Oracle Discoverer[TM]

Explore New Dimensions

Oracle Discoverer 3.0 is part of Oracle's suite of Decision Support Systems tools. It is an intuitive ad hoc query, reporting, exploration and web publishing tool that enables business users at all levels of the organization to gain immediate access to information from relational data warehouses, data marts or online transaction processing systems. The User Edition provides superior ease of use, unsurpassed performance and powerful data exploration via drill anywhere capabilities, pivoting and charting. The Administration Edition provides an easy-to-use interface for the setup and low maintenance of the powerful server based meta layer (End User Layer[TM]).   The End User Layer hides the complexity of data structures and drill relationships from end users who need to focus on business not data issues.
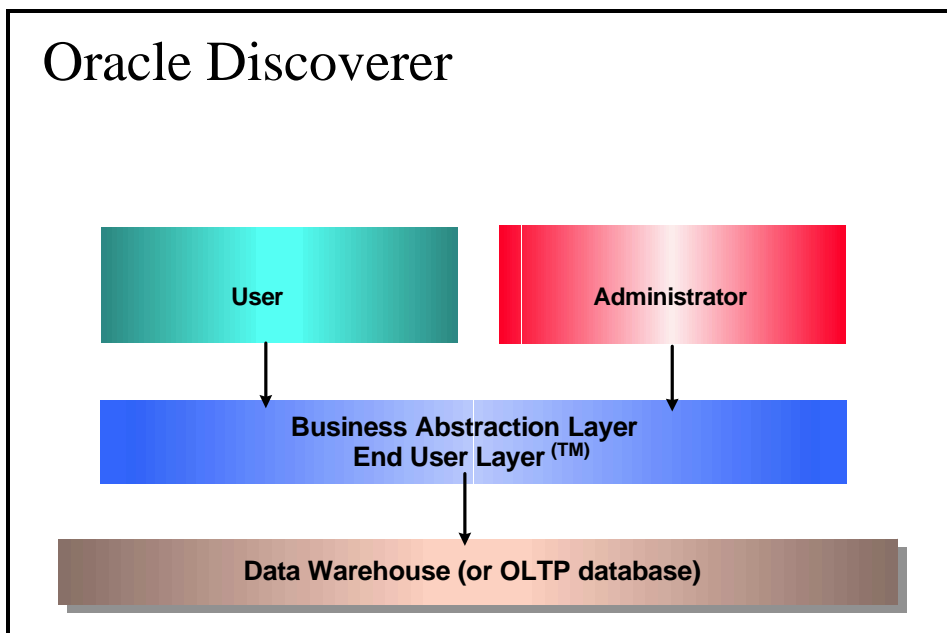

