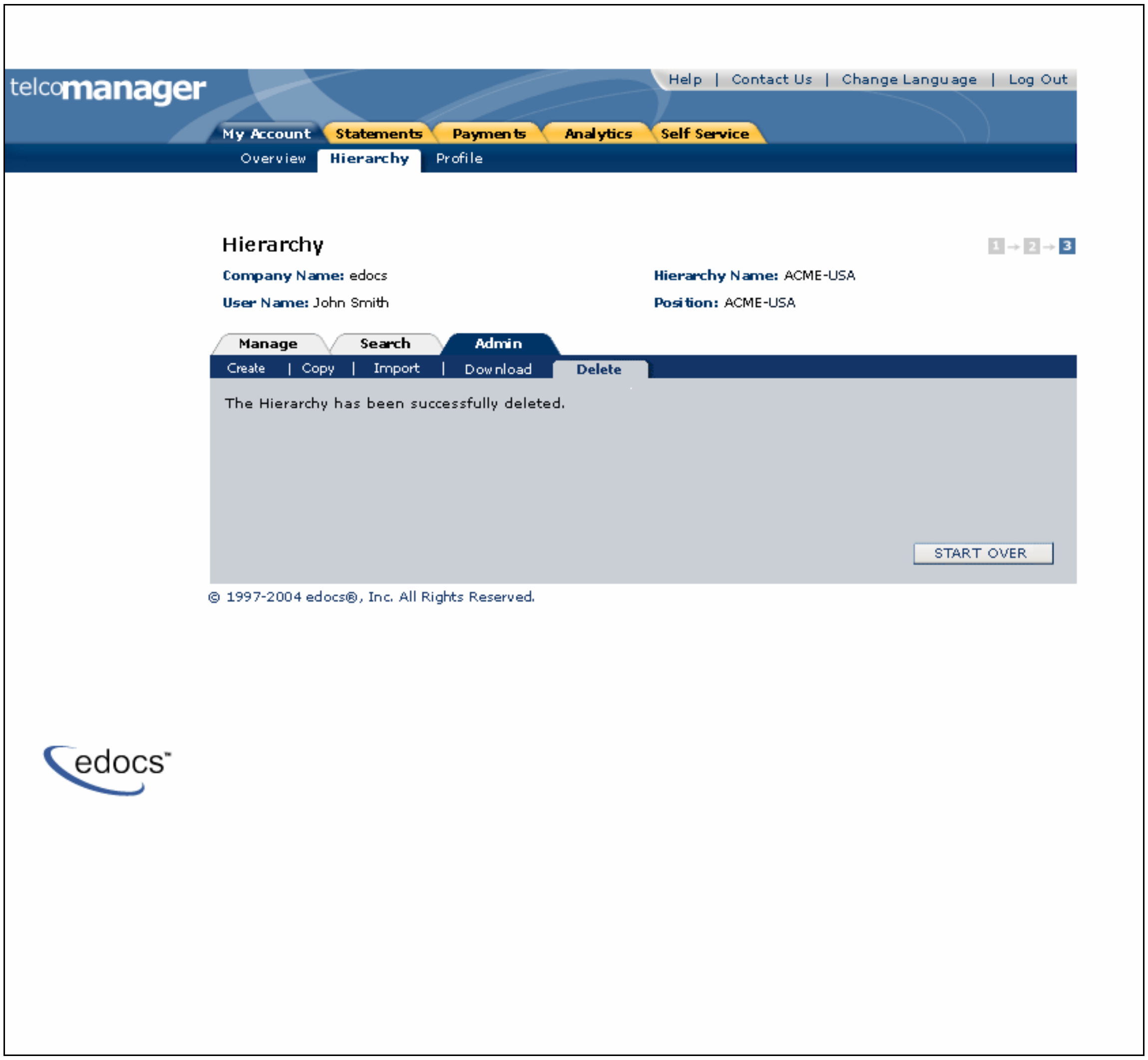
Name:	**Delete Hierarchy**
Brief Description:	Describes the mechanism whereby a user deletes a non-billing hierarchy.
Actors:	CSR, Admin, Manager
Entry Points	Admin Tab: Delete Sub-tab
Form Elements:	1. Delete Hierarchy Form Hierarchy Type [Required: Default: Current Context] Dropdown: [Consolidation, Organization] Hierarchy Name [Required: Default: Current Context] Dropdown: [Hierarchy Names stored in the system]
Main Path:	User selects Admin tab and Delete sub-tab System displays Delete Hierarchy Form. User specifies data for the hierarchy to be deleted and selects the Submit action. System returns a dialog box with the message: “Performing this Operation will permanently delete this hierarchy. Do you want to continue?” User selects the “OK” action. System deletes selected hierarchy and all nodes below it. System returns a success page stating: “The Hierarchy has been successfully deleted.” Use case ends.
Alternate Paths:	User selects Cancel action: System invokes **Cancel** use case. User selects Start Over action: System invokes **Start Over** use case.
Exception Paths:	**User encounters a validation error:** System invokes Validation Error Message use case. **User or CSR encounters a system error:** System invokes Error Message use case.
Business Rules:	Only non-billing hierarchies can be deleted. Users assigned to deleted hierarchies are unassigned and will still appear elsewhere if assigned and will not be unassigned from accounts or services contained in the group.

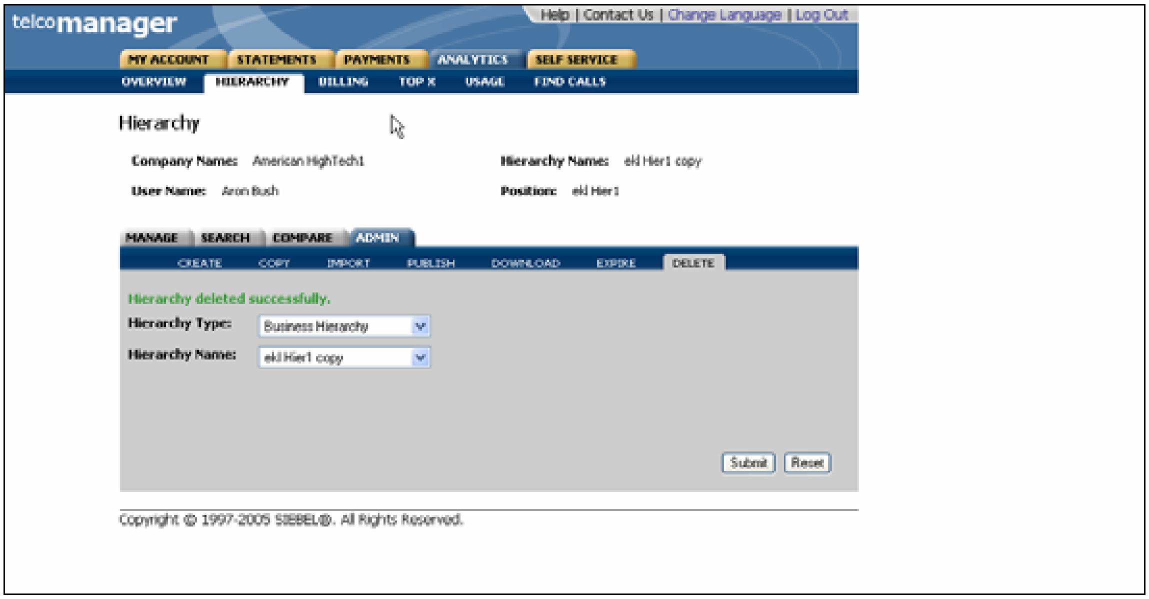


Delete Hierarchy Step 1: Specify Parameters



Delete Hierarchy Step 2: Confirm Page


telcomanager
Help | Contact Us | Change Language | Log Out
My Account
Statements
Payments
Analytics
Self Service
Overview
Hierarchy
Profile
Hierarchy
Company Name: edocs
Hierarchy Name: ACME-USA
User Name: John Smith
Position: ACME-USA
Manage
Search
Admin
Create | Copy | Import | Download
Delete
The Hierarchy has been successfully deleted.
START OVER
© 1997-2004 edocs®, Inc. All Rights Reserved.
edocs



Delete Hierarchy Step 3: Delete Page

Version Hierarchy

Version Billing Hierarchies

Name:	**Version Billing Hierarchies**
Brief Description:	System saves the current form of the billing hierarchy. *Business Requirement: Provide a way to generate accurate trending reports.*
Actors:	System
Main Path:	**1.** System stores the current version and effective date of all billing hierarchies on the first day of the month at 12:00 AM. **2.** System carries over the current version of all billing hierarchies to the new month.
Alternate Paths:	**[A1] Versioned hierarchy is purged:** System invokes Purge use case.
Exception Paths:	**System encounters an error during versioning:** System logs the error in the log file.
Business Rules:	Effective date is based upon the provider's reporting period. Reporting period is defaulted to one month. *Rationale: Service providers bill monthly.* In rare cases the bills are cut on a frequency other than monthly, the reporting period and effective dated hierarchies may be configured to match the provider's billing frequency. Effective date is 12:00 AM from the first of the month until 12:00 AM on the first of the next month.

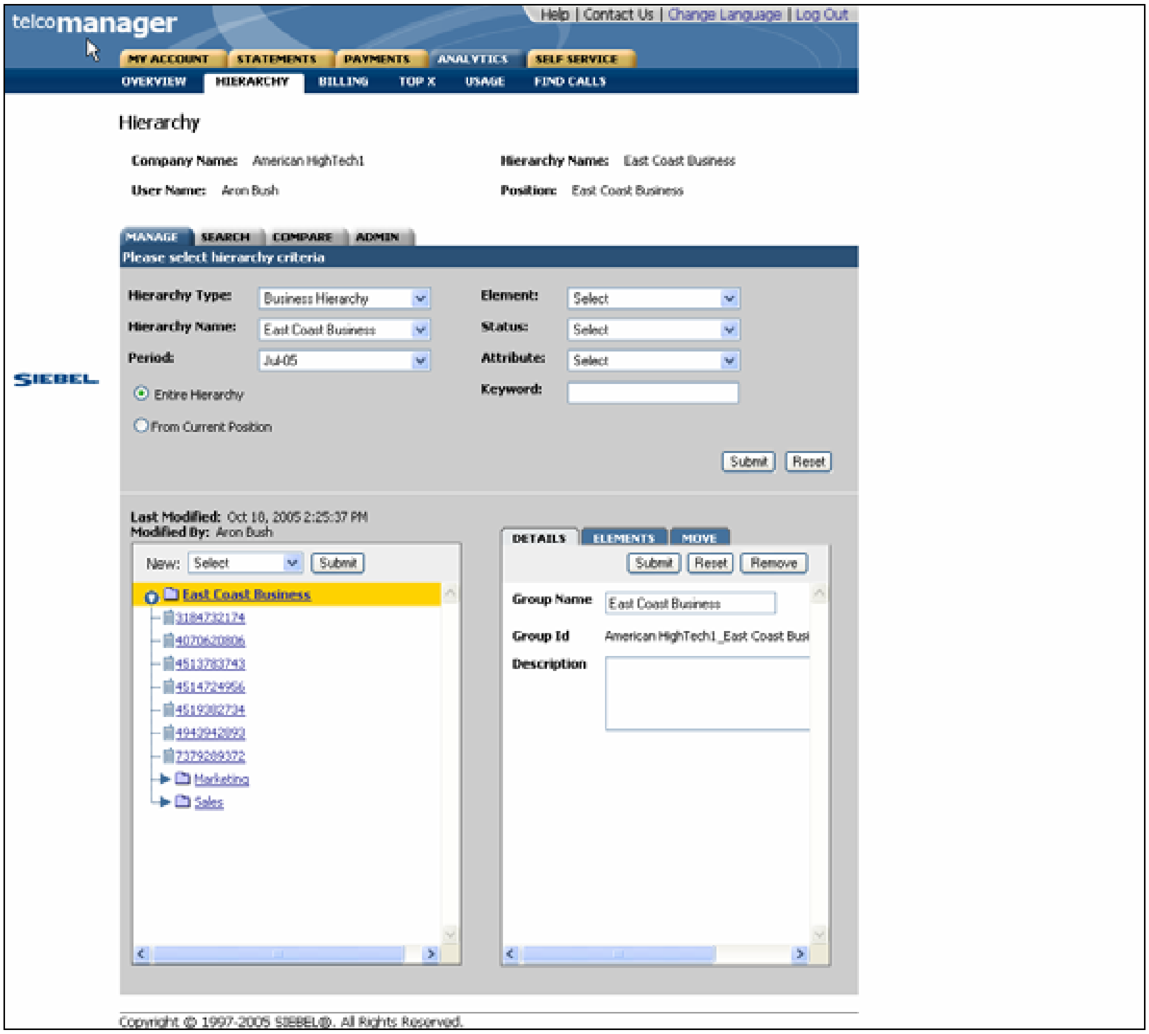
Manage Versioned Hierarchy

Name:	**Manage Versioned Hierarchy**
Brief Description:	Describes the user interface for managing an effective dated hierarchy and behavior of associated actions.
Actors:	CSR, Admin, Manager
Entry Points	**1.** My Account Tab: Hierarchy Sub-Tab **2.** Manage Tab
Form Elements:	Top Pane: Hierarchy Search Criteria If there is no user specified default hierarchy type and hierarchy name, the system uses the first billing hierarchy in the hit list as the default 1. Hierarchy Type 2. Hierarchy Name 3. Period [Required: Default: Current Context or Current Month for start of session] Reporting period that corresponds 1:1 with billing cycles. Dropdown Options: [monthly, up to 12 months, configurable] 4. Status 5. Attribute 6. Keyword 7. Radio buttons: [Default: From Current Location] Specifies the scope of the search, entire hierarchy or from the current position and below. Options: [Entire Hierarchy or From Current Location] 8. Instructional text: “Please select hierarchy criteria” *For more information regarding fields and their defaults, refer to Manage User Interface Use Case. Bottom Left Pane 1. New [Default: Select] Dropdown Options: [Groups] Bottom Right Pane: Details Sub-Tab * All fields are pre-populated with previously stored information. Bottom Right Pane: Elements Sub-Tab 1. Checkbox [header row] Selects all rows 2. Checkbox [row value] Selects the individual row 3. Results [number] Number of search results returned Bottom Right Pane: Move Sub-Tab

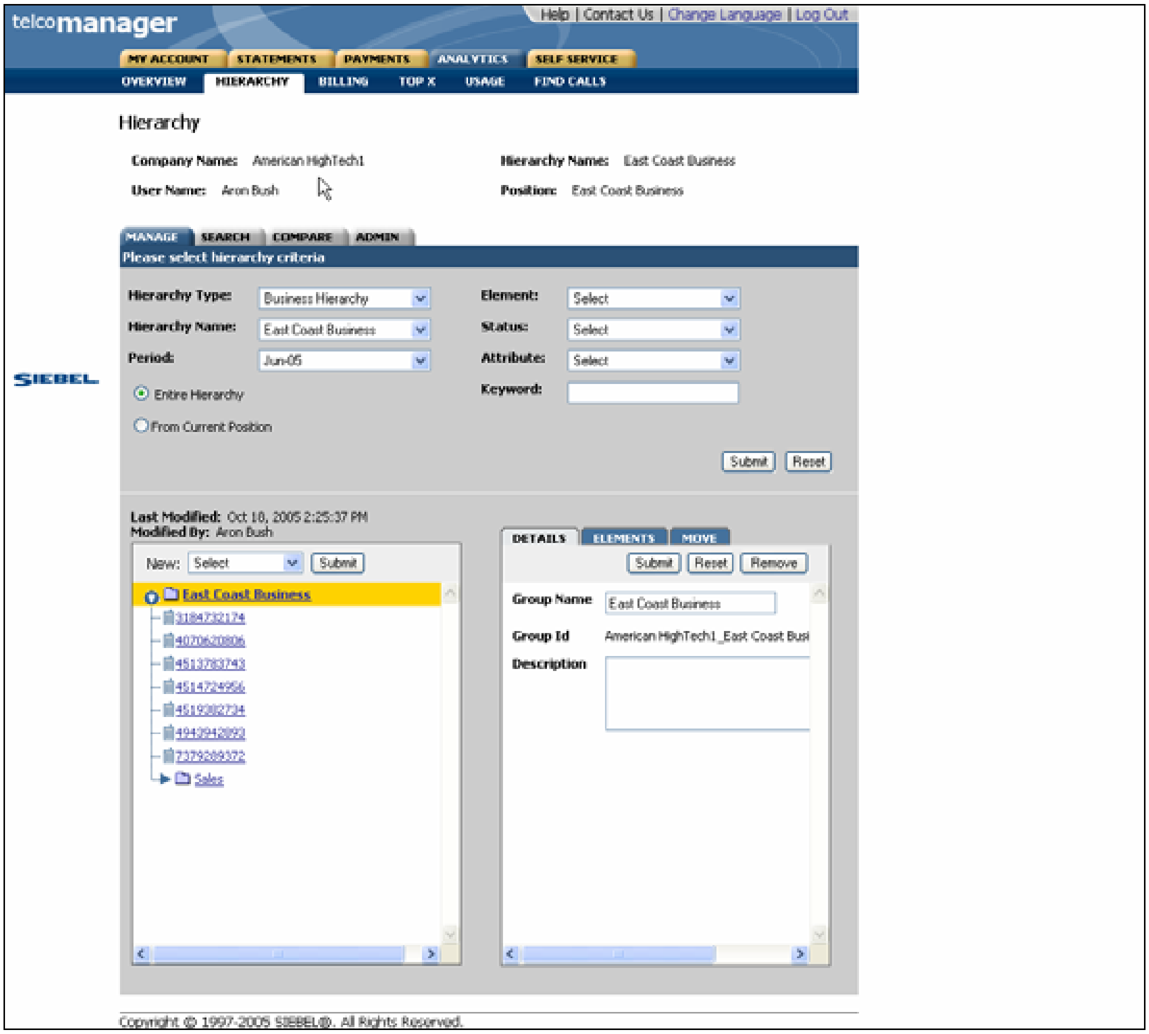
	1. Checkbox [node] Selects all rows 2. Checkbox [child branch] Selects the individual branch *For more information regarding fields and their defaults, refer to Manage User Interface Use Case.
Report Content:	Results Fields For Element Groups Element Sub-tab **1.** Name (Display name of element type Groups) **2.** Position (The name of the hierarchy node one level above) Results Fields For Element Accounts Element Sub-tab **1.** Account No. (Display name of element type Accounts) **2.** Position (The name of the hierarchy node one level above) Results Fields For Element Services Element Sub-tab **1.** Number (Display name of element type Services) **2.** Position (The name of the hierarchy node one level above) Results Fields For Element Users in Element Sub-tab **1.** Name (Display name of element type User) **2.** Position (The name of the hierarchy node one level above)
Main Path:	**1.** User selects Manage tab. **2.** System returns a page displaying: d. Top Pane: Hierarchy Search Criteria Form with current context and defaults. e. Bottom Left Pane: Graphical view of current hierarchy tree opened to current position context. f. Bottom Right Pane: Details tab containing the details for current hierarchy context. **3.** User specifies an alternate Period from the current period from the Period drop down box [B1] **4.** System determines query parameters based upon the specified hierarchy search criteria and redisplays page as follows: d. Top Pane: Hierarchy Search Criteria Form with context updated by specified search criteria. e. Bottom Left Pane: Graphical view of current hierarchy tree opened to current position context. f. Bottom Right Pane: Elements tab containing the fields for specified element and status with the total count for the search result set. (For field information, see Report Content section of this use case.) **5.** Use Case Ends.

Alternate Paths:	User enters search parameters for Attribute, and/or Keyword and selects the Submit action to refine search criteria and filter down the results: Rationale: Enable user to refine search by providing filters for the search and quickly select a position in the hierarchy. System searches the hierarchy tree returning a list of all nodes in the Elements sub-tab on the lower right pane that matches the search criteria showing the fields for specified element and status. User selects link of the display name in the Elements sub-tab: System returns the user to the Details sub-tab displaying attributes for the specified element type. User selects link of a position in the Elements sub-tab: System highlights the position of the selected item in the graphical view of the hierarchy. User expands and collapses the hierarchy branch by selecting on the arrow in the graphical view of the current hierarchy: System invokes **Collapse and Expand Hierarchy** use case. User selects New Group and the Submit action: System invokes **Create Group** use case. User selects Details sub tab: System returns the user to the Details sub-tab displaying attributes for the specified element type. User selects Delete or Remove action in the Details or Element sub-tabs: System invokes **Remove Element** use case. User modifies attributes in the Details sub-tab: System invokes **Modify Element Attributes** use case. User selects Add action in the Element sub -tab: System invokes **Add Element** use case. User selects column header links in the Element sub-tab: System invokes **Sorting** use case. User selects Move sub-tab: System invokes **Move Group** use case. User selects Reset action: System invokes **Reset** use case.
Exception Paths:	**User encounters a validation error:** System invokes Validation Error Message use case. **User encounters a system error:** System invokes Error Message use case.

