Communications Billing Analytics Application Guide

Business Edition

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PRODUCT MODULES AND OPTIONS. This guide contains descriptions of modules that are optional and for which you may not have purchased a license. Siebel's Sample Database also includes data related to these optional modules. As a result, your software implementation may differ from descriptions in this guide. To find out more about the modules your organization has purchased, see your corporate purchasing agent or your Siebel sales representative.

Contents

1 Overview

Introduction to Communications Billing Analytics

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 CD’s which are difficult or impossible to manage. Communcations service provider companies need to support hundreds of thousands of registered users making flexible queries against billions of transactions (CDR’s) per month in a high-performance always-on environment.

The application will deliver the following benefits to a communications client

- 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 encouraging a business customer to customize their data through custom organizational hierarchies and custom reports.
- 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 communication service purchases because the customer can use Communications Billing Analytics as their preferred tool for a consolidated view of their communications services.

- o 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's functionality is being used.

The application will deliver the following benefits to a communication client's business Customers:

- Reduced Costs:

  Less time is required to distribute, review, and analyze communication service invoices either in paper or CD form.

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

  Communications Billing Analytics makes it easy to analyze who is using communications services to by looking for exceptions and anomalies. In addition to controlling billing errors and personal use infractions, business customers can consolidate and slice the data differently to assess the most appropriate usage plan.

- Book Cost Accounting Entries:

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

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 website. 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

Communication 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.

Communication Analytics Manager

Communication Analytics Manager is a reporting solution for business customers that 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.

2 Business Processes and Application Logic

What's new in version 5.0.3

Although there have been many minor enhancements made to 5.0.3, the major components of functionality are described below.

Initial Out-of-the-Box Reports

Communications Billing Analytics now has an initial group of reports based on the generic communications data model. These reports may be simply rebranded or widely customized to meet a customer’s specific requirements. Many of these reports will be preconfigured with customization, printer friendly, and download capability. These initial out-of-the-box reports are:

- Group Spending
- Group Spending Trend
- Account Billing Overview
- Account Billing Details
- Account Billing Trend
- Invoice Billing Details
- Contract Billing Overview
- Contract Billing Trend
- Contact Call Details
- Total Cost By Plan
- Top X Most Expensive Calls
- Top X Longest Calls
- Top X Most Frequently Called Numbers
- Top X Most Frequently Called Destinations
- Top X Most Frequently Called Countries
- Top X Highest Spending by Contract
- Top X Highest Spending Contracts by Usage Type

Batch Reporting:

A user may choose to run a report in batch rather than interactively on the web to avoice making the user wait a long time online for report results or tying up constrained system resources.

Navigate Hierarchy

User can change their selected hierarchy or position within the hierarchy to enable the user to change the scope of the report or filter the list of reports applicable to the user's position in the hierarchy.

Additional Reports

Various reports were updated with more query parameters or features such as download and print friendly.

New User Interface Look and Feel

The user interface has been enhanced to improve the consistency with Communications Billing Manager and Communications Self-Serivce Manager applications. The user interface has also been enhanced to facilitate internationalization/localization and changes to the branding and identity to match a specific serivce provider's requirements.

Key Concepts

Hierarchy Basics

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

Overview

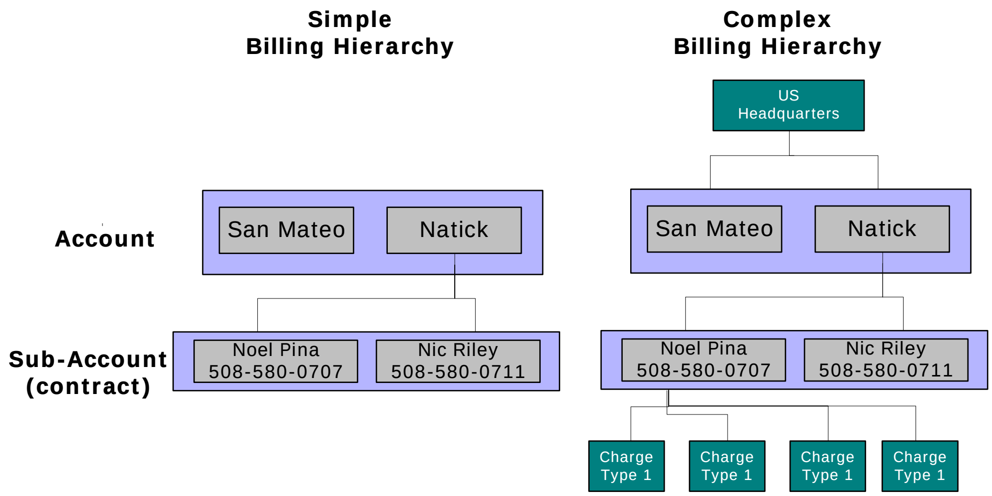
By creating different hierarchies, the user can define multiple views of the information in their invoices, such as by department, location, cost center, or any combination of different groupings the user wishes to assemble. These custom hierarchies are available to Communications Billing Analytics to 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.

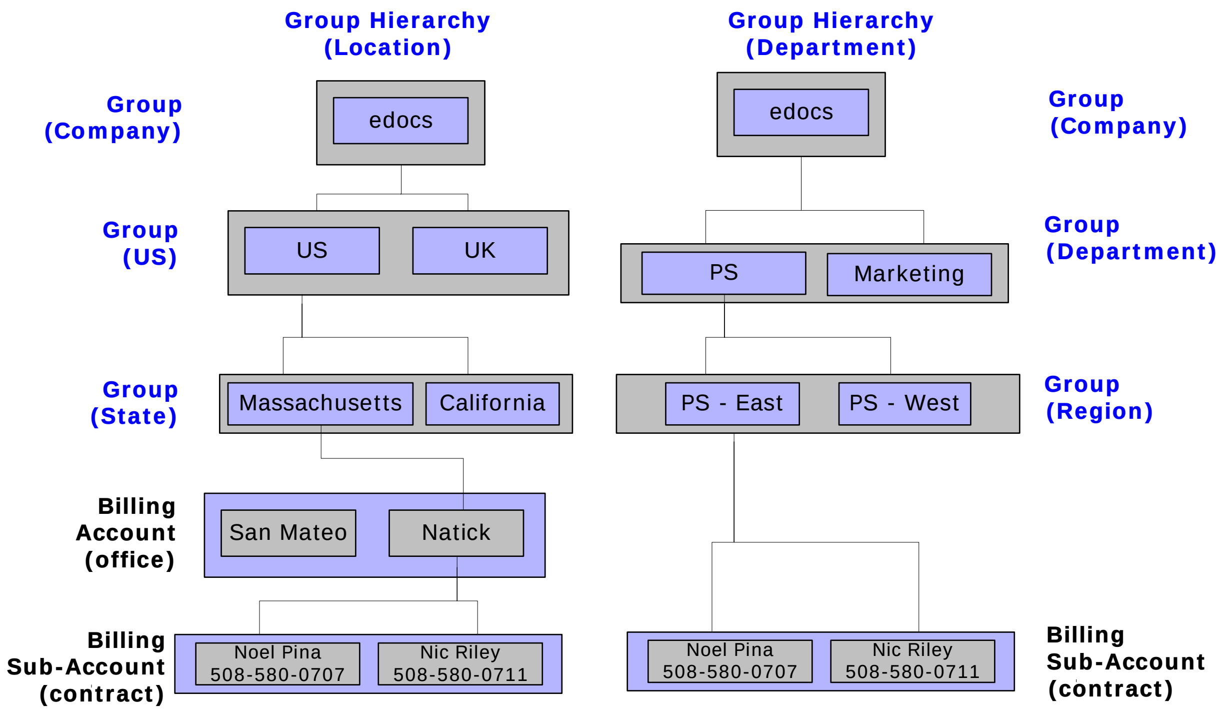
There are two types of hierarchies.

- *Billing Hierarchies:* Billing hierarchies are created automatically at the time the invoice data is loaded, and can include only information from within the invoice data stream. For example, a simple billing hierarchy might include only two levels: account and sub-account (sub-account is usually a contract or phone number in Communications). A complex billing hierarchy could contain an unlimited number of hierarchy objects above the account (such as divisions or corporate identifiers) or below the sub-account (such as a charge type associated with a phone).

  NOTE: Billing hierarchies contain the call usage and cost information to which the bottom nodes of a Group Hierarchy (or organization hierarchy) must link.



- *Group Hierarchies:* A user can create an unlimited number of Group Hierarchies in order to organize and view of the communications usage and cost information differently (location, department, cost center, etc.). All bottom nodes of the Group hierarchy must link to a node in a Billing hierarchy in order to contain any meaningful usage or cost information.



Enabled Functionality

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

- **Report Scope**: Depending on which hierarchy is selected and at what node the user's hierarchy context position is, the report returns only records associated with the user's current node and below in the tree structure.
- **Change Hierarchy Context**: The user navigates using the hierarchy UI to change their position (context) and subsequently the scope of the records returned on their reports. The user can also change the hierarchy position by drilling down on a value in a report to run a more detailed report. In either case the hierarchy position context is persisted so that the user does not need to change it again when running another 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 drilldown from a parent node subtotal into the child nodes details (for example, group US to group MA to Billing Account Natick Office to Billing Sub-Account Noel Pina Contract). Knowing whether a particular child node level exists in the selected hierarchy dictates whether the drilldown is possible (for example, a user can not be drilldown from a group report to an account report if the selected hierarchy links groups to sub-accounts bypassing the account level).
- **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 (for example,. such as a budget value to be used in reports that just display exception budget variances.

Hierarchy Actions – Within Communications Billing Analytics

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

- **Change Hierarchy Context**: The user selects a hierarchy, navigates to a position in the hierarchy, and selects that position to be the new context from which future reports run.

- **Synchronize Hierarchy Data**: Whenever changes are made to any hierarchies, those same changes are done within the Communications Billing Analytics XAD (eXtensible Analytics Datamart) so that the Communications Billing Analytics hierarchy data is always synchronized with those external systems (Siebel or others) that maintain it. This same synchronization can be enabled for any other data required in the XAD that is maintained in another systems (for example, personal address book, corporate address book, or hierarchy object profile information which includes users, companies, accounts, and groups).

Hierarchy Actions – Outside of Communications Billing Analytics

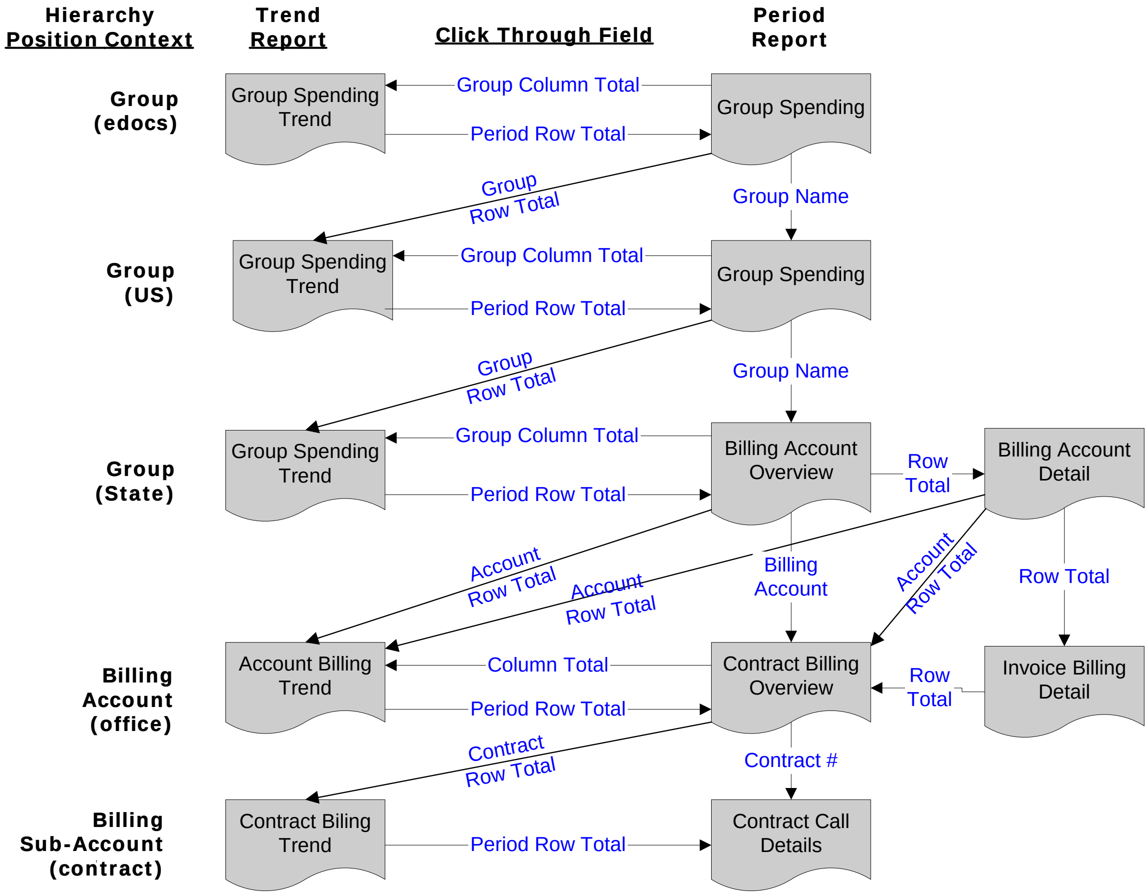
There are many use cases outside of the scope of Communications Billing Analytics in which CBA is dependent in order for hierarchy data to be available for reporting. These actions are listed here to clarify that they are not performed in Communications Billing Analytics.

- Create/maintain billing hierarchies
  (from billing feed / file import)
- Create/maintain group hierarchies
  (from UI, batch file import, or online API to other application)
- Enter user defined attributes for hierarchy objects
  (from UI or file import)
- Edit values for hierarchy object attributes
  (from UI or file import)
- Access Control
  (Users are assigned to positions within named hierarchies to determine to what billing hierarchy bottom nodes they have access. This impacts what hierarchies and node positions the user sees in the Navigate Hierarchy use case as well as what billing hierarchy node and leaf objects the user sees when creating a group hierarchy.)

Report Click Through Basics

The following diagram uses the department group hierarchy from the above hierarchy section (Key Concepts) and describes 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.

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 the illusion that the user is “slicing and dicing” 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 Group Spending Report to an Account Billing Overview 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.

Reporting Period vs. Billing Period

There is no Communications Billing Analytics logic associated with the billing period, only the “bill period end date” and the reporting period. In order to explain this statement, several terms and concepts are defined below:

Definitions:

Billing Period: The interval in which a communications service provider bill for a customer’s usage charges. Each customer account is assigned to a monthly billing cycle. The billing period spans from the beginning date for the cycle and the day before the cycle is processed. Large business-to-business (B2B) customers may have many accounts with each account being processed on a different cycle. Some service providers require that all accounts for a B2B customer have the same billing cycle. CBA accomodates either situation by running reports based on the Reporting Period.

Bill Cycle: This number corresponds to the billing system run that produces customer invoices. The billing cycle spreads the processing load of producing customer invoices over the entire month. Although each service provider may have a different number of cycles in each month, typically there are 20 cycles per month with 4 five day processing cycles starting on the 1st of the month separated by two days for maintenance or to re-run a failed cycle if there was a processing error. This processing pattern fits perfectly into a 28 day month (February). All other months have additonal days set aside for major maintainence or system upgrades.

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

Reporting Period: Defined by communications service provider to be the interval in which cost and usage detail and summary information is accumulated for reporting purposes. Reporting periods may be custom defined but are typically set to a calendar month to be in step with bill cycle processing. Also known as the statement date, for example, the February bill.

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	Feburary
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.

3 Site Web Flows

This following use cases show **common functionality**:

- **View List of Reports** – View reports by category and launch
- **Navigate Hierarchy** – User navigates the hierarchy and may select a different hierarchy or position within the hierarchy.
- **Change Selection Criteria** – Change most common query parameters and re-execute report
- **Customize a Report** – Change report query parameters, re-execute report, and optionally save parameter settings
- **Run Batch Report** – Run reports in batch mode that exceed some threshold.
- **View Batch Reports** – View the saved output of a batch report
- **Set System Wide Parameters** – Defines various configuration parameters for the service provider's instance of the application.
- **Synchronize Communications Billing Analytics from External Sources** – Update data in Communications Billing Analytics maintained in other systems of record.

The following use cases show **general UI behavior**:

- **Cancel** – System cancels the process on a series of one or more pages.
- **Display Error Message** – System re-displays page with an error message.
- **Display No Data Message** – System displays page with no data available message.
- **Download** – User downloads summary and call details.
- **Page through data in a table** – User pages through large amounts of data.
- **Printer-Friendly version** – User prints a printer-friendly version of the page.
- **Sort data in a table** – User sorts data by a single column header.
- **Change Language** – Toggle between languages

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:	**[E1] 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.

