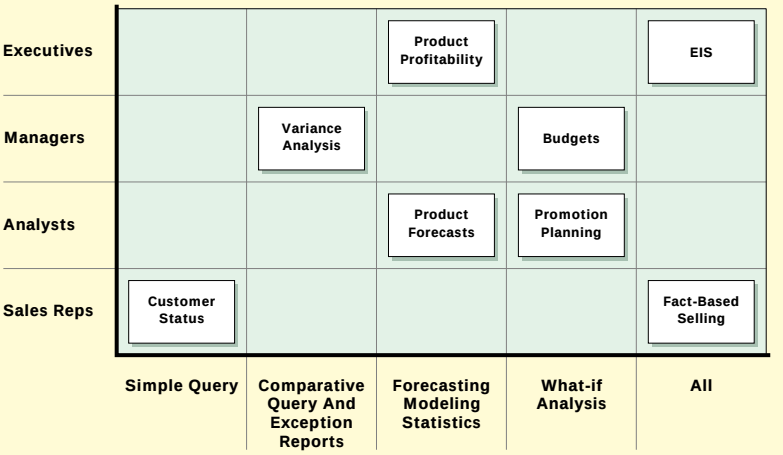
Oracle OLAP Technology

Enabling Better Business Decisions

ORACLE®

Enabling the Information Age™

Analysis Consumers Exist Throughout the Organization



Only a few users produce analyses in an enterprise, but many users consume the interactive reports, graphs, and multimedia briefings from simple query, comparative query and exception reporting, forecasting and modeling statistics, and what-if analysis.

OLAP: The Next Step Toward Competitive Advantage

For years, operational applications based on relational database technology have improved productivity by managing business transactions. Now leading enterprises are taking the next step. They are using online analytical processing (OLAP) technology to apply operational information to decision making. Facts now supplement intuition as analysts, managers, and executives use OLAP to make more informed, efficient decisions.

OLAP Users: Two Classes, One Path, Big Gains

Oracle's OLAP products combine a data model optimized for analysis with easy-to-use analytical tools. Two classes of users benefit from these tools:

The first is "analysis producers," who may be a financial, a marketing, or any other type of analyst. Analysis producers uncover trends and exceptions. Producers build what-if models that reveal the impact of alternatives in pricing, policies, or budgets in precise and measurable terms.

The second class of user is "analysis consumers." Only a few users produce analyses in an enterprise, but many users consume the interactive reports, graphs, and multimedia briefings that answer OLAP queries—"What will sales be in Asia next quarter if we raise prices relative to the competition's?" "How much will orders increase this quarter as customers forward buy to beat the announced price increase, and will the overall effect for next year be positive or negative to the bottom line?"

Ideally, analysis consumers receive the benefits of analysis with intuitive, easy-to-use tools. Oracle Express OLAP technology embodies this ideal. As the leading OLAP technology, Oracle Express® enables analysis producers and consumers to react swiftly and intelligently to challenge and change.

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Oracle Express: Enterprise OLAP

Enterprise OLAP integrates cross-departmental data into a coherent whole, enabling all users to work from a common information base. It gives users the ability to work with all of the data in a data warehouse. Enterprise OLAP can also go beyond the warehouse and integrate data from disparate systems—relational, legacy, or external. This integration enables new applications, such as fact-based selling, activity-based costing, and product profitability analysis to transcend the boundaries of a single department.

With the OLAP tools Oracle Express Objects,™ Oracle Express Analyzer,™ and Oracle Discoverer/2000,™ companies can now build and deploy these applications rapidly. Pre-built OLAP applications—Oracle Financial Analyzer,™ Oracle Financial Controller,™ and Oracle Sales Analyzer™—further reduce implementation time and costs.

Pre-built OLAP applications from Oracle and its solutions partners deliver immediate benefits in functional areas like financial consolidation and budgeting, and in specific industries like telecommunications. Whether companies build or buy Oracle Express applications for enterprise or workgroup OLAP, Oracle's Express tools and applications empower users and information systems departments (IS) with the most comprehensive and scalable solution available today.