Figure 1. Discoverer Architecture

Superior Ease of Use

As a result of extensive usability testing and end user input from the outset of development, Discoverer is recognized as the easiest to use ad hoc query, reporting and analysis tool in the market today. Gain immediate access to information using the advanced step-by-step wizard interface (Figure 2). Extensive help, cue cards and industry specific quick tours provide additional assistance.   The sophisticated, server-based End User Layer completely removes database and SQL complexity from users.   Store complex conditions as part of the End User Layer to provide users access to information without their having to understand Boolean logic. Use the powerful integrated charting to show data trends and exceptions more rapidly than numbers. Drill down through charts to view specific trends more closely.
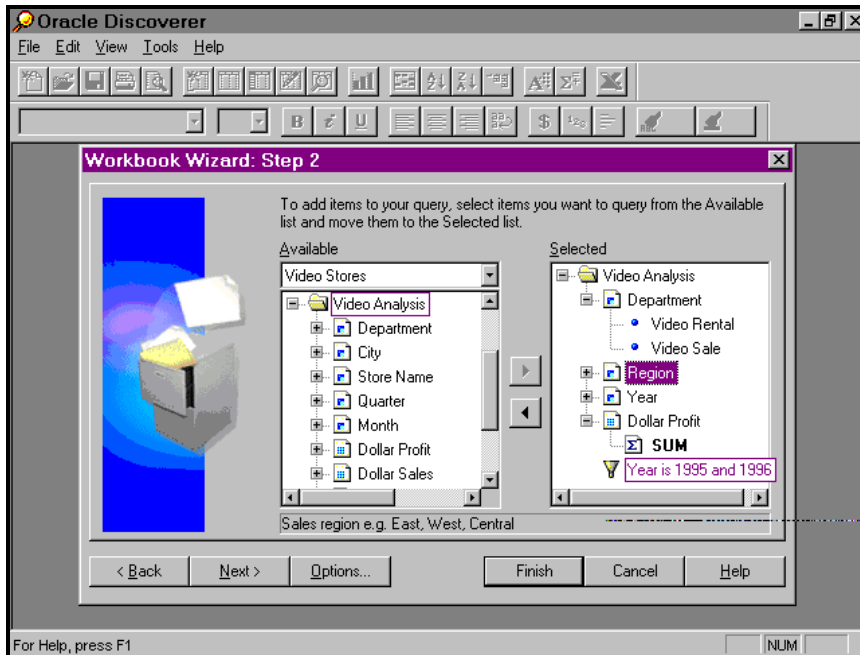
Figure 2.   Superior Ease of Use - Wizard Interface

Performance for the Data Warehouse

Discoverer provides maximum performance for ad hoc queries, drill and pivoting on both the Client and Server side. Use the expert SQL query engine to dynamically generate performance optimized SQL queries. Non-blocking queries allow other tasks to be run whilst a query is executing thus improving productivity for end users. The incremental array fetch reduces user frustration by providing immediate response times and reducing networking traffic.

Resource Control

Like all other tools, Discoverer provides a resource governor to stop long running queries and control resource usage. In addition, Discoverer provides a unique query prediction capability that tells you *before* you run the query how long the report will take (Figure 3).   This automatically reduces frustration and gives direct control to the user over which queries to run.
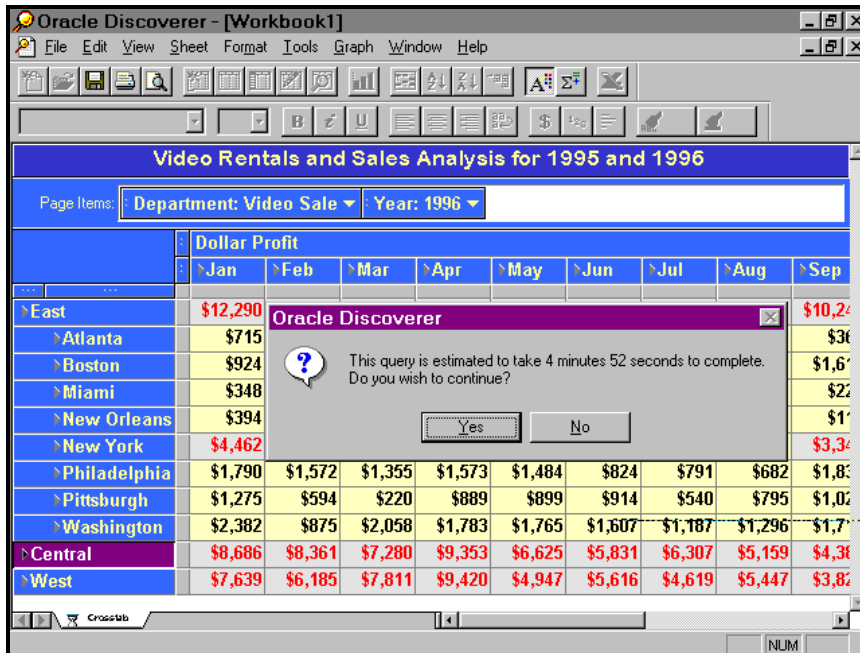
Figure 3. Resource Control - Query Prediction

Automatic Summary Redirection

In a data warehouse, large volumes of data are pre-summarized to improve performance characteristics. When you request information from a large volume detail table, Discoverer automatically (and transparently) redirects your requests to the pre-summarized table. Using a sophisticated algorithm, Discoverer does not require exact matches between your query request and the summarized tables available. Using advanced technology it uses the closest match that exists, and seamlessly aggregates within the hierarchy. It also allows users to reduce the number of summary tables needed and improves query performance by orders of magnitude.