Business Rules:	**General** The manage hierarchy behavior is the same for a historical versioned hierarchy as it is for the current hierarchy. However any changes made to a historical hierarchy will only affect the specified current version of the hierarch. System persists the Hierarchy Type, Hierarchy Name, Period, and Position throughout the user's session until user otherwise changes it. Hierarchy Access Control: Users can only view hierarchies to which they have been assigned and positions at or below the positions to which they have been assigned. User can not view hierarchy nodes to which they have not been granted view access privileges . If user enters the Manage Tab with the hierarchy as the current position, the graphical view of the hierarchy contains the hierarchy as the top node and its nodes one level below it. **Top Pane: Hierarchy Search Criteria** If user selects the radio button for "Entire Hierarchy", the scope of the search is all the nodes in the hierarchy. If user selects the radio button for "From Current Position", the scope of the search is relative to and limited by the nodes below the current position. **Bottom Left Pane: Graphical View of Hierarchy** If the hierarchy is modified, the fields "Last Modified" and "Modified By" are updated. If a position is selected, the position is highlighted. Unless the arrow for the position is selected, the node will not expand or collapse. If a node is empty, there will be no arrow next to the node. **Bottom Right Pane: Details/Element/Move Sub-Tabs** If user selects the checkbox in the row of the column headers of the search results, all items of the search results become selected. If Element is unassigned, it can be added to the hierarchy. If element is assigned, it can be removed or deleted from the hierarchy. If Element is Group, Delete action is available. For all other elements, Remove action is available. If text field box exists, the attribute is editable. Results field for the search criteria specified is updated according to action performed.
Notes:	



Current Period Manage Hierarchy



Previous Period [Historical Version] Manage Hierarchy

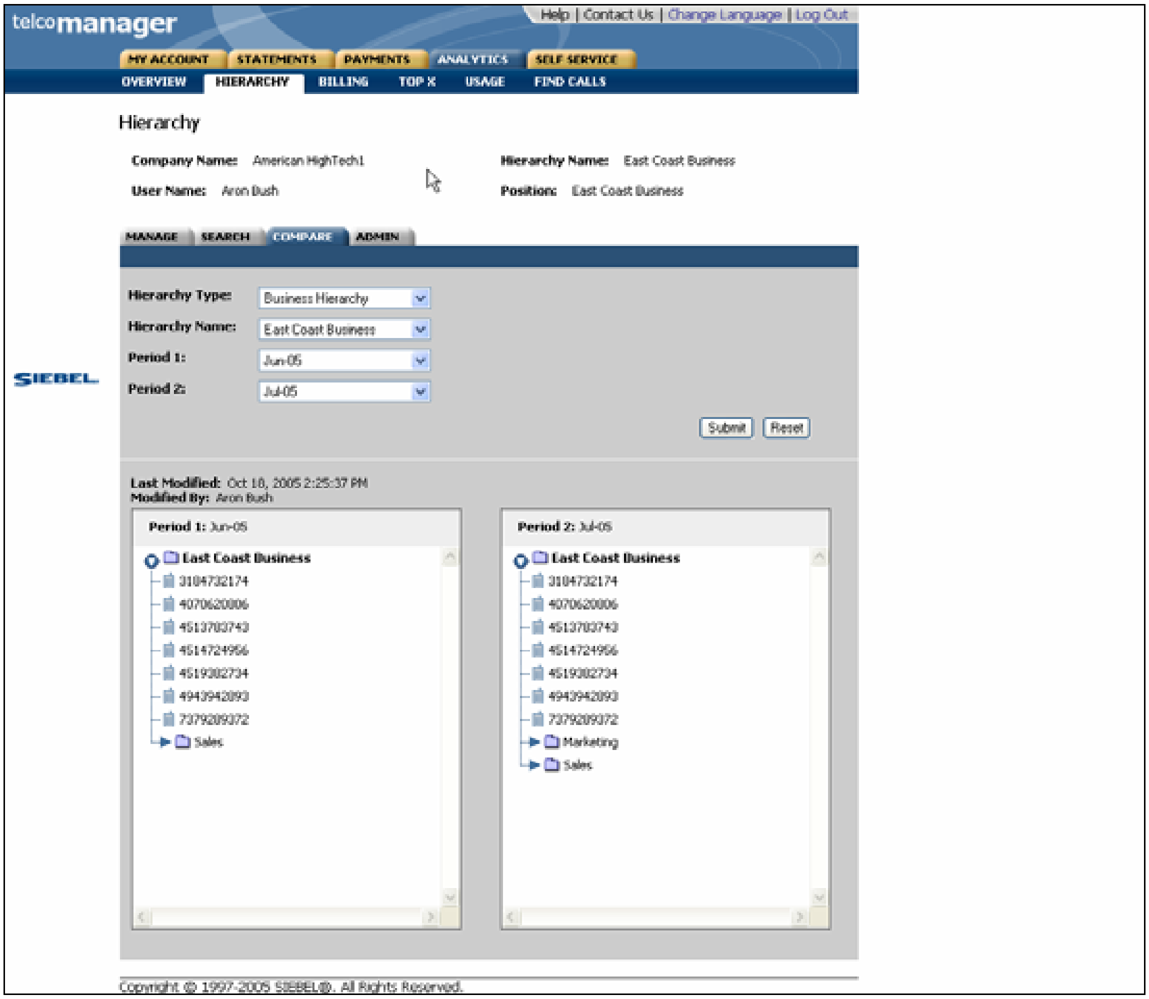
Compare Versioned Hierarchy

Name:	**Compare Versioned Hierarchy**
Brief Description:	User finds a particular group, account, services, and/or attributes for any node or leaf within a hierarchy.
Actors:	CSR, Admin, Manager
Entry Points	**1.** Compare Tab
Form Elements:	**Hierarchy Search Criteria** If there is no user specified default hierarchy type and hierarchy name, the system uses the first billing hierarchy in the hit list as the default 1. Hierarchy Type 2. Hierarchy Name 3. Period 1: [Specifies hierarchy version to be displayed in lower left pane] [Default: Current Period] 4. Period 2: [Specifies hierarchy version to be displayed in lower right pane] [Default: Current Period] 5. Element [Inactive] 6. Status [Inactive] 7. Attribute [Inactive] 8. Keyword [Inactive] 9. Radio buttons: [Inactive] *For more information regarding fields and their defaults, refer to Manage User Interface Use Case.
Report Content:	Search Results Fields For Element Groups *For more information regarding fields and their defaults, refer to Manage User Interface Use Case. Search Results Fields For Element Accounts *For more information regarding fields and their defaults, refer to Manage User Interface Use Case. Search Results Fields For Element Services *For more information regarding fields and their defaults, refer to Manage User Interface Use Case. Search Results Fields For Element Users **1.** *For more information regarding fields and their defaults, refer to Manage User Interface Use Case.
Main Path:	User selects Compare tab. System returns a page displaying: Display with Hierarchy Type, Hierarchy Name and Period User specifies a Hierarchy Name and an alternate for Period 1 and/or for Period 2 from the current period from the Period drop down box [B1]

	System determines query parameters based upon the specified hierarchy search criteria and redisplays page as follows: a. Top Pane: Hierarchy Search Criteria Form with context updated by specified search criteria. b. Bottom Left Pane: Graphical view of current hierarchy tree opened to Period 1 context. c. Bottom Right Pane: Graphical view of current hierarchy tree opened to Period 2 context. Use Case Ends.

Alternate Paths:	**[A1]** User selects one or more checkboxes and selects the Submit action: 1. System returns the user to the Manage tab displaying: i. Top pane: Hierarchy Search Criteria with specified search criteria context. ii. Bottom Left Pane: Graphical view of current hierarchy tree opened to current position context. iii. Bottom Right Pane: Elements tab containing the display name and position of the selected element. **[A2]** User selects link of the display name of the specified element type for the search criteria: 1. System returns the user to the Manage tab displaying: i. Top pane: Hierarchy Search Criteria with specified search criteria context. ii. Bottom Left Pane: Graphical view of current hierarchy tree opened to where the element selected is located in the tree in the bottom left pane. iii. Bottom Right Pane: Details tab containing the details for the selected element.
Exception Paths:	**User encounters a validation error:** System invokes Validation Error Message use case. User encounters a system error: System invokes Error Message use case.
Business Rules:	**General** The manage hierarchy behavior is the same for a historical versioned hierarchy as it is for the current hierarchy. However any changes made to a historical hierarchy will also affect all versions of the hierarchy forward up to and including the current hierarchy. System persists the Hierarchy Type, Hierarchy Name, Period, and Position throughout the user's session until user otherwise changes it. Hierarchy Access Control: Users can only view hierarchies to which they have been assigned and positions at or below the positions to which they have been assigned. User can not view hierarchy nodes to which they have not been granted view access privileges Any unassigned users, accounts, and services are attached on the top of the hierarchy. If user enters the Manage Tab with the hierarchy as the current position, the graphical view of the hierarchy contains the hierarchy as the top node and its nodes one level below it. **Top Pane: Hierarchy Search Criteria** "Entire Hierarchy", is inactive "From Current Position", is inactive **Bottom Left Pane: Graphical View of Hierarchy Period 1** If the hierarchy is modified, the fields "Last Modified" and "Modified By" are

	updated. If a position is selected, the position is highlighted. Unless the arrow for the position is selected, the node will not expand or collapse. If a node is empty, there will be no arrow next to the node. **Bottom Right Pane: Graphical View of Hierarchy Period 2** If the hierarchy is modified, the fields "Last Modified" and "Modified By" are updated. If a position is selected, the position is highlighted. Unless the arrow for the position is selected, the node will not expand or collapse. If a node is empty, there will be no arrow next to the node.



Compare Effective Dated Hierarchies

5 Report Use Cases

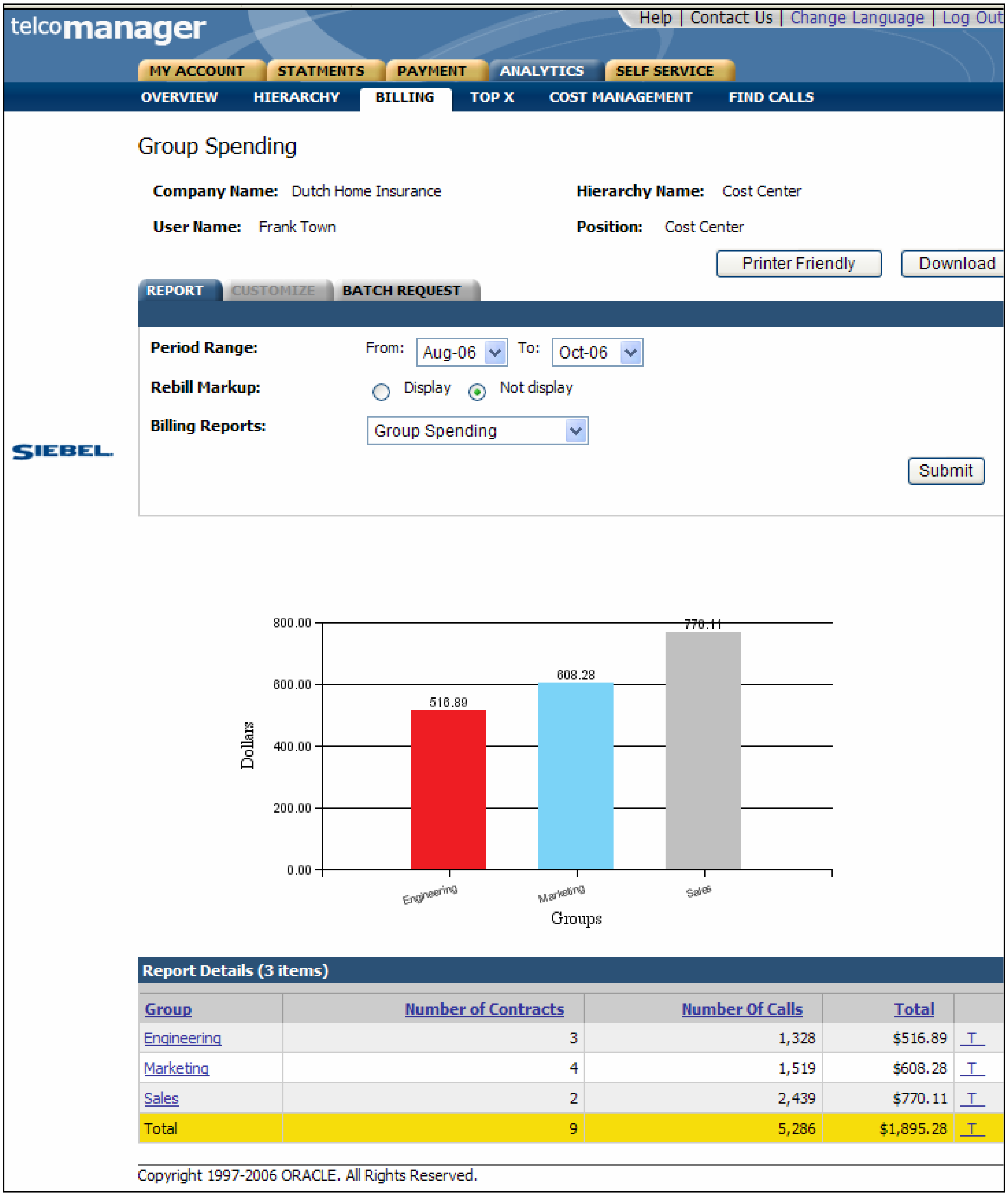
Billing Reports

Group Spending

Name:	**Group Spending**
Brief Description:	User views total fees for the current cost center.
Entry Points:	**1.** Billing Reports List **2.** Report Dropdown
Query Parameters:	**<u>Report Selection Criteria & Custom Tab</u>** **1.** Hierarchy Name & Position **2.** Period Range **<u>Report Selection Criteria Only</u>** **1.** Report **<u>Custom Tab Only</u>** **1.** Relative Period Range **2.** Group **3.** Number of Contracts **4.** Number of Calls **5.** Total Value *For more information regarding fields above, see Customize a Report Use Case.
Report Content:	<u>Fields</u> **1.** Group (Hierarchical node) **2.** Number of Contracts **3.** Number of Calls **4.** Total Value (Total charges and taxes) <u>Footer</u> For all but the first column, totals for all pages (including those not displayed) are displayed at the bottom of each page.

Name:	**Group Spending**
Chart:	Chart Type: Bar ♦ X axis: Group ♦ Y axis: Total Value
Main Path:	**1.** User selects the Group Spending report from the List of Billing Reports. **2.** System determines query parameters based on report context or defaults and returns: a. Tabular Report b. Chart **3.** Use case ends.
Alternate Paths:	**[A1] User modifies the query parameters:** 1. User changes any of the query parameters on the "Report" tab or their hierarchy context position and selects Display to execute report 2. System regenerates the report for the scope of selected reporting period and hierarchy context position. **[A2] Drilldown: User selects the link for a group.** System invokes Highest Spender Reports use case for the selected group. **[A3] Drilldown: User selects the hyperlink "T" at the end of a row:** The Group Spending Trend report is generated where the hierarchy context position is changed to the object of the row on which the user selected and the report is run with all the same parameters from the report previously ran. **[A4] Drilldown: User selects the hyperlink "T" on the total at the bottom of the page:** The Group Spending Trend report is generated where the report uses the hierarchy position context and report parameters for the report previously ran. **[A5] Result set returns more than 20 Chart Bars** User receives a message that the chart was suppressed because of this condition. **[A6] User selects the Printer-Friendly action:** System invokes Printer-Friendly use case. **[A7] User selects the Download action:** System invokes Download use case. **[A8] No data set is available for the report:** System invokes No Data use case.
Exception Paths:	**[E1]** User encounters a system error: • System invokes Error Message use case.

Name:	**Group Spending**
Business Rules:	**[B1]** If there are more than 20 Cost Centers in the result set the chart is suppressed.
Notes:	This report was named as Spending by Cost Center in Release 1.

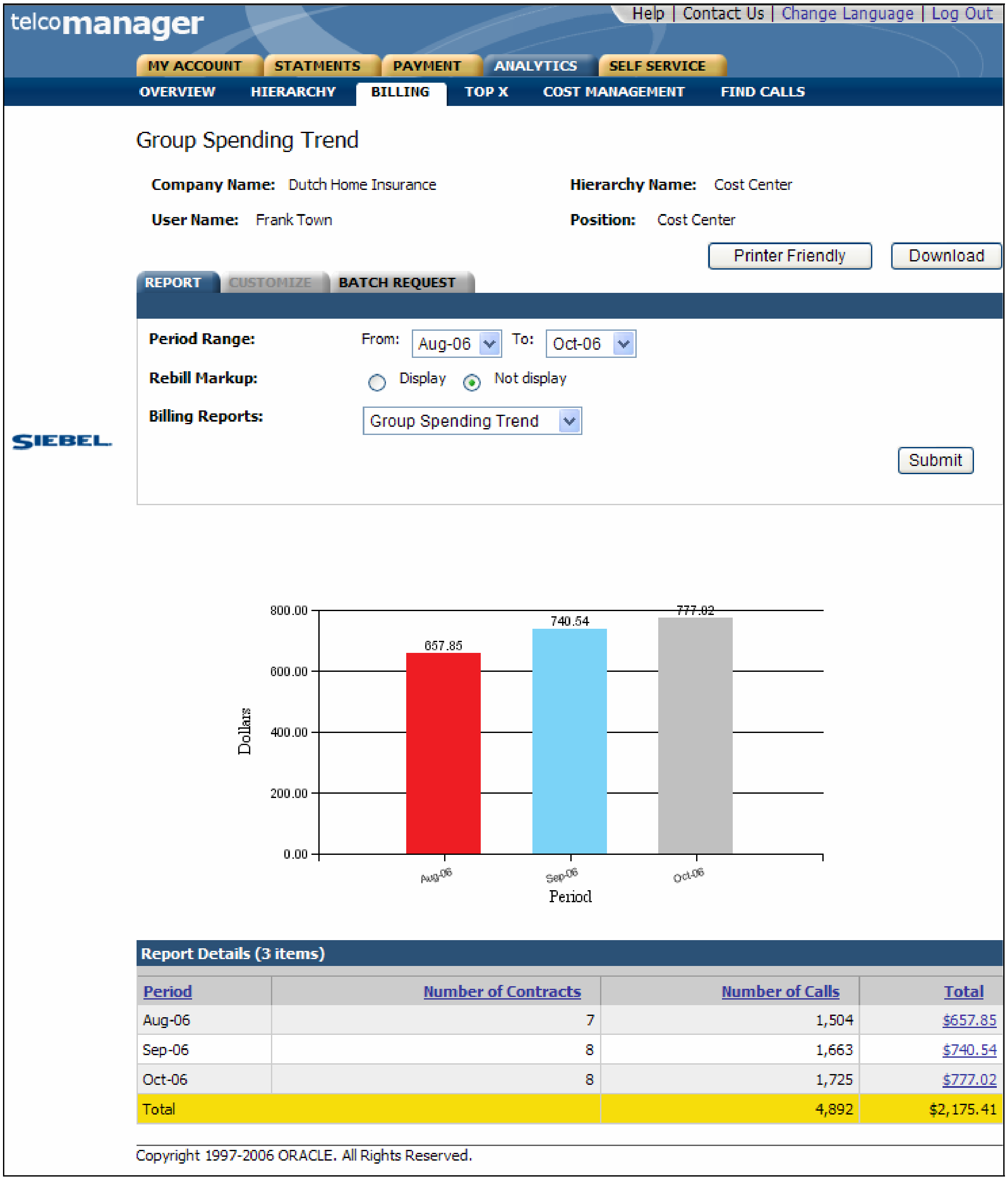


Group Spending

Group Spending Trend

Name:	**Group Spending Trend Report**
Brief Description:	This report tracks monthly summary charge information over a user defined reporting period range for a selected group in a group hierarchy. *Rationale:* 1) Analyze trends, 2) Identify anomalies
Entry Points	**1.** Report List **2.** Drilldown: Group Spending Trend Report (from a higher level in the hierarchy) **3.** Drilldown: Group Spending Report **4.** Report Dropdown
Query Parameters	**Report Selection Criteria & Custom Tab** **1.** Hierarchy Name & Position **2.** Period Range **Report Selection Criteria Only** **1.** Report
Report Content	Fields **1.** Reporting Period [Sort: Ascending] **2.** Number of Contracts **3.** Number of Calls **4.** Total Value (Total charges and taxes) Footer Display column totals (for all pages) for Number of Calls and Total Value.
Chart	Chart Type: Bar ♦ X axis: Reporting Period ♦ Y axis: User defined value
Main Path:	**1.** User selects the report from the List of Billing Reports. **2.** System determines query parameters based on report context or defaults. **3.** System returns: a. Bar Chart b. Summary tabular report

Name:	**Group Spending Trend Report**
Alternate Paths:	**[A1] User Modifies Query Parameters** User changes any of the query parameters on the “Report Tab” or their hierarchy context position and clicks display to execute report. **[A2] Drilldown To Billing Account Overview Report** Preconditions: Drilling down to this report is valid only if the current hierarchy position context is the bottom group level linked directly to a billing account object in the current hierarchy. *Rationale*: An exception condition means there are no child billing accounts to display as report rows. Note: See note in [A3] User clicks on the period name or total value in the tabular report to run the Account Billing Overview report for the reporting period on which the user clicked. **[A3] Result set returns more than 20 Chart Bars** User receives a message that the chart was suppressed because of this condition. **[A4] User selects the Printer-Friendly action** System invokes Printer-Friendly use case. **[A5] User selects the Download action** System invokes Download use case. **[A6] No data set is available for the report** System invokes No Data use case. **[A7] Change Column to Chart** 1. User selects a new value from the Column to Chart query parameter. New chart is displayed with the selected column.
Exception Paths:	**[E1] Drilldown Unavailable:** If the current hierarchy context position is directly related to both a child group hierarchy object and a child billing hierarchy object, it is not be possible to drilldown to either report. *Rationale:* The total on the report would not tie to value from which the user drilled down.
Business Rules:	**[B1] Maximum Period Ranges**: If the date range spans more than 20 reporting periods, the chart display is suppressed.
Notes:	None



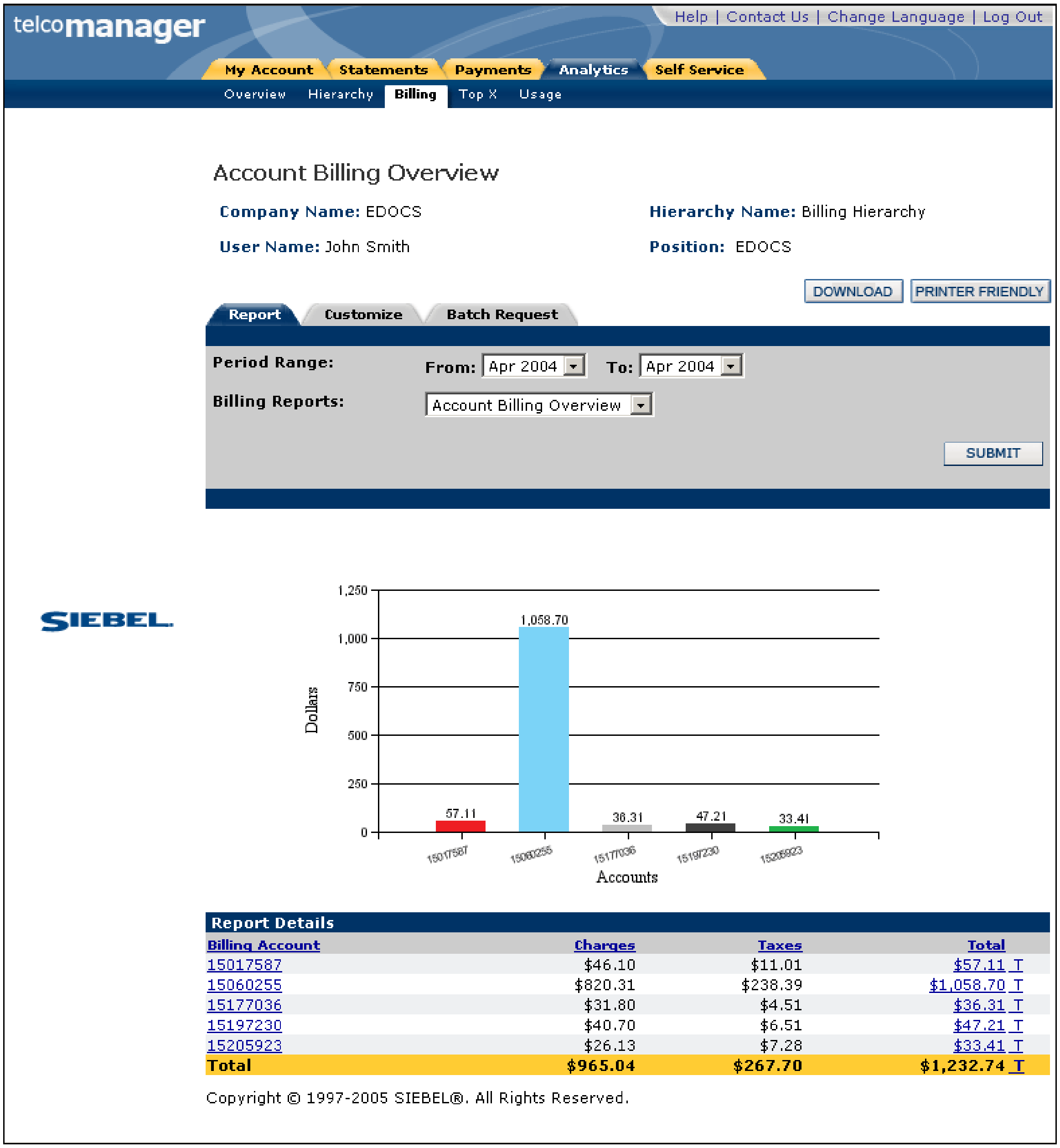
Group Spending Trend

Account Billing Overview

Name:	**Account Billing Overview Report**
Brief Description:	User views an overview of all billing accounts associated with the user
Entry Points:	**1.** Billing Reports List **2.** Report Dropdown
Query Parameters:	**Report Selection Criteria & Custom Tab** **1.** Hierarchy Name & Position **2.** Period Range **Report Selection Criteria Only** **1.** Report **Custom Tab Only** **1.** Relative Period Range **2.** Charges **3.** Taxes **4.** Total Value
Report Content:	Displayed Fields [Default] **1.** Billing Account **2.** Charges **3.** Taxes **4.** Total Value Available Fields Not Displayed **1.** Account Charges **2.** Usage Charges **3.** Adjustments **4.** Discounts **5.** Other Charges/Credits **6.** Taxes Footer For all but the first column, totals for all pages (including those not displayed) are displayed at the bottom of each page
Chart:	Chart Type: Bar ♦ X axis: Billing Account ♦ Y axis: Total Value

Name:	**Account Billing Overview Report**
Main Path:	**1.** User selects the Account Billing Overview report from the List of Billing Reports. **2.** System determines query parameters based on report context or defaults and returns: a. Tabular Report b. Chart **3.** Use case ends.