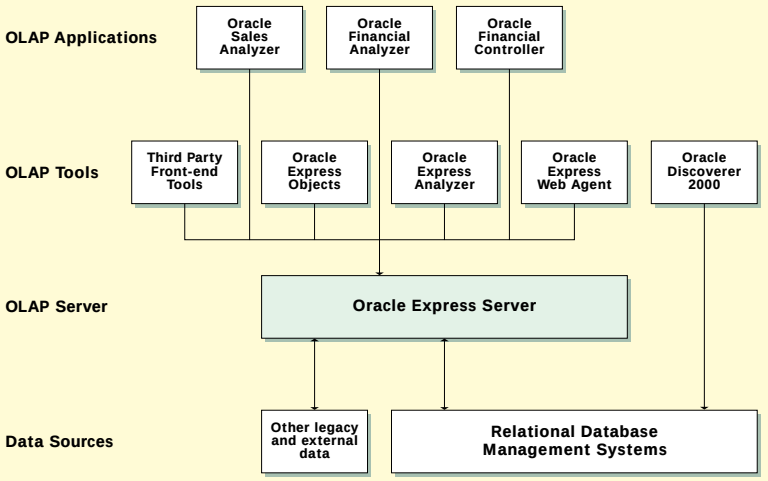
Oracle Express Server

The power of Oracle Express tools and applications comes from Oracle Express Server,™ an advanced calculation engine and data cache. The server uses a multidimensional model that reflects the way users think about their business.

The multidimensional model expands the row and column approach of spreadsheets into three or more dimensions. Users naturally envision categories of data (or dimensions) as edges of an array. Dimensions like time, product, line item, and geography categorize and summarize facts, like unit sales.

Queries against the multidimensional model execute rapidly. They are mathematically-calculated slices of the array. As a result, the array supports the largest, most complex OLAP applications.