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

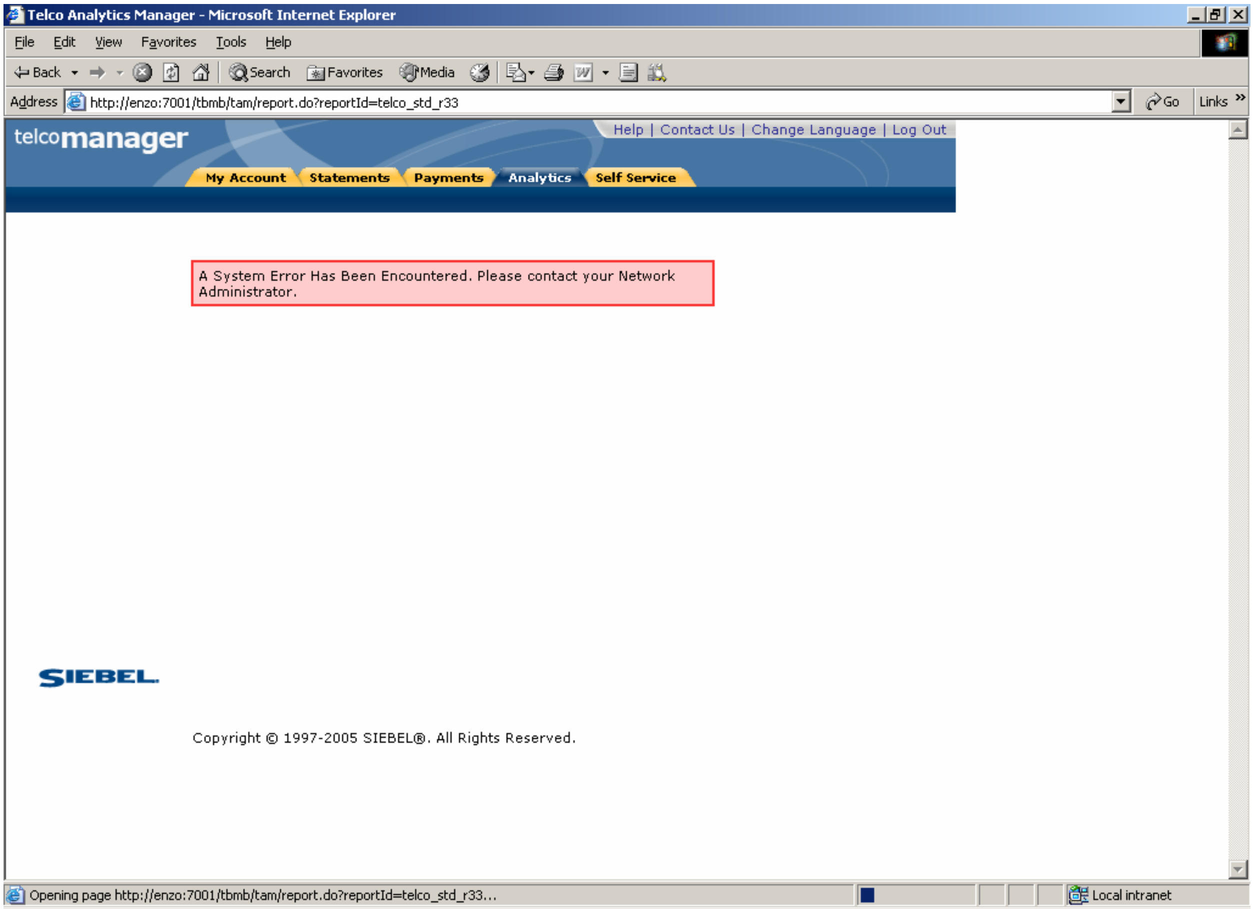
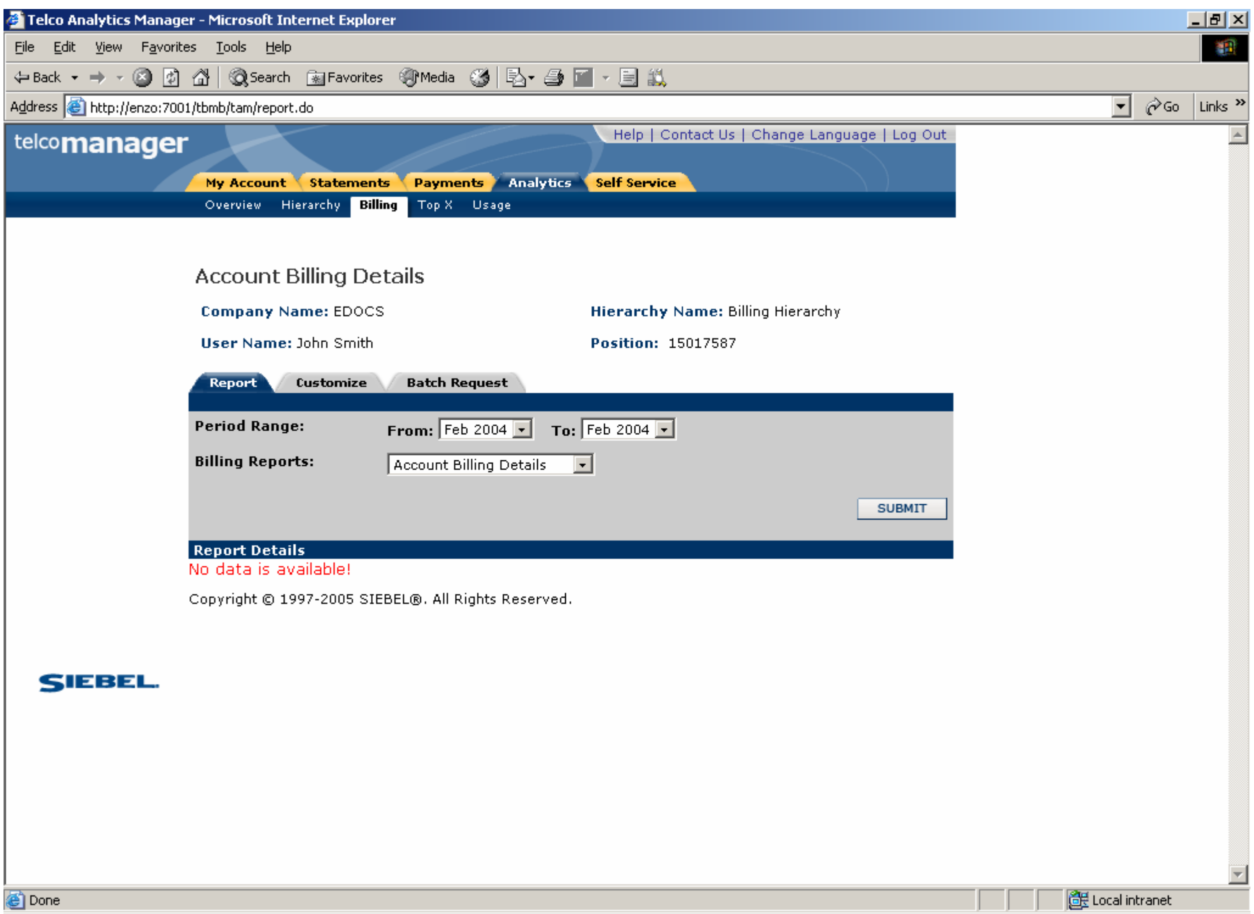


Figure 1 – Error Message Page

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



Download

Name:	**Download**
Brief Description:	User downloads the summary or call details
Entry Points	**1.** Any Billing or Top X Reports **2.** Find Calls
Query Parameters	Download Type [DEFAULT: CSV] Dropdown field where the user selects download types available to the user.
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 be 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.

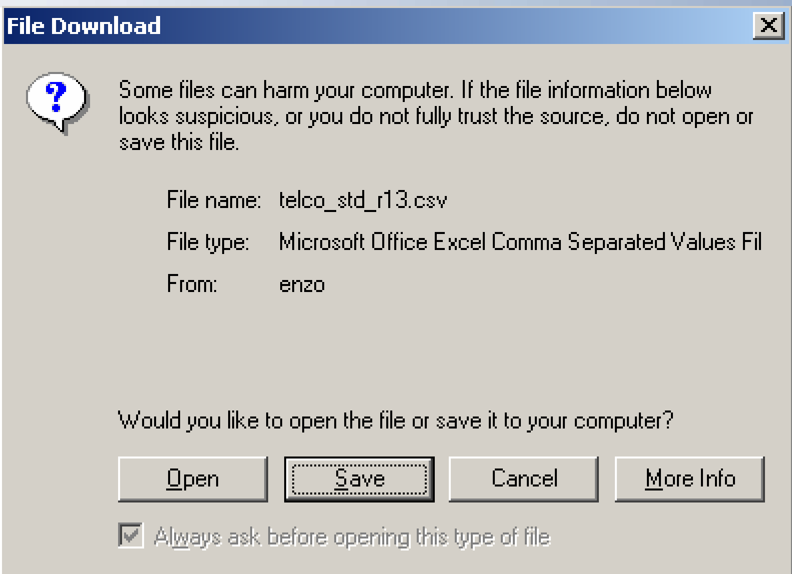


Figure 2 – Browser Download Options

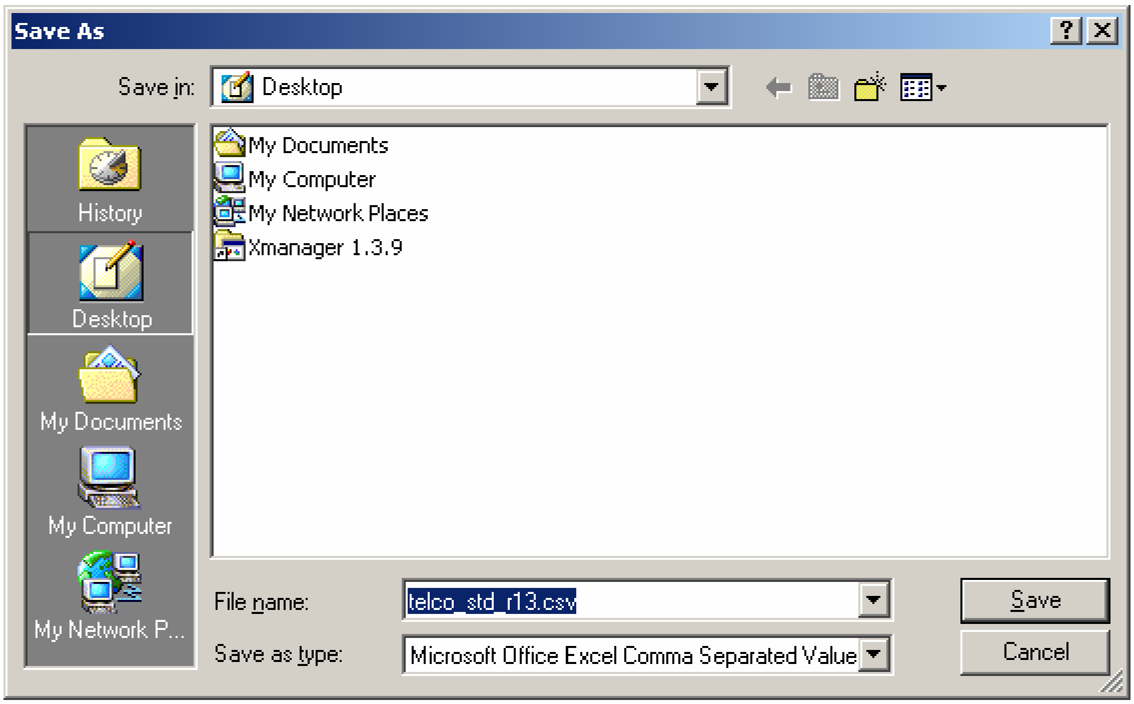


Figure 3 – Browser Download Save Function

Page through data in a table

Name:	**Page through data 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 single forward arrow. **2.** System returns the next page of data. **3.** User selects single backward arrow. **4.** System returns the previous page of data. **5.** User selects double forward arrow. **6.** System returns the last page of data. **7.** User selects double backward arrow. **8.** System returns the first page of data. **9.** Use Case Ends.
Alternate Paths:	**[A1]** User enters a number in the input box. System returns the data on the inputted page number.
Exception Paths:	**[E1] User encounters a system error:** System invokes Error Message use case.
Business Rules:	**[B1]** For a data set that is divided into two or more pages, each page displays the number of the current page and total number of pages, for example, page 3 of 5. If the data fits on one page, page numbering is suppressed. **[B2]** Report Total line is always displayed at the bottom of the table on each page and is the total for the entire report (not the displayed page). **[B3]** The number of lines displayed on each page is configurable and is initially set to 20.
Notes:	None

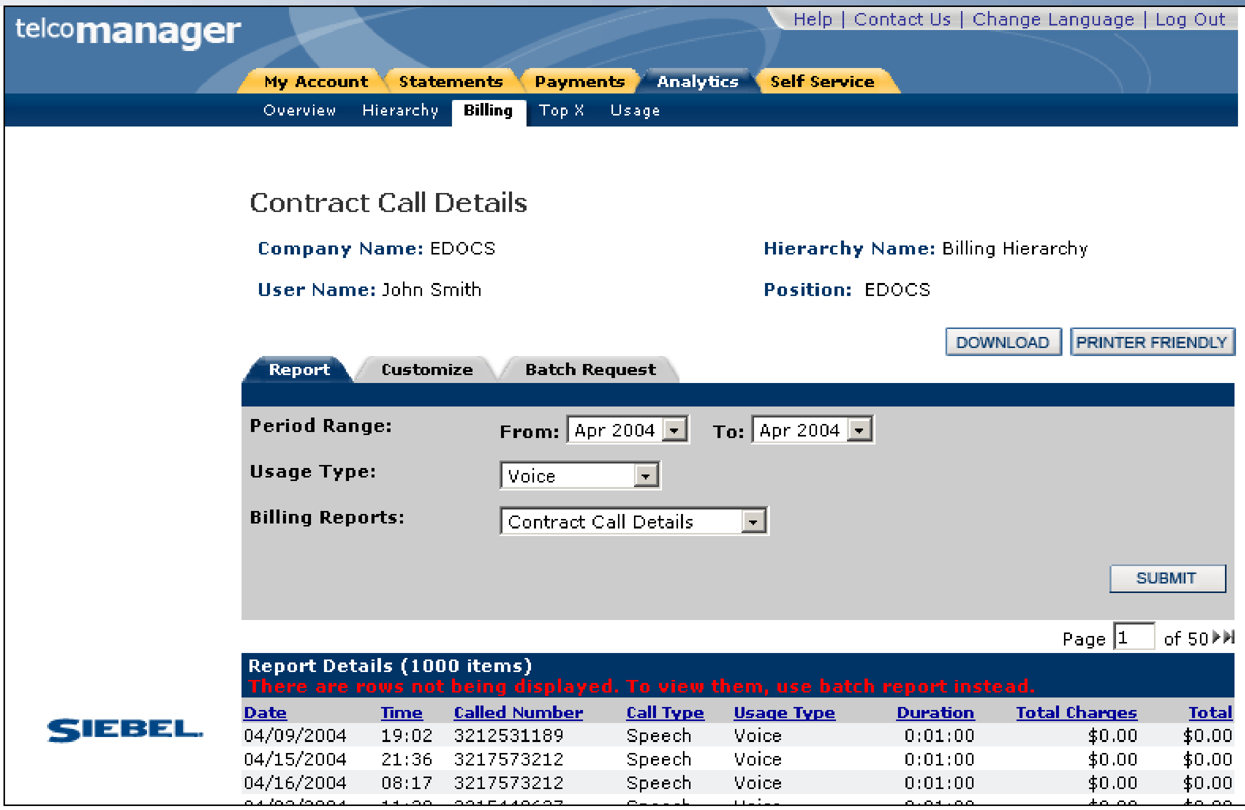
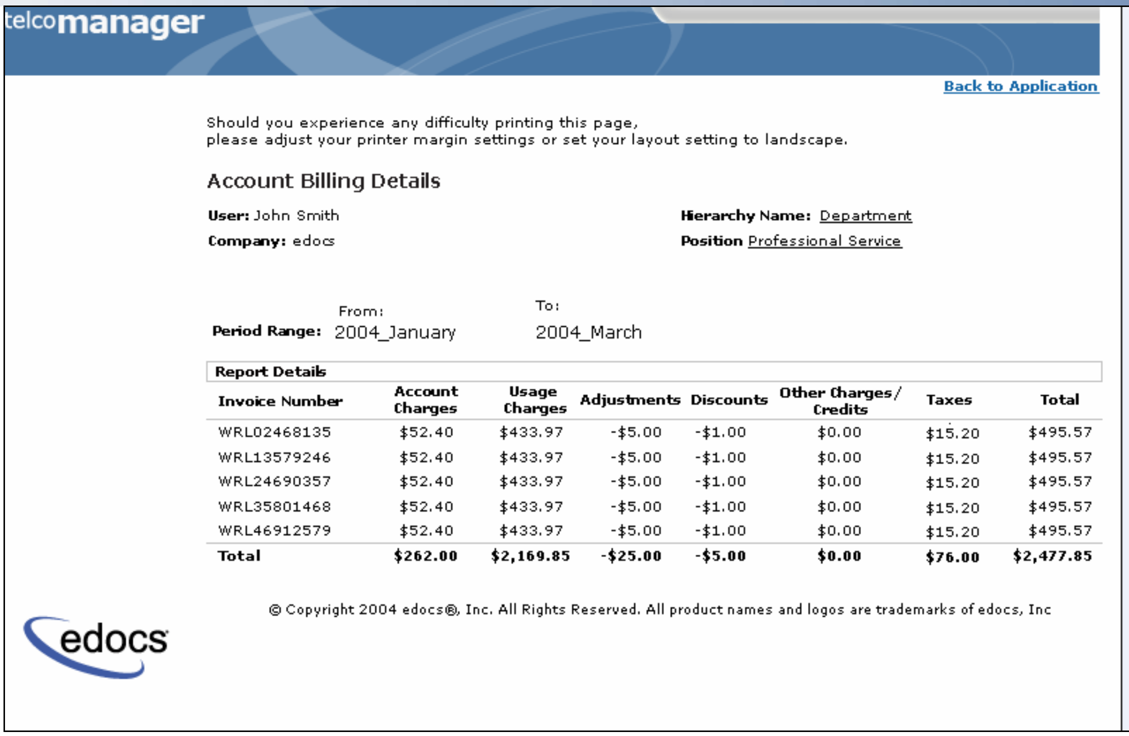


Figure 4 – Paging Function

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. **[B4]** When printing a printer-friendly page, the system removes the Back to Application action on the top right hand corner. **[B5]** When a user sorts a page and then selects the printer-friendly action, the printer-friendly version returned is sorted.
Notes:	



telcomanager

Back to Application

Should you experience any difficulty printing this page,
please adjust your printer margin settings or set your layout setting to landscape.

Account Billing Details

User: John Smith **Hierarchy Name:** Department
Company: edocs **Position** Professional Service

Period Range: From: 2004_January To: 2004_March

Report Details

Invoice Number	Account Charges	Usage Charges	Adjustments	Discounts	Other Charges/ Credits	Taxes	Total
WRL02468135	$52.40	$433.97	-$5.00	-$1.00	$0.00	$15.20	$495.57
WRL13579246	$52.40	$433.97	-$5.00	-$1.00	$0.00	$15.20	$495.57
WRL24690357	$52.40	$433.97	-$5.00	-$1.00	$0.00	$15.20	$495.57
WRL35801468	$52.40	$433.97	-$5.00	-$1.00	$0.00	$15.20	$495.57
WRL46912579	$52.40	$433.97	-$5.00	-$1.00	$0.00	$15.20	$495.57
Total	**$262.00**	**$2,169.85**	**-$25.00**	**-$5.00**	**$0.00**	**$76.00**	**$2,477.85**

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Figure 5 – Printer-Friendly Version

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.