ResultsBase Architecture

The ResultsBase client cubic cache compresses and indexes retrieved data to enable rapid drilling and rotation on the client without repeated access to the database server. Discoverer utilizes the bitmapped indexing and star query functionality of Oracle7™ to further support data warehouse sites.

Flexible Warehouse Exploration

Use the Discoverer drill anywhere and pivoting capabilities to explore the information in your data warehouse. The drill architecture in Discoverer allows you to slice-and-dice your data to view results in different ways, giving you a complete and accurate picture of your business without writing complex SQL.

Low Maintenance End User Layer

Use the intuitive, wizard based interface of the Administration Edition component to make query building and analysis even easier for end users.

Single Button Load

Setup and on-going maintenance of the End User Layer is minimal and less time consuming as a result of the extensive defaulting and single button load. (Figure 4).

Designer/2000^{TM} Integration

Protect your investment in Oracle Designer/2000 by automatically loading definitions from Designer/2000 into the End User Layer.   Ensure one central source system for all data definitions in Designer/2000 and use the powerful refresh option to update Discoverer and keep consistent meta layers.
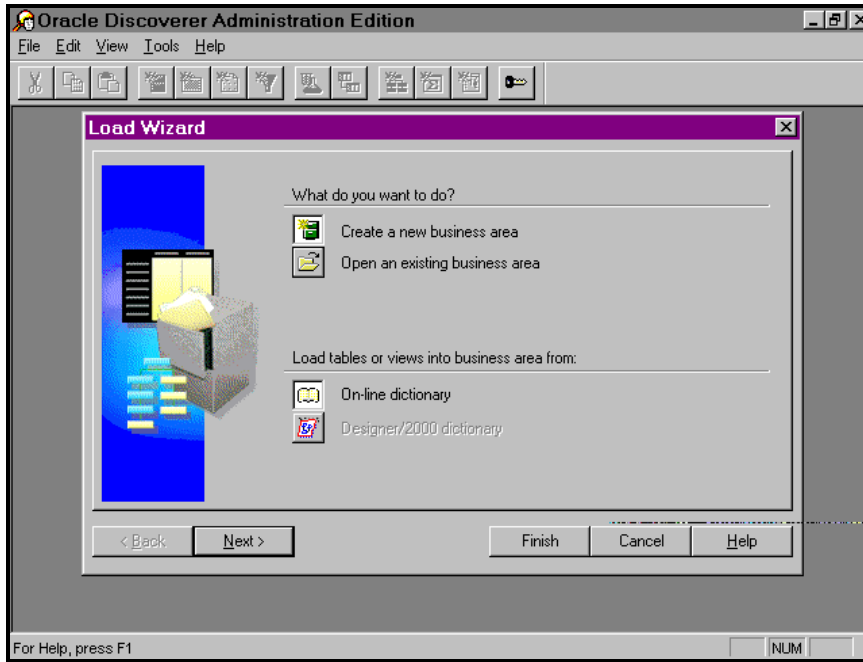

Figure 4. Low Maintenance End User Layer - Single Button Load

Server Based Scalability

Use the power of the centralized database server to provide scalability and security.   Reduce administration time further when utilizing the automatic summary table maintenance feature.

User Edition - Ad hoc Query, Reporting, Drill and Web Publishing

Discoverer empowers end users to create queries and reports, and to perform powerful exploration without understanding SQL or database structures. The End User Layer is the translation mechanism that provides this functionality.