Oracle's Family of Decision Support Tools

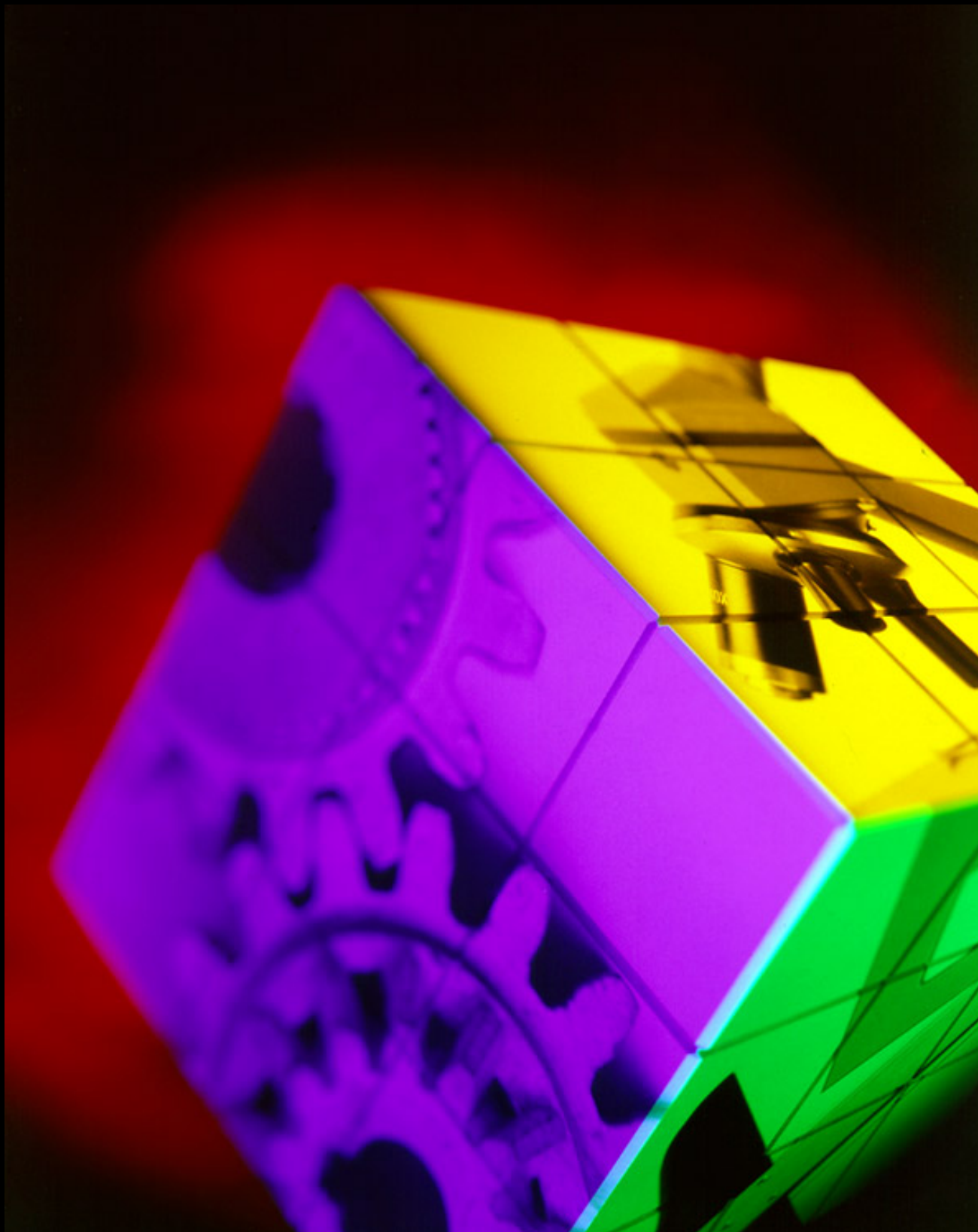


Oracle's family of decision support tools comes from the web-enabled Oracle Express Server, an advanced calculation engine and data cache which integrates data from disparate systems—relational, legacy, or external.

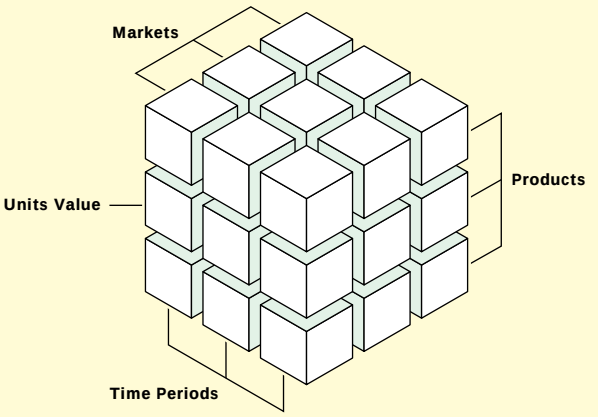
OLAP tools such as Oracle Express Objects, Oracle Express Analyzer, and Oracle Discoverer/2000 enable companies to rapidly build and deploy applications. Pre-built OLAP applications—Oracle Financial Analyzer, Oracle Financial Controller, and Oracle Sales Analyzer—further reduce implementation time and costs.

The power of Oracle Express tools and applications comes from Oracle Express Server, an advanced calculation engine and data cache. The server uses a multidimensional model that reflects the way users think about their business.

The Oracle OLAP tools address the full spectrum of user needs—from simple query and analysis of data contained in a warehouse to sophisticated analysis, forecasting and modeling, to object-oriented OLAP application development for the enterprise.



Oracle Express Transforms Relational Data for Multidimensional Analysis



Business decision making and analytical applications require a data model designed for end users. The data model for Oracle Express is a cube, associating variables with multiple dimensions, or sets of similar entities. By organizing and manipulating data from relational databases or other flat tables multidimensionally, users can look at their data the way they look at their business. In this case, unit sales (the variable) can be viewed by product and by market over time (dimensions).

Product	Market	Time	Units
CD Player	Boston	Q1	12,224
CD Player	Boston	Q2	13,459
CD Player	Boston	Q3	14,116
CD Player	Boston	Q4	16,889

Accompanying the multidimensional data model of Oracle Express Server are functions that analyze, forecast, model, and ask what-if questions of the data. The server has built-in functions for mathematical, financial, statistical, and time-series manipulation.