Change Language

Name:	**Change Language**
Brief Description:	User selects action to change the language displayed in the UI.
Entry Points	Any page
Main Path:	The main path only updates the language in the report template and excludes the text in the tiles around the report template. **1.** User selects “Change Language” action **2.** System updates the static content of the report template user interface to another language. **3.** Use Case Ends.
Alternate Paths:	
Exception Paths:	**[E1] User encounters a system error:** System invokes Error Message use case.
Business Rules:	**[B2]** Change language is available on every page.
Notes:	

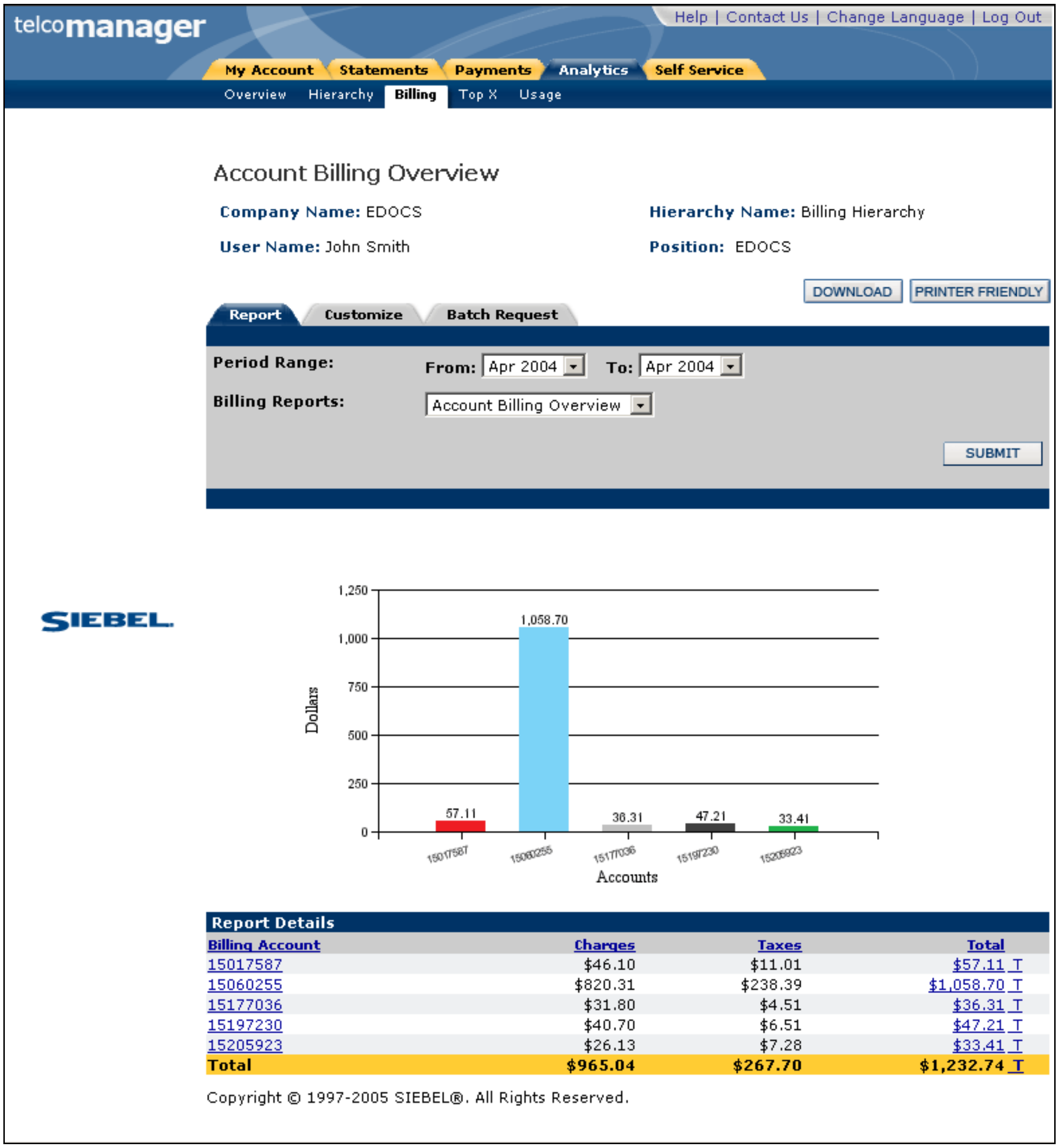


Figure 6 – Switch Language Sample Page

View List of Reports

Name:	**List of Reports**
Brief Description:	User views a list of standard and custom reports. *Rationale:* Screen in which to view only those standard and custom reports relevant to the users 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 c. Usage 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.
Report Content	List of Standard Reports [Billing Reports] **1.** Group Spending **2.** Group Spending Trend **3.** Account Billing Overview **4.** Account Billing Details **5.** Account Billing Trend **6.** Invoice Billing Details **7.** Contract Billing Overview **8.** Contract Billing Trend **9.** Contract Call Details **10.** Total Cost by Plan [Top X Reports] **1.** Most Expensive Calls **2.** Longest Calls **3.** Most Frequently Called Numbers **4.** Most Frequently Called Destinations **5.** Most Frequently Called Countries **6.** Highest Spending by Contract **7.** Highest Spending Contracts by Usage Type List of Custom Reports [User defined custom reports] 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 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. **5.** Use case ends
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. 2. User confirms the action by selecting the Delete action. 3. System deletes the custom report and returns to the List of Reports page. **[A4] Reports Suppressed from the list.** 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 (using hierarchy examples from the Key Concepts section), 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 account. Also if the user's position is at the group level for a selected hierarchy (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).
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 both dependent upon which tab is selected: Billing Reports or Top X Reports. **[B2]** If there are no user defined custom reports, the module will not be displayed. **[B3]** If the last custom report on the list is deleted, the Custom Reports module will be suppressed. System suppresses the display of UI modules where no data exists.

Name:	**List of Reports**
Notes:	None

Figure 7 – Sample Format of List of Reports

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.
Entry Points	**1.** Navigate Hierarchy menu item **2.** Clicking the value in the screen header for Hierarchy or position

Name:	**Navigate Hierarchy**
Query Parameters	**1.** Hierarchy Name [DEFAULT: current context, or user's default hierarchy if the current context is not yet set] a. Dropdown field where the user selects from a list of hierarchies to which the user has been assigned. For example, user may change from a department or location based group hierarchy to a billing hierarchy. **2.** Search a. Type: [DEFAULT: current context or highest/first node to which the user has access if the current context has not yet been set] b. Dropdown field where the user selects the type of object (e.g. account, sub-account, group type) within the hierarchy they wish to search. . For example, user may select sub-account (Contract) Type. Types available in the dropdown are based upon the hierarchy name selected by the user c. Text: Free form text
Report Content	N/A
Chart	N/A
Main Path:	**1.** User selects Navigate Hierarchy sub tab from one of the report list screens. **2.** System returns a screen with the name of the current hierarchy and hierarchy position highlighted for the current user. **3.** User selects a different hierarchy name from the dropdown list of the hierarchies to which the user has access to the root node. **4.** System updates the tree with the selected hierarchy nodes to which the user has access. [A1] **5.** User expands nodes in order to navigate down into different branches of the tree. **6.** User selects a new position in the hierarchy. [A2] **7.** System collapses the Navigate Hierarchy screen, returns to the screen previously being viewed (report list), and regenerates the list of reports displaying only those reports relevant for the selected hierarchy name and hierarchical position. [E1-E2] **8.** System persists this hierarchy name and position throughout the user's session. **9.** Use Case Ends.

Name:	**Navigate Hierarchy**
Alternate Paths:	**[A1]** User selects Cancel function Rationale: User wishes to exit navigate hierarchy screen and return to the previous screen they were in. 1. System invokes Cancel use case. **[A2]** User can not view hierarchy nodes to which they have not been granted view access privileges Users can only navigate, expand, and select those nodes in the tree at or below the node(s) to which they have been granted view access. If the user does not have access to the root of the tree, all parent nodes between the root and those to which the user has access will be displayed, but are visually differentiated to indicate that the user can not select or expand the nodes (gray and alt tags). The user can not see a sibling node unless the user has access to the sibling's shared parent. A user can be granted access to multiple nodes within a hierarchy. Although this access control information is maintained outside of Communications Billing Analytics, Communications Billing Analytics must be able to utilize (store and/or read) the following logical information to limit users' hierarchy view access privileges. o User ID/Name (note first and last name is displayed on each screen) o Hierarchy Name o Hierarchy Node Name o Default (true false)
Exception Paths:	**[E1] User encounters a system error:** 1. System invokes Error Message use case. **[E2] User selects a position in a hierarchy that is not valid for current the report:** 1. System displays a message stating: "Your selected position is not valid for the report. Do you wish to return to the Report List?" 2. User selects Continue action. [A3] 3. System returns the user to the List of Reports page with the current hierarchical position selected by the user.
Business Rules:	**[B1]** Any unassigned accounts or contracts are attached on the top of the hierarchy. **[B2]** 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. *Dependency:* User access control maintained in an external Siebel or non-Siebel system must be synchronized with Communications Billing Analytics. **[B3]** The hierarchy tree displayed is the only tree that is valid for the most recent reporting period in the Period Range context.

Name:	Navigate Hierarchy
Pre-conditions	1. Access Control Defined Users Assigned to named hierarchies and positions within those hierarchies *Rationale:* Logic for what hierarchies appear in the dropdown list and what nodes appear in the tree 2. Hierarchy Levels Defined [A2] *Rationale:* Logic for what selections appear in the "Level" dropdown box of search.
Notes:	None

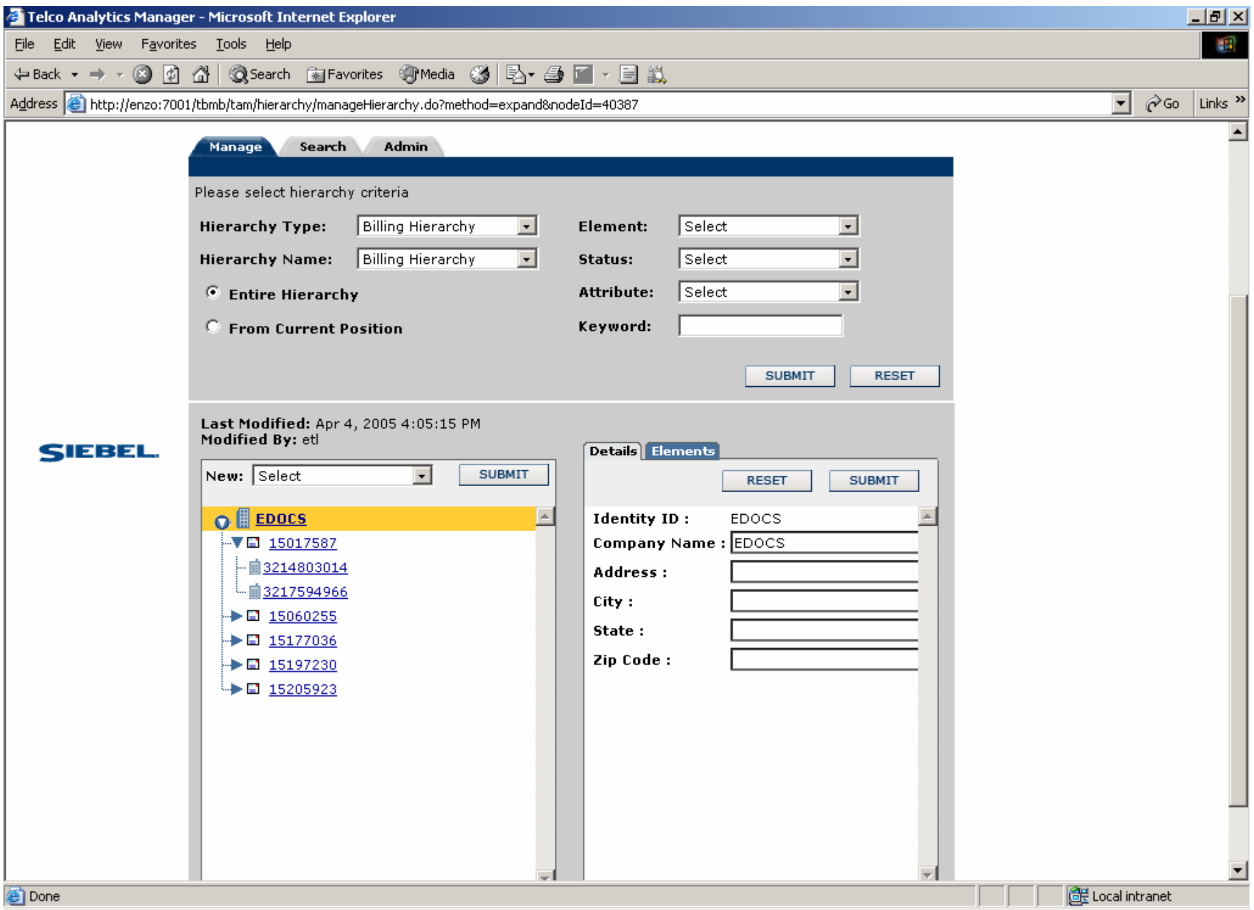
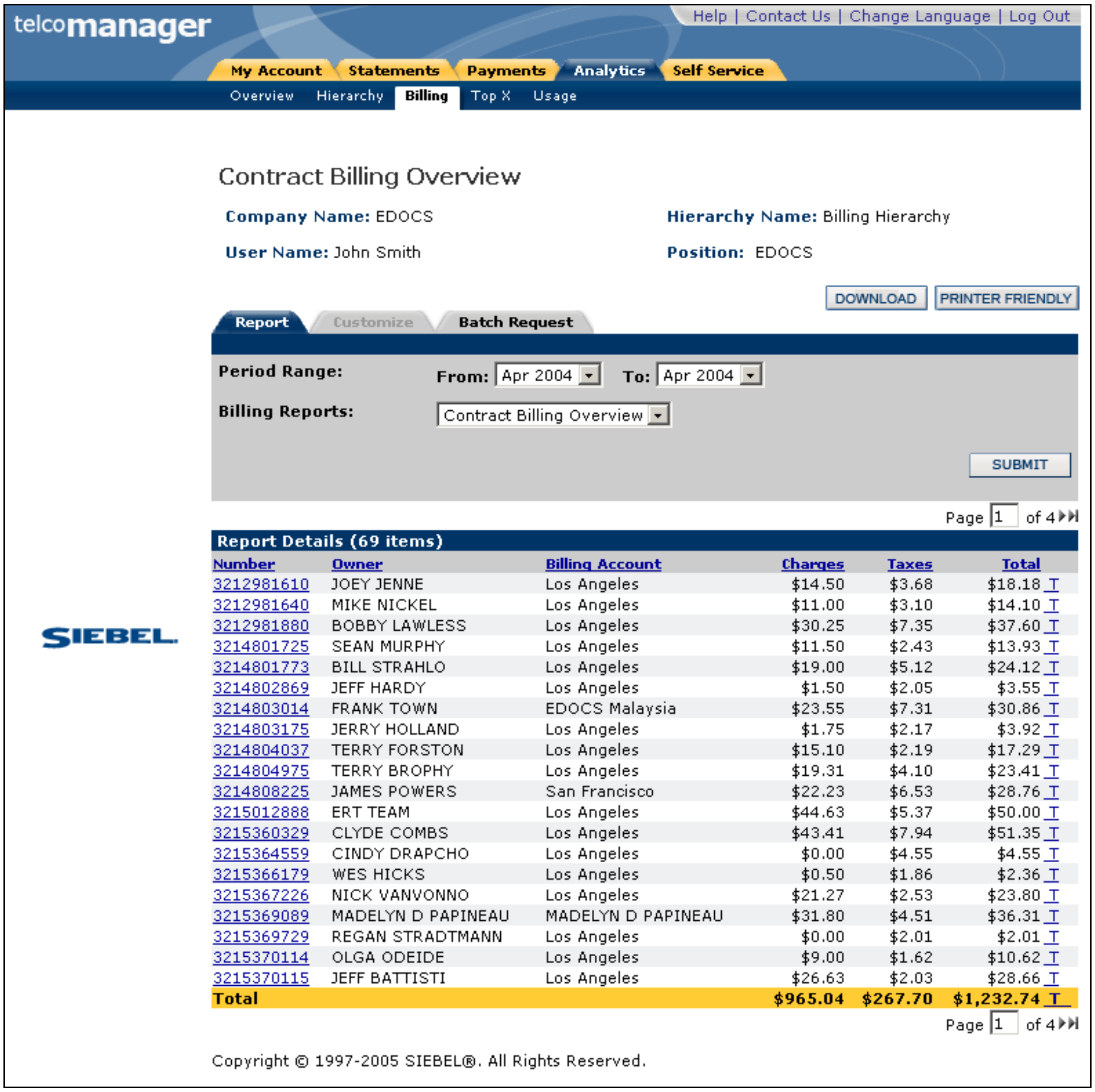


Figure 8 – Navigate Hierarchy

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. 2. 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.) 2. User selects a report and the Display action. 3. 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:	
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

Figure 9 – Sample of 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. *Rollover Help:* "Select a relative period ranging 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. *Rollover Help:* "Select a report to run from the dropdown selection of reports available." 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. *Rollover Help:* "Select the type of usage defined in the plan. e.g. Voice, Data, Messaging " 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

Name:	Customize a Report
	Parameters" for the fields included in that report. Report specific customizable fields based upon defaults or user specified report fields. 1. **Account Charges** [Default: all] *Rollover Help:* "The amount added or deducted on the basis of qualifying circumstances" 2. **Adjustments** [Default: all] *Rollover Help:* "The amount added or deducted on the basis of qualifying circumstances." 3. **Billing Account** [Default: all] *Rollover Help:* "The account number associated to a invoice." 4. **Called Number** [Default: all] *Rollover Help:* n/a 5. **Charges** [Default: all] *Rollover Help:* "The associated costs on a bill." 6. **Countries** [Default: all] *Rollover Help:* n/a 7. **Destination** [Default: all] *Rollover Help:* "The place to which a call is directed. e.g. Los Angeles, CA." 8. **Discounts** [Default: all] *Rollover Help:* "Any deduction applied to a charge." 9. **Duration** [Default: all] *Rollover Help:* "The total length of a call." 10. **Group** [Default: all] *Rollover Help:* "An aggregation of invoice information." 11. **Invoice** [Default: all] *Rollover Help:* n/a 12. **Number** [Default: all] *Rollover Help:* "A service or contract." 13. **Number of Calls** [Default: all] *Rollover Help:* n/a 14. **Number of Contracts** [Default: all] *Rollover Help:* "Total number of services." 15. **Other Charges/Credits** [Default: all] *Rollover Help:* "Any additional cost or deduction applied to a charge." 16. **Owner** [Default: all] *Rollover Help:* "The person associated to an account." 17. **Plan** [Default: all] *Rollover Help:* "A calling plan." 18. **Taxes** [Default: all] *Rollover Help:* "The fees required by the government to be paid against the account charges." 19. **Toll Charges** [Default: all] *Rollover Help:* "The cost associated with placing a long distance call. e.g. 4.25." 20. **Total** [Default: all] *Rollover Help:* "The overall cost for a particular call. e.g. 25.00."

Name:	**Customize a Report**
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
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:** 4. 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.