Create Powerful Queries

Building queries with the User Edition is a straightforward and intuitive task. Select the data required and alter the layout of the worksheet directly by dragging and dropping. Build conditional filters and calculated items using the intuitive step-by-step wizard interface. Never worry about data types, parentheses, function names or data values.

Comprehensive Reporting

Use standard report templates (tabular, cross-tabular, group sort (or break), and master detail) to satisfy your business need. Bring data to life visually using a variety of font styles, sizes, foreground and background colors applied to headings and data.

Exception Reporting

Place exception bands on large data sets to easily identify ranges of interest and produce a traffic lighting effect by replacing data with colors.

Flexible Exploration

The extensive drill functionality provides drill between items, drill up and down hierarchies and the unique ability to drill from summary to detail.

Just-in-time Drilling

Use Discoverer's unique concept of Just-in-time drilling to retrieve only the information you need, at the time you need it. Conditional drills allow retrieval of small, specific amounts of information - - improving performance and reducing network load.

Clearly see multiple levels of drill results using the most extensively tested interface available today.   View your data by year, quarter, country, region and multiple other parameters using one consistent interface.

Date Drills

Seamlessly drill from year to quarter to month etc.   Tight integration with the date structures from the database mean specific date columns do not need to be created to perform date exploration.

Expand Drills

Break out of the default hierarchy structures provided by the End User Layer by defining your own drill paths as you explore.   Using the same consistent interface, choose the information you would like to see next.

Summary to Detail Drills

Tools today provide the ability to drill through summarized data. Discoverer extends this in a unique fashion by seamlessly drilling from summary information to view detail transactions.   See a profit increase in December 1996 in the South, and drill to the individual detail orders to find out why this occurred.   (Figure 5).
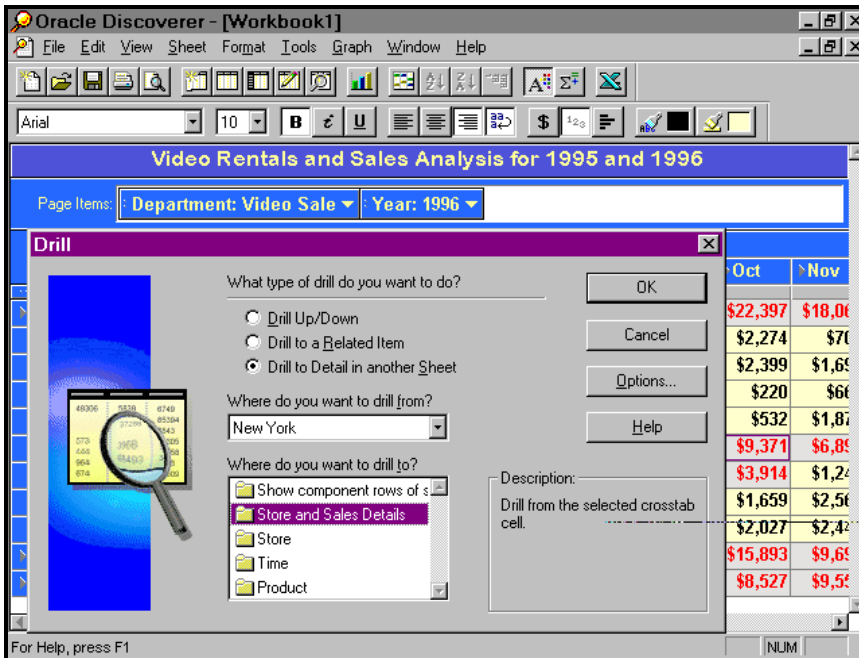
Figure 5. Summary to Detail Drills