Name:	Account Billing Overview Report
Alternate Paths:	**[A1] User modifies the query parameters:** 1. User changes any of the query parameters on the "Report" tab or their hierarchy context position and selects Display to execute report. 2. System regenerates the report for the scope of selected reporting period and hierarchy context position. **[A2] Drilldowns: User selects link to get additional details.** 1. A Billing Account: system invokes Contract Billing Overview use case for the selected Billing Account. 2. A Row Total: system invokes Account Billing Details use case for the selected number. **[A3] Drilldown: User selects the hyperlink "T" at the end of a row:** The **Account Billing Trend** report is generated where the hierarchy context position is changed to the object of the row on which the user selected and the report is run with all the same parameters from the report previously ran. **[A4] Drilldown: User selects the hyperlink "T" on the total at the bottom of the page:** The **Group Spending Trend** report is generated where the report uses the hierarchy position context and report parameters for the report previously ran. **[A5] Result set returns more than 20 Chart Bars** **User receives a message that the chart was suppressed because of this condition.** **[A6] User selects the Printer-Friendly action:** System invokes Printer-Friendly use case. **[A7] User selects the Download action:** System invokes Download use case. **[A8] No data set is available for the report:** System invokes No Data use case. **[A9] User changes the displayed columns in the Customize tab** System invokes Customize a Report use case and alternate paths. **[A10] User selects Change Language action** System updates the report with the "Switch Language Report Template". Rationale: To test that the reporting module supports the switch language functionality.
Exception Paths:	**[E2] User encounters a system error:** System invokes Error Message use case.
Business Rules:	**[B1]** If there are more than 20 Billing Accounts in the result set, the chart is suppressed.

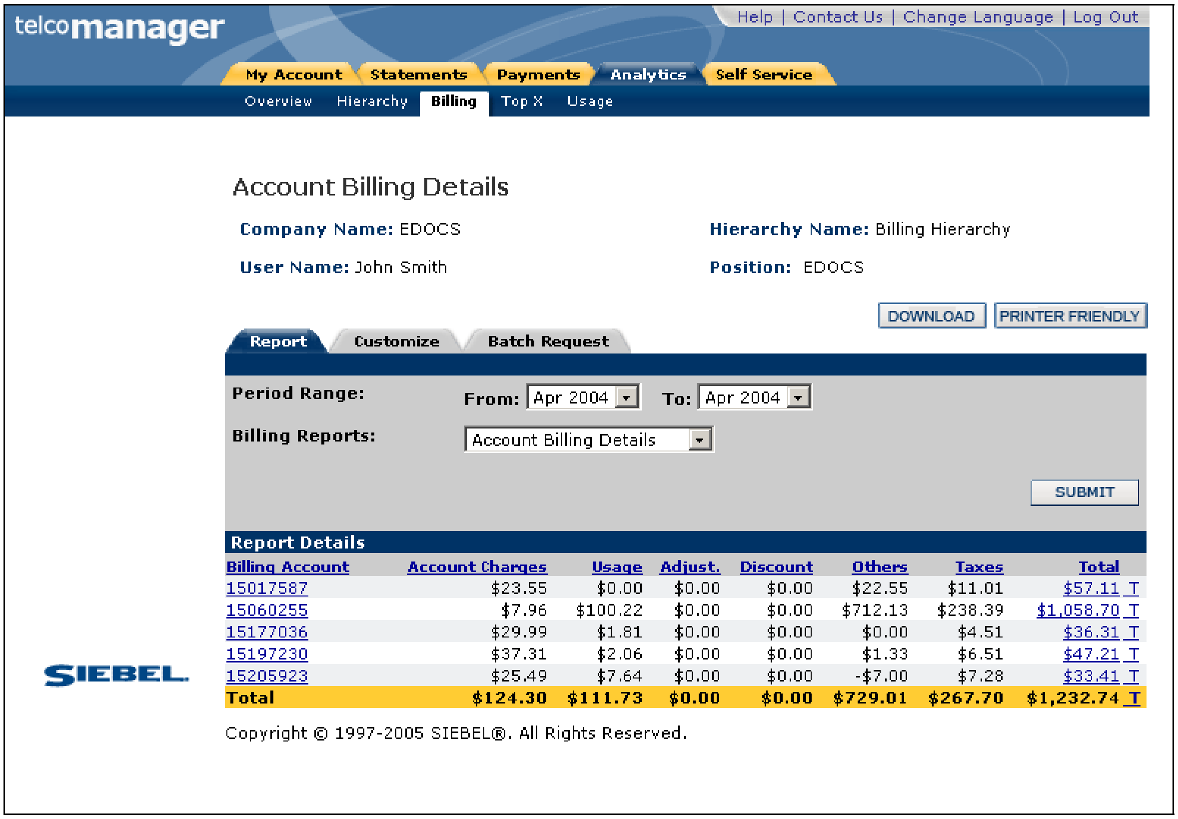


Account Billing Overview

Account Billing Details

Name:	**Account Billing Details**
Brief Description:	User views the charge types for all billing accounts associated with the user
Entry Points	**1.** Billing Reports List **2.** Report Dropdown
Query Parameters:	**Report Selection Criteria & Custom Tab** **1.** Hierarchy Name & Position **2.** Period Range **Report Selection Criteria Only** **1.** Report **Custom Tab Only** **1.** Relative Period Range **2.** Account Charges **3.** Usage Charges **4.** Adjustments **5.** Discounts **6.** Other Charges/Credits **7.** Taxes **8.** Total Value
Report Content:	Fields **1.** Billing Account **2.** Account Charges **3.** Usage Charges **4.** Adjustments **5.** Discounts **6.** Other Charges/Credits **7.** Taxes **8.** Total Value Footer For all but the first column, totals for all pages (including those not displayed) are displayed at the bottom of each page
Chart:	None

Name:	**Account Billing Details**
Main Path:	**1.** User selects the Account Billing Details report from the List of Billing Reports. **2.** System determines query parameters based on report context or defaults and returns a tabular report. **3.** Use case ends.
Alternate Paths:	**[A1] User modifies the query parameters** 1. User changes any of the query parameters on the "Report" tab or their hierarchy context position and selects Display to execute report. 2. System regenerates the report for the scope of selected reporting period and hierarchy context position. **[A2] Drilldowns: User selects link to get additional details.** 1. A Billing Account: system invokes Contract Billing Overview use case for the selected account. 2. A Row Total: system invokes Invoice Billing Details use case for the selected number. **[A3] Drilldown: User selects the hyperlink "T" at the end of a row:** The Account Billing Trend report is generated where the hierarchy context position is changed to the object of the row on which the user selected and the report is run with all the same parameters from the report previously ran. **[A4] Drilldown: User selects the hyperlink "T" on the total at the bottom of the page:** The Group Spending Trend report is generated where the report uses the hierarchy position context and report parameters for the report previously ran. **[A5] User selects the Printer-Friendly action** System invokes Printer-Friendly use case. **[A6] User selects the Download action** System invokes Download use case. **[A7] No data set is available for the report:** System invokes No Data use case.
Exception Paths:	**[E1]** User encounters a system error: System invokes Error Message use case.
Business Rules:	None
Notes:	None



Account Billing Details

Account Billing Trend

Name:	**Account Billing Trend Report**
Brief Description:	This report tracks monthly summary charge information over a user defined reporting period range for a selected billing account in a billing or group hierarchy. *Rationale*: 1) Analyze trends, 2) Identify anomalies
Entry Points	**1.** Report List **2.** Drilldown: Account Billing Overview Report **3.** Drilldown: Account Billing Detail Report **4.** Drilldown: Contract Billing Overview Report **5.** Report Dropdown

Name:	**Account Billing Trend Report**
Query Parameters	**<u>Report Selection Criteria & Custom Tab</u>** **1.** Hierarchy Name & Position **2.** Period Range User selects a start and end reporting period from two drop down boxes. **<u>Report Selection Criteria Only</u>** **1.** Report
Report Content	<u>Fields</u> **1.** Reporting Period [Sort: Ascending] **2.** Account Charges **3.** Usage Charges **4.** Adjustments **5.** Discounts **6.** Other Charges / Credits **7.** Taxes **8.** Total Value <u>Footer</u> For all but the first column, totals for all pages (including those not displayed) are displayed at the bottom of each page
Chart	Chart Type: Bar ♦ X axis: Reporting Period ♦ Y axis: User defined value
Main Path:	**1.** User selects the report from the List of Billing Reports. **2.** System determines query parameters based on report context or defaults. **3.** System returns: a. Bar Chart b. Summary tabular report

Name:	**Account Billing Trend Report**
Alternate Paths:	**[A1] User modifies query parameters** User changes any of the query parameters on the "Report Tab" or their hierarchy context position and clicks display to execute the report. **[A2] Drilldown To Contract Billing Overview Report** User clicks on a value in the tabular report to run the report for the reporting period on which the user clicked. **[A3] Result set returns more than 20 Chart Bars** User receives a message that the chart was suppressed because of this condition. **[A4] User selects the Printer-Friendly action** System invokes Printer-Friendly use case. **[A5] User selects the Download action** System invokes Download use case. **[A6] No data set is available for the report:** System invokes No Data use case. **[A7] Change Column to Chart** 1. User selects a new value from the Column to Chart query parameter. New chart is displayed with the selected column.
Exception Paths:	**[E1] User encounters a system error:** 1. System invokes Error Message use case.
Business Rules:	**[B1]** Maximum Period Ranges: If the date range spans more than 20 reporting periods, the chart display is suppressed.
Notes:	None

telcomanager

Help | Contact Us | Change Language | Log Out

MY ACCOUNT | STATMENTS | PAYMENT | ANALYTICS | SELF SERVICE

OVERVIEW | HIERARCHY | BILLING | TOP X | COST MANAGEMENT | FIND CALLS

SIEBEL

Account Billing Trend

Company Name: Dutch Home Insurance **Hierarchy Name:** Billing Hierarchy

User Name: Frank Town **Position:** Dutch Home Insurance

Printer Friendly | Download

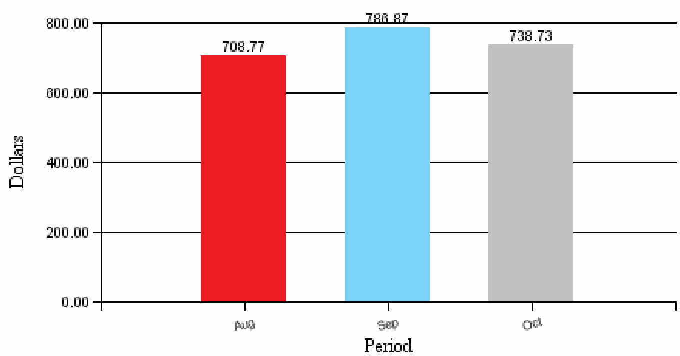
REPORT | CUSTOMIZE | BATCH REQUEST

Period Range: From: Aug-06 To: Oct-06

Rebill Markup: Display Not display

Billing Reports: Account Billing Trend

Submit



Report Details (3 items)

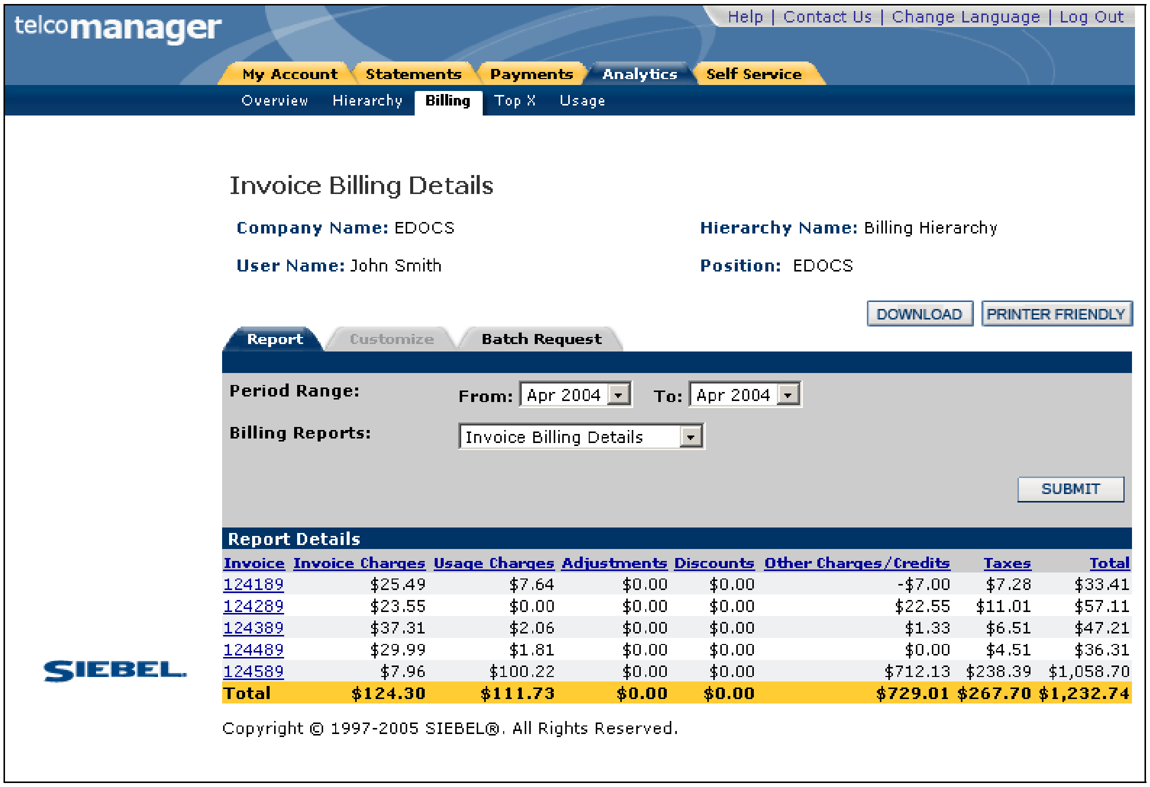
Period	Account Charges	Usage Charges	Adjust.	Discounts	Others/Credits	Subscription Charges	Taxes	Total
August	$482.70	$0.00	$0.00	$0.00	$0.00	$168.14	$57.93	$708.77
September	$548.30	$0.00	$0.00	$0.00	$0.00	$172.77	$65.80	$786.87
October	$526.10	$0.00	$0.00	$0.00	$0.00	$149.50	$63.13	$738.73
Total	$1,557.10	$0.00	$0.00	$0.00	$0.00	$490.41	$186.86	$2,234.37

Account Billing Trend

Invoice Billing Details

Name:	**Invoice Billing Details**
Brief Description:	User views the charge types summarized by invoice
Entry Points	**1.** Billing Reports List **2.** Report Dropdown **3.** Account Billing Details
Query Parameters:	**Report Selection Criteria & Custom Tab** **1.** Hierarchy Name & Position **2.** Period Range **Report Selection Criteria Only** **3.** Report
Report Content:	Fields **1.** Invoice **2.** Invoice Charges **3.** Usage Charges **4.** Adjustments **5.** Discounts **6.** Other Charges/Credits **7.** Taxes **8.** Total Value Footer For all but the first column, totals for all pages (including those not displayed) are displayed at the bottom of each page
Chart:	None
Main Path:	**1.** User selects the Invoice Billing Details report from the List of Billing Reports. **2.** System determines query parameters based on report context or defaults and returns a tabular report. **3.** Use case ends.

Name:	**Invoice Billing Details**
Alternate Paths:	**[A1] User modifies the query parameters** 1. User changes any of the query parameters on the "Report" tab or their hierarchy context position and selects Display to execute report. 2. System regenerates the report for the scope of selected reporting period and hierarchy context position. **[A2] Drilldowns: User selects Invoice** System invokes **Contract Billing Overview** use case for the selected invoice number. **[A3] User selects the Printer-Friendly action** System invokes Printer-Friendly use case. **[A4] User selects the Download action** System invokes Download use case. **[A5] No data set is available for the report:** System invokes No Data use case.
Exception Paths:	**[E1]** User encounters a system error: 1. System invokes Error Message use case.
Business Rules:	None
Notes:	This is the same report spec as the old "Account Billing Details" report before that one was changed so that each row summarized an account rather than an invoice.

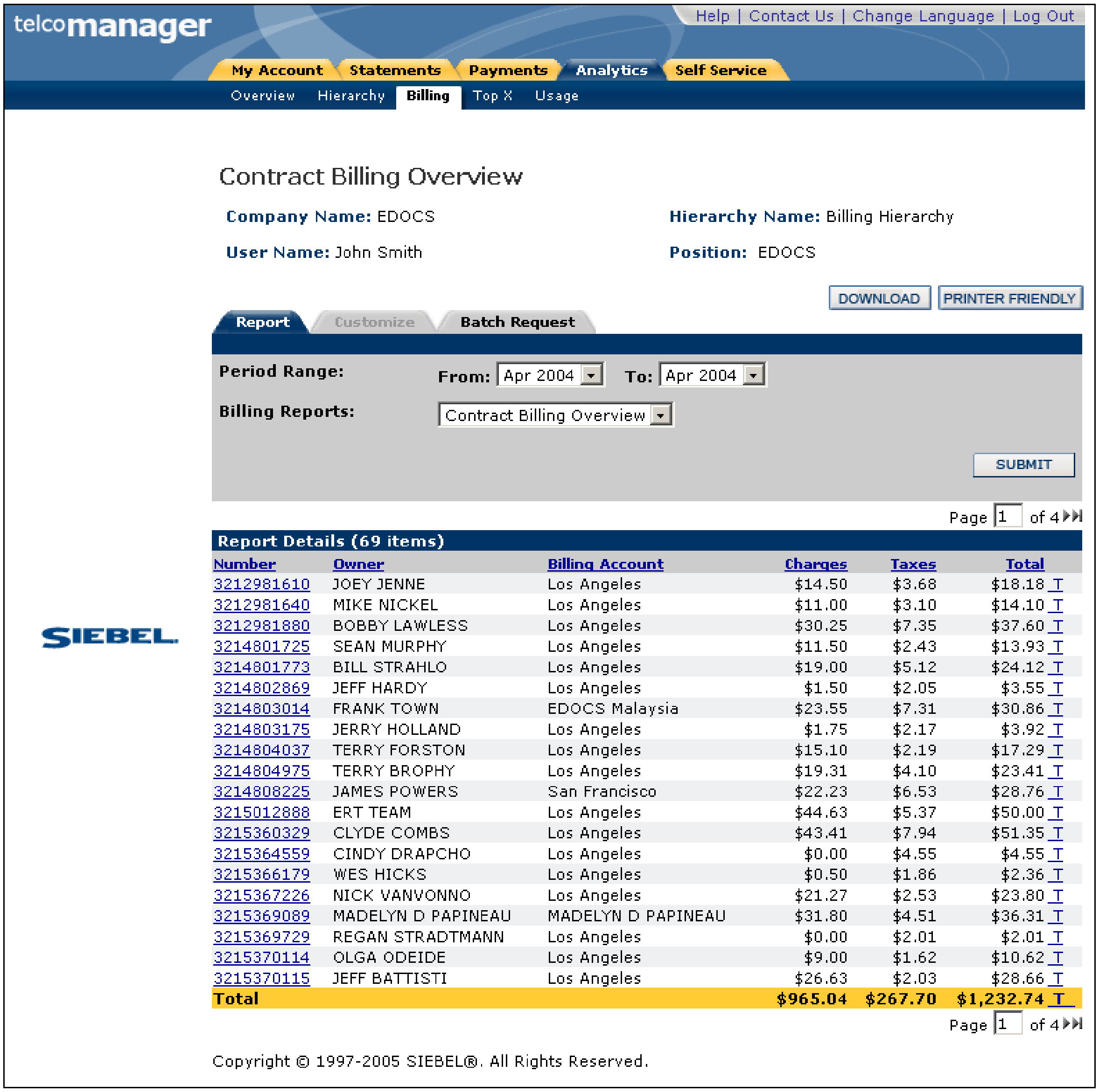


Invoice Billing Details

Contract Billing Overview

Name:	**Contract Billing Overview**
Brief Description:	User views an invoice overview of all contracts associated with the user
Entry Points:	**1.** Billing Reports List **2.** Account Billing Overview **3.** Account Billing Details **4.** Report Dropdown
Query Parameters:	**Report Selection Criteria & Custom Tab** **1.** Hierarchy Name & Position **2.** Period Range **Report Selection Criteria Only** **1.** Report
Report Content:	Fields **1.** Number **2.** Owner **3.** Billing Account **4.** Charges **5.** Taxes **6.** Total Value Footer For all but the first column, totals for all pages (including those not displayed) are displayed at the bottom of each page
Chart:	None
Main Path:	**1.** User selects the Contract Billing Overview report from the List of Billing Reports. **2.** System determines query parameters based on report context or defaults and returns a tabular report. **3.** Use case ends.