Name:	Customize a Report
Notes:	None

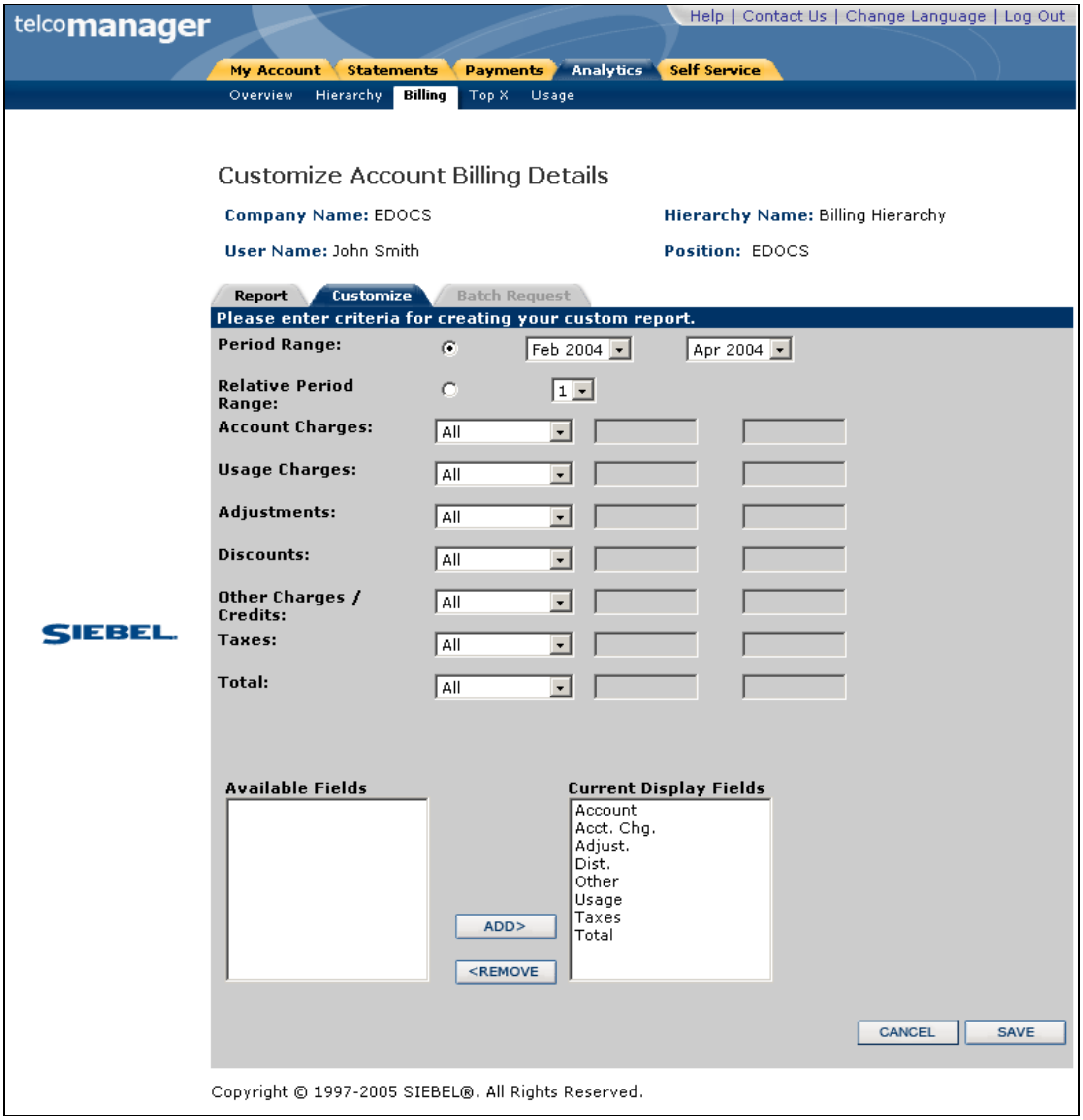


Figure 10 – Sample of a Customize Page

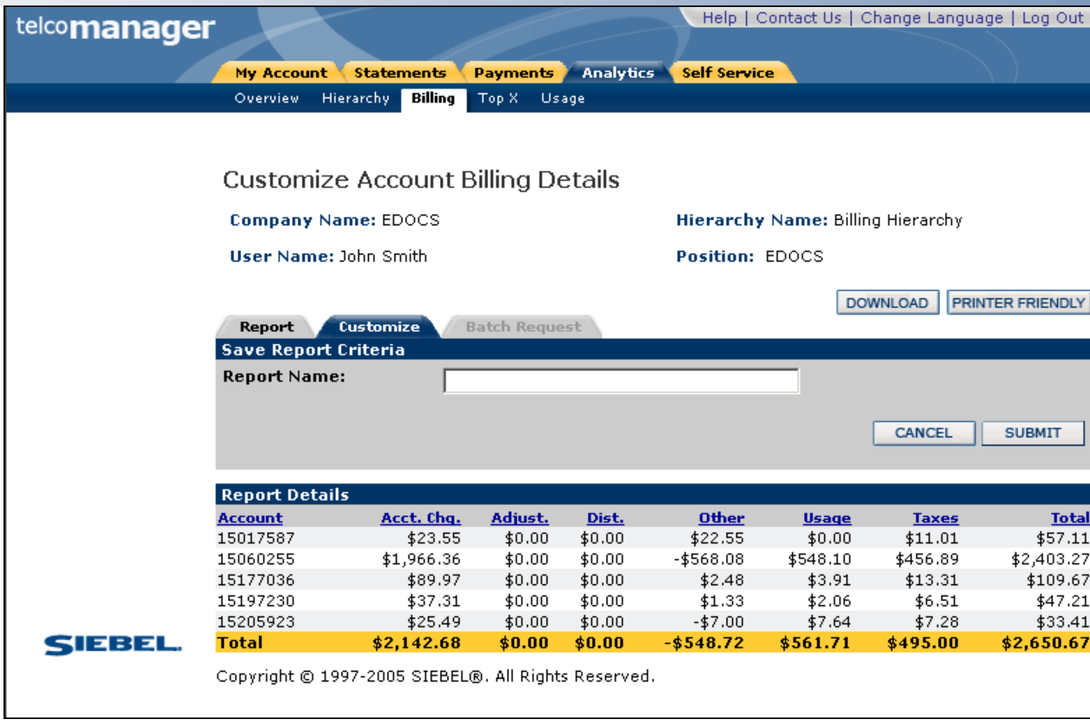


Figure 11 – Save a Customized Report

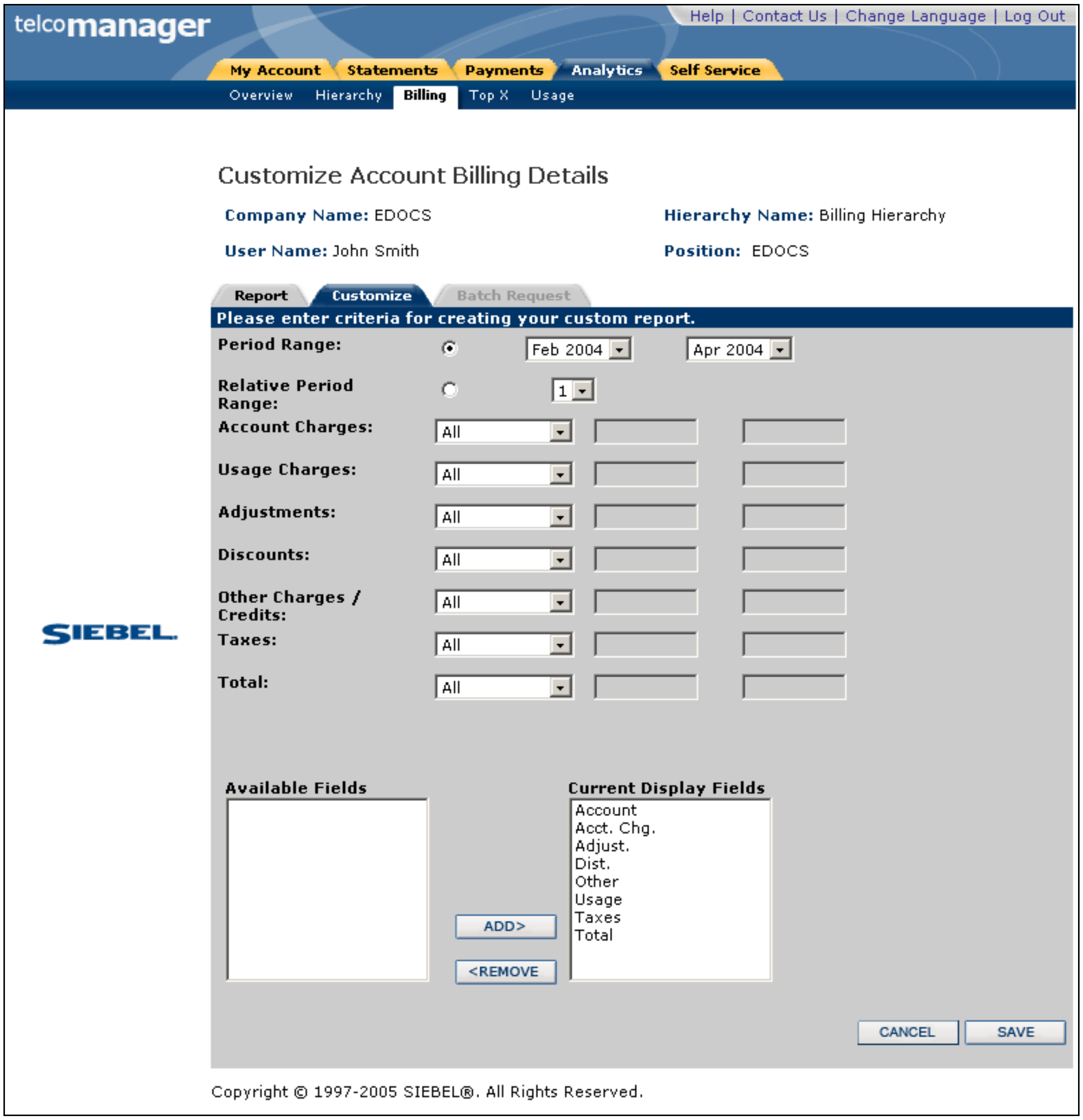


Figure 12 – Confirm Save of a Customized Report

Run Batch Report

Name:	**Run Batch Report**
Brief Description:	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 duration 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:	
Business Rules:	

Name:	**Run Batch Report**
Pre-Conditions	1. Configurable (by Telco 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:	

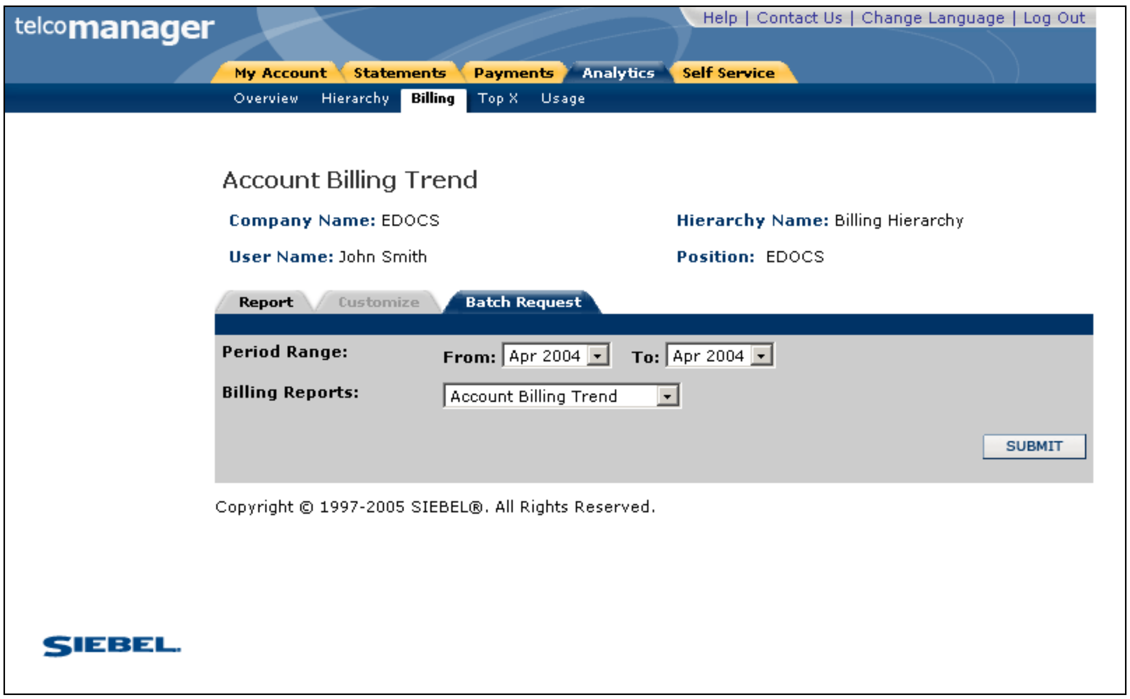


Figure 13 – Confirm Batch Report

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 be 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** 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

Name:	View Batch Reports
	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

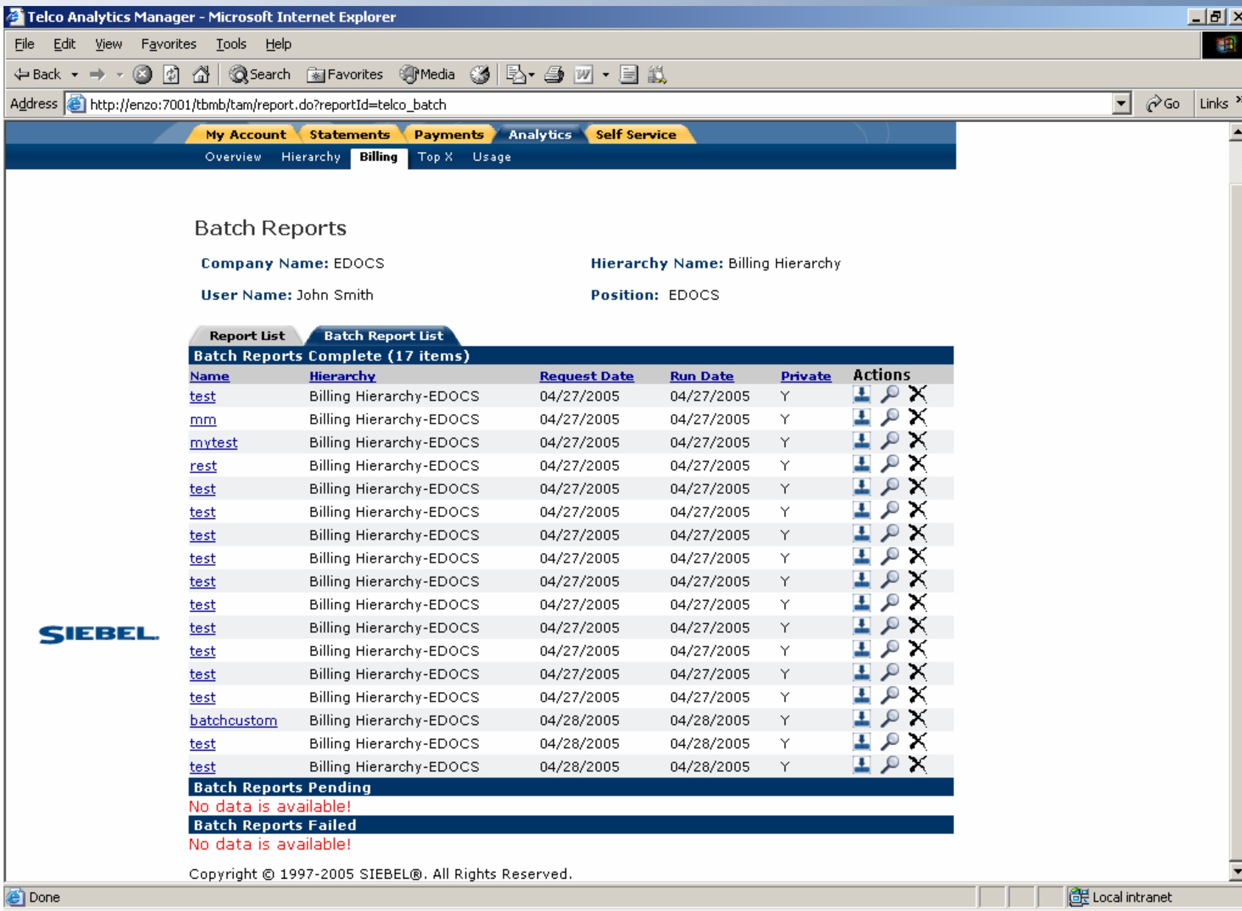


Figure 14 – View Batch Reports

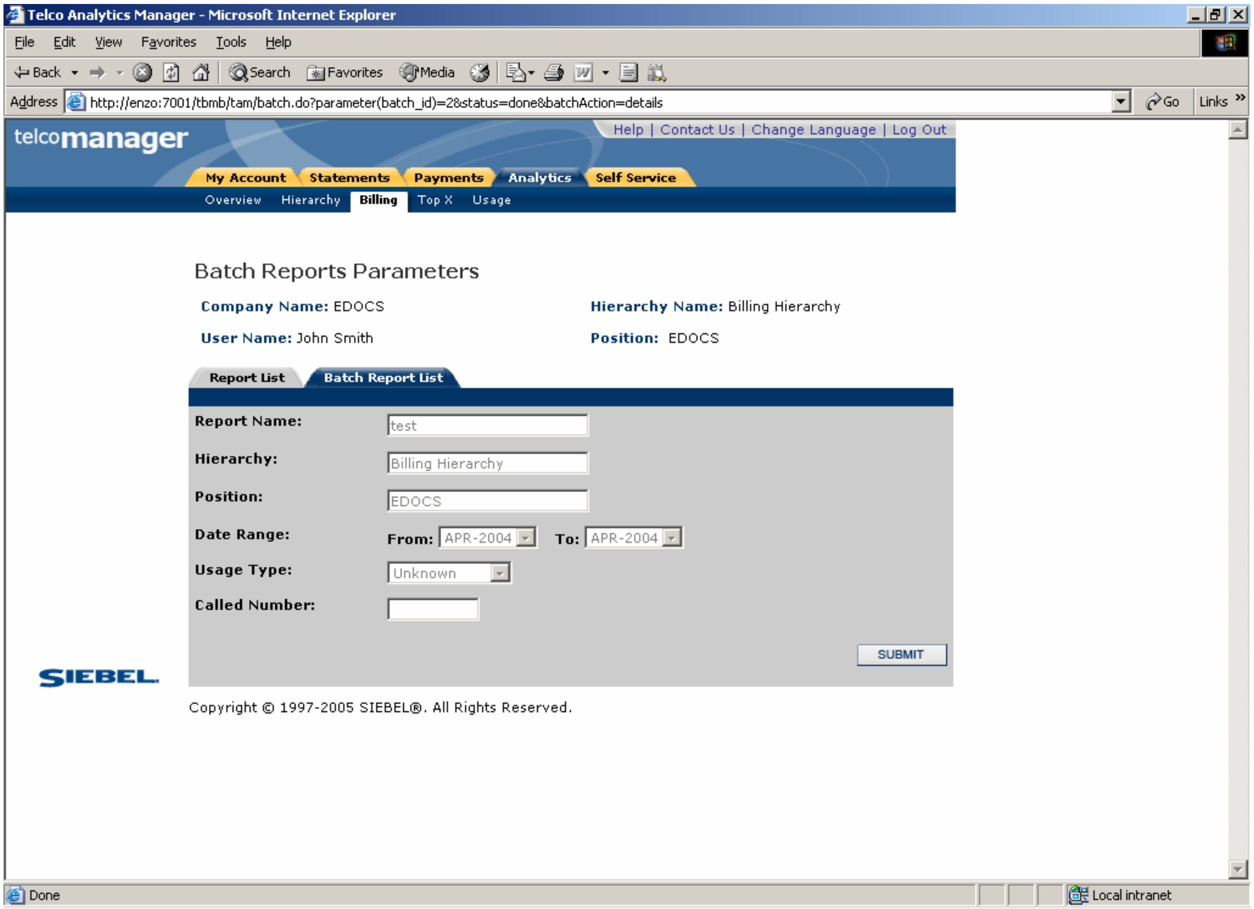


Figure 15 – View Batch Report Parameters

Billing Reports

There are two types of reports, billing related and analytical usage.

