

Decision Support System -- Computer Programs

A History of Multidimensional Database Development

Season	Date	Title	System	Phone/ Address	Periodical	\$ Cost	Comment
fall 1994	Oct 31, 1994	Sybase acquisition lays warehousing foundation	Expressway	SIC code 7372 Sybase Inc. Emeryville, CA Expressway Technologies Corp Waltham, MA	InfoWorld	\$25,000 for each Expresswa y Version 103 \$140,000 for Sybase Navigatio n Server parallel processing add-on for large decision support applicatio ns	Warehousing foundation.
fall 1995	Oct 9, 1995	Application vendors support Arbor's Essbase.	Arbor Software's Essbase AppSource Corp's Wired API Toolkit	Arbor Software Sunnyvale, CA (408) 727- 5800	PC Week		Wired API Toolkit, a development kit for Delphi that creates component objects and class libraries for performing OLAP functions for Essbase. Appixware decision support software will provide connections to Essbase.

Decision Support System -- Computer Programs

A History of Multidimensional Database Development

fall 1995	Nov 13, 1995	Holistic readies decision-support tools upgrade	Applix Inc's Applixware decision support software Holistic Systems Inc's Holos 4.1	?	PC Week		Decision support software. Query, reporting, and metadata modeling. Decision support application development tools. Holos combines a front-end decision support query and reporting tool with a metadata modeler. Holos purposes to improve the multidimensional metadata repository, shifting the burden of bundling the best metadata structure from the database administrator to the application itself. Still a lot of coding behind the scenes.
fall 1995	Dec 4, 1995	D&B's SmartStream jabs SAP AG; client/server apps offer improved database functionality	Dun & Bradstreet Software's SmartStream DE Suite		Computerworld	\$200,000 for a 25-user license	Decision support software. Database mapping, replication. Enables multiple databases to be established at different sites and replicates data between them. Enables businesses to distribute functionality between their: financial organizations, factories, and warehouses. Provides a distributed workflow capability that makes it simple to configure new

Decision Support System -- Computer Programs

A History of Multidimensional Database Development

winter 1995 - 1996	Dec 25, 1995	Oracle to ship object-based query tool for OLAP server	Oracle's Express Objects		PC Week	\$3,995 for Express Objects \$595 for Analyzer	businesses and to introduce third-party applications. Features include automated mainframe-to-client/server mapping function. Decision support software. Report building. Express Objects is a managed query and reporting environment for Express Server, which Oracle acquired from IRI Software, which will define query components as reusable objects, allowing users to quickly build complex reports.
winter 1995 - 1996	Jan 29, 1996	Data-mining tool taps parallel servers	Information Discovery's IDIS 3.0 client/server data-mining application	Information Discovery (310) 937- 6300 http://www.datamining.com	PC Week	\$1,900 for client and \$25,000 for server server version	Idis 3.0 data-mining software uses artificial intelligence techniques to detect trends among large amounts of data. It uses agent technology to examine data within the DBMS, rather than extract a subset for analysis. The program can produce results in text as well as graphic. High level executive could push a button, have the tool go out, find the data, and then write an executive summary.
winter 1995 - 1996	Feb 19, 1996	Comshare overhauls its multidimensional DSS tool.	Comshare's Commander Division 1	Comshare Ann Arbor, MI (800) 922-	PC Week	\$189,000 for a 50 user license.	Decision support software. Database reporting tool. Server side, multidimensional DSS tool.

Decision Support System -- Computer Programs

A History of Multidimensional Database Development

7979
<http://www.comshare.com>

Decision 1 performs data precalculations and sorts, includes variance reporting feature which indicates when aggregate values that seem to fall within constraints actually contain subset values that fall outside limits. Messaging agents notify users when monitored data falls within predefined ranges. Decision 1.2 will include improved capabilities for conducting offline data analysis.