Name:	**Contract Billing Overview**
Alternate Paths:	**[A1] User modifies the query parameters** 1. User changes any of the query parameters on the “Report” tab or their hierarchy context position and selects Display to execute report. **2.** System regenerates the report for the scope of selected **reporting period and hierarchy context position.** **[A2] Drilldown: User selects a number to get additional details.** System invokes **Contract Call Details** use case for the selected number. **[A3] Drilldown: User selects the hyperlink “T” at the end of a row:** The Contract Billing Trend report is generated where the hierarchy context position is changed to the object of the row on which the user selected and the report is run with all the same parameters from the report previously ran. **[A4] Drilldown: User selects the hyperlink “T” on the total at the bottom of the page:** The Account Billing Trend report is generated where the report uses the hierarchy position context and report parameters for the report previously ran. **[A5] User selects the Printer-Friendly action** System invokes Printer-Friendly use case. **[A6] User selects the Download action** System invokes Download use case. **[A7] No data set is available for the report:** System invokes No Data use case.
Exception Paths:	**[E1]** User encounters a system error: 1. System invokes Error Message use case.
Business Rules:	None.
Notes:	None.



telcomanager

Help | Contact Us | Change Language | Log Out

My Account | Statements | Payments | Analytics | Self Service

Overview | Hierarchy | Billing | Top X | Usage

Contract Billing Overview

Company Name: EDOCS **Hierarchy Name:** Billing Hierarchy

User Name: John Smith **Position:** EDOCS

DOWNLOAD PRINTER FRIENDLY

Report | Customize | Batch Request

Period Range: **From:** Apr 2004 **To:** Apr 2004

Billing Reports: Contract Billing Overview

SUBMIT

Page 1 of 4

Report Details (69 items)

Number	Owner	Billing Account	Charges	Taxes	Total
3212981610	JOEY JENNE	Los Angeles	$14.50	$3.68	$18.18 T
3212981640	MIKE NICKEL	Los Angeles	$11.00	$3.10	$14.10 T
3212981880	BOBBY LAWLESS	Los Angeles	$30.25	$7.35	$37.60 T
3214801725	SEAN MURPHY	Los Angeles	$11.50	$2.43	$13.93 T
3214801773	BILL STRAHLO	Los Angeles	$19.00	$5.12	$24.12 T
3214802869	JEFF HARDY	Los Angeles	$1.50	$2.05	$3.55 T
3214803014	FRANK TOWN	EDOCS Malaysia	$23.55	$7.31	$30.86 T
3214803175	JERRY HOLLAND	Los Angeles	$1.75	$2.17	$3.92 T
3214804037	TERRY FORSTON	Los Angeles	$15.10	$2.19	$17.29 T
3214804975	TERRY BROPHY	Los Angeles	$19.31	$4.10	$23.41 T
3214808225	JAMES POWERS	San Francisco	$22.23	$6.53	$28.76 T
3215012888	ERT TEAM	Los Angeles	$44.63	$5.37	$50.00 T
3215360329	CLYDE COMBS	Los Angeles	$43.41	$7.94	$51.35 T
3215364559	CINDY DRAPCHO	Los Angeles	$0.00	$4.55	$4.55 T
3215366179	WES HICKS	Los Angeles	$0.50	$1.86	$2.36 T
3215367226	NICK VANVONNO	Los Angeles	$21.27	$2.53	$23.80 T
3215369089	MADELYN D PAPINEAU	MADELYN D PAPINEAU	$31.80	$4.51	$36.31 T
3215369729	REGAN STRADTMANN	Los Angeles	$0.00	$2.01	$2.01 T
3215370114	OLGA ODEIDE	Los Angeles	$9.00	$1.62	$10.62 T
3215370115	JEFF BATTISTI	Los Angeles	$26.63	$2.03	$28.66 T
Total			**$965.04**	**$267.70**	**$1,232.74 T**

Page 1 of 4

Copyright © 1997-2005 SIEBEL®. All Rights Reserved.

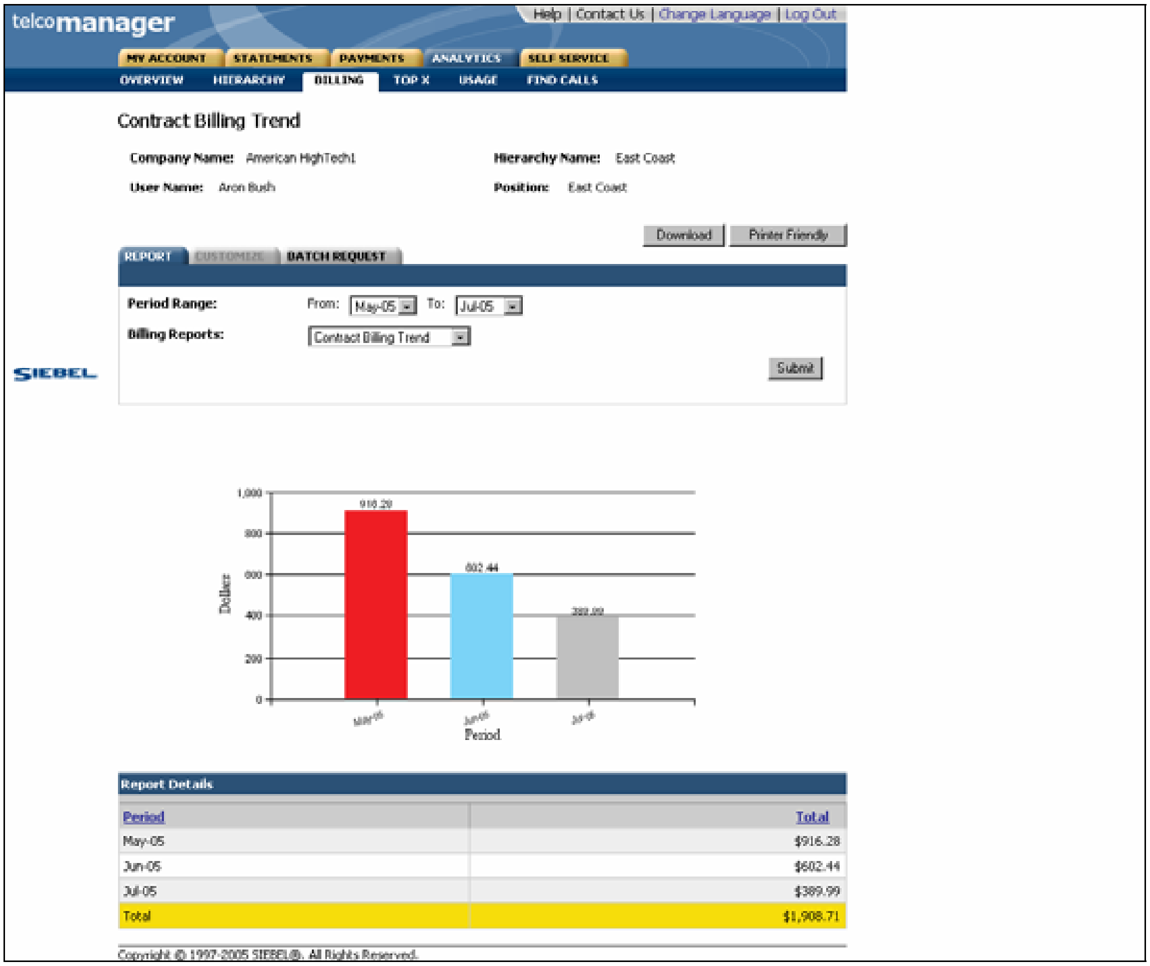
Contract Billing Overview

Contract Billing Trend

Name:	**Contract Billing Trend Report**
Brief Description:	This report tracks monthly summary charge information over a user defined reporting period range for a selected billing contract in a billing or group hierarchy. *Rationale*: 1) Analyze trends, 2) Identify anomalies

Name:	**Contract Billing Trend Report**
Entry Points	**1.** Report List **2.** Drilldown: Contract Billing Overview Report **3.** Report Dropdown
Query Parameters	**Report Selection Criteria & Custom Tab** **1.** Hierarchy Name & Position **2.** Period Range **Report Selection Criteria Only** **1.** Report
Report Content	**Fields** **1.** Reporting Period [Sort: Ascending] **2.** Total Value **Footer** For all but the first column totals for all pages (including those not displayed) are displayed at the bottom of each page
Chart	Chart Type: Bar ♦ Y axis: User defined value ♦ Y axis: Total Value
Main Path:	**1.** User selects the report from the List of Billing Reports. **2.** System determines query parameters based on report context or defaults. **3.** System returns: a. Bar Chart b. Summary tabular report

Name:	**Contract Billing Trend Report**
Alternate Paths:	**[A1] Change Report Selection Criteria** User changes any of the query parameters on the "Report Tab" or their hierarchy context position and clicks display to execute the report. **[A2] Create Custom Report** User selects the customize action. System Invokes the Customize use case enabling the user to change query parameters defined above. **[A3] Result set returns more than 20 Chart Bars** User receives a message that the chart was suppressed because of this condition. **[A4] User selects the Printer-Friendly action** System invokes **Printer-Friendly** use case. **[A5] User selects the Download action** System invokes **Download** use case. **[A6] No data set is available for the report:** System invokes **No Data** use case. **[A7] Change Column to Chart** 1. User selects a new value from the Column to Chart query parameter. New chart is displayed with the selected column.
Exception Paths:	**[E1]** User encounters a system error: System invokes **Error Message** use case.
Business Rules:	**[B1]** Maximum Period Ranges: If the date range spans more than 20 reporting periods, the chart display is suppressed.
Notes:	None

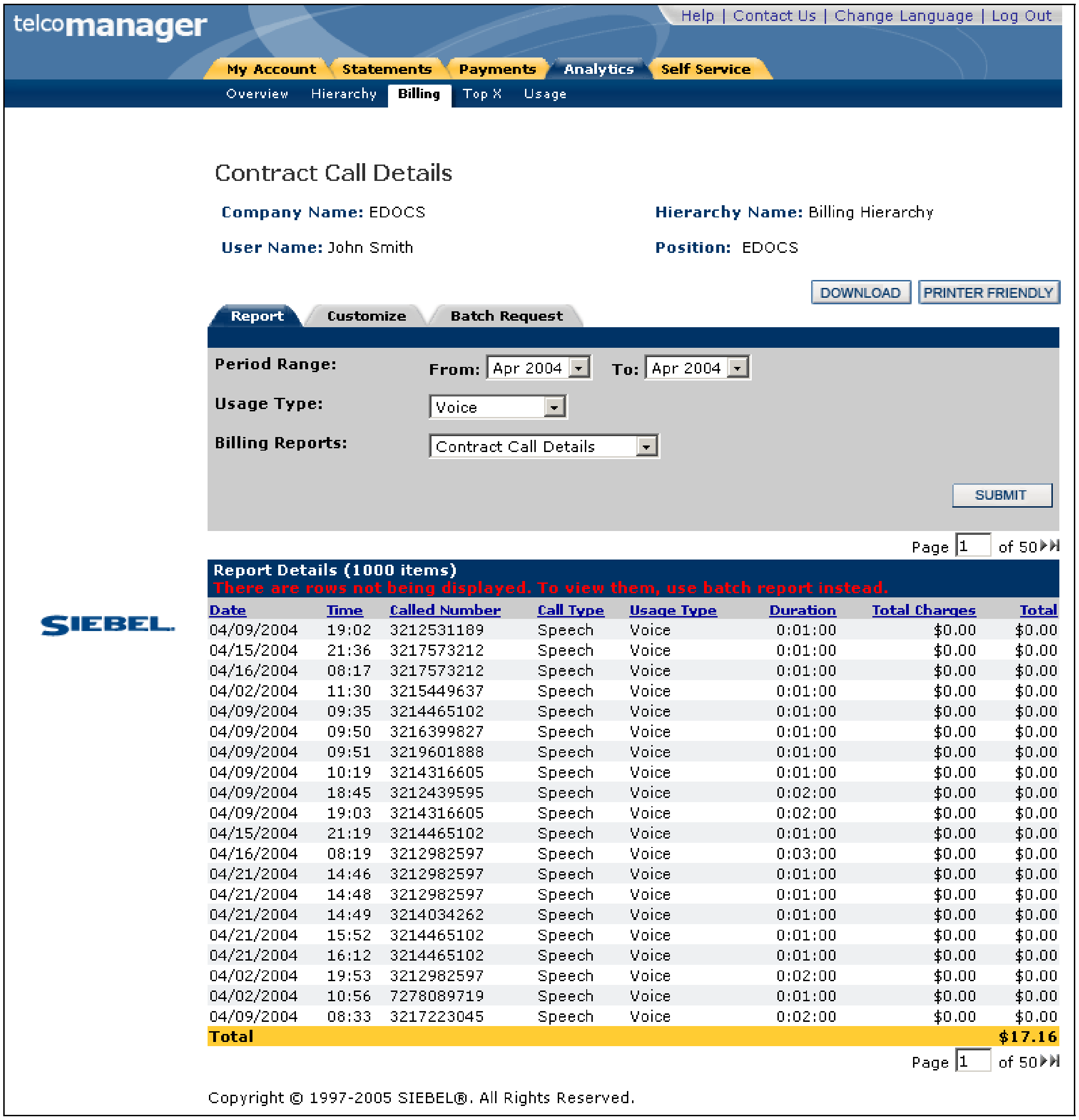


Contract Billing Trend Report

Contract Call Details

Name:	**Contract Call Details**
Brief Description:	User views contract call detail information
Entry Points:	**1.** Billing Reports List **2.** Contract Billing Overview **3.** Report Dropdown
Query Parameters:	**Report Selection Criteria & Custom Tab** **1.** Hierarchy Name & Position **2.** Date Range **3.** Call Type **4.** Usage Type **Report Selection Criteria Only** **1.** Report **Custom Tab Only** **1.** Called Number **2.** Call Type **3.** Usage Type **4.** Duration **5.** Toll Charges **6.** Total Value
Report Content:	Fields **1.** Date **2.** Time **3.** Called Number **4.** Call Type **5.** Usage Type **6.** Duration **7.** Toll Charges **8.** Total Value Footer For all but the first column, totals for all pages (including those not displayed) are displayed at the bottom of each page
Chart:	None

Name:	**Contract Call Details**
Main Path:	**1.** User selects the Contract Billing Overview report from the List of Billing Reports. **2.** System determines query parameters based on report context or defaults and returns a tabular report. **3.** Use case ends.
Alternate Paths:	**[A1] User modifies the query parameters** 1. User changes any of the query parameters on the “Report” tab or their hierarchy context position and selects Display to execute report. 2. System regenerates the report for the scope of selected reporting period and hierarchy context position. **[A2] User selects the Printer-Friendly action:** System invokes Printer-Friendly use case. **[A3] User selects the Download action** System invokes Download use case. **[A4] No data set is available for the report:** System invokes No Data use case.
Exception Paths:	**[E1] User encounters a system error:** System invokes Error Message use case.
Business Rules:	None
Notes:	None



telcomanager

Help | Contact Us | Change Language | Log Out

My Account | Statements | Payments | Analytics | Self Service

Overview | Hierarchy | Billing | Top X | Usage

Contract Call Details

Company Name: EDOCS

Hierarchy Name: Billing Hierarchy

User Name: John Smith

Position: EDOCS

DOWNLOAD | PRINTER FRIENDLY

Report | Customize | Batch Request

Period Range: **From:** Apr 2004 **To:** Apr 2004

Usage Type: Voice

Billing Reports: Contract Call Details

SUBMIT

Page 1 of 50

Report Details (1000 items)

There are rows not being displayed. To view them, use batch report instead.

Date	Time	Called Number	Call Type	Usage Type	Duration	Total Charges	Total
04/09/2004	19:02	3212531189	Speech	Voice	0:01:00	$0.00	$0.00
04/15/2004	21:36	3217573212	Speech	Voice	0:01:00	$0.00	$0.00
04/16/2004	08:17	3217573212	Speech	Voice	0:01:00	$0.00	$0.00
04/02/2004	11:30	3215449637	Speech	Voice	0:01:00	$0.00	$0.00
04/09/2004	09:35	3214465102	Speech	Voice	0:01:00	$0.00	$0.00
04/09/2004	09:50	3216399827	Speech	Voice	0:01:00	$0.00	$0.00
04/09/2004	09:51	3219601888	Speech	Voice	0:01:00	$0.00	$0.00
04/09/2004	10:19	3214316605	Speech	Voice	0:01:00	$0.00	$0.00
04/09/2004	18:45	3212439595	Speech	Voice	0:02:00	$0.00	$0.00
04/09/2004	19:03	3214316605	Speech	Voice	0:02:00	$0.00	$0.00
04/15/2004	21:19	3214465102	Speech	Voice	0:01:00	$0.00	$0.00
04/16/2004	08:19	3212982597	Speech	Voice	0:03:00	$0.00	$0.00
04/21/2004	14:46	3212982597	Speech	Voice	0:01:00	$0.00	$0.00
04/21/2004	14:48	3212982597	Speech	Voice	0:01:00	$0.00	$0.00
04/21/2004	14:49	3214034262	Speech	Voice	0:01:00	$0.00	$0.00
04/21/2004	15:52	3214465102	Speech	Voice	0:01:00	$0.00	$0.00
04/21/2004	16:12	3214465102	Speech	Voice	0:01:00	$0.00	$0.00
04/02/2004	19:53	3212982597	Speech	Voice	0:02:00	$0.00	$0.00
04/02/2004	10:56	7278089719	Speech	Voice	0:01:00	$0.00	$0.00
04/09/2004	08:33	3217223045	Speech	Voice	0:02:00	$0.00	$0.00
Total							**$17.16**

Page 1 of 50

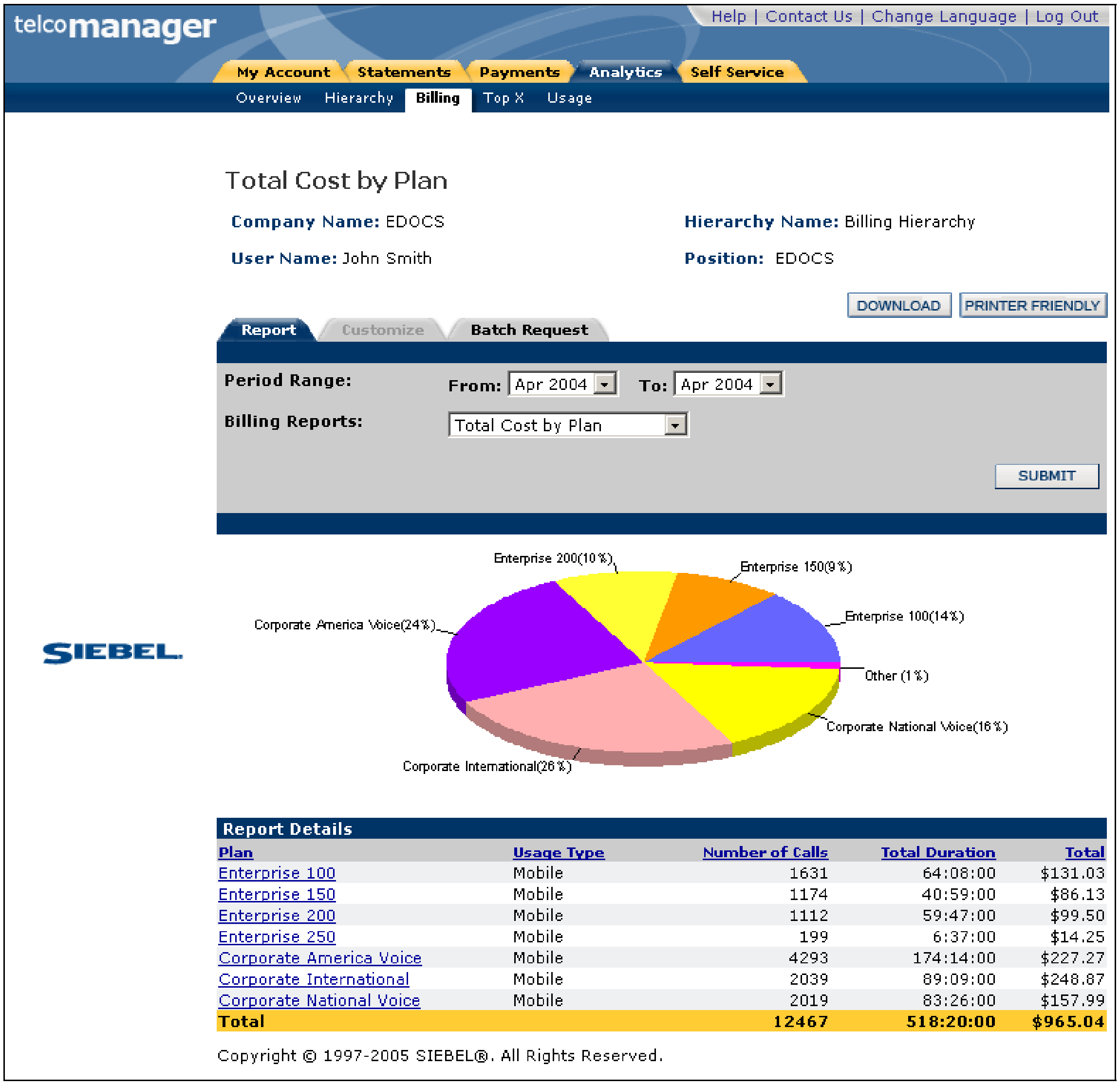
Copyright © 1997-2005 SIEBEL®. All Rights Reserved.

Contract Call Details

Total Cost by Plan

Name:	**Total Cost by Plan**
Brief Description:	User views the total cost of all plans for all billing accounts associated with the user
Entry Points:	**1.** List of Billing Reports **2.** Report Dropdown
Query Parameters:	**<u>Report Selection Criteria & Custom Tab</u>** **1.** Hierarchy Name & Position **2.** Period Range **<u>Report Selection Criteria Only</u>** **1.** Report
Report Content:	<u>Fields</u> **1.** Plan **2.** Usage Type **3.** Number of Calls **4.** Duration **5.** Total Value (Total charges and taxes) <u>Footer</u> For all but the first column, totals for all pages (including those not displayed) are displayed at the bottom of each page.
Chart:	Chart Type: Pie ♦ Slices: Plan
Main Path:	**1.** User selects the Total Cost by Plan report from the List of Billing Reports. **2.** System determines query parameters based on report context or defaults and returns. a. Tabular Report b. Chart **3.** Use case ends.