Drill out

Extend your drill capabilities and drill out of your data to a supporting application such as a video clip, sound file, text file, word processor or spreadsheet file.   For example, in a hospital, view patients' medical records, then seamlessly drill out to view the X-ray. This powerful extension provides users with open-ended capabilities to access additional information stored outside any database structures. (Figure 6).
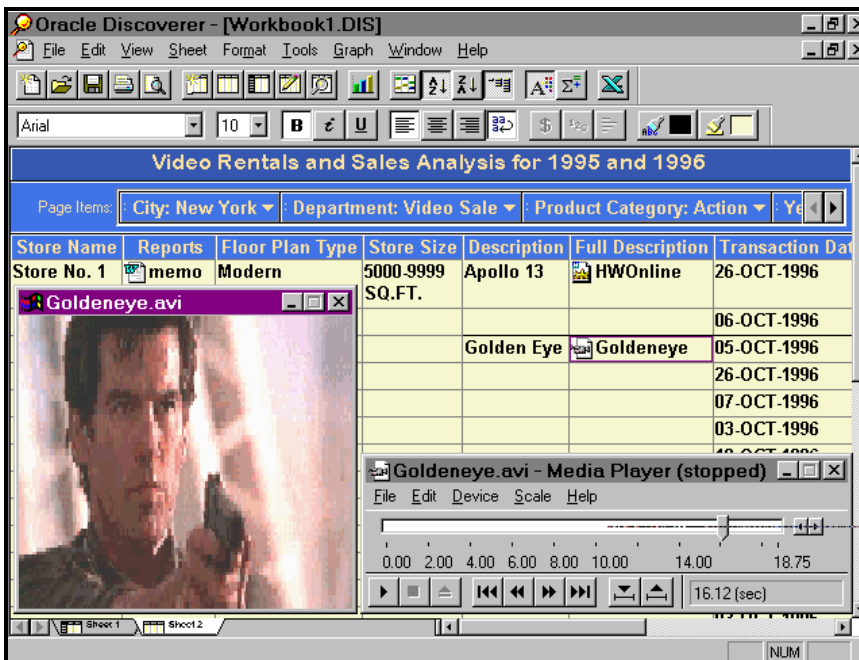

Figure 6. Drill out to supporting applications e.g. Video Clips

Business Charting

View trends and anomalies in your data by displaying them in graphical format. Chart styles include area, line, horizontal bar, pie, surface, pareto, doughnut, scatter, marks, column, cube, fit to curve, polar, and open-hi-low-close -- in two dimensional and three dimensional format. Charts are dynamically linked to your results, allowing you to drill through the chart itself and immediately see trends and anomalies in your business. (Figure 7).
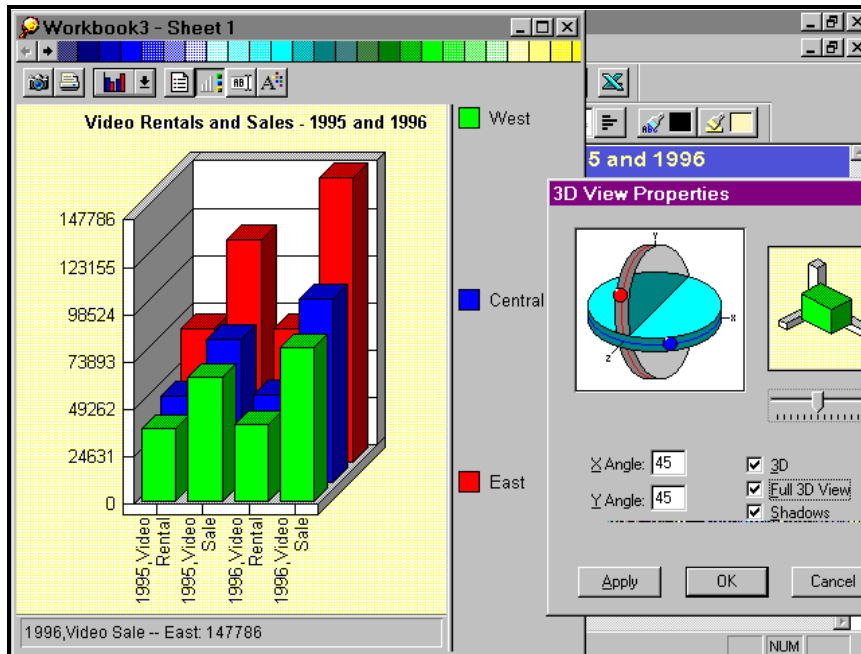

Figure 7. Business Charting - View trends and anomalies in your data

Web Publishing

Publish final results from Discoverer workbooks in .HTML format.   Enable a wider audience in the organization to view results using your standard Web Browser e.g. Netscape Navigator, Microsoft Explorer, or Oracle PowerBrowser™.