Supports Arbor Software Inc's Essbase multidimensional database only as a back-end data source. Will be able to access other data sources through ODBC and a fourth-generation language translator.

winter 1995 - 1996	Feb 26, 1996	Platinum polishes data warehousing wares.	Platinum Technology Inc's (look up the 6 products) InfoPump 2.0 InfoHub 2.0 Platinum Repository MVS 3.3 Platinum	Platinum Technology Inc. Oakbrook Terrace, IL (800) 442- 6861 http://www.platinum.com	PC Week	\$? for InfoPump 2.0 \$? for InfoHub 2.0 \$50,0000 for Platinum Repository MVS	InfoPump 2.0 (Database utility) -- used for data replication between databases, will support 32-bit implementstions of Hewlett-Packard Co's HP/UX and SunSoft's Solaris. InfoHub 2.0 (Database middleware) -- Handles movement of data from legacy systems to relational DBMSs. Platinum Repository MVS 3.3 (DBMS) -- allows users to import data from Informix Software Inc's
--------------------------	-----------------	--	--	--	---------	--	--

Decision Support System -- Computer Programs

A History of Multidimensional Database Development

			InfoRefiner 3.0			3.3 \$90,000 for Platinum InfoRefine r 3.0 \$40,000 for InfoTrans port 2.0 \$25,000 for Data Shopper 1.2 for up to 100 users.	databases. Platinum InfoRefiner 3.0 (DBMS utility) -- makes it easier to extract data from a single source. InfoTransport 2.0 used to distribute data from mainframes to client databases. Data Shopper allows queries to be stored in Repository.
winter 1995 - 1996	Feb 26, 1996	PowerPlay scores with OLAP engine; Cognos adds data support.	Cognos Corp's PowerPlay 5.0	Cognos Corp Ottawa and Burlington MA (617) 229- 6600 http://www.cognos.com	PC Week	\$4,995 for PowerPlay 5.0 Server for Windows NT \$14,995 for PowerPlay for HP/UX, AIX, and	Decision support software. Multidimensional OLAP engine. PowerPlay builds a multidimensional data matrix as a binary large object within a relational DBMS. Smaller multidimensional matrixes can also be built on the client for two-tier deployments or offline analysis. Compression algorithms create data matrixes four times smaller than the original data. Recalculates only aggregates of data sets that have changed after an update

Decision Support System -- Computer Programs

A History of Multidimensional Database Development

Solaris to the matrix, rather than recalculate the entire cube.

\$695 for 32-bit client applications. Includes native connections to other multidimensional data sources, adding support for Oracle's Express Server and Pilot Software's Lightship engine. Dovetails with Impromptu query and reporting tool, which is used for transaction analysis on a OLAP result set.

winter 1995 - 1996	Feb 26, 1996	Give just the facts, according to OLAP	Products that meet Open, Scalable, and Integrated criteria:	Business Objects Inc. Menlo Park, CA	PC Week	OLAP concerns
			Business Objects Inc.	Accuate Menlo Park, CA		Your typical RDBMS query will tell you what, not why. You know this already, which is why you are using OLAP. The OLAP server model has some serious limitations. OLAP servers require an intelligent client accessing a multidimensional database server. This works well for users with a well-scoped area of interest. But what happens when we want ad hoc queries, and we want to deploy the system to a larger, more diverse set of staff with varying data analysis needs? The problem is that under the covers, most OLAP servers are extracting data from a two-dimensional RDBMS and populating a multidimensional data cube. This creates data duplication and
			Accuate			

Decision Support System -- Computer Programs

A History of Multidimensional Database Development

update challenges. Static data cubes require users to rely on IT to modify them as query needs change. There we go again, perpetuating the IT backlog. We can't redesign our databases to better serve multidimensional extracts. That's why we need a new approach to OLAP. We need our decision -support process to be open, scalable, and integrated.

Open means you can use the databases we have now with the schemas we have now. You can leverage your current technology investment and infrastructure as well as dynamically generate and populate data cubes.

Scalable means you must be able to deploy your OLAP solution throughout your organization, from the workgroup to the enterprise.

Integrated means your OLAP solution should be comprehensive -- with one place for query, analysis, and reporting. Users need to have everything in their decision tool kit working together, without IT intervention.

Decision Support System -- Computer Programs

A History of Multidimensional Database Development

winter 1995 - 1996	Feb 26, 1996	PeopleSoft, Cognos mull OLAP licensing deal	Cognos' PowerPlay		PC Week		Decision support software. PeopleSoft plans to embed the PowerPlay OLAP processing engine in its client/server application suite. OLAP engines create Multidimensional views of large amounts of transactional data. Complex queries of decision support application often require OLAP (? these Multidimensional views). Decision support systems (? Multidimensional views) allows end users to access different levels of data to answer specific questions, such as how a particular salesperson is performing.
winter 1995 - 1996	Mar 4, 1996	Asymetrix spruces up tool; InfoAssistant gets client extension, enterprise server.	Asymetrix's InfoAssistant	SIC code: 7372, 4822 Asymetrix Bellevue, WA (206) 462- 0501 http://www.asymetrix.com	PC Week	\$3,495 for InfoAssist ant Enterprise Server Edition, \$Free client extension necessary to access the	Decision support software. Database access software. InfoAssistant allows users to access databases across the Internet. It establishes a direct TCP/IP connection with an InfoAssistant Enterprise Server Edition by entering the server's uniform resource locator (URL). Most internet decision support systems embed data in World Wide Web pages that are dynamically generated through a common gateway interface (CGI).