Name:	**Total Cost by Plan**
Alternate Paths:	**[A1] User modifies the query parameters** 1. User changes any of the query parameters on the “Report” tab or their hierarchy context position and selects Display to execute report. 2. System regenerates the report for the scope of selected reporting period and hierarchy context position. **[A2] Drilldowns: User selects link to get additional details:** 1. From A Plan: system invokes Contract Billing Overview use case for the selected plan. 2. From A Number from Contract Billing Overview: system invokes Contract Call Details use case for the selected number. **[A3] User selects the Printer-Friendly action** System invokes Printer-Friendly use case. **[A4]** User selects the Download action System invokes Download use case. **[A5] No data set is available for the report:** System invokes No Data use case.
Exception Paths:	**[E1]** User encounters a system error: System invokes Error Message use case.
Business Rules:	**[B1]** If the grand Total for the report is equal to 0, the chart is suppressed.
Notes:	The slices on the pie chart denotes Plan If any chart slice is less than 1% the data is aggregated together to make a bigger slice labeled “Other” (need to confirm this rule)



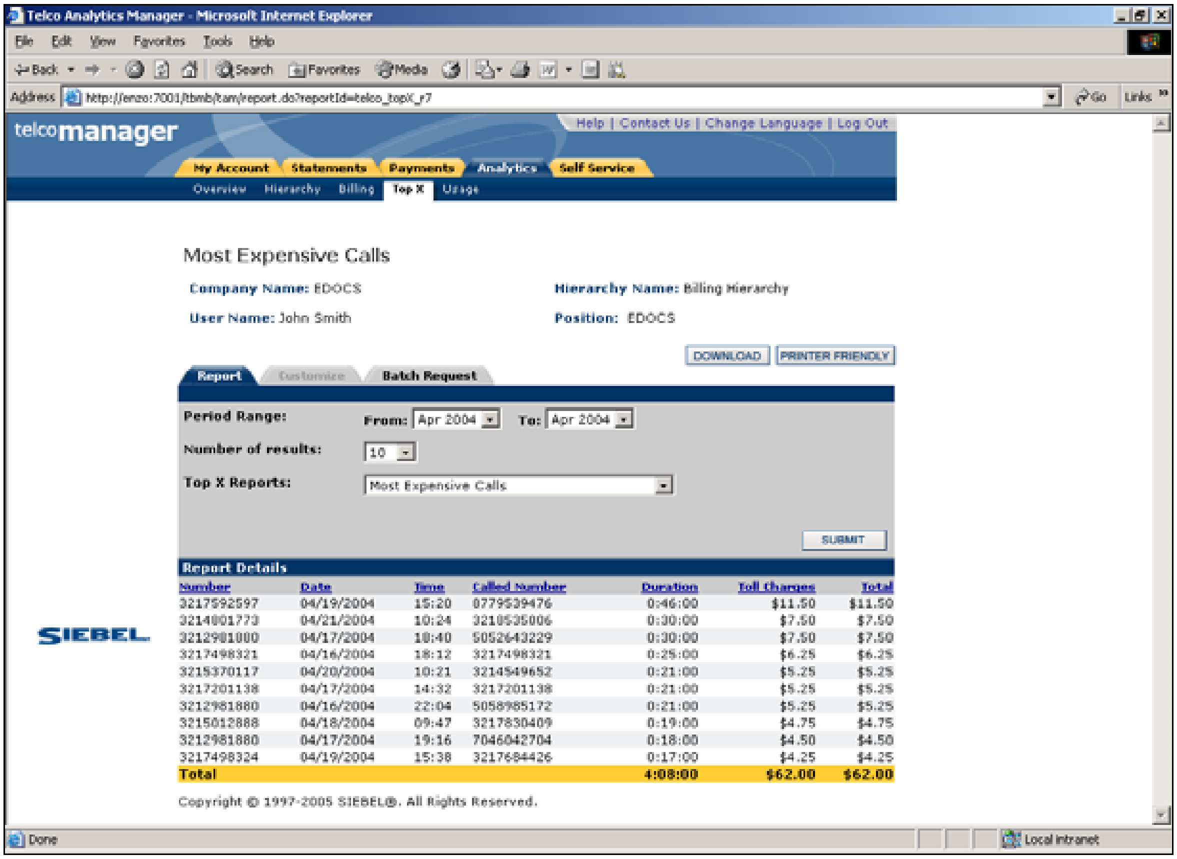
Total Cost by Plan

Top X Reports

Most Expensive Calls

Name:	**Most Expensive Calls**
Brief Description:	User views the Top X Most Expensive Calls.
Entry Points:	**1.** List of Top X Reports **2.** Report Dropdown
Query Parameters:	Report Selection Criteria & Custom Tab **1.** Hierarchy Name & Position **2.** Period Range Report Selection Criteria Only **1.** Number of Results **2.** Report
Report Content:	Fields **1.** Number **2.** Date **3.** Time **4.** Called Number **5.** Duration **6.** Toll Charges **7.** Total Value [Sort, descending] Footer For all but the first column, totals for all pages (including those not displayed) are displayed at the bottom of each page.
Chart:	None
Main Path:	**1.** User selects Most Expensive Calls report from the List of Top X Reports. **2.** System determines query parameters based on report context or defaults and returns a tabular report. **3.** Use case ends.

Name:	**Most Expensive Calls**
Alternate Paths:	**[A1]** User modifies the query parameters 1. User changes any of the query parameters on the “Report” tab or their hierarchy context position and selects Display to execute report. 2. System regenerates the report for the scope of selected reporting period and hierarchy context position. **[A2]** User selects the Printer-Friendly action System invokes Printer-Friendly use case. **[A3]** User selects the Download action: System invokes Download use case **[A4]** No data set is available for the report: System invokes No Data use case.
Exception Paths:	**[E1]** User encounters a system error: System invokes Error Message use case.
Business Rules:	**[B1]** The current reporting period and hierarchical position context are persisted from previous action.
Notes:	In cases where the result set is less than the Number of Results specified, the available data set is displayed.

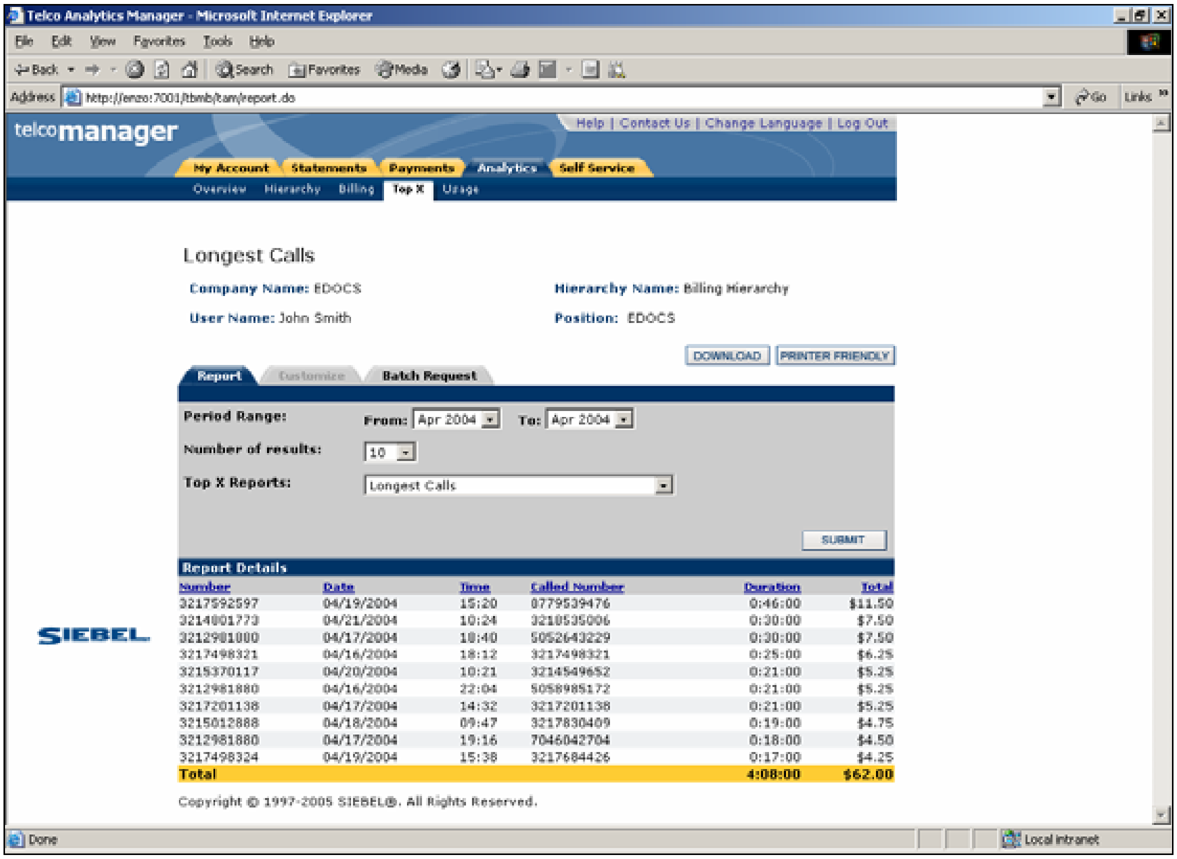


Most Expensive Calls

Longest Calls

Name:	**Longest Calls**
Brief Description:	User views the Top X Longest Calls.
Entry Points:	**1.** List of Top X Reports **2.** Report Dropdown
Query Parameters:	Report Selection Criteria & Custom Tab **1.** Hierarchy Name & Position **2.** Period Range Report Selection Criteria Only **1.** Number of Results **2.** Report
Report Content:	Fields **1.** Number **2.** Date **3.** Time **4.** Called Number **5.** Duration **6.** Total Value [Sort, descending] Footer For all but the first column, totals for all pages (including those not displayed) are displayed at the bottom of each page.
Chart:	None
Main Path:	**1.** User selects Longest Calls report from the List of Top X Reports. **2.** System determines query parameters based on report context or defaults and returns a tabular report. **3.** Use case ends.

Name:	**Longest Calls**
Alternate Paths:	**[A1] User modifies the query parameters** 1. User changes any of the query parameters on the “Report” tab or their hierarchy context position and selects Display to execute report. 2. System regenerates the report for the scope of selected reporting period and hierarchy context position. **[A2] User selects the Printer-Friendly action** System invokes Printer-Friendly use case. **[A3] User selects the Download action** System invokes Download use case. **[A4] No data set is available for the report:** System invokes No Data use case.
Exception Paths:	**[E1]** User encounters a system error: System invokes Error Message use case.
Business Rules:	**[B1]** The current bill period range and hierarchical position context are persisted from previous action.
Notes:	In cases where the result set is less than the Number of Results specified, the available data set is displayed.

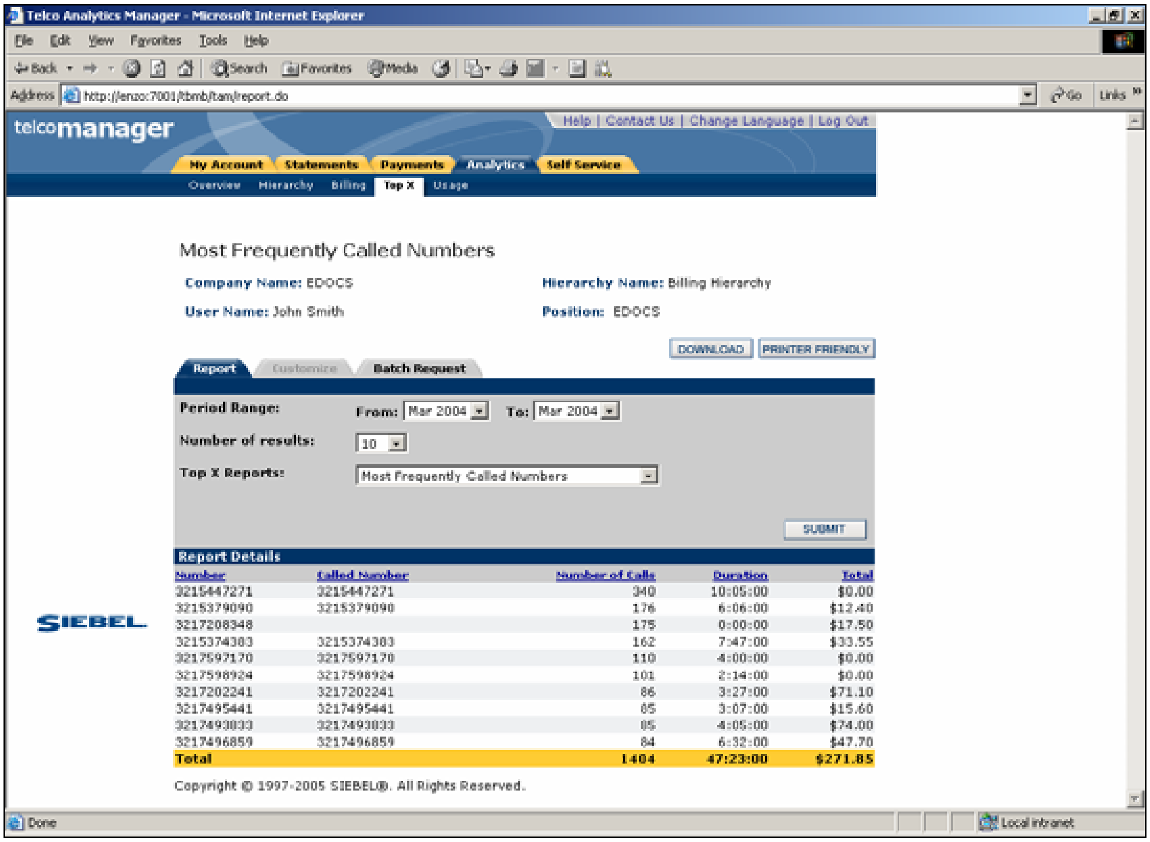


Longest Calls

Most Frequently Called Numbers

Name:	**Most Frequently Called Numbers**
Brief Description:	User views the Top X Most Frequently Called Numbers.
Entry Points:	**1.** List of Top X Reports **2.** Report Dropdown
Query Parameters:	Report Selection Criteria & Custom Tab **1.** Hierarchy Name & Position **2.** Period Range Report Selection Criteria Only **1.** Number of Results **2.** Report
Report Content:	Fields **1.** Number **2.** Called Number **3.** Number of Calls (Formula: Aggregation of all calls for the called number) **4.** Duration (Formula: Aggregation of duration for the called number) **5.** Total Value [Sort, descending] Footer For all but the first column, totals for all pages (including those not displayed) are displayed at the bottom of each page.
Chart:	None
Main Path:	**1.** User selects the Most Frequently Called Numbers report from the List of Top X Reports. **2.** System determines query parameters based on report context or defaults and returns a tabular report. **3.** Use case ends.

Name:	**Most Frequently Called Numbers**
Alternate Paths:	**[A1] User modifies the query parameters** 1. User changes any of the query parameters on the "Report" tab or their hierarchy context position and selects Display to execute report. 2. System regenerates the report for the scope of selected reporting period and hierarchy context position. **[A2] User selects Printer-Friendly the action** System invokes Printer-Friendly use case. **[A3] User selects the Download action** System invokes Download use case. **[A4] No data set is available for the report:** System invokes No Data use case.
Exception Paths:	**[E1] User encounters a system error:** System invokes Error Message use case.
Business Rules:	**[B1]** The current bill period range and hierarchical position context are persisted from previous action.
Notes:	In cases where the result set is less than the Number of Results specified, the available data set is displayed.

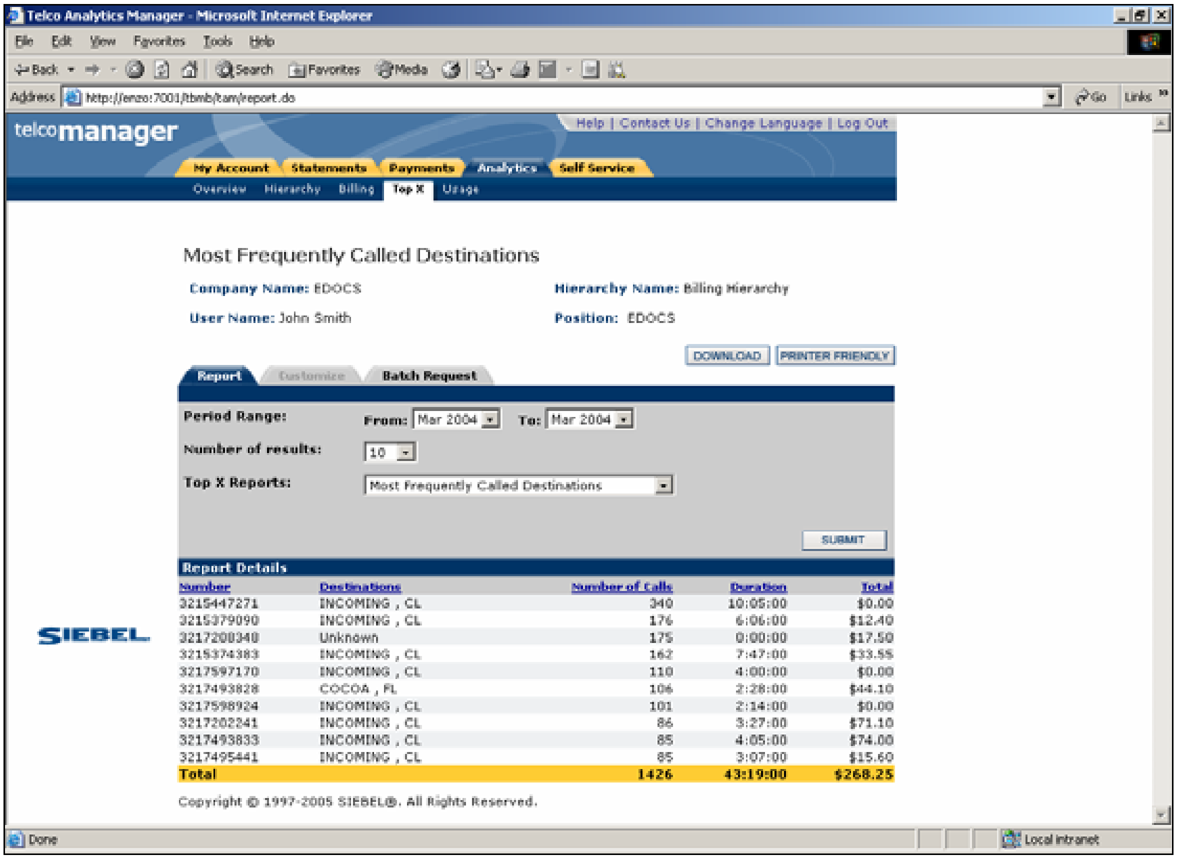


Most Frequently Called Numbers

Most Frequently Called Destinations

Name:	**Most Frequently Called Destinations**
Brief Description:	User views the Top X Most Frequently Called Destinations.
Entry Points:	**1.** List of Top X Reports **2.** Report Dropdown
Query Parameters:	<u>Report Selection Criteria & Custom Tab</u> **1.** Hierarchy Name & Position **2.** Period Range <u>Report Selection Criteria Only</u> **1.** Number of Results **2.** Report
Report Content	<u>Fields</u> **1.** Number **2.** Destination **3.** Number of Calls (Formula: Aggregation of all calls for the called number) **4.** Duration (Formula: Aggregation of duration for the called number) **5.** Total Value [Sort, descending] <u>Footer</u> For all but the first column, totals for all pages (including those not displayed) are displayed at the bottom of each page.
Chart	None
Main Path:	**1.** User selects the Most Frequently Called Destinations report from the List of Top X Reports. **2.** System determines query parameters based on report context or defaults and returns a tabular report. **3.** Use case ends.

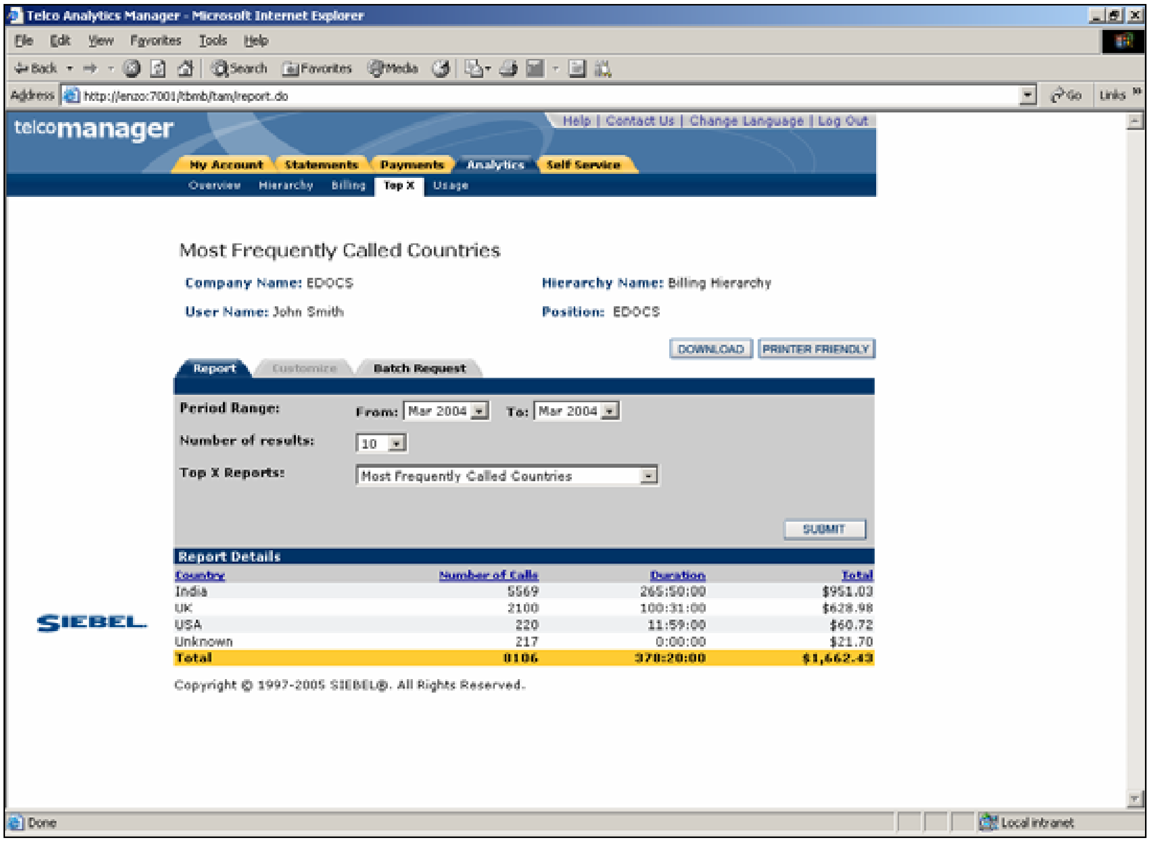
Name:	**Most Frequently Called Destinations**
Alternate Paths:	**[A1] User modifies the query parameters:** 1. User changes any of the query parameters on the "Report" tab or their hierarchy context position and selects Display to execute report. 2. System regenerates the report for the scope of selected reporting period and hierarchy context position. **[A2] User selects Printer-Friendly the action:** System invokes Printer-Friendly use case. **[A3] User selects the Download action**: System invokes Download use case. **[A4] No data set is available for the report:** System invokes No Data use case.
Exception Paths:	**[E1] User encounters a system error:** System invokes Error Message use case.
Business Rules:	**[B1]** The current bill period range and hierarchical position context are persisted from previous action.
Notes:	In cases where the result set is less than the Number of Results specified, the available data set is displayed.