Billing Related

Group Spending on page 55

Group Spending Trend on page 57

Account Billing Overview on page 61

Account Billing Details on page 65

Account Billing Trend on page 68

Invoice Billing Details on page 72

Contract Billing Overview on page 75

Contract Billing Trend on page 77

Contract Call Details on page 80

Total Cost by Plan on page 84

Analytical Usage

Most Expensive Calls on page 87

Longest Calls on page 90

Most Frequently Called Numbers on page 92

Most Frequently Called Destinations on page 95

Most Frequently Called Countries on page 97

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.
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.

Name:	**Group Spending**
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 Spending by Contract 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.
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.

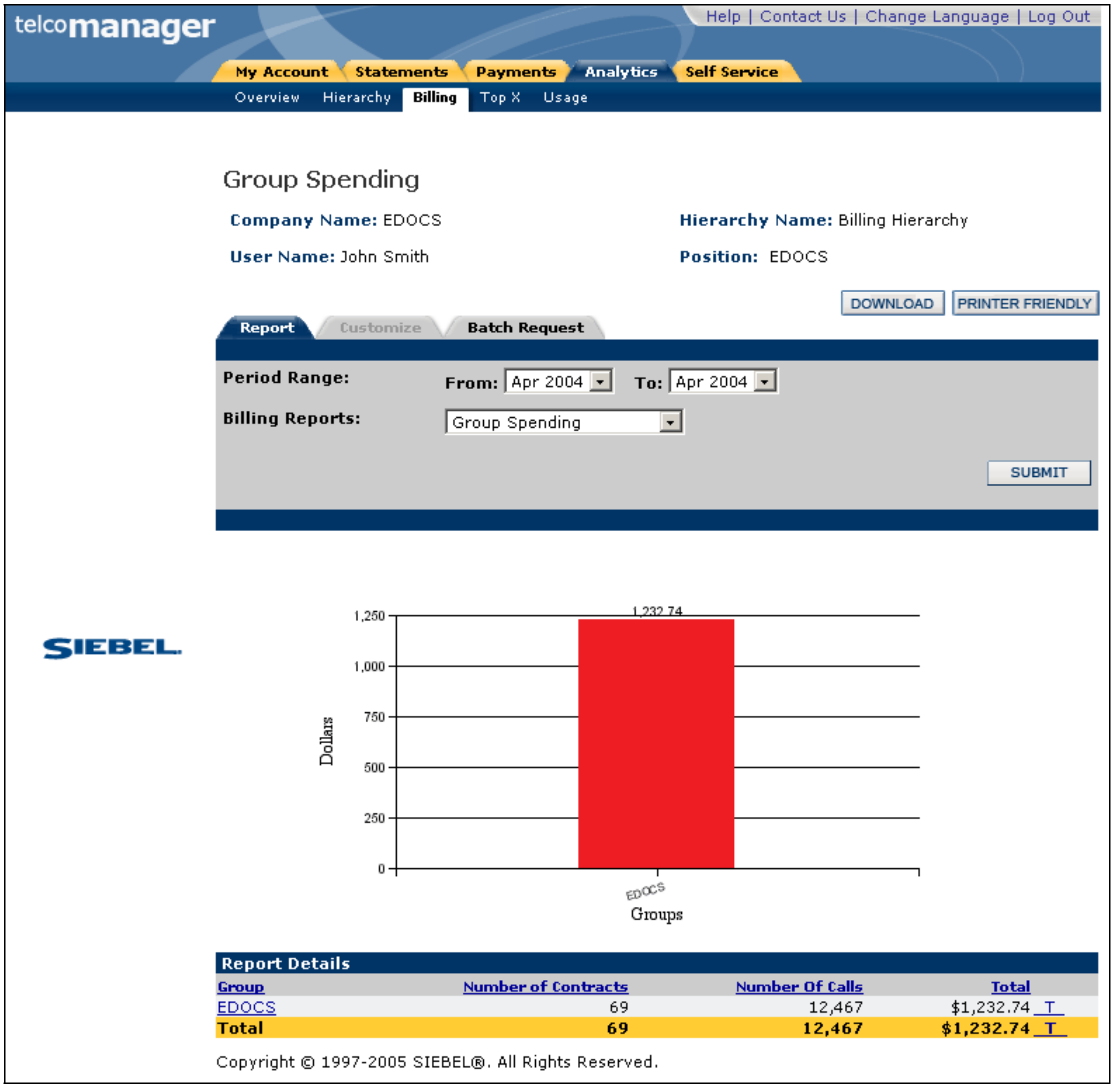


Figure 16 – Group Spending

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

Name:	**Group Spending Trend Report**
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.** Reporting Period [Sort: Ascending] **2.** Number of Contracts **3.** Number of Calls **4.** Total Value (Total charges and taxes) <u>Footer</u> 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]** User selects customize action 1. User selects the customize action. 2. System Invokes the "Customize a Report" use case enabling the user to change query parameters defined above: **[A3]** 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. **[A4]** Result set returns more than 20 Chart Bars User receives a message that the chart was suppressed because of this condition. **[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. **[A8]** Change Column to Chart 1. User selects a new value from the Column to Chart query parameter. 2. 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

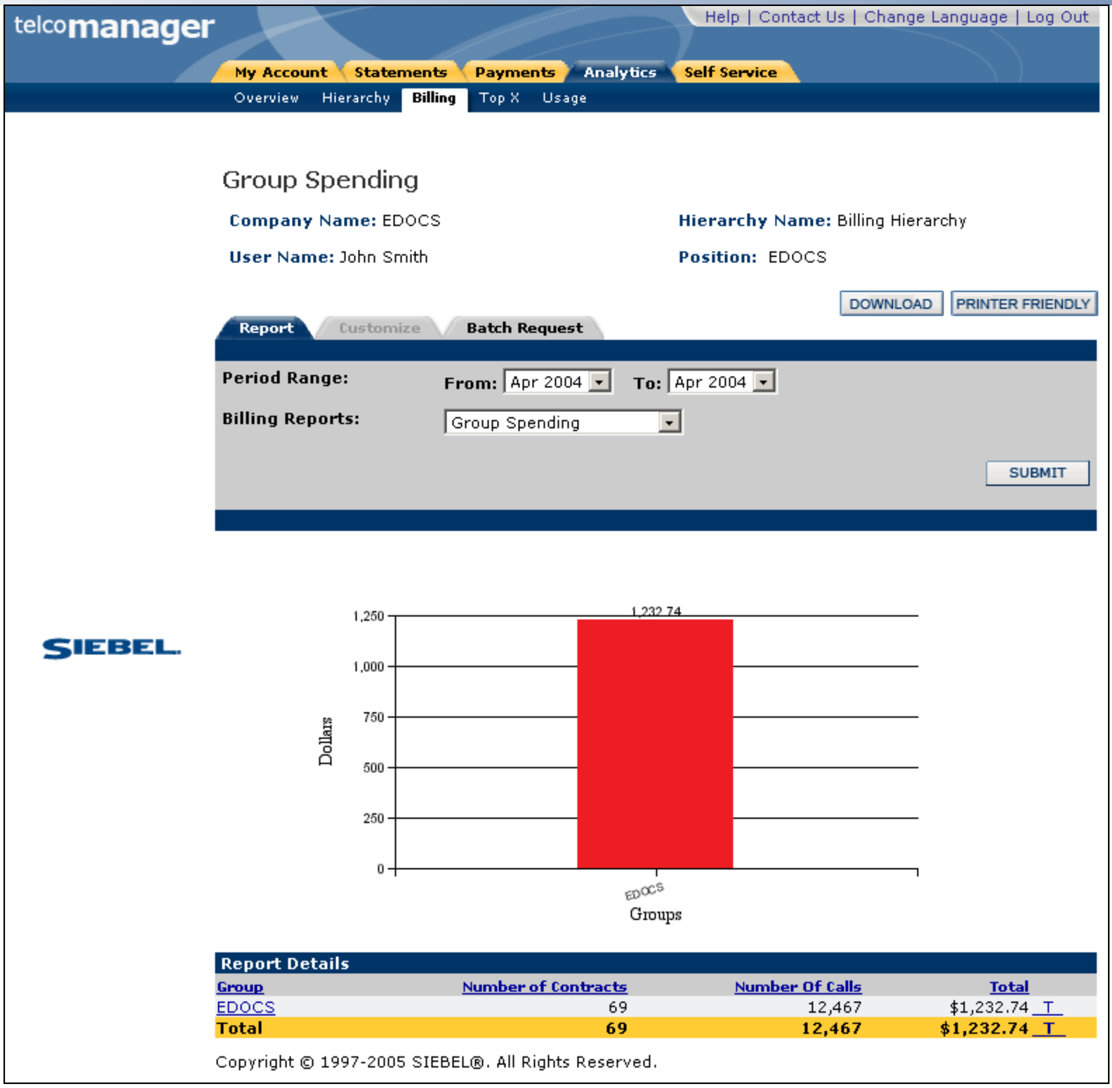


Figure 17 –Group Spending Trend

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
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] User selects the Customize action** **1.** System invokes Customize use case ena**bling user to change the query parameters defined above.** **[A3] 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. **[A4] 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. **[A5] 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. **[A6] Result set returns more than 20 Chart Bars User receives a message that the chart was suppressed because of this condition.** **[A7] User selects the Printer-Friendly action:** System invokes Printer-Friendly use case. **[A8] User selects the Download action:** System invokes Download use case. **[A9] No data set is available for the report:** System invokes No Data use case. **[A10] User changes the displayed columns in the Customize tab** System invokes Customize a Report use case and alternate paths. **[A11] 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.

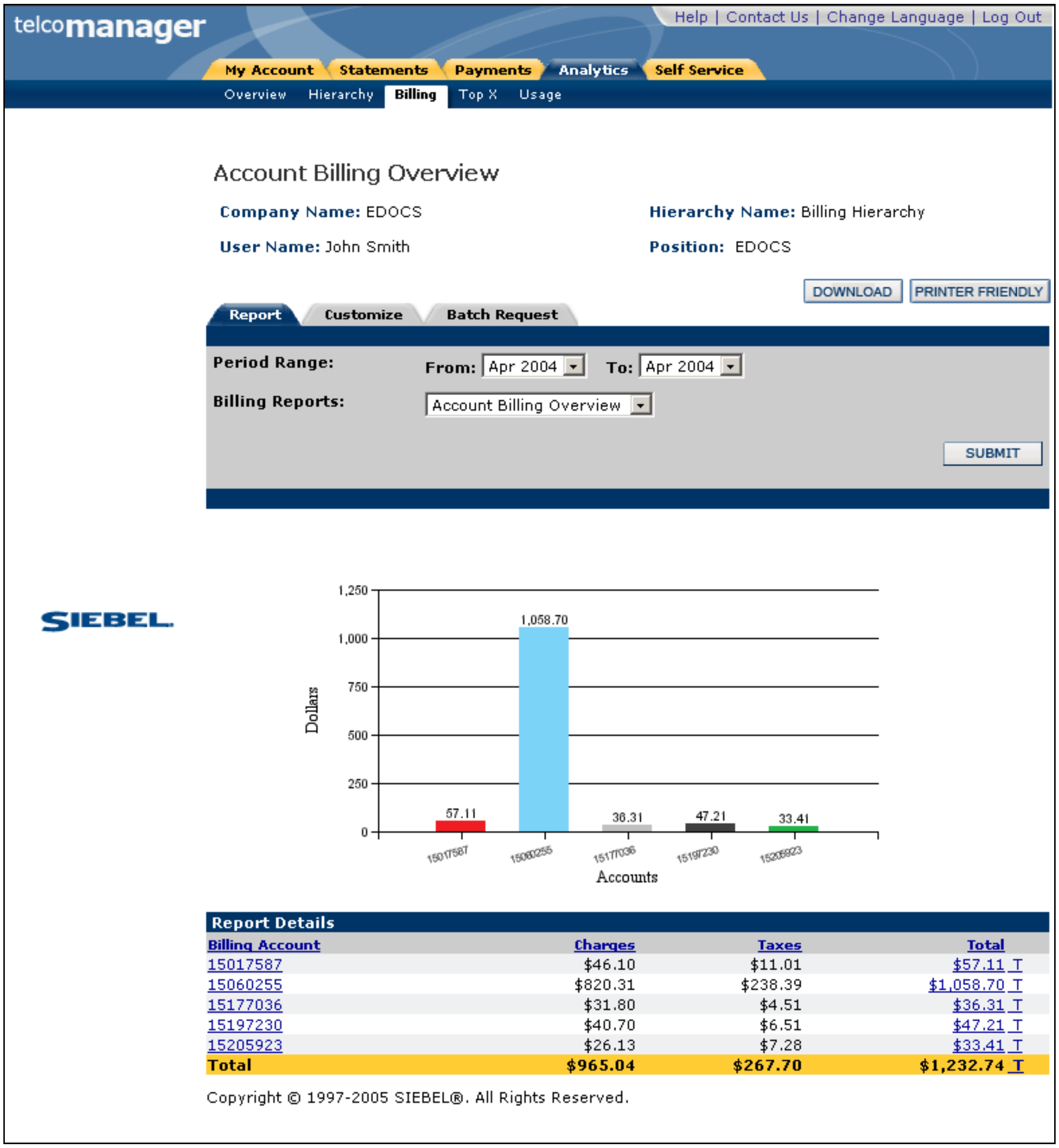


Figure 18 – Account Billing Overview

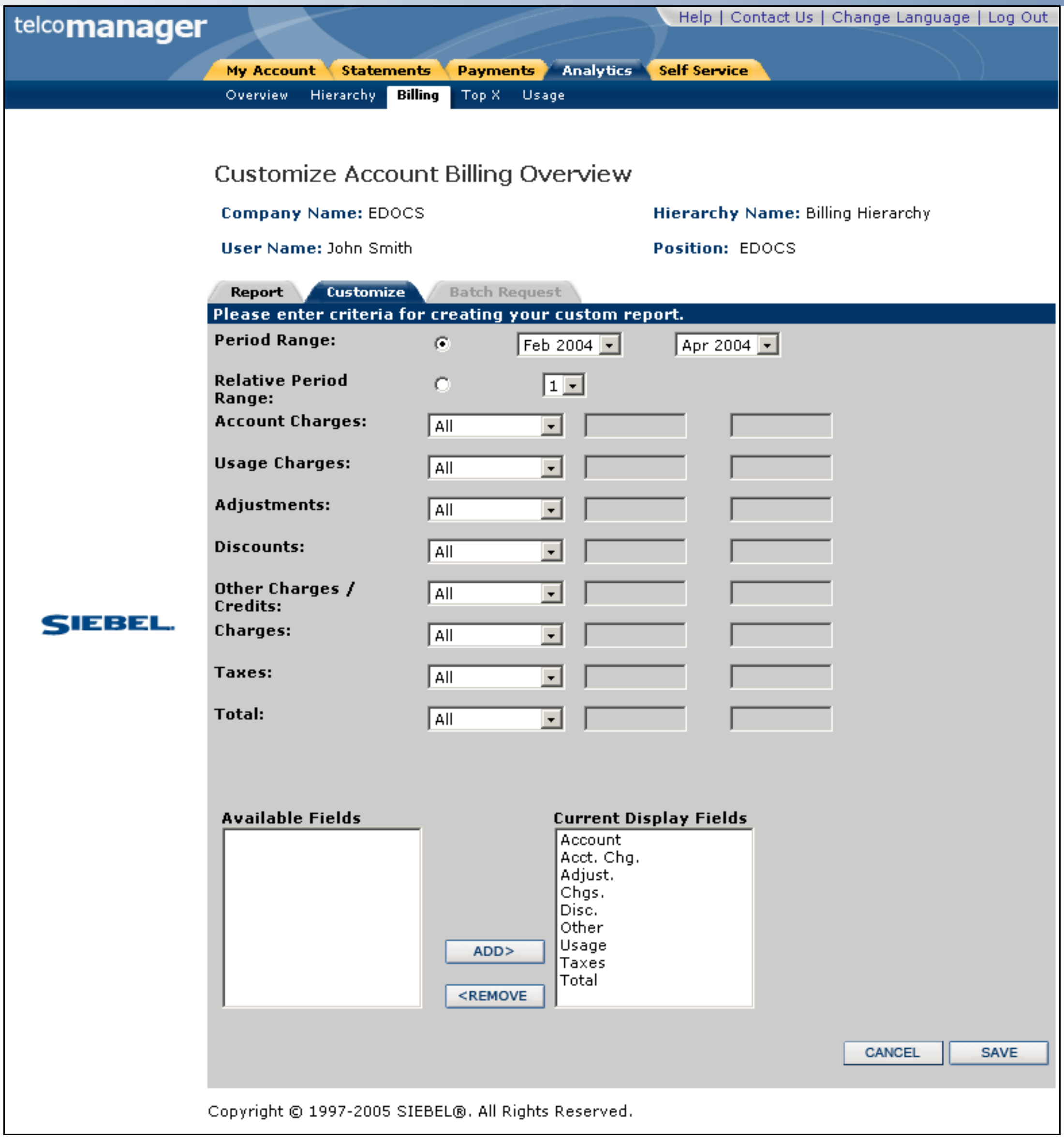


Figure 19 – Customize Account Billing Overview

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
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.