Decision Support System -- Computer Programs

A History of Multidimensional Database Development

						Enterprise Server, download able from the Asymetrix Web site.	With a CGI you've got a lot of work to do, to build join paths, to anticipate all possible queries, which slows performance. Here you won't have to carry the overhead of a web page.
						\$695 separately, InfoAssist ant for Windows NT	
winter 1995 - 1996	Mar 4, 1996	Vendors boost OLAP tool performance; upgrades to data analysis products are designed to meet capacity demands.	Arbor Software's Essbase 4.0 Cognos' PowerPlay 5.0 TM1 Software's TM1 Server 6.0 DBMS	Arbor Software Sunnyvale, CA (408) 727-5800 Cognos Burlington, MA (617) 229-6600 TM1 Warren, NJ (908) 755-	InfoWorld	\$37,500 for Essbase server for 5 users \$7,000 for TM1 Server 6.0 \$695 for PowerPlay Client 5.0 \$14,995 for	Decision support systems. Multidimensional databases. Meeting user demands for scalability and quick performance. Essbase boosts performance and allows users to scale their OLAP databases to hundreds of gigabytes through a new calcualtion engine. TM1 Server maintains the core structure of the OLAP database in memory, rather than on disk, which boosts performance and design flexibility.

Decision Support System -- Computer Programs

A History of Multidimensional Database Development

				9880			
winter 1995 - 1996	Mar 4, 1996	SAP plans Net access to back end.	SAP AG's Business Web R/3 (computer integrated manufacturing (CIM))	SAP AG ? ?	InfoWorld	PowerPlay 5.0 Server for Unix \$4,995 for PowerPlay for Windows NT. \$?	PowerPlay client side OLAP tool, updated to a server, to boost scalability. PowerPlay 5.0 Server lets users off-load client data to a server database. Decision support systems Data access software. Computer integrated manufacturing To provide access to its back-end applications through Internet browsers. SAP will use application development tools from Business@Web for the desktop integration to the R3 system, so users can access the system through a Web browser, such as Netscape Navigator.
winter 1995 - 1996	Mar 11, 1996	Essbase looks beyond enterprise.	Arbor Software Corp's Essbase 4.0	Arbor Software (408) 727- 5800 http://www.arbor.com	PC Week	\$37,500 for Essbase server for five concurrent user license.	Decision support systems. Multidimensional database. This latest version of Essbase adds World Wide Web capabilities, that enable LAN users to conduct Essbase queries over the Web. The Essbase Web extension will sit

Decision Support System -- Computer Programs

A History of Multidimensional Database Development

\$2,500 per user for the single version, sold in packages of five.

between the Essbase server and a Common Gateway Interface to a corporate Web server, enabling server and browser independence.

Also, performance and scalability boosted by Intelligent calculator, which recalculates only new or updated matrices.

And, new Query Processor moves intensive processing to the server, reducing network traffic.

Retrieval Wizard, leveraging Essbase's support for a variety of front-end tools, lets users model data directly from a spreadsheet interface. Essbase's Application Manager and Spreadsheet Client software build access to data directly from Excel or Lotus 1-2-3.

winter 1995 - 1996	Mar 11, 1996	All about OLAP	Information Advantage DecisionSuite	http://www.in foadvan.com	PC Week	\$?	Decison support software. Data warehouse software ROLAP
--------------------------	-----------------	-------------------	---	--	---------	-----	---

Decision Support System -- Computer Programs

A History of Multidimensional Database Development

winter 1995 - 1996	Mar 25, 1996	D&B SmartStream suite pours Java for client/server.	Dun & Bradstreet Software's SmartStream Suite	Dun & Bradstreet Software Services Inc. ? ?	PC Week	\$100 per client for requisition software.	<p>Information Advantage's DecisionSuite product -- a three tiered relational online analytical processing technology for data warehouses and data marts.</p> <p>Several white papers on data warehousing.</p> <p>Decision support systems. SmartStream Web Series, a series of Java-based applications for users of the SmartStream client/server suite, are designed to reduce both the cost of implementation and the disk space required to run client/server systems.</p>
--------------------------	-----------------	---	---	--	---------	---	--

First in the series, Requisitions, allows users to complete requisition forms using Netscape Navigator 2.0., enabling many of the same activities as the requisition feature of the SmartStream Procurement suite, including workflow and distributed database capabilities over an intranet, but, it should gobble up less disk space, since the client PC won't have to house the application locally.