Most Frequently Called Destinations

Most Frequently Called Countries

Name:	**Most Frequently Called Countries**
Brief Description:	User views the Top X Most Frequently Called Countries.
Entry Points:	**1.** List of Top X Reports **2.** Report Dropdown
Query Parameters:	Report Selection Criteria & Custom Tab **1.** Hierarchy Name & Position **2.** Period Range Report Selection Criteria Only **1.** Number of Results **2.** Report
Report Content	Fields **1.** Number **2.** Countries (Formula: Aggregation of Destinations mapped to countries unless available in the bill feed) **3.** Number of Calls (Formula: Aggregation of all calls for the called number) **4.** Duration (Formula: Aggregation of duration for the called number) **5.** Total Value [Sort, descending] Footer For all but the first column, totals for all pages (including those not displayed) are displayed at the bottom of each page.
Chart	None



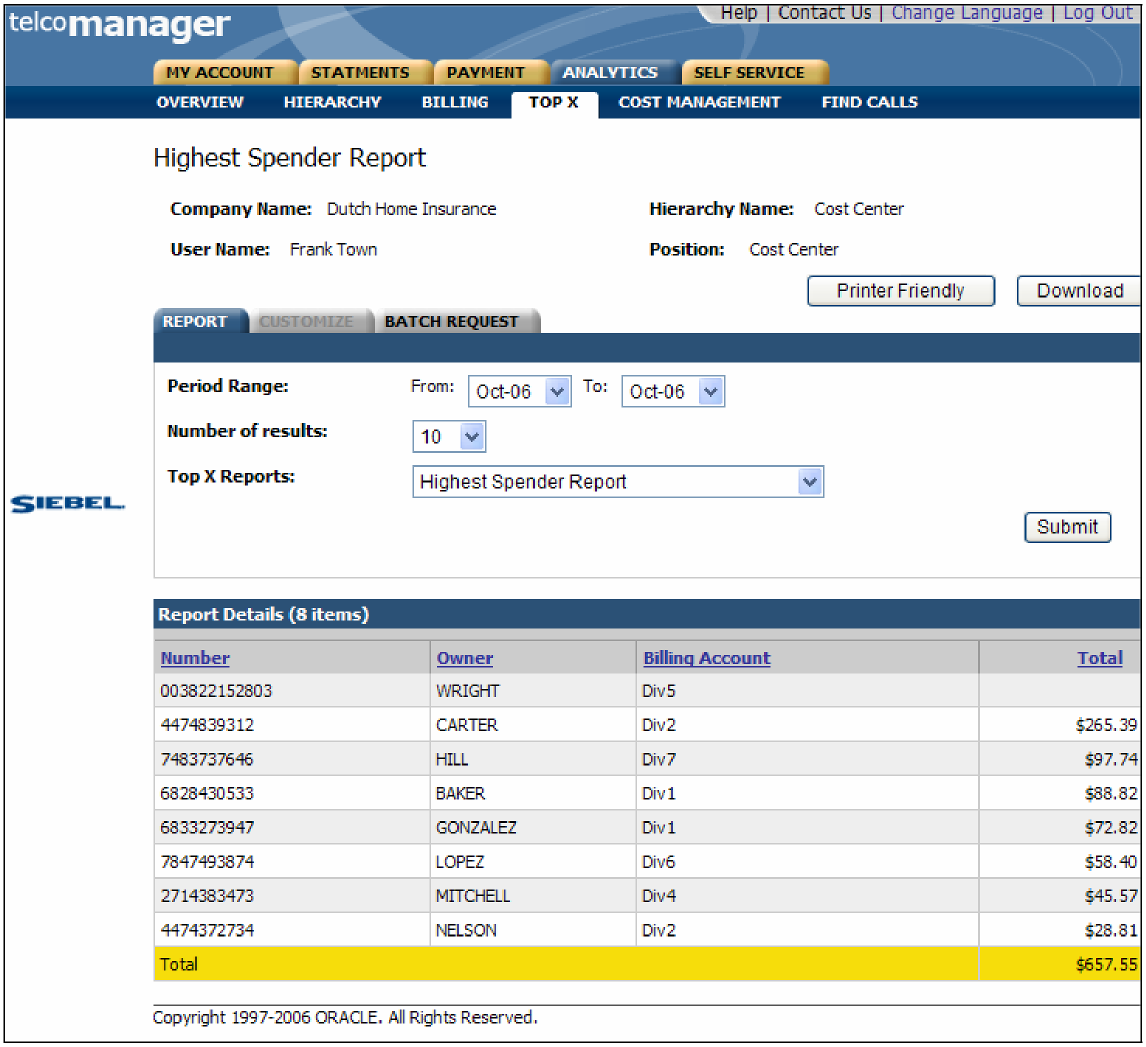
Most Frequently Called Countries

Highest Spender Report

Name:	Highest Spender Report
Brief Description:	User views the Top X Highest Spending Contracts.
Entry Points:	**1.** List of Top X Reports **2.** Report Dropdown
Query Parameters:	<u>Report Selection Criteria & Custom Tab</u> **1.** Hierarchy Name & Position [Default: "Current Context"] **2.** Period Range [Default: "current context"] User selects a start and end reporting period from two dropdown boxes. <u>Report Selection Criteria Only</u> **1.** Number of Results [Default: "10"] Select desired number of results from dropdown selection of predefined number of rows returned by the report query. Dropdown box of values [10, 25, 50, 100] **2.** Report [Default: none, character Limit: 40] User selects a different report from a dropdown box.
Report Content	<u>Fields</u> **1.** Number **2.** Owner **3.** Billing Account **4.** Total Value [Sort, descending] <u>Footer</u> For all but the first column, totals for all pages (including those not displayed) should be displayed at the bottom of each page.
Chart	None
Main Path:	**1.** User selects the Highest Spender Reports report from the List of Top X Reports. **2.** System determines query parameters based on report context or defaults and returns a tabular report. **3.** Use case ends.

Alternate Paths:	**[A1] User modifies the query parameters** 1. User changes any of the query parameters on the "Report" tab or their hierarchy context position and selects Display to execute report. 2. System regenerates the report for the scope of selected reporting period and hierarchy context position. **[A2] User selects the Download action:** 1. System invokes Download use case. **[A3] No data set is available for the report:** System invokes No Data use case.

Exception Paths:	**[E1] User encounters a system error:** 2. System invokes Error Message use case.
Business Rules:	**[B2]** The current bill period range and hierarchical position context are persisted from previous action.
Notes:	In cases where the result set is less than the Number of Results specified, the available data set will be displayed.



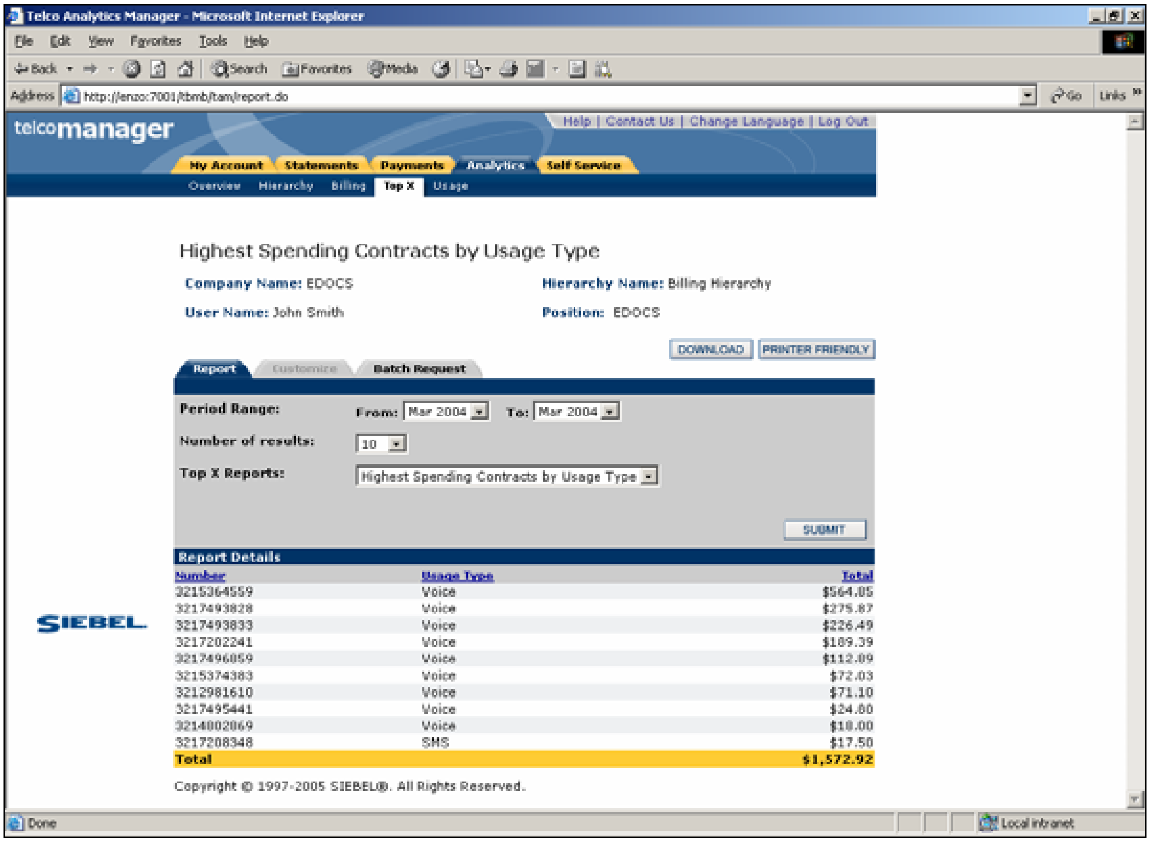
Number	Owner	Billing Account	Total
003822152803	WRIGHT	Div5	
4474839312	CARTER	Div2	$265.39
7483737646	HILL	Div7	$97.74
6828430533	BAKER	Div1	$88.82
6833273947	GONZALEZ	Div1	$72.82
7847493874	LOPEZ	Div6	$58.40
2714383473	MITCHELL	Div4	$45.57
4474372734	NELSON	Div2	$28.81
Total			$657.55

Highest Spender Reports

Highest Spending Contracts by Usage Type

Name:	**Highest Spending Contracts by Usage Type**
Brief Description:	User views the Top X Highest Spending Contracts by Usage Type.
Entry Points:	**1.** List of Top X Reports **2.** Report Dropdown
Query Parameters:	Report Selection Criteria & Custom Tab **1.** Hierarchy Name & Position **2.** Period Range Report Selection Criteria Only **1.** Number of Results **2.** Report
Report Content	Fields **1.** Number **2.** Usage Type **3.** Total Value [Sort, descending] Footer For all but the first column, totals for all pages (including those not displayed) should be displayed at the bottom of each page.
Chart	None
Main Path:	**1.** User selects the Highest Spending Contracts by Usage Type report from the List of Top X Reports. **2.** System determines query parameters based on report context or defaults and returns a tabular report. **3.** Use case ends.
Alternate Paths:	**[A1] User modifies the query parameters:** 1. User changes any of the query parameters on the “Report” tab or their hierarchy context position and selects Display to execute report. 2. System regenerates the report for the scope of selected reporting period and hierarchy context position. **[A2] User selects the Printer-Friendly action:** 1. System invokes Printer-Friendly use case. **[A3] User selects the Download action:** 1. System invokes Download use case. **[A4] No data set is available for the report:**

	1. System invokes No Data use case.
Exception Paths:	**[E1] User encounters a system error:** 1. System invokes Error Message use case.
Business Rules:	**[B1]** The current bill period range and hierarchical position context are persisted from previous action.
Notes:	In cases where the result set is less than the Number of Results specified, the available data set will be displayed.

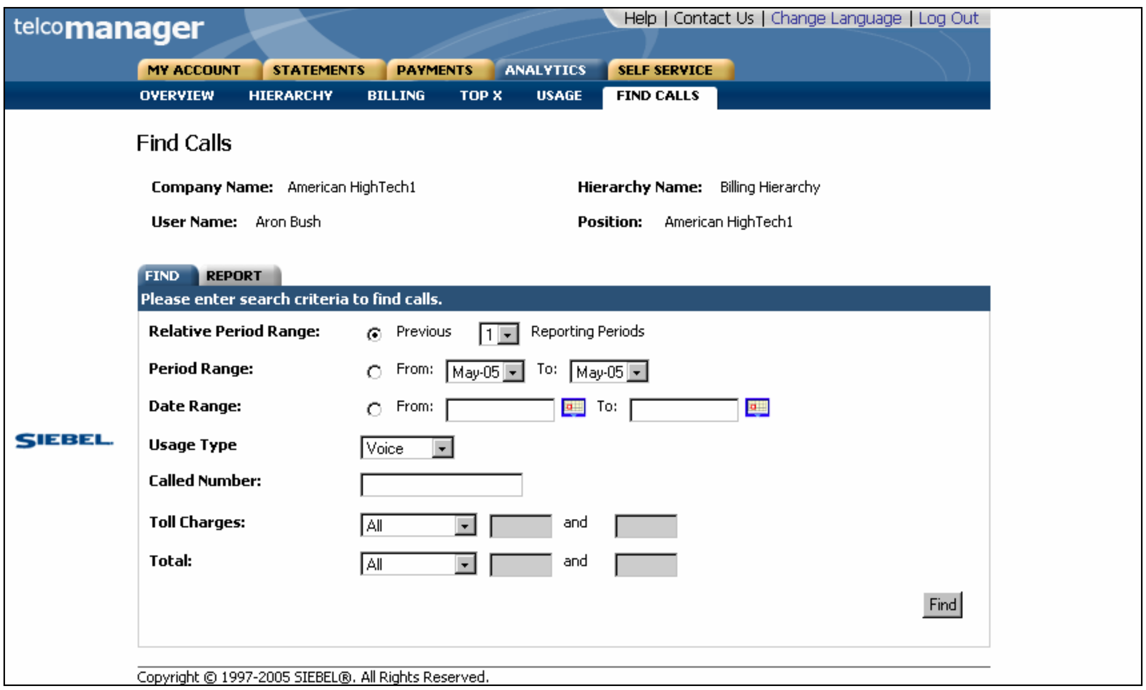


Highest Spending Contracts by Usage Type

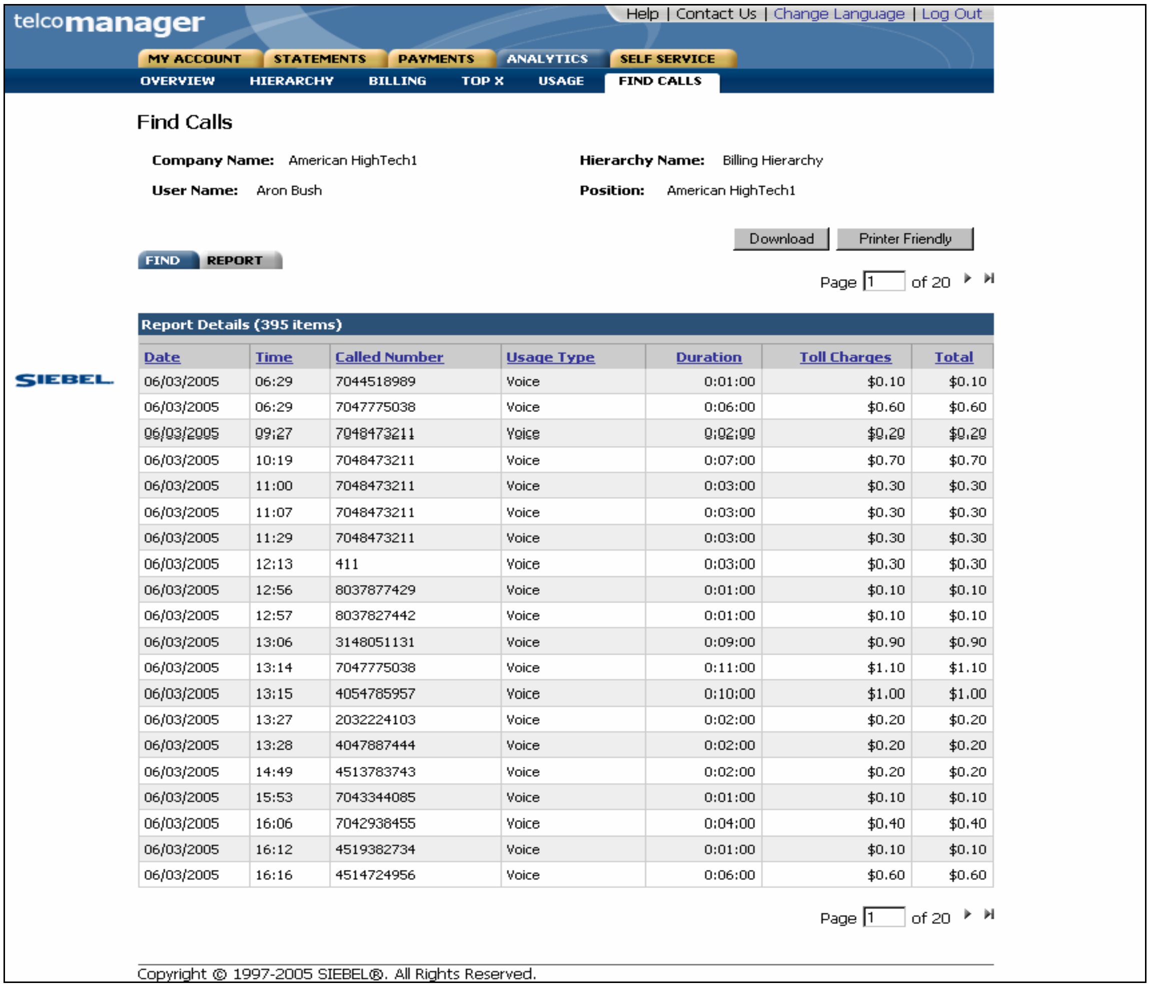
Find Calls

Name:	**Find Calls**
Brief Description:	User creates a list of calls based on a custom search
Query Parameters:	Report Selection Criteria Tab **1.** Hierarchy Name & Position **[A1]** Period Range **[A2]** Call Type **[A3]** Usage Type
Report Content	Fields **1.** Date **2.** Time **3.** Called Number **4.** Call Type **5.** Usage Type **6.** Duration **7.** Toll Charges **8.** Total Value Footer For all but the first column, totals for all pages (including those not displayed) should be displayed at the bottom of each page.
Chart	None
Main Path:	**1.** User enters or selects search criteria and selects Find action. **2.** System determines query parameters based on report context or defaults and returns a tabular report. **3.** Use case ends.
Alternate Paths:	**[A1] User modifies the query parameters:** 1. User changes any of the query parameters on the "Report" tab or their hierarchy context position and selects Display to execute report. System regenerates the report for the scope of selected reporting period and hierarchy context position. **[A2] User selects the Printer-Friendly action:** 1. System invokes Printer-Friendly use case. **[A3] User selects the Download action:** 1. System invokes Download use case. **[A4] No data set is available for the report:**

	1. System invokes No Data use case. **[A5] User selects Clear action:** 1. System clears all the entered information on the page. **[A6] User executes a report with a large query result set.** 1. System returns the result set with minimal latency. Rationale: Prevent user from a long wait time
Exception Paths:	**[E1] User encounters a system error:** 1. System invokes Error Message use case.
Business Rules:	**[B1]** Find Calls report Reports will include both billed and unbilled usage.
Notes:	A maximum limit has been set to temporarily avoid a server error caused by a submitted query for all records in the database. Setting this maximum limit does not fulfill the requirement for this report. A new approach will be implemented in Release 3.

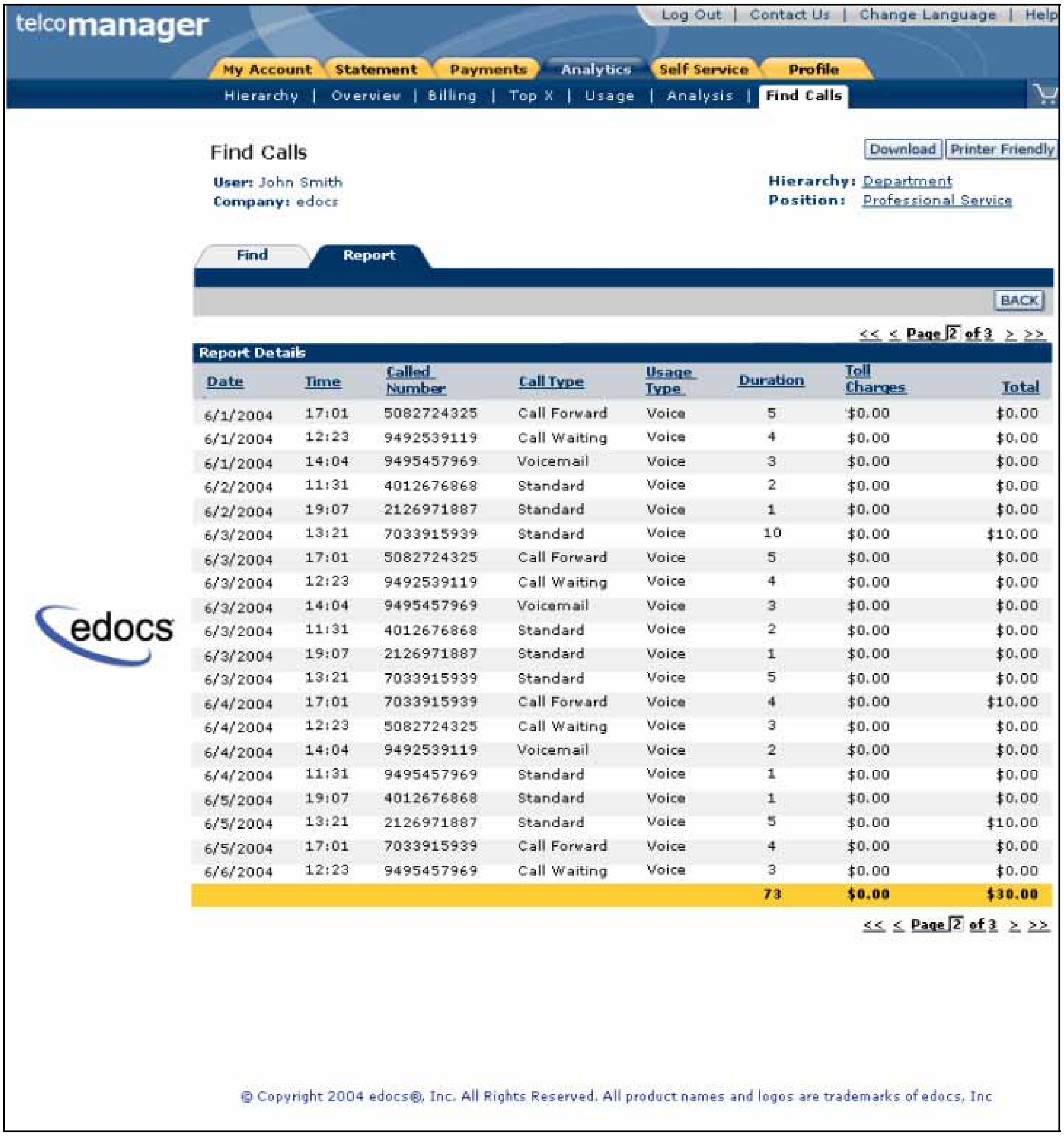


Find Calls Search



Date	Time	Called Number	Usage Type	Duration	Toll Charges	Total
06/03/2005	06:29	7044518989	Voice	0:01:00	$0.10	$0.10
06/03/2005	06:29	7047775038	Voice	0:06:00	$0.60	$0.60
06/03/2005	09:27	7048473211	Voice	0:02:00	$0.20	$0.20
06/03/2005	10:19	7048473211	Voice	0:07:00	$0.70	$0.70
06/03/2005	11:00	7048473211	Voice	0:03:00	$0.30	$0.30
06/03/2005	11:07	7048473211	Voice	0:03:00	$0.30	$0.30
06/03/2005	11:29	7048473211	Voice	0:03:00	$0.30	$0.30
06/03/2005	12:13	411	Voice	0:03:00	$0.30	$0.30
06/03/2005	12:56	8037877429	Voice	0:01:00	$0.10	$0.10
06/03/2005	12:57	8037827442	Voice	0:01:00	$0.10	$0.10
06/03/2005	13:06	3148051131	Voice	0:09:00	$0.90	$0.90
06/03/2005	13:14	7047775038	Voice	0:11:00	$1.10	$1.10
06/03/2005	13:15	4054785957	Voice	0:10:00	$1.00	$1.00
06/03/2005	13:27	2032224103	Voice	0:02:00	$0.20	$0.20
06/03/2005	13:28	4047887444	Voice	0:02:00	$0.20	$0.20
06/03/2005	14:49	4513783743	Voice	0:02:00	$0.20	$0.20
06/03/2005	15:53	7043344085	Voice	0:01:00	$0.10	$0.10
06/03/2005	16:06	7042938455	Voice	0:04:00	$0.40	$0.40
06/03/2005	16:12	4519382734	Voice	0:01:00	$0.10	$0.10
06/03/2005	16:16	4514724956	Voice	0:06:00	$0.60	$0.60