Express Server can store and manage multidimensional arrays of data or provide direct analysis of relational data with a sophisticated multidimensional caching scheme requiring little or no indexing. Scalable and robust, applications based on the server supply multi-user access and complete data integrity for the largest databases. And Oracle's open strategy allows companies implementing Enterprise OLAP to choose among relational databases, development tools, and user interfaces—including customized Windows front ends, spreadsheets, and the World Wide Web—for maximum flexibility.

Web-Enabled OLAP

The Oracle Express Web Agent™ empowers end users to perform business-critical ad hoc analysis of multidimensional data over corporate intranets and the World Wide Web. It combines the analytical power of Oracle Express technology with the simplicity of Web browsing.

Using popular HTML authoring tools, the Oracle Express Web Agent makes it easy to embed dynamic, data-aware views into your Web pages. For those users needing more advanced OLAP applications, the Oracle Express Web Agent Developer's Toolkit allows developers to create sophisticated OLAP Web sites. This extensive toolkit encapsulates both low-level HTML functions and higher-level building blocks for OLAP application development. For example, displaying a table of sales data with drill-down capabilities requires one line in the Express stored procedure language containing the name of that data measure.

The Oracle Express Web Agent is implemented using a common gateway interface (CGI), enabling it to work with any Web server.

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Oracle Express Objects

Oracle Express Objects is the premier visual, object-oriented development environment for creating these client/server OLAP applications. Most users are not professional analysts, but must perform analyses to support their job function. These users require OLAP applications where the analysis logic has been predefined.

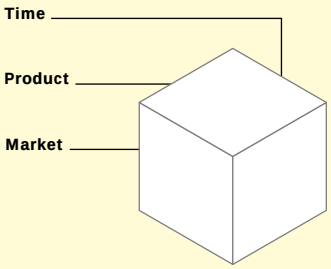
Express Objects offers the graphical modeling and what-if analysis of traditional Oracle Express systems, but is also open to third-party controls via the standards of Microsoft's object linking and embedding (OLE). As a result, applications created in Oracle Express Objects may use an OLE control for mapping the roads to the stores where a company's products are sold. These applications, using agents, alerts, and OLE controls, may monitor inventory levels, alert managers when those levels fall, and automatically increase inventory levels of flagship products.

Creation of such systems has never been easier. Oracle Express Objects has data-aware controls for viewing and manipulating Oracle Express data, as well as controls for analyzing relational data stores. Oracle Express Objects supports both visual development and event-driven programming. The environment fully supports true object orientation: encapsulation, inheritance, and polymorphism. Applications developed with Oracle Express Objects are easily distributed and shared with end users, who can both run the applications and extend them without additional programming.

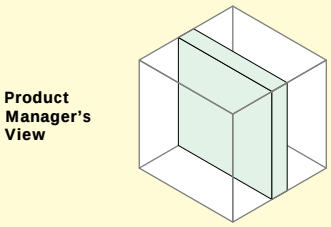
Oracle Express Analyzer

Oracle Express Analyzer is a general-purpose, object-oriented tool for end-user reporting and analysis. It can also run any Oracle Express Objects application. In fact, users of Oracle Express Analyzer can extend and publish applications developed in Oracle Express Objects. The two are integrated so that IS and the user community have a wealth of options for building and sharing applications and objects.

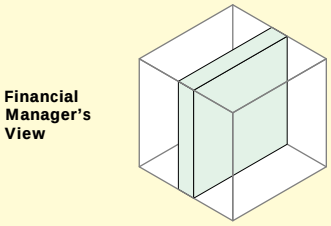
Multidimensional Views of Data



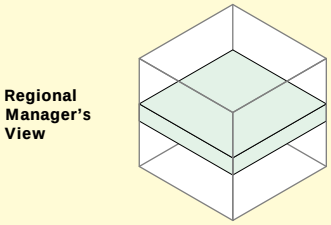
With Oracle Express, analysis consumers can easily view data according to their unique perspectives, for example:



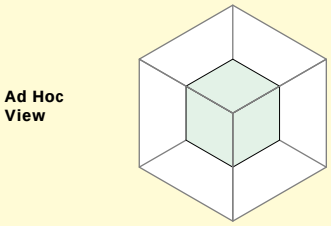
Product managers study one product across may time periods and markets.