Name:	**Account 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] User selects the Customize action** **1.** System invokes Customize use case ena**bling user to change the query parameters defined above.** **[A3] 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. **[A4] 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. **[A5] 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. **[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.
Business Rules:	None
Notes:	None

Figure 20 – Account Billing Details

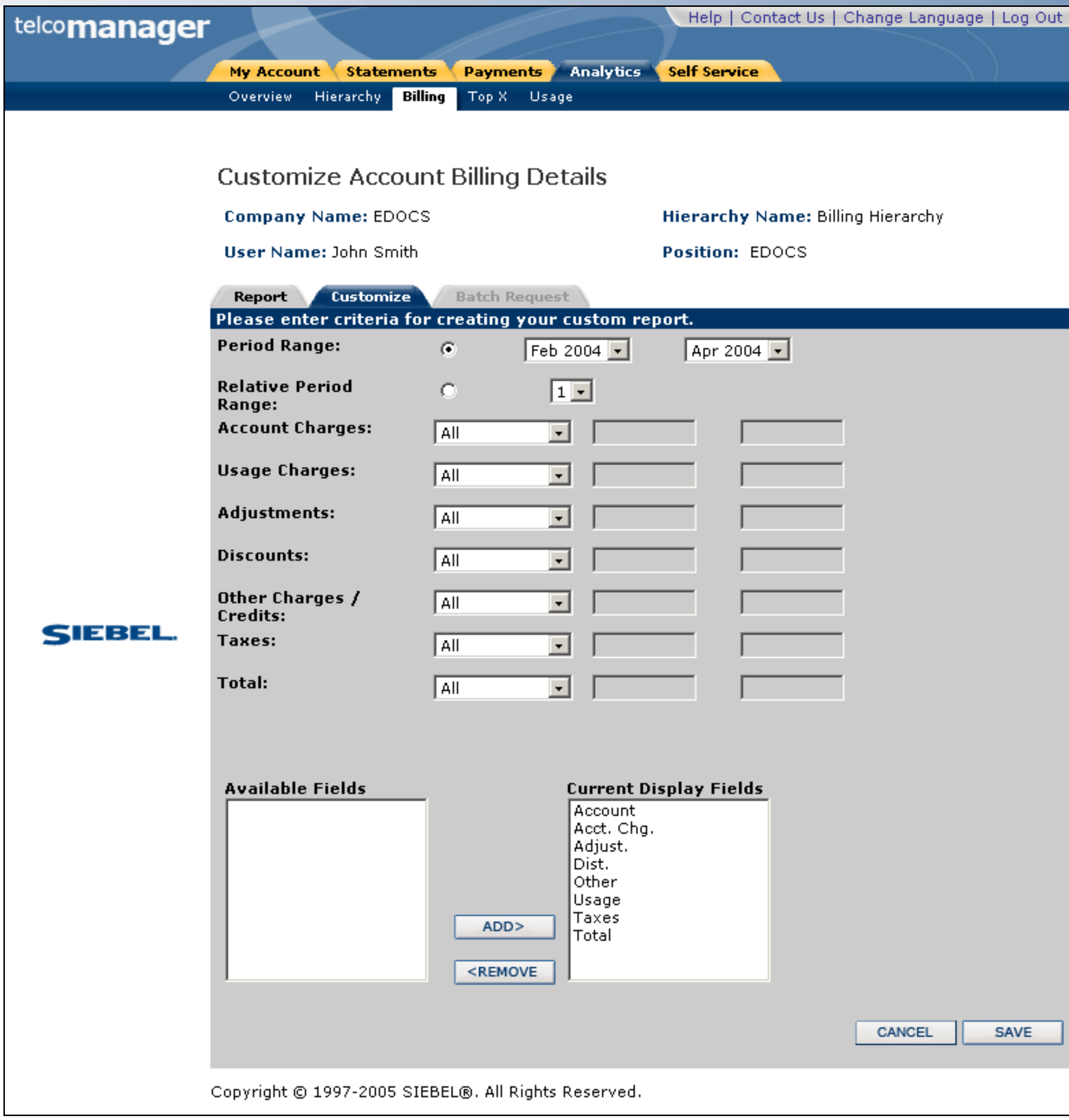


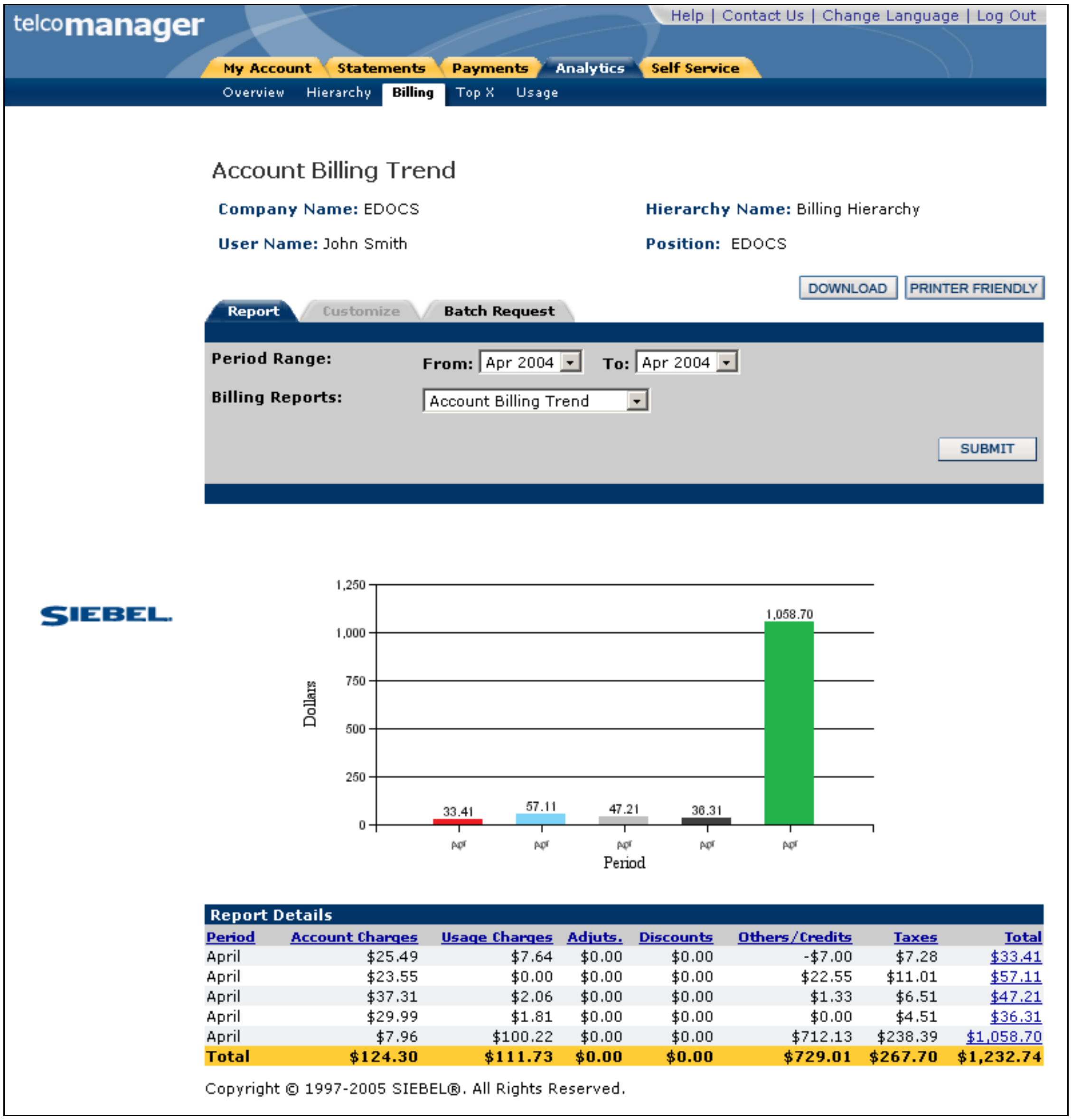
Figure 21 – Customize Account Billing Details

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]** User selects customize action 1. User selects the customize action. 2. System Invokes the Customize use case enabling the user to change query parameters defined above. **[A3]** 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. **[A4]** Result set returns more than 20 Chart Bars **User receives a message that the chart was suppressed because of this condition.** **[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. **[A8]** Change Column to Chart 1. User selects a new value from the Column to Chart query parameter. 2. New chart is displayed with the selected column.
Exception Paths:	**[E3] User encounters a system error:** 1. System invokes Error Message use case.
Business Rules:	**[B2]** Maximum Period Ranges: If the date range spans more than 20 reporting periods, the chart display is suppressed.
Notes:	None



Period	Account Charges	Usage Charges	Adjuts.	Discounts	Others/Credits	Taxes	Total
April	$25.49	$7.64	$0.00	$0.00	-$7.00	$7.28	$33.41
April	$23.55	$0.00	$0.00	$0.00	$22.55	$11.01	$57.11
April	$37.31	$2.06	$0.00	$0.00	$1.33	$6.51	$47.21
April	$29.99	$1.81	$0.00	$0.00	$0.00	$4.51	$36.31
April	$7.96	$100.22	$0.00	$0.00	$712.13	$238.39	$1,058.70
Total	**$124.30**	**$111.73**	**$0.00**	**$0.00**	**$729.01**	**$267.70**	**$1,232.74**

Figure 22 –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] User selects the Customize action:** System invokes **Customize** use case enabling user to change the query parameters defined above. **[A3] Drilldowns: User selects Invoice** System invokes **Contract Billing Overview** use case for the selected invoice number. **[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.
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.

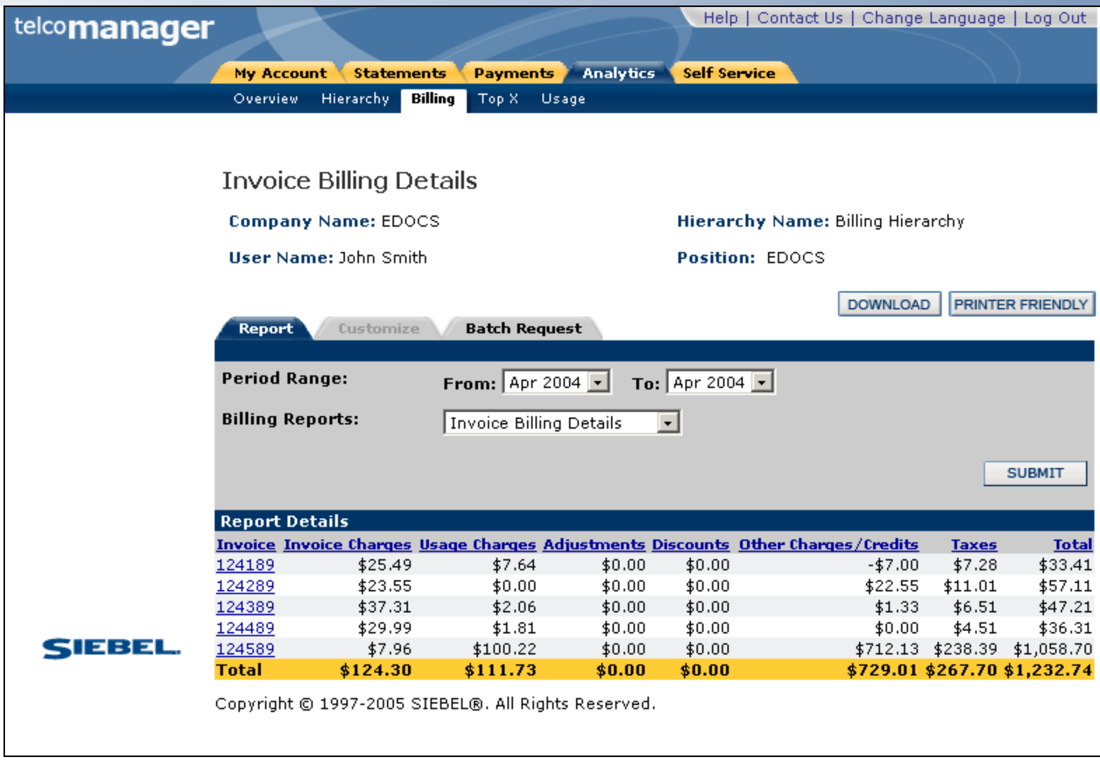
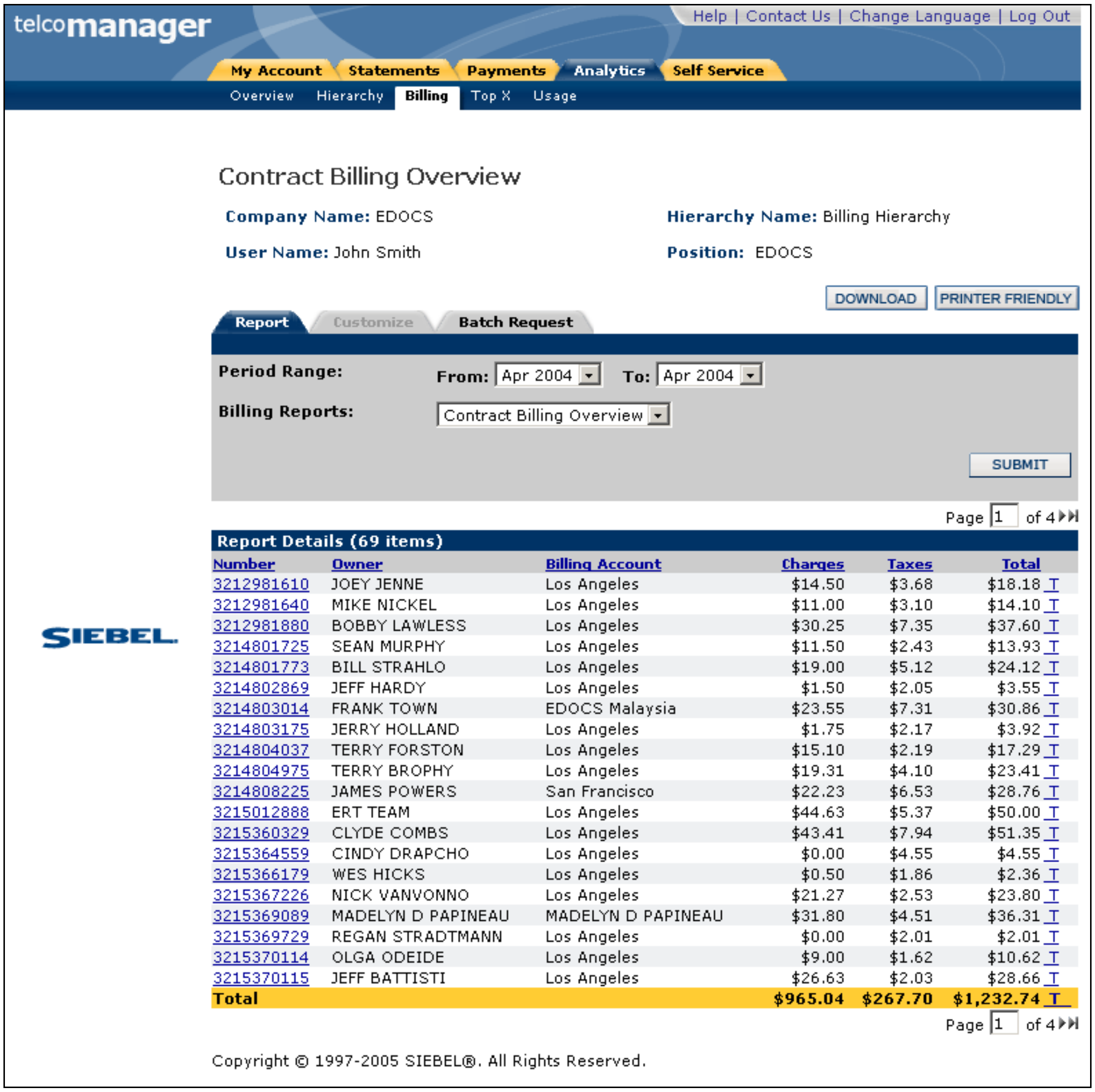


Fig: 23 Invoice Billing Details

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



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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

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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**

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SIEBEL

Figure 24 – 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
Entry Points	**1.** Report List **2.** Drilldown: Contract Billing Overview Report **3.** Report Dropdown

Name:	**Contract Billing Trend Report**
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
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]** Result set returns more than 20 Chart Bars User receives a message that the chart was suppressed because of this condition. **[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. **[A6]** Change Column to Chart 1. User selects a new value from the Column to Chart query parameter. 2. New chart is displayed with the selected column.
Exception Paths:	**[E1]** User encounters a system error: System invokes **Error Message** use case.

Name:	**Contract Billing Trend Report**
Business Rules:	**[B3]** Maximum Period Ranges: If the date range spans more than 20 reporting periods, the chart display is suppressed.
Notes:	None

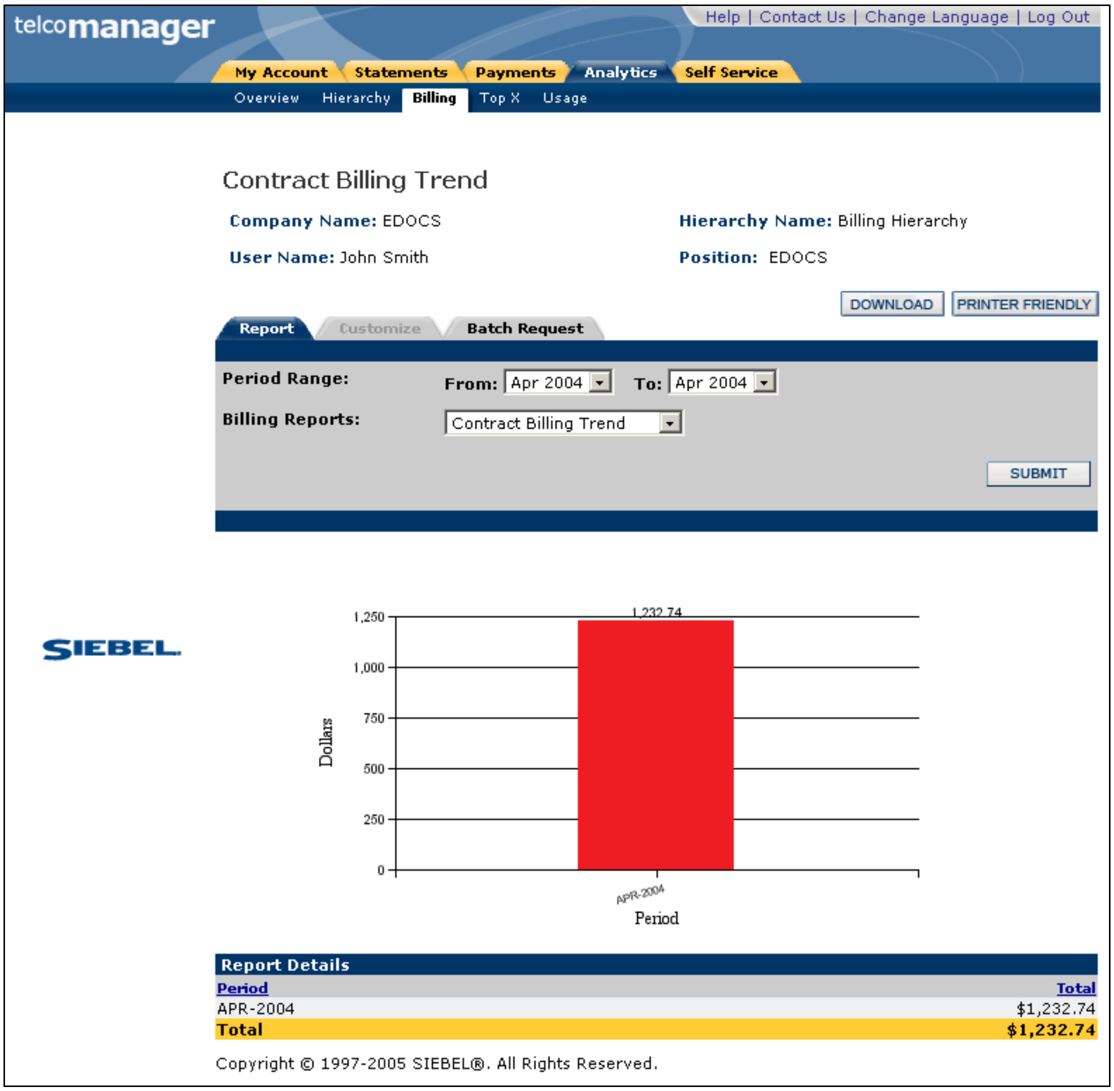
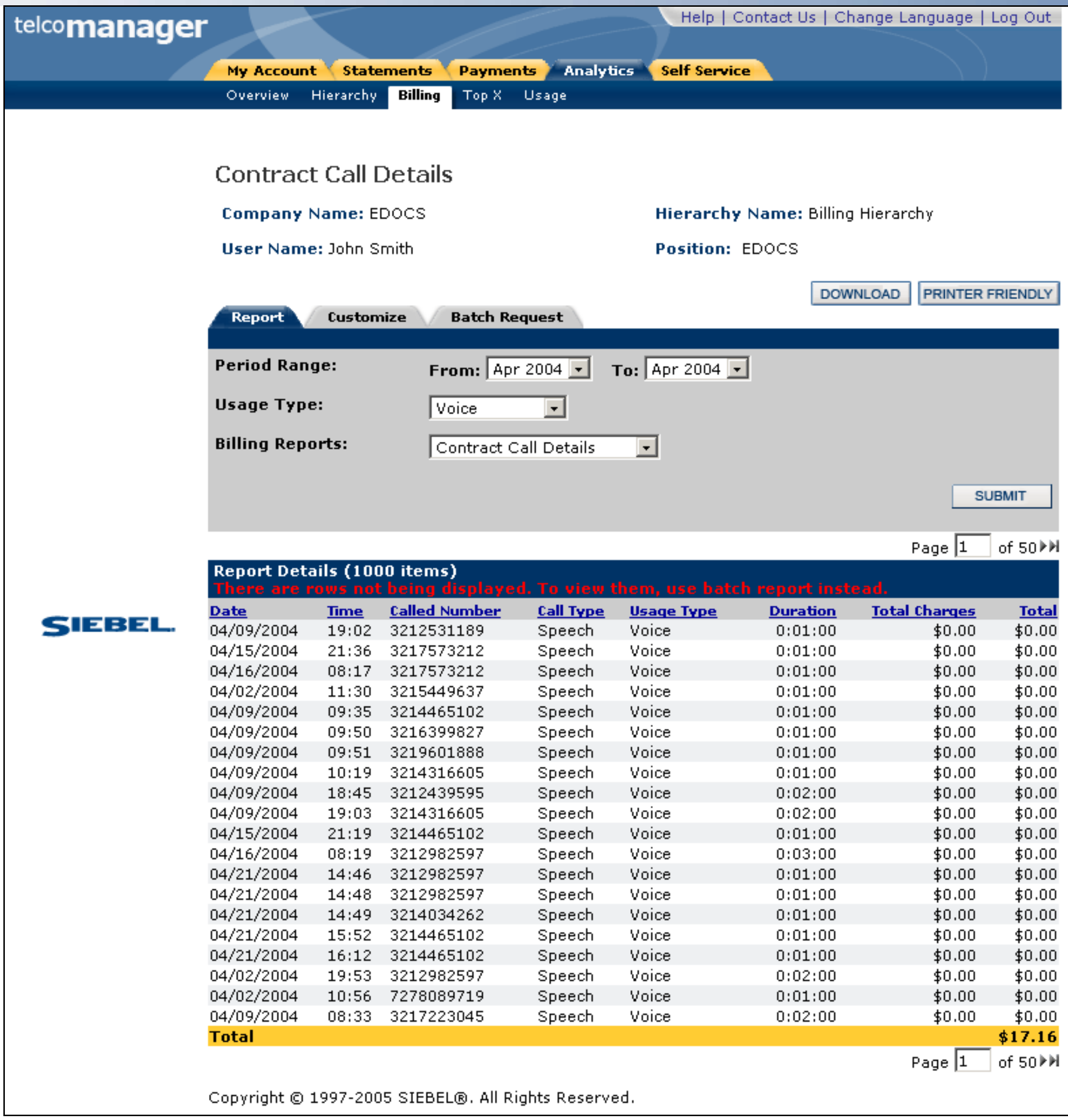