Find Calls



telcomanager

Log Out | Contact Us | Change Language | Help

My Account | Statement | Payments | Analytics | Self Service | Profile

Hierarchy | Overview | Billing | Top X | Usage | Analysis | Find Calls

Find Calls

Download | Printer Friendly

User: John Smith
Company: edocs

Hierarchy: Department
Position: Professional Service

Find | Report

BACK

<< < Page 2 of 3 > >>

Report Details

Date	Time	Called Number	Call Type	Usage Type	Duration	Toll Charges	Total
6/1/2004	17:01	5082724325	Call Forward	Voice	5	$0.00	$0.00
6/1/2004	12:23	9492539119	Call Waiting	Voice	4	$0.00	$0.00
6/1/2004	14:04	9495457969	Voicemail	Voice	3	$0.00	$0.00
6/2/2004	11:31	4012676868	Standard	Voice	2	$0.00	$0.00
6/2/2004	19:07	2126971887	Standard	Voice	1	$0.00	$0.00
6/3/2004	13:21	7033915939	Standard	Voice	10	$0.00	$10.00
6/3/2004	17:01	5082724325	Call Forward	Voice	5	$0.00	$0.00
6/3/2004	12:23	9492539119	Call Waiting	Voice	4	$0.00	$0.00
6/3/2004	14:04	9495457969	Voicemail	Voice	3	$0.00	$0.00
6/3/2004	11:31	4012676868	Standard	Voice	2	$0.00	$0.00
6/3/2004	19:07	2126971887	Standard	Voice	1	$0.00	$0.00
6/3/2004	13:21	7033915939	Standard	Voice	5	$0.00	$0.00
6/4/2004	17:01	7033915939	Call Forward	Voice	4	$0.00	$10.00
6/4/2004	12:23	5082724325	Call Waiting	Voice	3	$0.00	$0.00
6/4/2004	14:04	9492539119	Voicemail	Voice	2	$0.00	$0.00
6/4/2004	11:31	9495457969	Standard	Voice	1	$0.00	$0.00
6/5/2004	19:07	4012676868	Standard	Voice	1	$0.00	$0.00
6/5/2004	13:21	2126971887	Standard	Voice	5	$0.00	$10.00
6/5/2004	17:01	7033915939	Call Forward	Voice	4	$0.00	$0.00
6/6/2004	12:23	9495457969	Call Waiting	Voice	3	$0.00	$0.00
					73	$0.00	$30.00

<< < Page 2 of 3 > >>

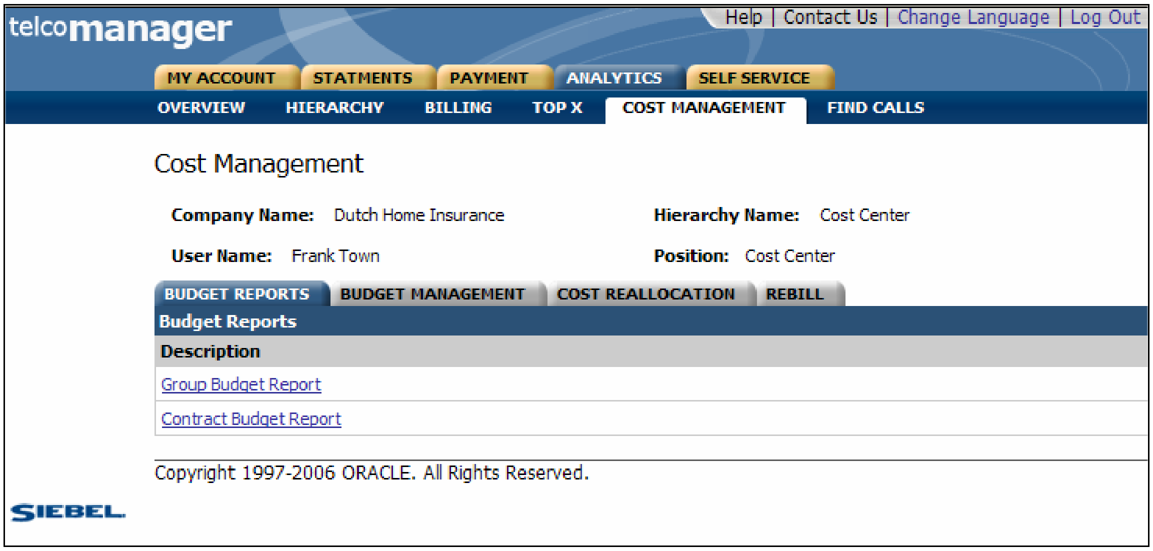
© Copyright 2004 edocs®, Inc. All Rights Reserved. All product names and logos are trademarks of edocs, Inc

Find Calls Report Results

Cost and Budget Management Reports

Budget Reports

Name:	**Budget Report**
Brief Description:	User is presented with a list of available Budget Reports based on the Users current hierarchy context
Entry Points:	Cost Management-> Budget Reports
Primary Actors:	This is a Manager/Admin Function only.
Query Parameters:	Current hierarchy type
Report Content:	Billing Hierarchy: Contract Budget Report Business Hierarchy: Group Budget Report Contract Budget Report
Chart:	None. Choices are limited to the available report list
Main Path:	**1.** User selects Cost Management tab **2.** Application determines the list of available reports based on the current hierarchy type **3.** List of available reports is displayed **4.** Use case ends.
Alternate Paths:	None
Exception Paths:	None
Business Rules:	none

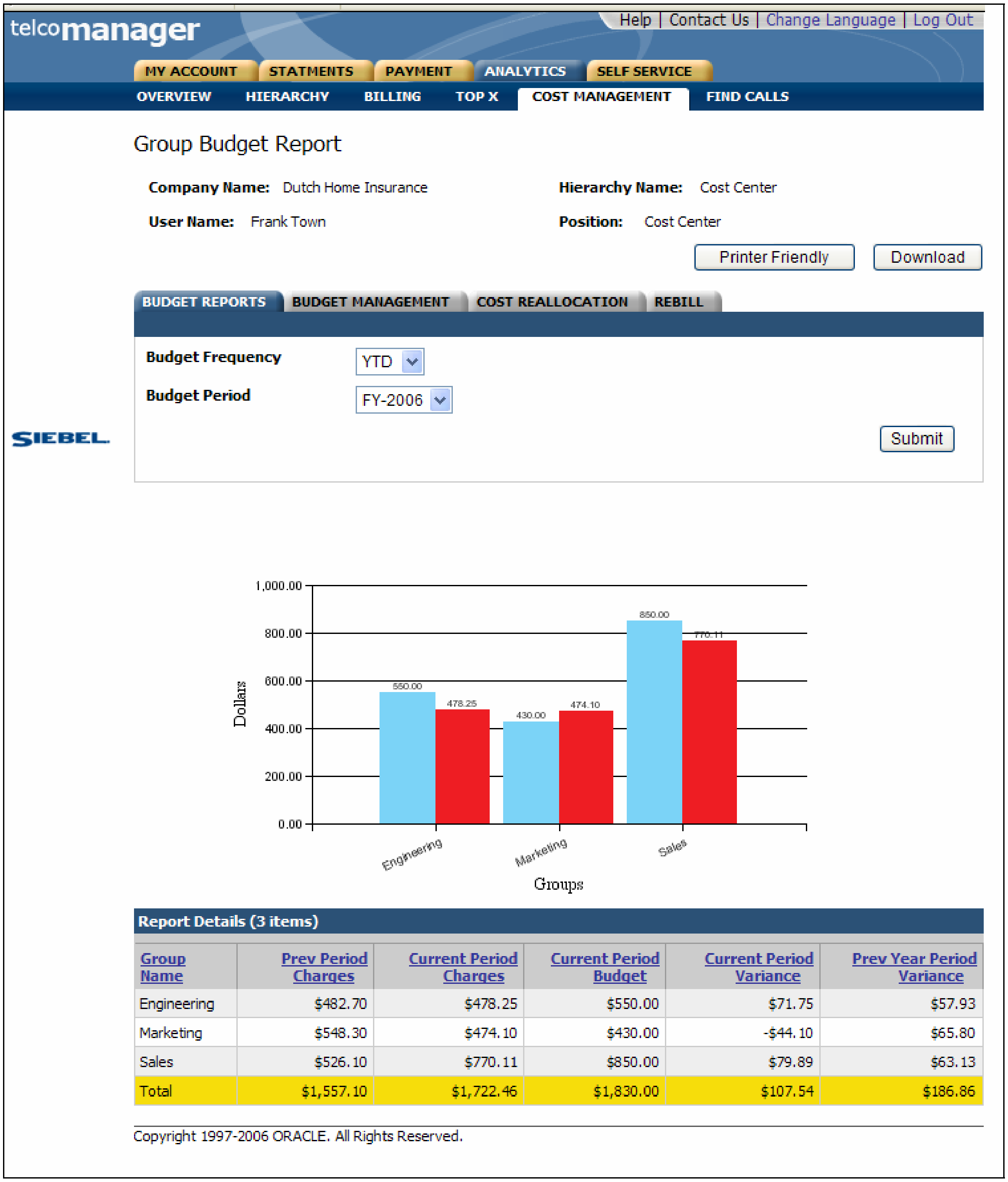


Cost Management Tab-Budget Reports Screen

Group Budget Report

Name:	**Group Budget Report**
Brief Description:	User views budgeted amounts against actual charges incurred over a period of time. This is a sum of all charges, including taxes and rounding if any, for all groups below the current selected hierarchy position. The Group Budget Report will only be shown if the User is in a Business Hierarchy. A Group is defined as the folder that is directly under the current hierarchy position and has at least one or more account nodes under it or its sub-folders.
Entry Points:	Cost Management-> Budget Reports -> Group Budget Report
Primary Actors:	This is a Manager/Admin Function only.
Query Parameters:	Report Selection Criteria 1. Current hierarchy position 2. Budget Frequency 3. Budget Period See Change Selection Criteria use case for description of parameters.
Report Content:	Top Header Section: Company Name User name Position User Selection Section: Budget Frequency drop down Budget Period drop down Chart Report Details: Fields 1) Group (The folders below the current hierarchy position) 2) Current period budget 3) Current period charges 4) Current period variance (Budget-Charges) 5) Prior period budget 6) Prior period charges 7) Prior period variance (Budget-Charges) 8) Variance of the prior year for the same time period.

	Footer For all but the first column, totals for all pages (including those not displayed) should be displayed at the bottom of each page.
Chart:	Chart Type: side-by-side bar chart X axis: Two bars displayed for each group Budget Amount (aggregate of all child Service Agreements) Actual Group Spend (aggregate of all child Service Agreements) Y axis: Charge/Budget Amount
Main Path:	**1.** User selects the Group Budget Report link from the report list **2.** Application determines query parameters based on report context or defaults and returns: **3.** Tabular Report and corresponding Chart **4.** Use case ends.
Alternate Paths:	**[A1]** User modifies the query parameters: 1. User changes Budget Frequency 2. User changes the Budget Period **[A2]** Drilldown: User selects the link for a group. 1. Application recursively invokes same report for the selected group, or if there are no more groups under the selected group, invokes the Contract Budget Report if the group contains contracts only.
Exception Paths:	**[E1]** User encounters an application error: Application invokes Error Message use case. **[E2]** Result set returns more than 20 Chart Bars User will receive a message that the chart was suppressed because of this condition.
Business Rules:	**[B1]** If there are more than 20 Groups in the result set the chart is suppressed **[B2]** The Group Budget Report will only be shown if the User is in a Business Hierarchy. This report will not be shown if the User is in a Billing Hierarchy. **[B3]** The report should display a list of Sub Groups or Contracts in this particular Business Group. **[B4]** If there is missing Budget or Charge data for a particular Group or Contract, it will be ignored (i.e., if the budget is zero the variance will have a negative number). **[B5]** In a Business Hierarchy, the Contract Budget Report and the Group Budget Report will have the same data.



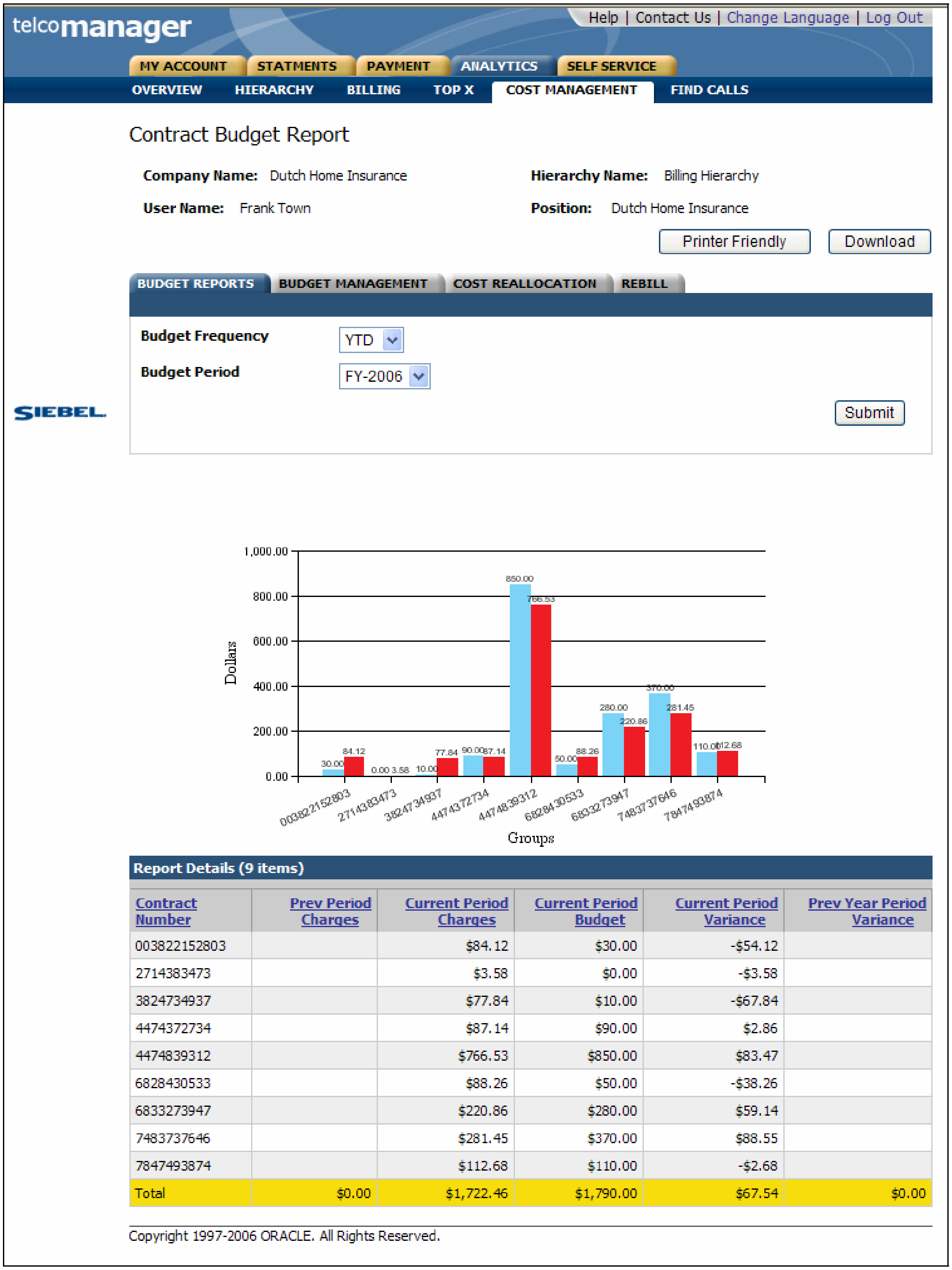
Group Name	Prev Period Charges	Current Period Charges	Current Period Budget	Current Period Variance	Prev Year Period Variance
Engineering	$482.70	$478.25	$550.00	$71.75	$57.93
Marketing	$548.30	$474.10	$430.00	-$44.10	$65.80
Sales	$526.10	$770.11	$850.00	$79.89	$63.13
Total	$1,557.10	$1,722.46	$1,830.00	$107.54	$186.86

Group Budget Report

Contract Budget Report

Name:	**Contract Budget Report**
Brief Description:	User views budgeted amounts against actual charges incurred over a period of time. This is a sum of all charges, including taxes and rounding if any, for all Contracts (Service Agreements) in the current selected hierarchy position. The Contract Budget Report will be shown if the User is in either a Billing or Business Hierarchy. The Contract is defined as the Service Agreement number (typically the telephone number). The budget amounts are managed for each Service Agreement.
Entry Points:	Cost Management-> Budget Reports -> Contract Budget Report or through drilldown from Group Budget Report
Primary Actors:	This is a Manager/Admin Function only
Query Parameters:	Report Selection Criteria Current hierarchy position Budget Frequency Budget Period
Report Content:	Top Header Section: Company Name User name Position User Selection Section: Budget Frequency drop down Budget Period drop down Chart Report Details: Fields 1) Group (Current hierarchy position) 2) Current period budget 3) Current period charges 4) Current period variance (Budget-Charges) 5) Prior period budget 6) Prior period charges

	7) Prior period variance (Budget-Charges) 8) Variance of the prior year for the same time period. Footer For all but the first column, totals for all pages (including those not displayed) should be displayed at the bottom of each page.
Chart:	Chart Type: side-by-side bar chart X axis: Two bars displayed for each group Budget Amount (aggregate of all child Service Agreements) Actual Contract Spend (aggregate of all charges associated with each Service Agreement) Y axis: Charge/Budget Amount
Main Path:	**1.** User selects the Cost Management Tab **2.** User selects the Budget Reports tab **3.** User selects Contract Budget Tracking Report **4.** System determines query parameters based on report context or defaults and returns: a. Tabular Report b. Chart **5.** Use case ends.
Alternate Paths:	**[A1]** User modifies the query parameters: 1. User changes the Budget Frequency from the dropdown 2. User changes the Budget Period from the dropdown
Exception Paths:	**[E1]** User encounters an application error: Application invokes Error Message use case.
Business Rules:	**[B1]** If there are more than 20 Groups in the result set the chart is suppressed
Notes:	None
Configuration:	None



Contract Number	Prev Period Charges	Current Period Charges	Current Period Budget	Current Period Variance	Prev Year Period Variance
003822152803		$84.12	$30.00	-$54.12	
2714383473		$3.58	$0.00	-$3.58	
3824734937		$77.84	$10.00	-$67.84	
4474372734		$87.14	$90.00	$2.86	
4474839312		$766.53	$850.00	$83.47	
6828430533		$88.26	$50.00	-$38.26	
6833273947		$220.86	$280.00	$59.14	
7483737646		$281.45	$370.00	$88.55	
7847493874		$112.68	$110.00	-$2.68	
Total	$0.00	$1,722.46	$1,790.00	$67.54	$0.00

Contract Budget Report

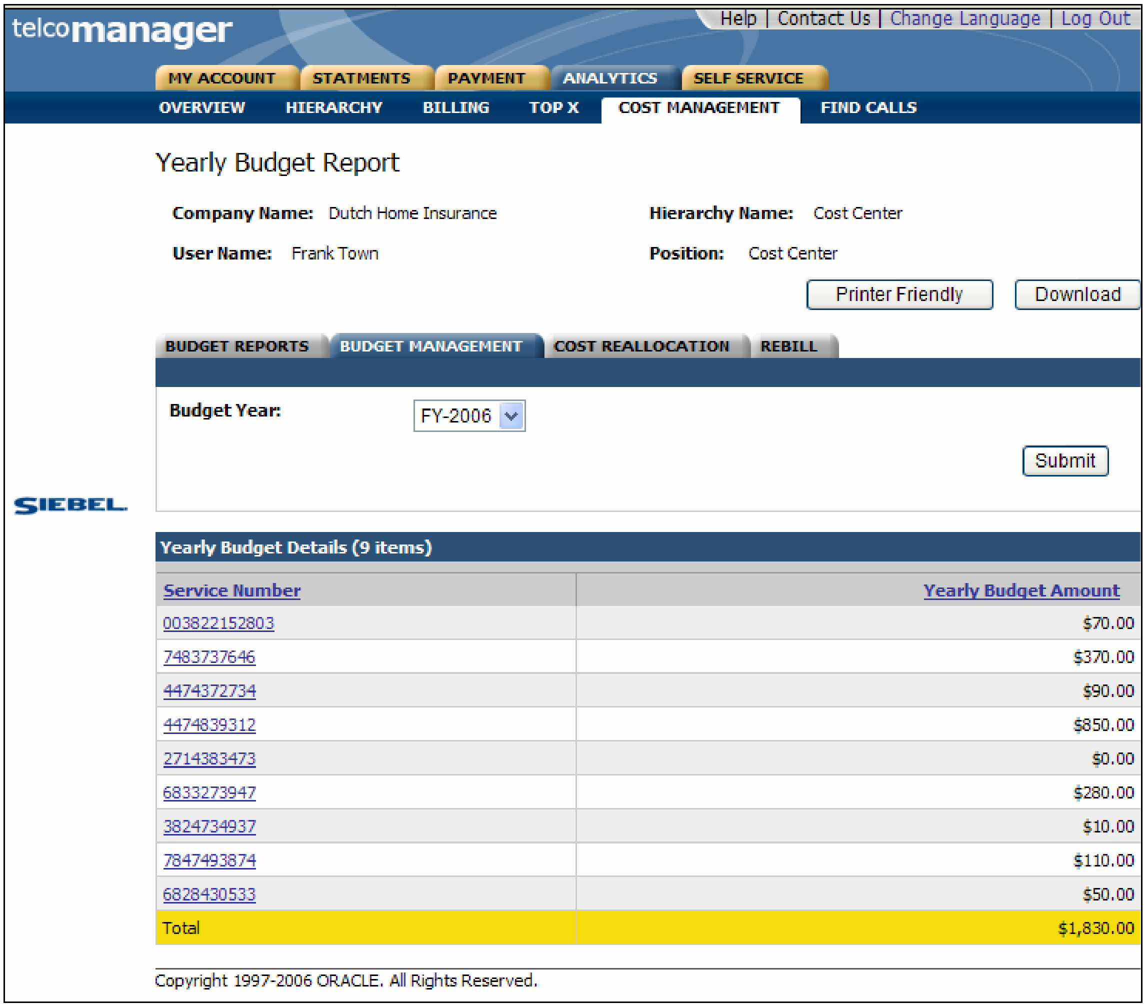
Budget Report Settings

The following use cases enable the user to specify settings for cost and budget reports.