Financial managers focus on the current and previous time period for all markets and all products.

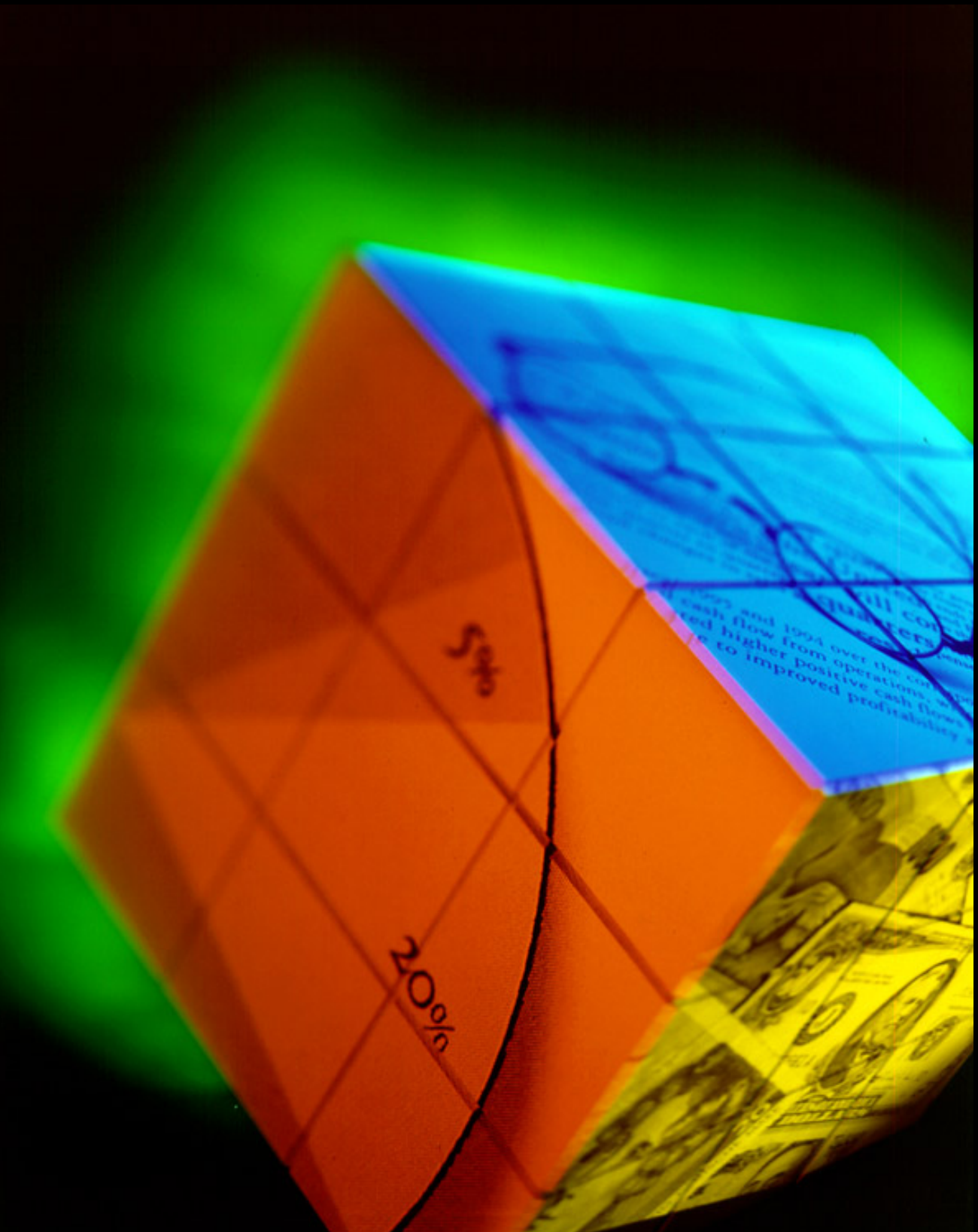


Regional managers examine all time periods and all products across some markets.