Administration Edition - Minimal Setup and Low Maintenance

Use the Business Administration wizard interface to automatically populate the End User Layer, using the fast, one button load capability. Group information into logical Business Areas to make data access easy and intuitive.

Minimal Setup

Extensive defaulting enables end users to immediately start querying their data. Initial load provides *default* folder names and descriptions, item names, descriptions and list of values, join definitions and drill definitions. Reuse information held in the Designer/2000 repository to automatically populate the End User Layer with folder, item and join definitions.   Reuse existing definitions held in previously created Business Areas to save time when creating new Business Areas.

Create composite folders to provide virtual views of information which inherit changes from the base folders and provide users with an easier view of their business.   Reduce the complexity of data structures by pre-defining complex formulae and storing them as calculated items. (Figure 8).
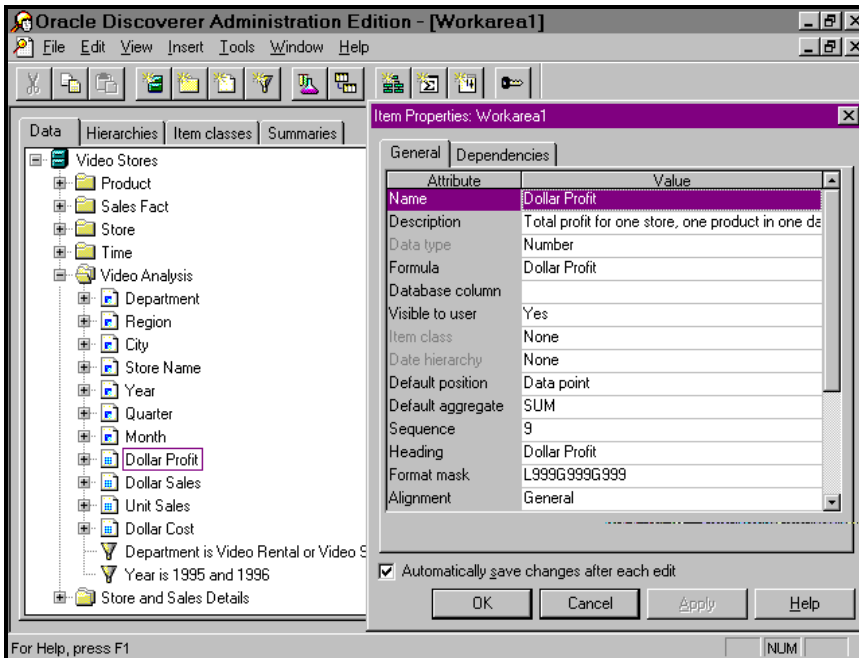

Figure 8. Minimal Setup - Default Names, Descriptions and Values

Low Maintenance

Use the database server to provide a centralized, secure repository for business definitions in the End User Layer.   Efficient multi-user access and the scalability of the server protect your investment in Oracle technology. Use the native database security to provide user access control - thus saving administration time and reducing security concerns.   Rapidly synchronize changes in the database with the End User Layer using the wizard interface.