Figure 25 – Contract Billing Trend

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
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 Call 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] User selects the Customize action:** System invokes **Customize** use case enabling user to change the query parameters defined above. **[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:	None
Notes:	None



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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

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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**

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Figure 26 – Contract Call Details

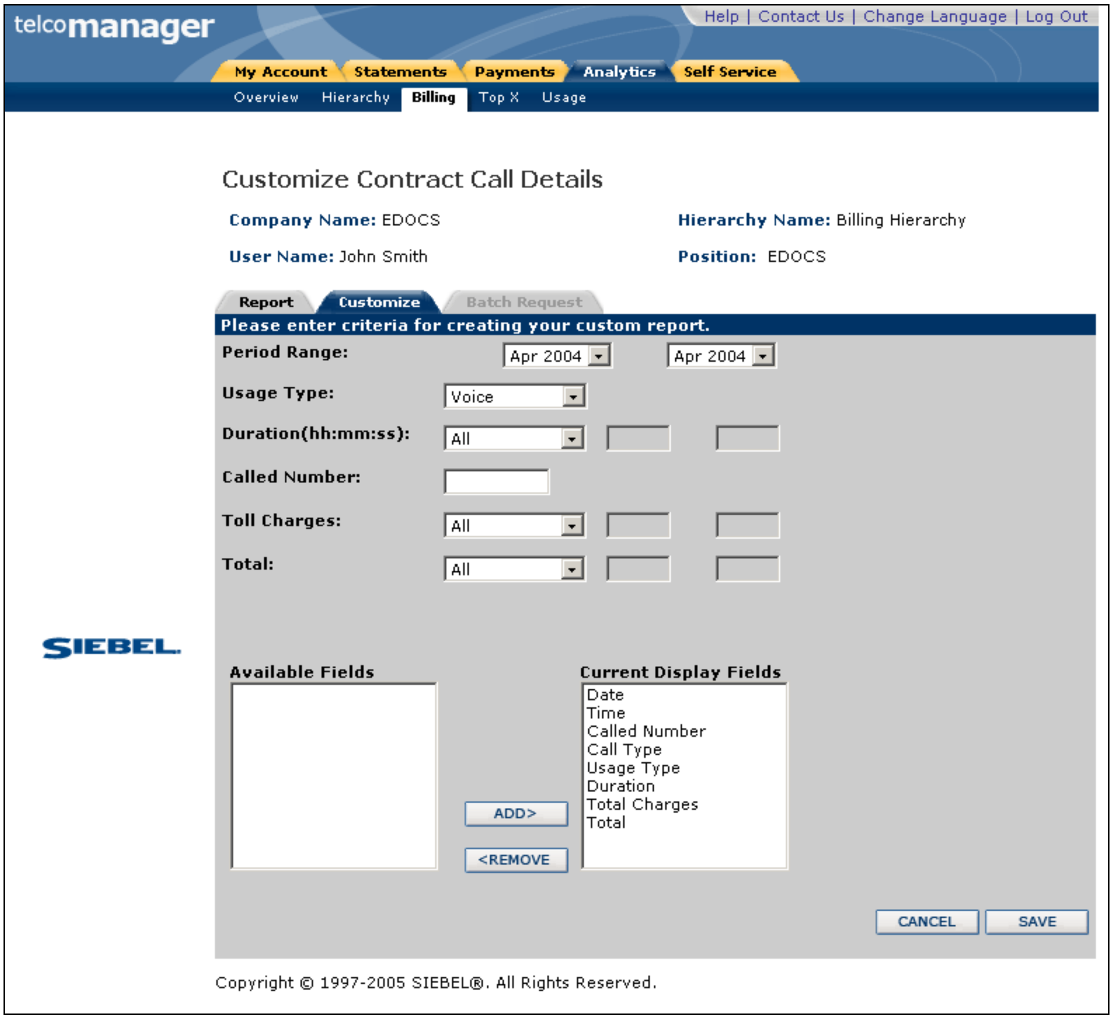

Figure 27 – Customize Contract Call Details

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:	**Report Selection Criteria & Custom Tab** **1.** Hierarchy Name & Position **2.** Period Range **Report Selection Criteria Only** **1.** Report
Report Content:	Fields **1.** Plan **2.** Usage Type **3.** Number of Calls **4.** Duration **5.** Total Value (Total charges and 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: 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:	**[B4]** 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)

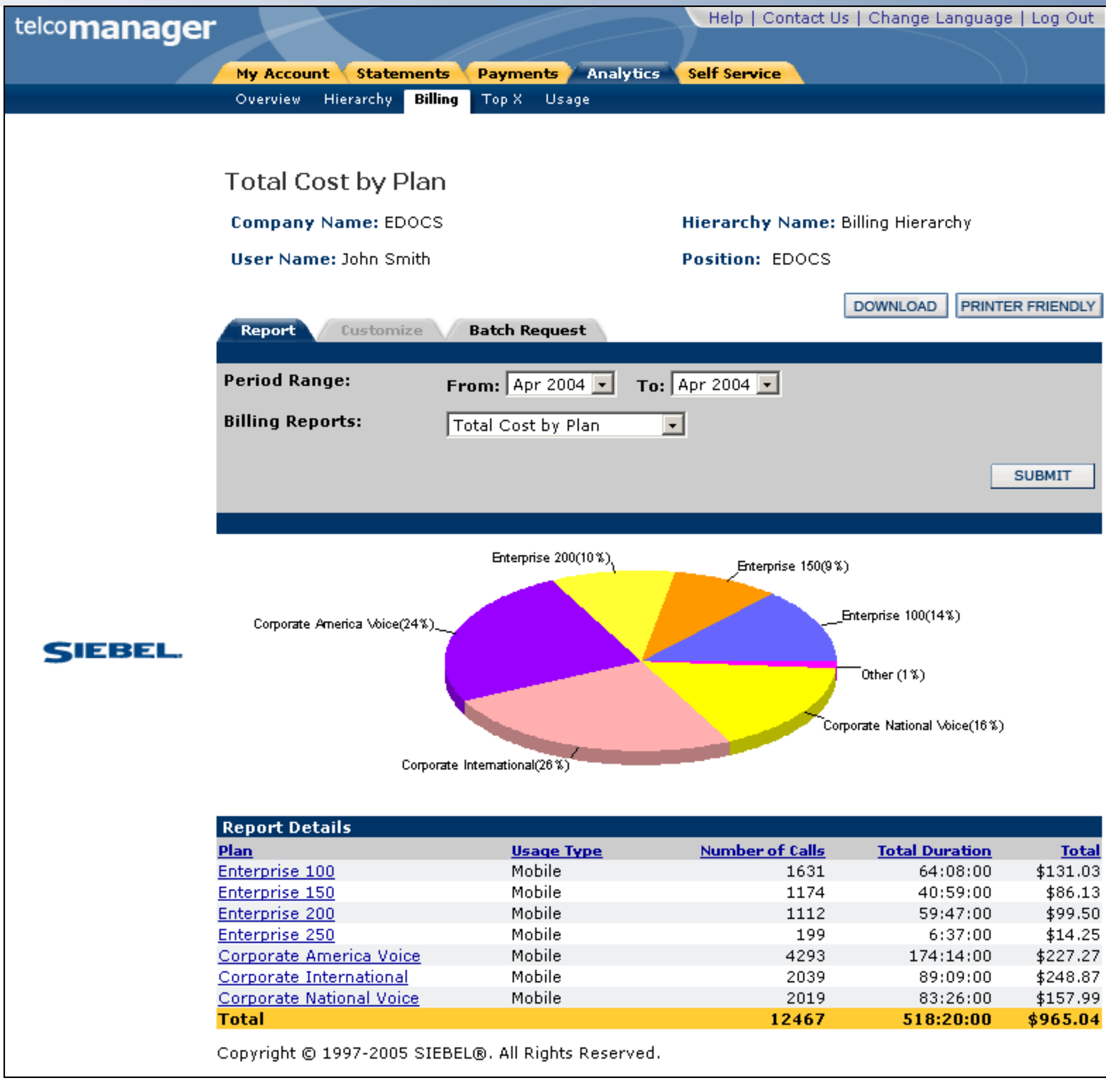

Figure 28 – Total Cost by Plan

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.

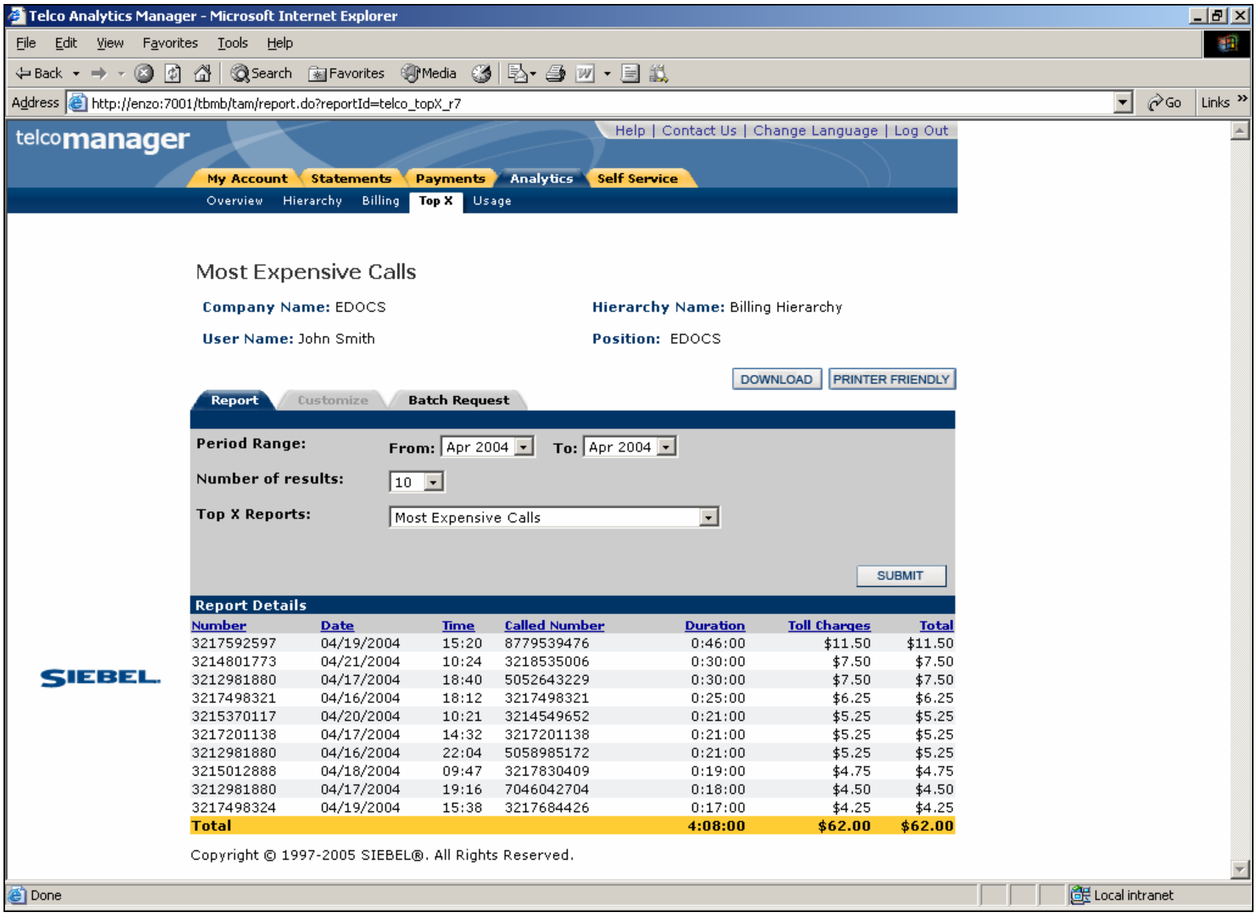

Figure 29 – Most Expensive Calls

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.
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.

Name:	**Longest Calls**
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.

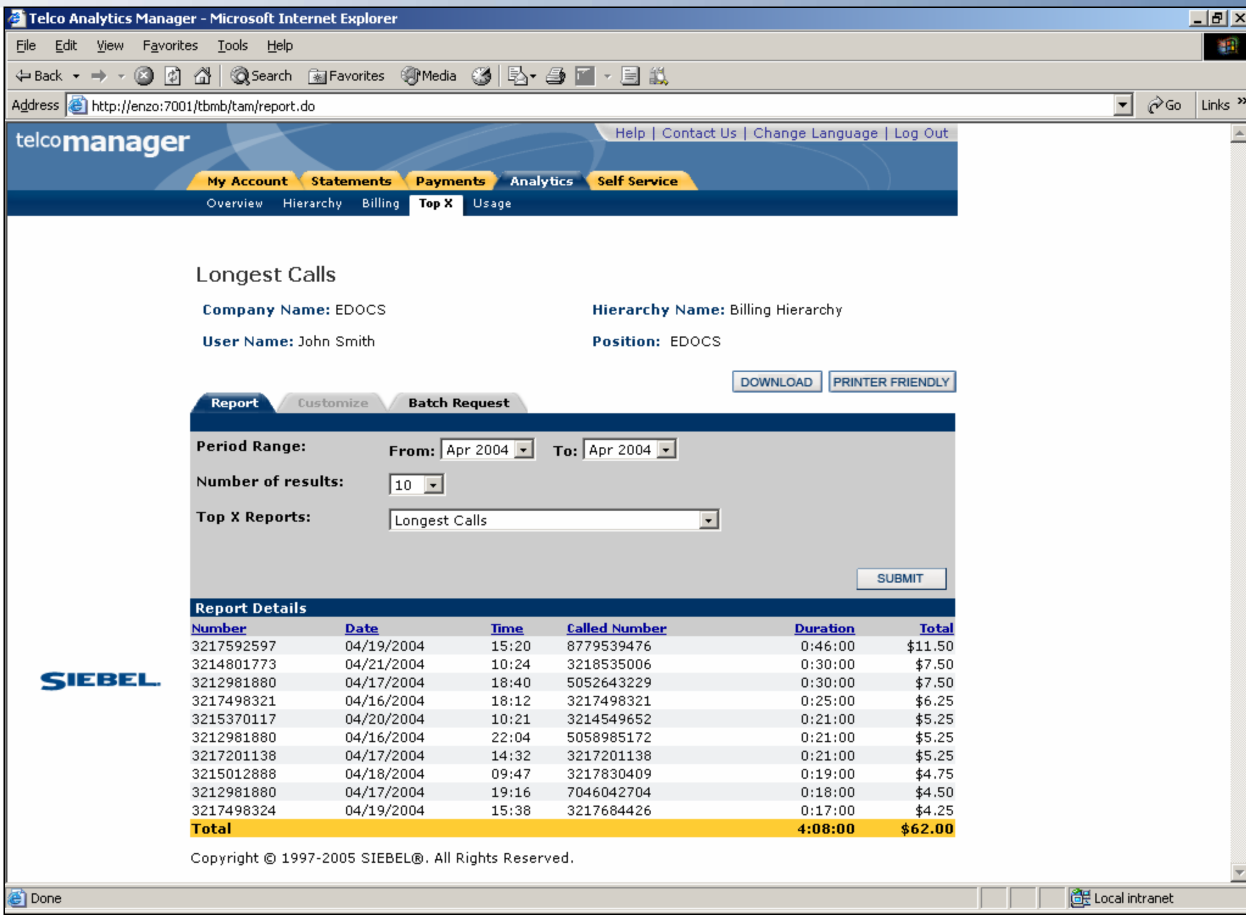

Figure 30 – Longest Calls

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

Name:	**Most Frequently Called Numbers**
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.
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.