Strategic planners might focus on a subset of the corporation's data, such as the current and next quarters for an innovative product being sold only in the West.

Prebuilt OLAP applications from Oracle and its solutions partners deliver immediate benefits in functional areas like financial consolidation and budgeting, and in specific industries like telecommunications.

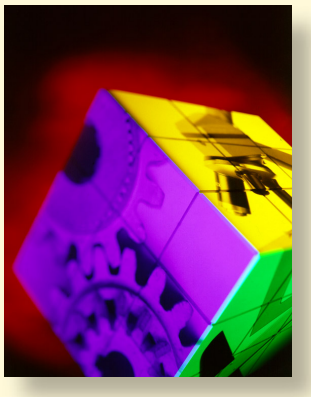


Choosing Express technology from Oracle Corporation means choosing the OLAP standard. It also means choosing a business partner who is experienced, reliable, global, and poised to improve decision making today and tomorrow.

Oracle Express Server

Oracle Express Web Agent

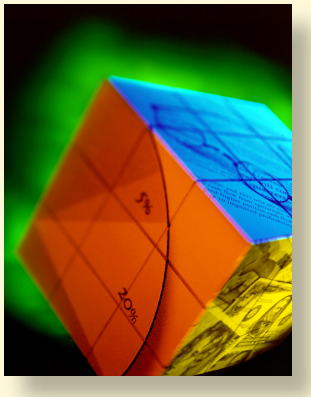
Personal Express



Oracle Express Objects

Oracle Express Analyzer

Oracle Express Administrator



Oracle Financial Analyzer

Oracle Financial Controller

Oracle Sales Analyzer

A cornerstone object in Oracle Express Analyzer is a briefing. Briefings are pages of subject-oriented analyses built with reusable objects. These objects are interactive. Users can rotate, drill down, and query data in any table or graph on a briefing page to perform their own ad hoc analysis.

The scope of briefings is limitless. They can contain information from any application that meets the OLE standard. Yet briefings are easy to use and create with point-and-click tools. Casual users, who usually read briefings, page through them with pulldown menus or navigation buttons. Power users, who can create briefings on their own or with objects they receive from IS, don't need to program. Briefings can be shared via LANs and e-mail.

Oracle Discoverer/2000

Oracle Discoverer/2000 is an ad hoc query tool that provides users with immediate access to critical business information. Oracle Discoverer/2000 was designed for both end users and power users. End users can access detailed records via relational queries, reports, and graphs without programming knowledge or database experience. Power users are further able to modify and manipulate data or database schemas.

Oracle Discover/2000, Oracle Express Objects, and Oracle Express Analyzer together address the full spectrum of user needs—from simple query and analysis of data contained in a warehouse to sophisticated analysis, forecasting and modeling, to object-oriented OLAP application development for the enterprise.

Oracle Financial Analyzer

Oracle Financial Analyzer is a distributed application for financial reporting, analysis, budgeting, and planning. By integrating a central source of management data with powerful analytical tools, the system enables organizations to meet their critical financial objectives—to control costs, analyze performance, evaluate opportunities, submit and roll up budgets, and formulate future direction.

With Oracle Financial Analyzer, Finance can perform the following tasks without having to rely on IS:

- Report and analyze financial data
- Manage the budgeting and forecasting processes
- Answer ad hoc requests efficiently
- Improve cost control and performance measurement
- Identify areas for profit improvement
- Plan more comprehensively and accurately

Oracle Financial Analyzer can access financial data from spreadsheets, general ledgers, relational databases, and legacy systems. The product seamlessly integrates with Oracle General Ledger.™ This integration greatly simplifies data acquisition and maintenance, providing a more cost-effective financial management solution.

Oracle Financial Controller

Oracle Financial Controller is a statutory financial consolidation application that also makes it easier for companies to close their books. Collecting data from typically disparate general ledgers, the product meets the stringent requirements of formal financial consolidation. Oracle Financial Controller provides full audit trails, inter-company elimination functions, adjustment capabilities, and currency translation tools.