Budget Management

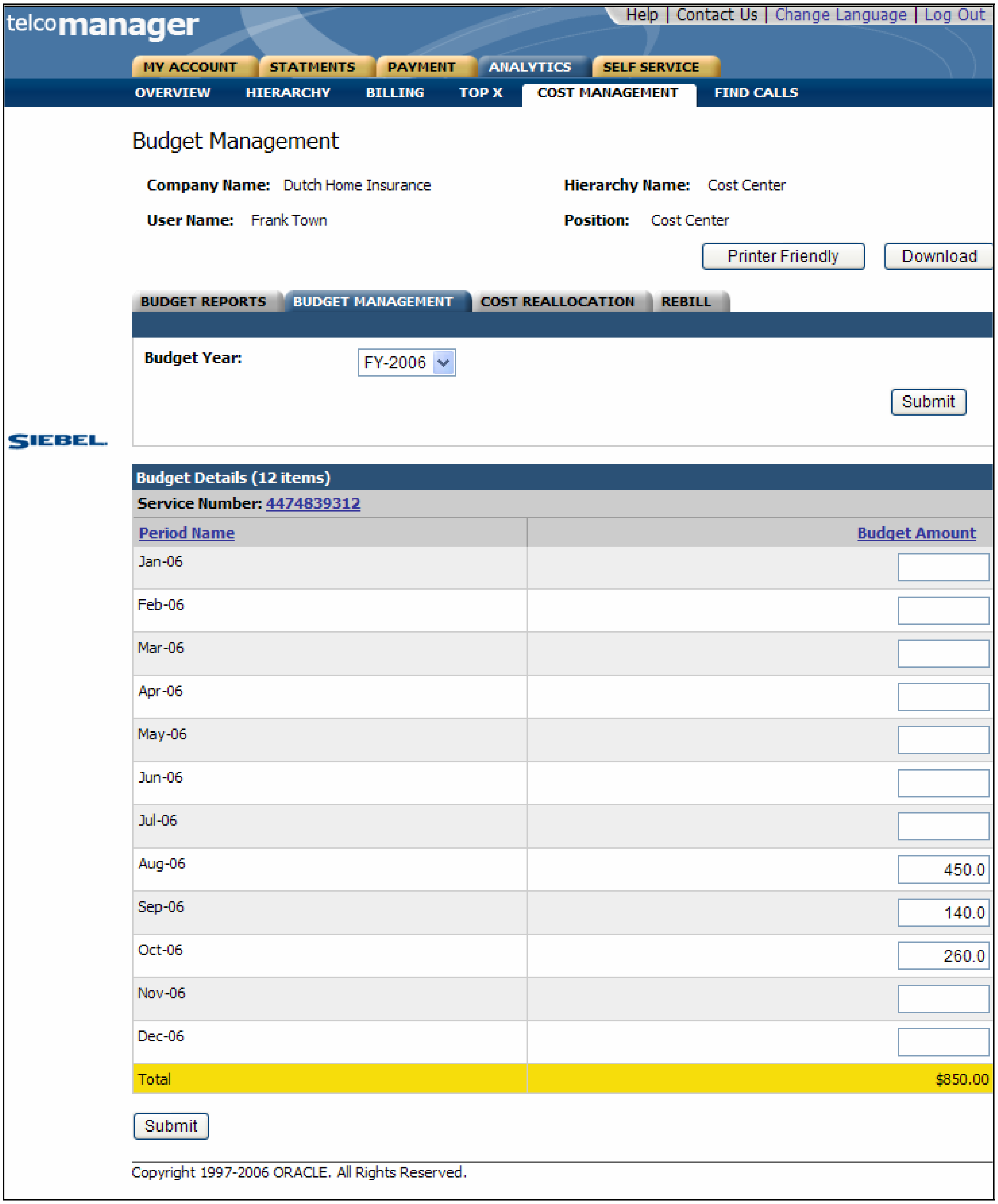
Name:	**Budget Management**
Brief Description:	User defines the allocated budget – at a Contract (Service Agreement) level (typically a phone number). These subscriber level budget amounts then roll up to the Groups to define the Group level budget.
Entry Points:	
Primary Actors:	This is a Manager /Admin Function only
Report Content:	User Selection Section: Budget Year Dropdown Yearly Budget Details: Displayed Fields **1.** Service Number **2.** Yearly Budget Amount Footer Sub-total of Budget for the group Drilldown: Select service number from list User Selection Section: Budget Year Dropdown Budget Details: Displayed Fields **3.** Period Name (Month and Year) **4.** Budget Amount Footer Sub-total of Budget for the group
Chart:	Not applicable.

Main Path:	**1.** User selects Budget Management Sub Tab **2.** User chooses to change the Budget Year from the drop down (default to current year) **3.** System will display the appropriate budget for that year listing each service number **4.** User may drilldown into each Service Number to set monthly budget amounts **5.** User may enter a budget amount for each month **6.** User selects Submit to save input **7.** System will adjust the budget for that particular Service/Month **8.** Use Case Ends
Alternate Paths:	None
Exception Paths:	**[E1]** User encounters an application error: 1. Application invokes Error Message use case.
Business Rules:	**[B1]** Past Budget cells can also be viewed by selecting the drop down "Budget Year" **[B2]** Budget Management is only **visible and editable** by Admin/Manager. The Admin/Manager will be able to enter future budgets for up to one year. **[B4]** These settings affect Budget Reports only. The Budget Grid will be displayed for an additional 12 months from the current period where there is billing data.
Notes:	None
Configuration:	None



Service Number	Yearly Budget Amount
003822152803	$70.00
7483737646	$370.00
4474372734	$90.00
4474839312	$850.00
2714383473	$0.00
6833273947	$280.00
3824734937	$10.00
7847493874	$110.00
6828430533	$50.00
Total	$1,830.00

Budget Management - Yearly Budgeted Amount

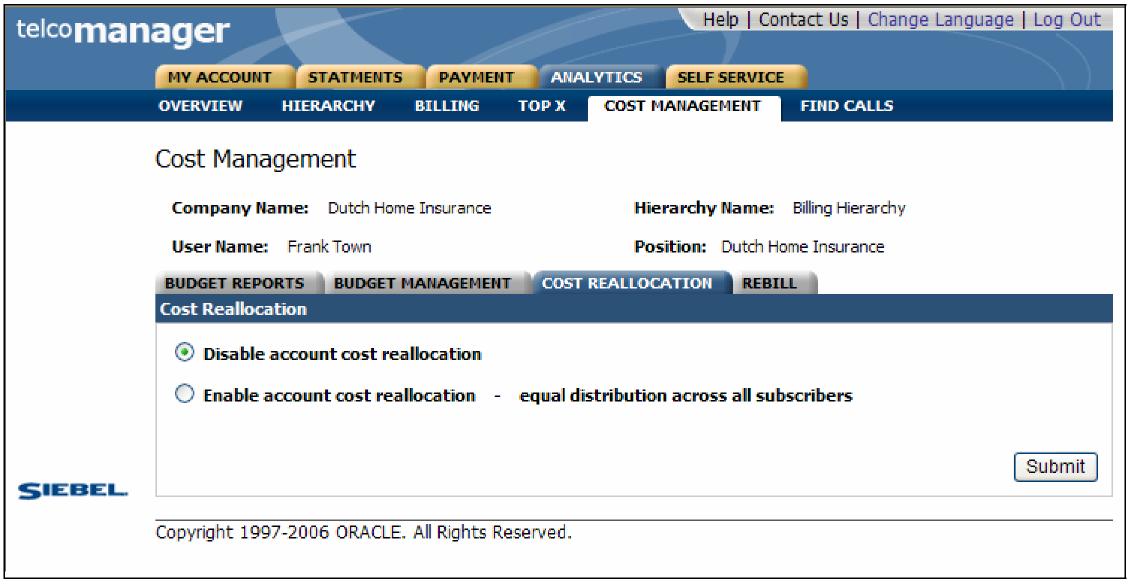


Budget Management - Budgeted Amount by Period

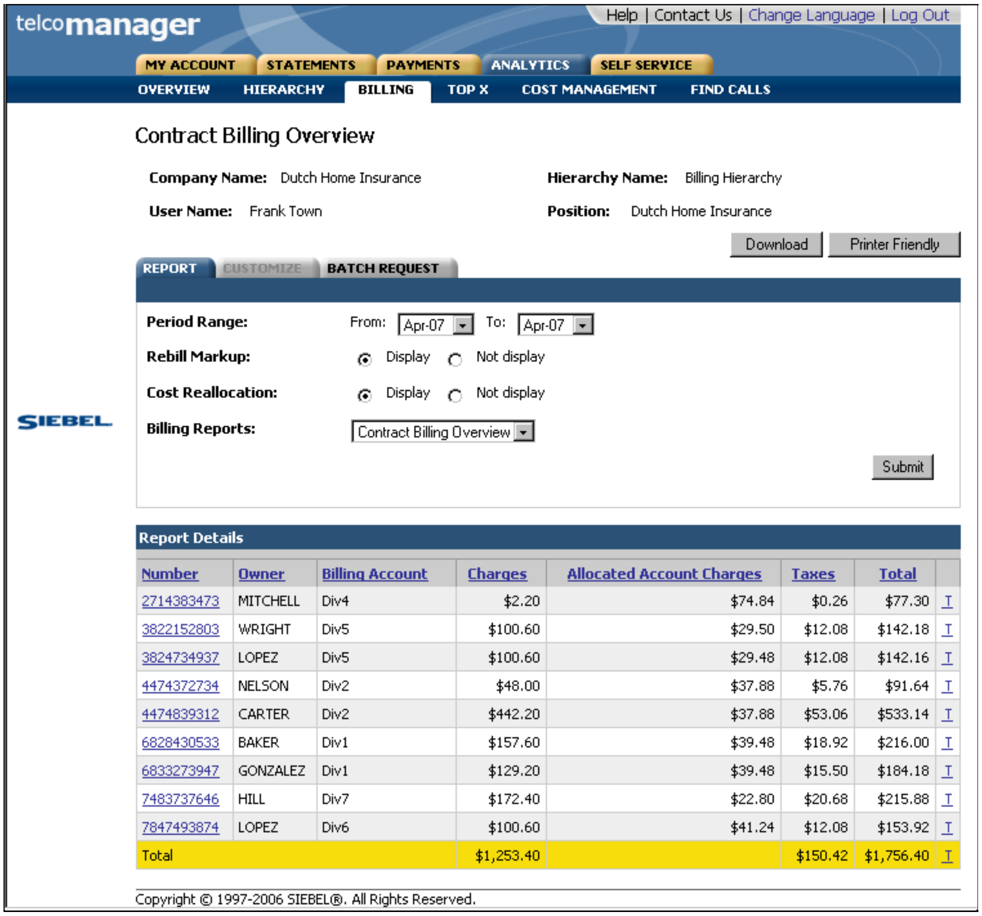
Cost Reallocation Setting

Name:	**Cost Reallocation Setting**
Brief Description:	User defines the reallocation setting for account level charges. This enables Account level charges to be distributed among the individual subscribers. The reallocated charges are available on any report where non-usage charges are displayed. These settings affect the following reports. These reports will now have an option for the user to “Display” or “Not Display” the cost allocation changes: • Group Spending • Group Spending Trend • Account Billing Overview • Account Billing Details • Account Billing Trend • Invoice Billing Details • Top X Highest Spender Reports
Entry Points:	• Cost Management Tab • Cost Reallocation Subtab
Primary Actors:	This is a Manager /Admin Function has the ability to set the Allocation Amounts. The Subscribers can only “view” the reports with the “new charges” if there has been any allocations.
Query Parameters:	Report Selection Criteria 1. Current hierarchy position 2. Report See Change Selection Criteria use case for description of parameters.
Report Content:	Top Header Section: Company Name User name Position User Selection Section: Radio Buttons Reallocation Type – valid types are: • None – no reallocation • Equally – equal distribution across all subscribers
Chart:	Not applicable

Main Path:	**1.** User Selects Cost Reallocation SubTab **2.** User may change the Cost Reallocation by selecting the appropriate radio buttons. **3.** User clicks submit to save the changes **4.** System determines query parameters based on report context or defaults and returns the report with the appropriate subscription charges for each Account in the Reports. **5.** User may click on the display button to show these Cost Allocation changes in all the reports. This option is only available for the Admin/Manager. The Subscriber User will only get to see the reports with the new charges already in the reports. **6.** Use Case Ends
Alternate Paths:	**[A1]** User modifies the query parameters: 1. User changes any of the query parameters on the "Billing" tab or their business structure context position and selects Display to execute report. 2. Application regenerates the report for the scope of selected reporting period and business structure context position.
Exception Paths:	**[E1]** User encounters an application error: Application invokes Error Message use case.
Business Rules:	**[B1]** The Charges that need to be reallocated should be applied only to the Subscription Charges for each Account. **[B2]** All changes in the subscription charges will affect the reports below and they will need to be recalculated and displayed when requested by user for each report. a. Group Spending b. Group Spending Trend c. Account Billing Overview d. Account Billing Details e. Account Billing Trend f. Invoice Billing Details g. Top X Highest Spending
Configuration:	None



Cost Management-Cost Reallocation Settings



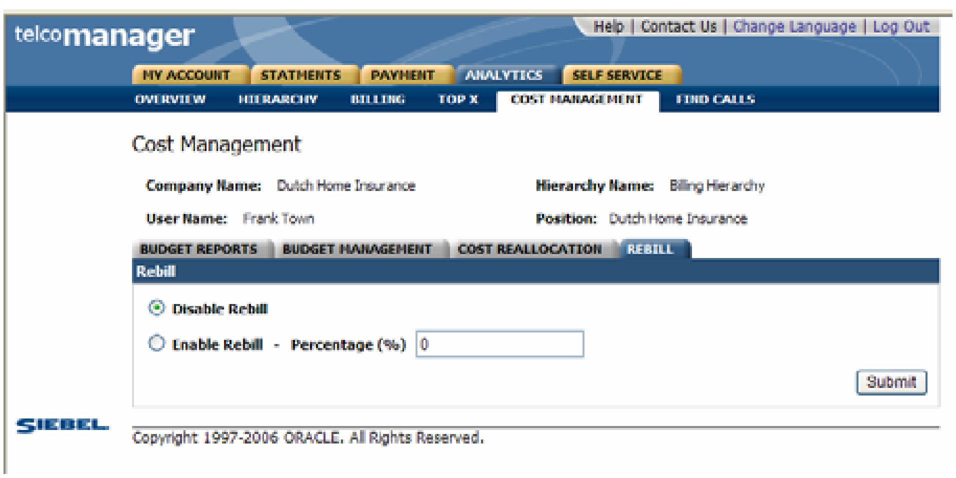
Number	Owner	Billing Account	Charges	Allocated Account Charges	Taxes	Total	
2714383473	MITCHELL	Div4	$2.20	$74.84	$0.26	$77.30	T
3822152803	WRIGHT	Div5	$100.60	$29.50	$12.08	$142.18	T
3824734937	LOPEZ	Div5	$100.60	$29.48	$12.08	$142.16	T
4474372734	NELSON	Div2	$48.00	$37.88	$5.76	$91.64	T
4474839312	CARTER	Div2	$442.20	$37.88	$53.06	$533.14	T
6828430533	BAKER	Div1	$157.60	$39.48	$18.92	$216.00	T
6833273947	GONZALEZ	Div1	$129.20	$39.48	$15.50	$184.18	T
7483737646	HILL	Div7	$172.40	$22.80	$20.68	$215.88	T
7847493874	LOPEZ	Div6	$100.60	$41.24	$12.08	$153.92	T
Total			$1,253.40		$150.42	$1,756.40	T

Resulting Changes in a Report Example Due to Cost Reallocation and Re-Billing

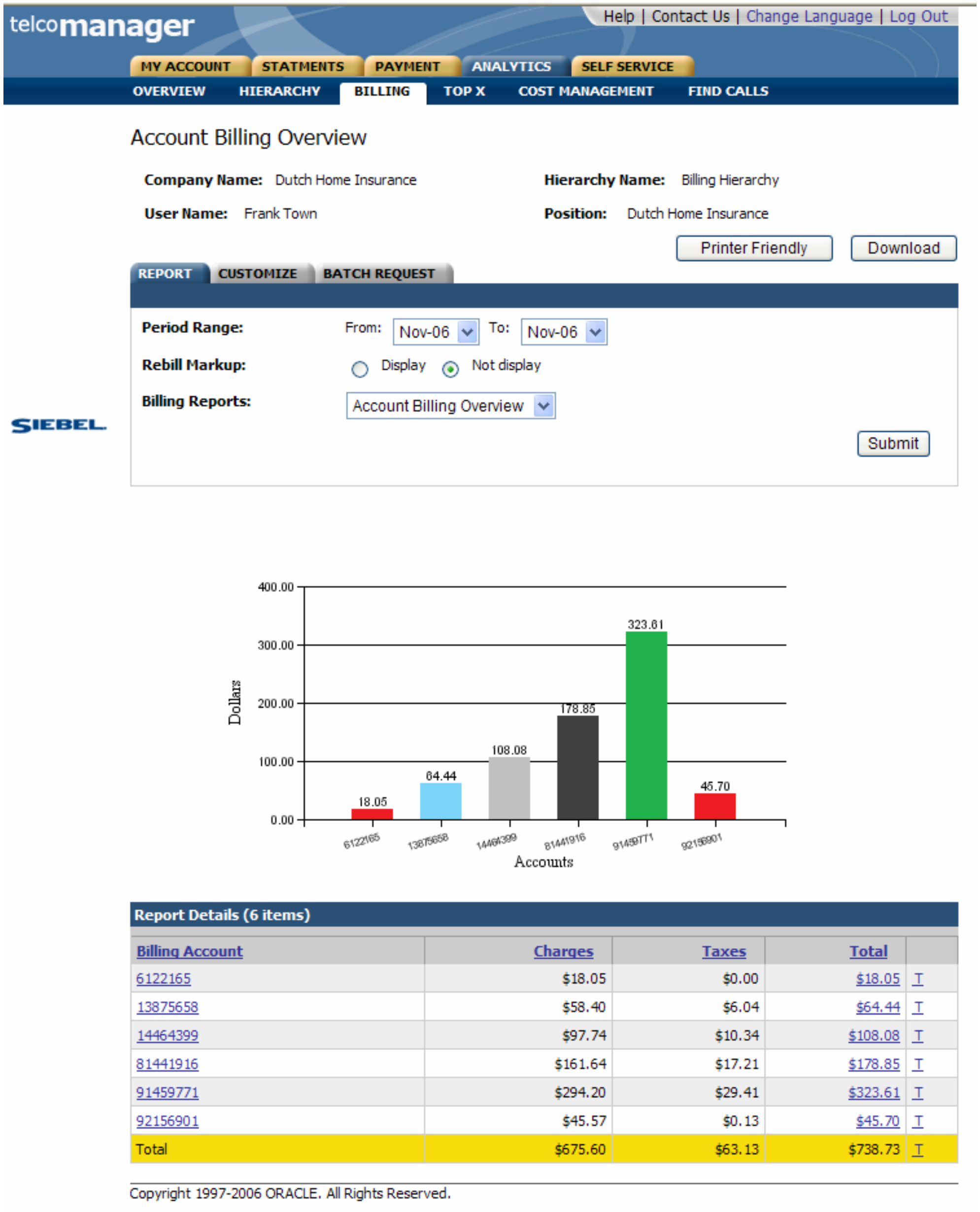
Markup / Re-Bill Setting

Name:	**Mark-up / Re-Bill Setting**
Brief Description:	User defines the mark-up/Re-Bill amounts – at the Enterprise or Group level in a Business or Billing Hierarchy.
Entry Points:	• Cost Management Tab • Re-Bill Sub Tab
Primary Actors:	Manager /Admin Function can set the Re-Bill Amounts and view all the reports with or without the Re-Bill option. The Subscriber can only view the Reports with the new “Re-Bill Charges”. They will not be able to see the old charges in reports.
Query Parameters:	Report Selection Criteria Current hierarchy position Report See Change Selection Criteria use case for description of parameters.
Form Content:	Displayed Fields **1.** Mark-up / Re-Bill Indicator • On – Turns on mark-up calculations • Off – Turns off mark-up calculations for all data (i.e., not time-stamped) **2.** Mark-up / Re-Bill amount – options are: • Equal – mark-up all charges equally; user must specify percentage amount to mark-up
Chart:	Not applicable
Main Path:	**1.** User selects the Re-Bill subtab under Cost Management **2.** System displays the Re-Bill Form as described in the Form Content Section and selects a Business Hierarchy for which to apply the Re-Bill charges. **3.** User selects to Turn off/on Re-Bill indicator and enters the type of Re-Bill charges and the amounts of distribution in the section below. **4.** User selects submit to save the changes. a. System determines query parameters based on report context or defaults and readjusts charges and generates the Re-Bill Report for that Group within the Business or Billing Hierarchy. i. If you are a manager or admin you will see the old and the new charges. ii. If you are a subscriber you see only the "newly re-billed

	charge" (if there is one). If re-bill is not applied you will see the old charge. **5.** Use case ends.
Alternate Paths:	
Exception Paths:	**1.** User encounters an application error: Application invokes Error Message use case.
Business Rules:	**[B1]** The charges will be shown as “Other charges” in all appropriate existing reports and will be based on the Subscription charge of each subscriber (service) belonging to that group. The charge will be percentage based. Admin User will be able to see the original charges and updated totals based on the Rebill percentage specified in the Reports. **[B2]** All other users who view Re-Bill reports can only view the reports with the new Re-Bill Charges. The old charges should be transparent to these Users. **[B3]** The Re-Bill Percentages can only be applied at the Root level in a hierarchy, i.e. in a given tree structure path (see examples above) only one node can have the Re-Bill option. In 5.1.1, if the user is not in a Root Node, the Rebill Option will be turned off. **[B4]** Re-Bill charges cannot be applied at a single subscriber level (MTN or Service Level). All nodes should have children. Therefore Re-Billing has to happen at a Group level in a Business Hierarchy.
Configuration:	None



Cost Management-Re-Bill Settings



Cost Management-Re-Bill Settings

6 Appendix A

Glossary of Terms

Term	Definition
Account	The payment agreement between a service provider and a customer. An account may contain one or more contracts (a.k.a. Billing Account)
Business Rule	Description of a decision made during a business process. May describe the behavior of the application.
Consolidation	The process of presenting a customer with information from multiple account invoices for a single company or organization.
Contract	Defines the usage plan, features, and device for a specific phone number.
Cost Center	A business structure used to allocate expenses and usage. A typical business structure is comprised of a hierarchical tree of cost centers. Each cost center may be defined as, but not limited to a company, location, department, or region used for organizational spending reports.
Customer	The consumer of the service from a provider. Customers can either be individuals (B2C) or small, medium, and large businesses (B2B).
Document	A single statement or set of account data from an input data source. The input data source may consist of many individual documents. Document content roughly corresponds to data typically provided to customers in print form on the Web.
Hierarchy	A node tree with a single root node, intermediate nodes, and leaf nodes. The hierarchy tree may be used to consolidate several accounts into a single billing hierarchy or provide an organizational structure consisting of cost centers for organizational spending reports.
Invoice	A statement of charges and service usage provided to a customer by the service provider. Used to inform the customer credits, debits, and the amount due for an account
Message	A relatively small set of information that is delivered via the Web or email message to user. Can be synonymous to notification and alert.
Module	1) Self-contained collections of code, scripts, and configuration information that is functionally coherent. They need not be self-contained, but inter-module dependencies must be defined and managed. 2) A large grained software structure. The software architecture can be described in terms of modules and their interaction.
User	1) A user is an enrolled customer with a unique login name, password, and individually assigned and managed permissions. 2) In a hierarchy, a user is typically assigned to a node.