Automatic Summary Management

Collect statistics to identify aggregates that users perform. Use the unique features of the summary wizard to create and *automatically* maintain summary tables to vastly improve performance (Figure 9). Use the summary wizard to register existing summary tables to ensure the User Edition can exploit these summaries when running queries, using the powerful automatic summary redirection capabilities.
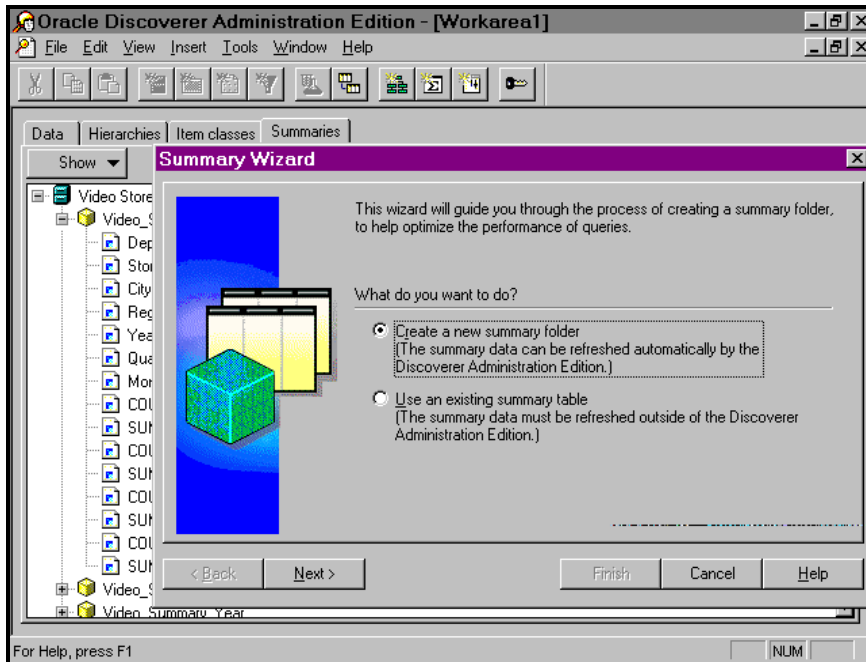
Figure 9. Summary Wizard - Create and Automatically Maintain Summary Tables

Oracle Integration

Leverage your investment in other Oracle products. Discoverer can automatically load semantic data from Designer/2000 into the End User Layer. Integration with the Oracle kernel provides support for Oracle7 role based security, query prediction and automatic summary table creation and maintenance. The End User Layer is being extended to support the Express suite of products and the Applications Data Warehouse. Use customized Business Areas and views to rapidly access Oracle Applications data with minimal setup and maintenance. Create your own Business Areas to provide end user access to any Oracle based application you develop.

Open Access

Enable other tools to access business definitions stored in the End User Layer using the Open Meta Layer API which provides reduced setup and maintenance. Oracle Discoverer is OLE2 compliant which enables data transfer between familiar desktop tools such as Microsoft Word and Microsoft Excel. Export data to common file formats to enable information exchange between common desktop tools.

Migration from Discoverer/2000™

Immediately take advantage of Discoverer's enhanced functionality by effortlessly migrating existing End User Layer definitions from Discoverer/2000. Existing queries defined using Discoverer/2000 can be easily imported as a Discoverer Workbook.

Oracle Discoverer™ Key Features

User Interface

- Developed in C++ and designed for Windows95 and WindowsNT
- Single interface for adhoc query, reporting, charting, drill down analysis and web publishing
- Build adhoc queries through the wizard interface
- Administer the End User Layer through the wizard interface
- On-line help, cue cards and interactive industry specific quick tours : Retail/Restaurant, Telecommunications, Healthcare, Government
- Incorporates advanced features of Windows95 : drag and drop, right mouse button shortcuts, long filenames and extensions, toolbar hints.