To ensure adherence to corporate consolidation processes, Oracle Financial Controller's workflow capabilities enable the systematic monitoring and control of financial data from different subsidiary sources. In conjunction with Oracle Financial Controller's security and access controls, data integrity and accuracy are assured.

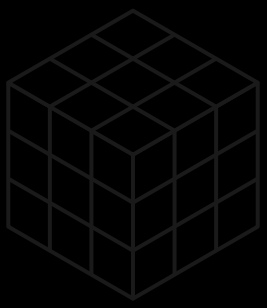
Oracle Sales Analyzer

Oracle Sales Analyzer is a general-purpose application for analyzing sales, marketing, or similar data. Sales trends, marketing campaigns, product or customer profitability, product life cycles, and promotional effectiveness can be evaluated with the product. When evaluations are complete, the system helps users to adjust their strategies through custom analysis.

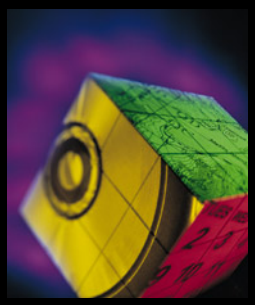
Oracle Sales Analyzer makes it easy to do market share calculations, ranking reports, and 80/20 analysis and calculations so that users can determine:

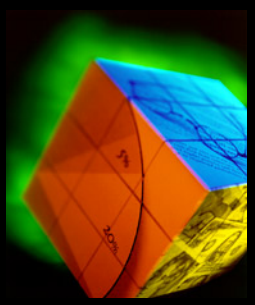
- Who is likely to buy which products next, and when
- Why market share is falling in some markets, but not others
- Which are the most profitable accounts or customers to call
- How a new product launch will affect existing products
- How effective the last promotion was compared to plan and compared to last year
- What the best pricing strategy is—to maximize margin or match a competitor's price

The SQL Bridge module provides Oracle Sales Analyzer users with analytical access to any relational data warehouse, including data in Oracle Applications.™



Oracle OLAP Technology





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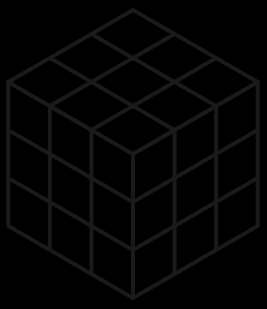

Oracle OLAP Technology

Enabling Better Business Decisions

Analyzing the Past, Anticipating the Future

Choosing Express technology from Oracle Corporation means choosing the OLAP standard. It also means choosing a business partner who is experienced, reliable, global, and poised to improve decision making today and tomorrow.

We count most of the leading U.S. and international corporations among our users. Oracle Express OLAP supports decisions in governments throughout the world and industries as varied as pharmaceuticals, retail, financial services, entertainment, utilities, telecommunications, transportation, and consumer packaged goods.

The quality and breadth of Oracle's services will impress you. Oracle employs more than 20,000 software professionals in 90 countries to provide you consulting, education, and support services.

We also offer another type of customer service: we support industry-leading technology that enhances your current investments and presents future options. Oracle Express Server runs on platforms ranging from IBM MVS, to UNIX, to Microsoft NT. Oracle Express OLAP products follow and anticipate industry standards, including ODBC, RPCs, and the World Wide Web.

Oracle Express OLAP is a key component of Oracle® Universal Server,® a complete information management solution for managing any data, in any application, on any scale. Oracle Express applications front-end the Oracle Warehouse and the Oracle Applications Data Warehouse. Oracle Express products will support SQL*Net® as well as Oracle's other advanced networking and security capabilities. Oracle database administration tools will increasingly serve both relational and multidimensional environments.

Whatever your industry and information infrastructure, Oracle Express OLAP strategies can improve your organizational performance. Oracle can apply its experience to your business issues, delivering analytical power to your end users, wherever they work in the world. Oracle is not only committed to its technologies, it is committed to its customers. In other words, Oracle will help you build on your current systems by providing a complete OLAP architecture to serve you not only now, but 10 years from now.

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