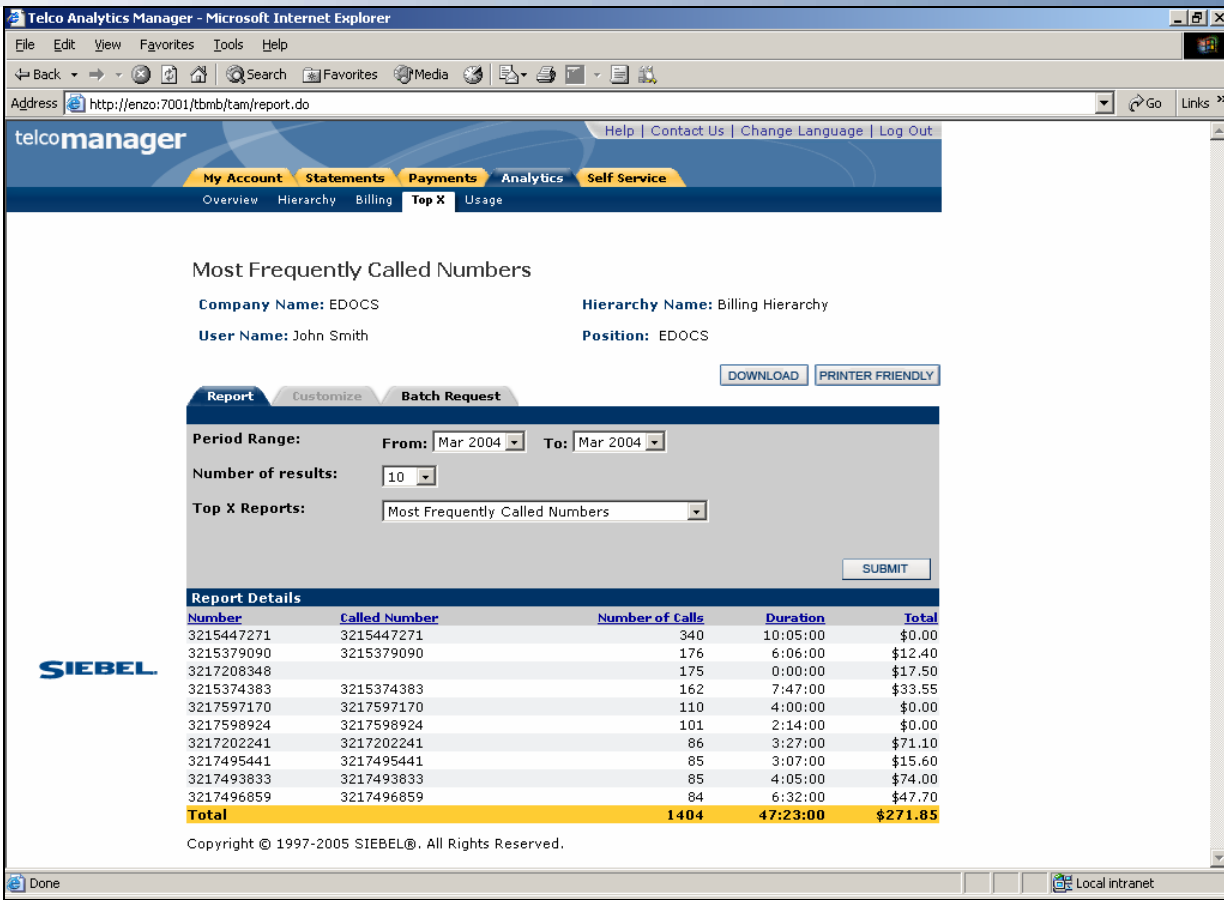

Figure 31 – Most Frequently Called Numbers

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:	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.** 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] 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 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.
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.

Name:	Most Frequently Called Destinations
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.

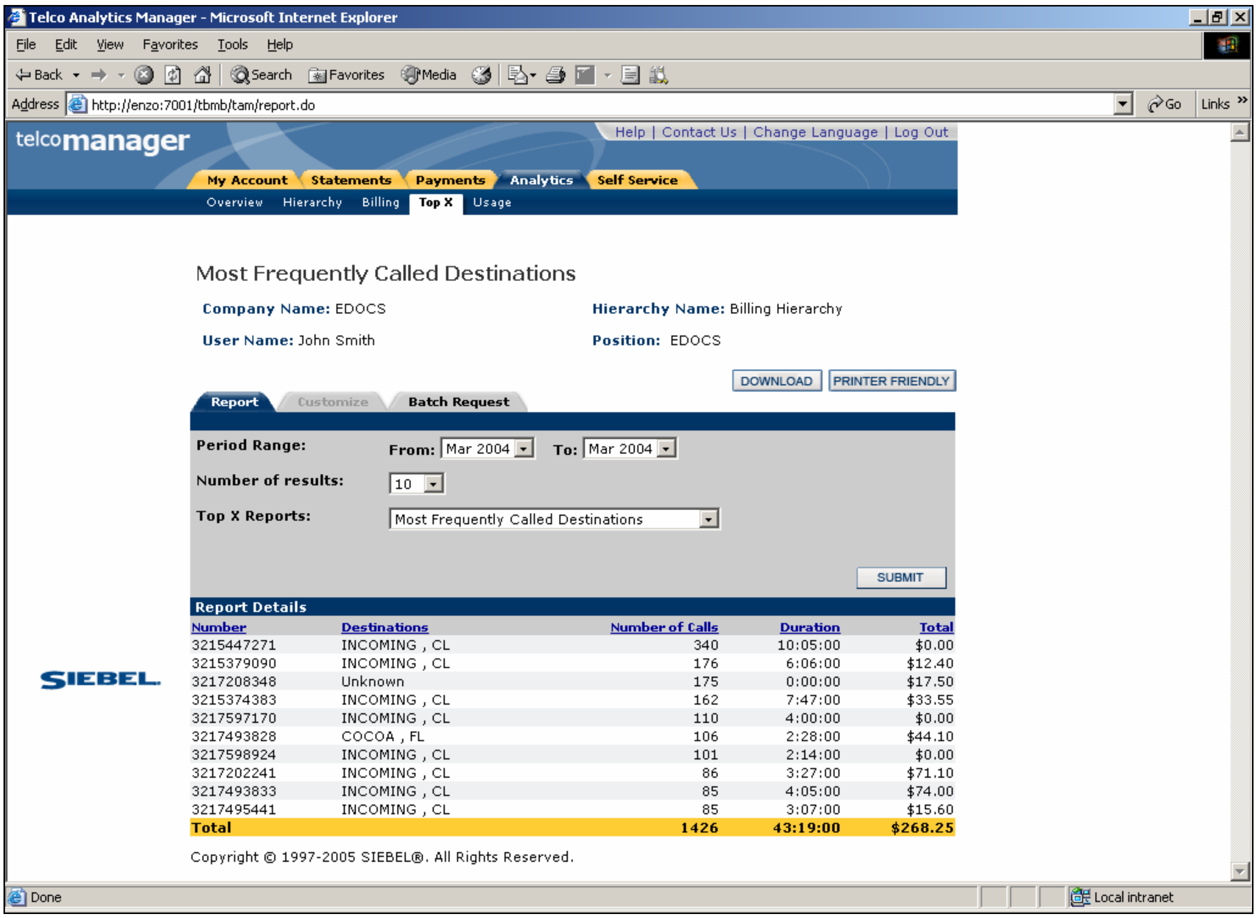

Figure 32 – Most Frequently Called Destinations

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:	<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.** 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] <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

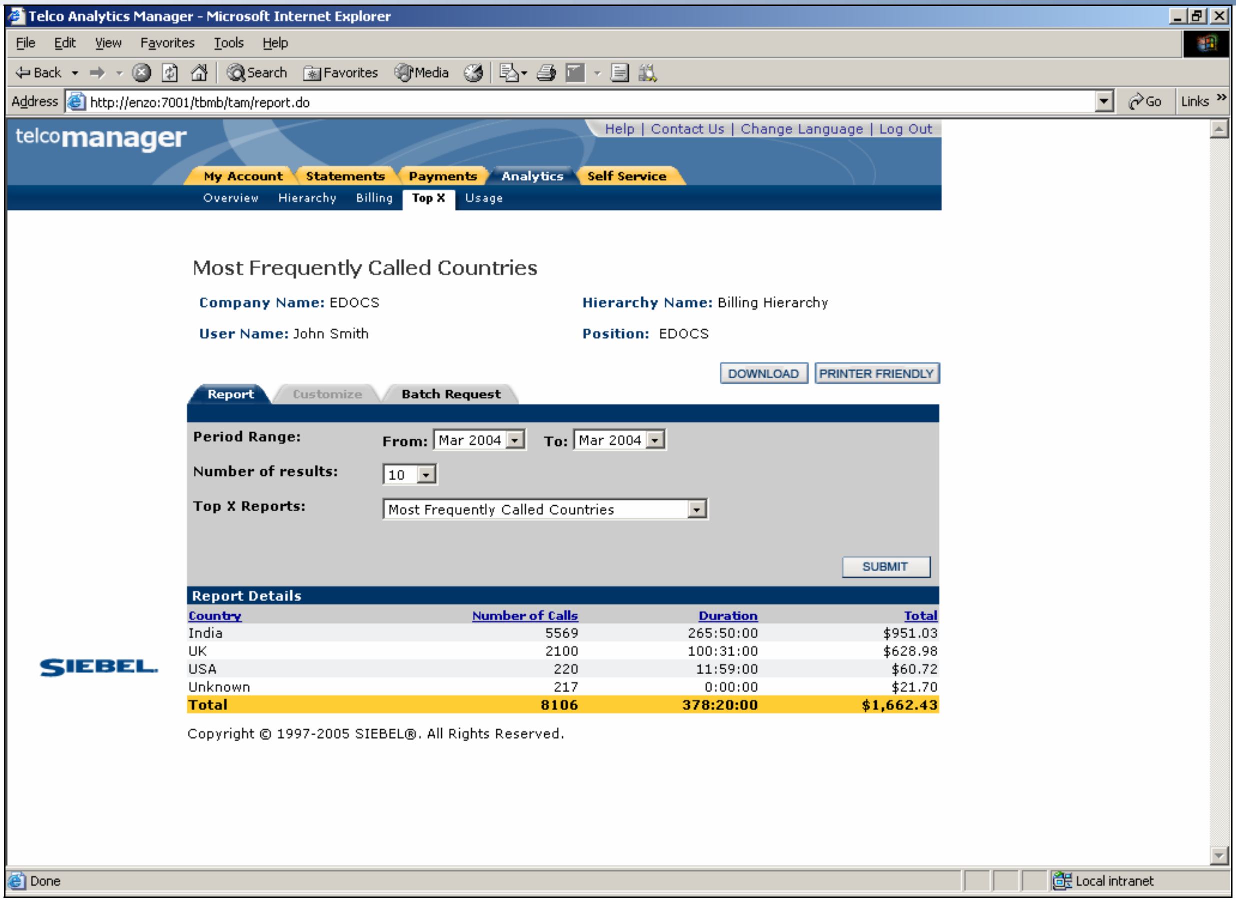

Figure 33 – Most Frequently Called Countries

Highest Spending by Contract

Name:	Highest Spending by Contract
Brief Description:	User views the Top X Highest Spending Contracts.
Entry Points:	**1.** List of Top X Reports **2.** Report Dropdown
Query Parameters:	Report Selection Criteria & Custom 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. Report Selection Criteria Only **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	Fields **1.** Number **2.** Owner **3.** Billing Account **4.** 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 by Contract 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:** 1. System invokes No Data use case.
Exception Paths:	**[E1] User encounters a system error:** 2. System invokes Error Message use case.
Business Rules:	**[B3]** 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.
Questions:	None

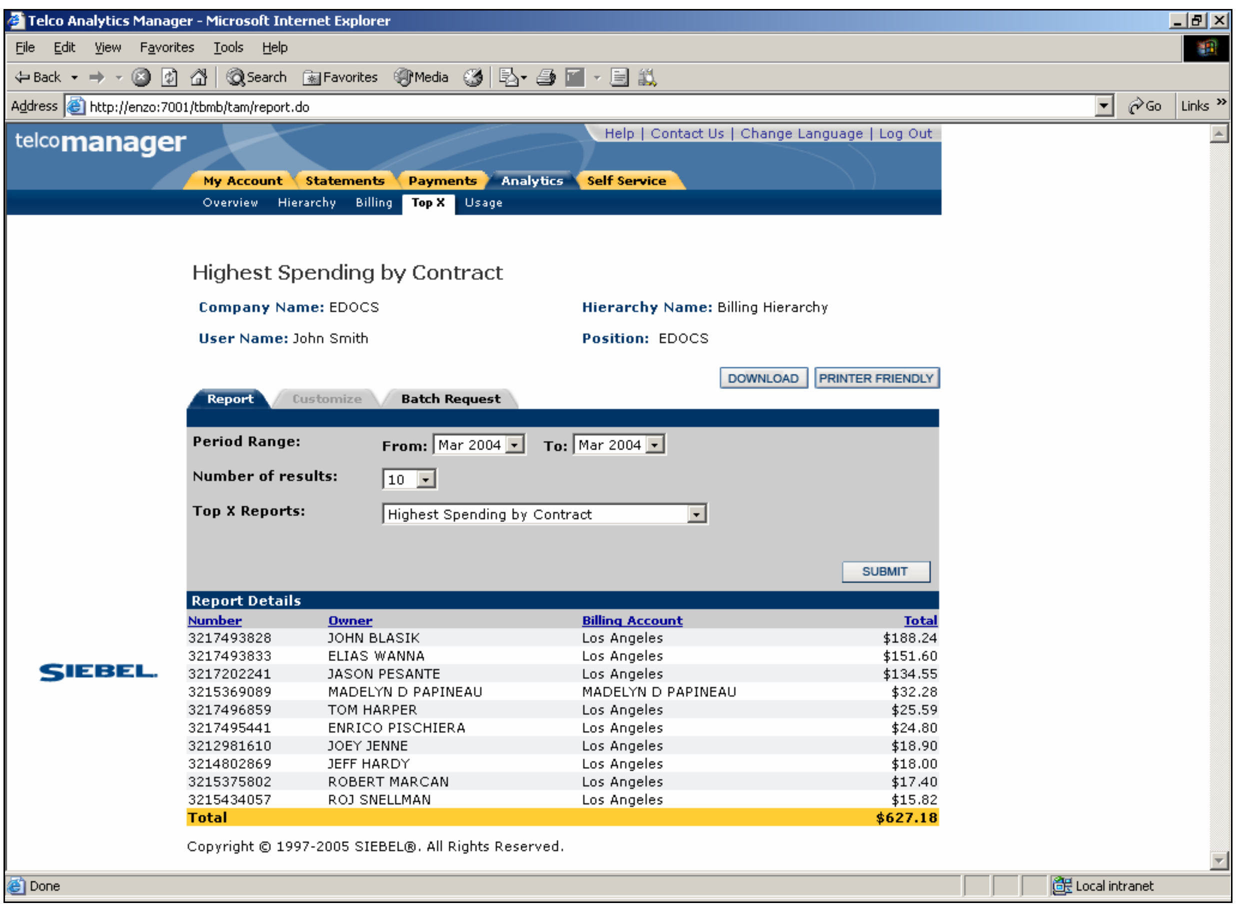

Figure 34 – Highest Spending by Contract

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:** 3. 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.
Questions:	None

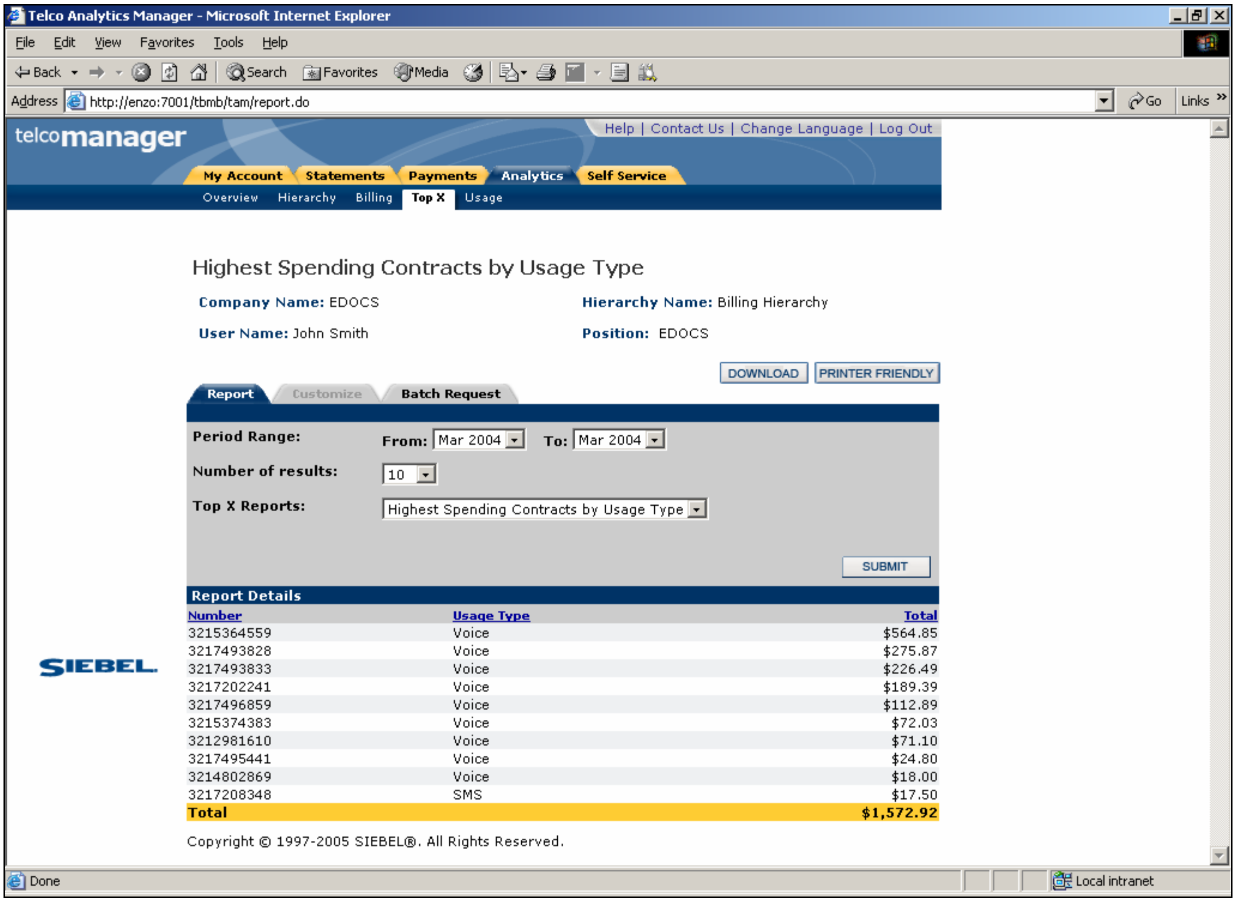

Figure 35 – Highest Spending Contracts by Usage Type

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