Query Functionality

- Graphical query builder
- Automatically identify related data
- Define selection criteria (conditions or filters)
- Combine conditions using logical operators
- Nest conditions
- Sort rows in any order
- Group data automatically
- Use parameters with default values
- Join related data automatically (equi, non-equi, self and outer joins)
- Create calculated items (user defined expressions)
- Support for subqueries
- Support for summary totals (avg, min, max, sum, count, std deviation, variance)
- Include or exclude duplicate rows
- Use Oracle7 defined SQL functions
- Schedule queries to run in batch mode, freeing client resources
- Control the number of rows returned by a query
- Control the amount of time spent running a query
- Predict the amount of time a query will run before it executes
- Automatic summary redirection (summary awareness)

Query Management

- Save workbooks in the database
- Save workbooks to the file system
- Save worksheets to a number of different file formats
- Share workbooks with other end users
- Preview query results
- Print query results

Report Building and Formatting

- View your results online with the WYSIWYG workbook
- Default layout style
- Create a variety of reports, including:
  Tabular
  Summary and Group Sort
  Cross Tabular or Matrix
  Master-Detail
- Resize displayed columns
- Reorder displayed columns
- Specify multiple line page headers and footers
- Specify variables in worksheet headers and footers e.g. Page number, Date, Time, File name, Sheet name
- Specify page formatting - margins, print direction, horizontal & vertical positioning
- Place embedded parameters in headers and footers
- Format data using default or custom format masks depending on data type
- Create global formatting information for all users
- Format column headings and data using different font styles, sizes, foreground and background colors, strikeout and underline
- Create exception bands on ranges of data

Flexible Exploration

- Place any number of dimensions on the row or column axes
- Perform automatic drill down and drill up analysis between items
- Perform automatic drill down and drill up on date periods (year, quarter, month, week, day, hour, minute)
- Automatically navigate database hierarchies
- Perform expanded or replace drills
- Perform conditional (filtered) or unconditional drills
- Perform summary to detail (Hyperdrill) drills
- Perform drill out to supporting applications e.g. Video Player (Hyperdrill Plug-in)
- Pivot axes (dimensions) in cross tabular reports to see different dimensions of data
- Perform drill down from business charts

Business Charting

- Maintain focus with current worksheet
- Use Oracle Discoverer to create :
    - *Two and three-dimensional charts*
    - *Area charts*
    - *Line charts*
    - *Horizontal Bar charts*
    - *Pie charts*
    - *Column charts*
    - *Surface charts*
    - *Pareto charts*
    - *Doughnut charts*
    - *Scatter charts*
    - *Marks charts*
    - *Cube charts*
    - *Polar charts*
    - *Fit to Curve charts*
    - *Open - Hi-Low-Close charts*
- Set horizontal and vertical grid lines
- Define color schemes
- Define scale for X and Y axis
- Set full rotation and shadow on three dimensional charts
- Set chart titles on top, bottom, left and right of screen
- Set axis focus automatically for rows and columns

Web Publishing

- Save workbook or worksheet results as .HTML format
- Drill through all paths defined in the workbook (including summary to detail drills)

Security

- Protect your data with read-only access
- Run queries online or via a scheduled batch operation
- Control online queries with both reactive and predictive query governing
- Use database roles to simplify security administration
- Runtime only option prevents users from developing queries
- Set default user preferences

Administration

- Fast bulk load of database tables and views
- Access design information from Designer/2000
- Control access to database objects using native database security
- Exploit Oracle7 roles and security
- Define Business Areas for logically grouping information
- Create complex folders for creating virtual views of data and hiding complexity from end users
- Create derived items to hide complex SQL expressions and dynamic objects
- Create and maintain automatic join conditions and drill relationships
- Maintain default folder names, item names, headings and default formatting
- Create alternative sort sequences (item classes) for user data
- Automatically create lists of values for items
- Create and automatically maintain summary tables
- Make workbooks available to all users

Integration

- Access non-Oracle databases through Oracle Open Gateways
- Use DDE to cut and paste (link) query results to other applications using the clipboard
- Save worksheet results to WKS, DIF, SYLK, TXT, PRN, CSV, XLS, HTM, HTM(Web Charts) files
- Import SQL statements

Performance

- Retrieve partial results
- Multi-row fetch using array interface
- Sort and format data locally using the memory efficient client side cubic cache
- Select automatic or manual query execution