With the Java client, this "smart" form, running under the client's browser, provides error recognition

Decision Support System -- Computer Programs

A History of Multidimensional Database Development

and correction before the form data is sent off to the server.

These SmartStream Web Series applications will integrate with the SmartStream DE client/server suite through standard hypertext transport protocol (HTP) - based World Wide Web servers and Winstock based API to the SmartStream DE Server.

spring 1996	Apr 1, 1996	Crystal adding Web engine to report writer	Crystal Services Inc's Crystal Info, Crystal Reports	Crystal Services Inc. (800) 877- 2340 http://www.seagate.com/software/crystal/	PC Week	\$395 for Crystal Reports 4.5 \$350 for Crystal Info	Decision support software. (Crystal Info) Report generation software. (Crystal Reports) Crystal products can be used to publish data on the Web. Crystal Web Report Engine, which is part of Crystal Reports 4.5, allows users to generate and publish database reports in hypertext markup language (HTML) format. This web report engine lets you thake an HTML page and put it on a Web server, but, it also will let you take the next step: A developer could build a front end, collect the information, then pass it to the report engine, which generates a
----------------	----------------	--	--	---	---------	--	--

Decision Support System -- Computer Programs

A History of Multidimensional Database Development

dynamic report.

This Crystal Web Report Engine will also have an API enabling it to run on Oracle Web servers. Crystal will also create a network loadable object (NLO) for Crystal Reports, which will let users of the Oracle PowerBrowser access and view reports on Oracle Web servers.

An Internet extension to Crystal Info 4.5 will begin shipping in the second quarter.

Gaining Web publishing capacity.
 Decision support software.
 Expert systems development software.
 DBMS
 Data-mining tools

Revamped line of IBM data-mining products and services that run on multiple platforms and slice decision-support analysis into vertical markets.

Intellegent Miner tool kit will bundle data mining tools such as Neural Network artificial intelligence

spring 1996	Apr 1, 1996	IBM digs up data mining.	IBM Corp's Intelligent Miner, Intellegent Decision Server	IBM Corp Armonk, NY ? ?	PC Week	? ?
----------------	----------------	-----------------------------	--	----------------------------------	---------	--------

Decision Support System -- Computer Programs

A History of Multidimensional Database Development

software and Data Interpretation System which is being renamed Intelligent Decision Server (IDS). IDS manipulates database information and packages it into different class libraries.

Data mining uses artificial intelligence techniques to detect trends among large amounts of data.

IBM will unveil this week mining applications for market analysis, fraud prevention, and customer segmentation, with the retail market as a major focus.

Neural Network, used to support data mining applications in areas such as mortgage lending, insurance policy assessment, truck routing, and manufacturing parameter control, looks for patterns and relationships that are not immediately obvious. It tells you the questions to ask.

IDS can be used to package information into class libraries with various front-end systems. They're trying to put together better front ends,

Decision Support System -- Computer Programs

A History of Multidimensional Database Development

							so users can run the data mining tools through Netscape Navigator and other browsers, as well as products such as Lotus Notes.
spring 1996	Apr 8, 1996	Intersolv simplifies database access; SequeLink accesses many data sources.	Intersolv's DataDirect SequeLink 3.01	Intersolv Inc. Rockville, MD (301) 838- 5000	InfoWorld	\$2,795 for 10 users.	<p>Database middleware. Multi database access.</p> <p>DataDirect SequeLink 3.01 , a hybrid middleware and data access package, will seek to speed up and extend end-user decision support systems. SequeLink used to get to data warehouse, rather than using ODBC drivers.</p> <p>Because SequeLink runs on the server rather than the client, the combined product will get a boost in performance. Before (with SmartData) you were doing ODBC driver access at desktop speeds. SequeLink gives developers a single API to get to several data sources, allowing users to trim down the software footprint on client systems, via server-based middleware.</p> <p>End users can report from multiple databases.</p>

Decision Support System -- Computer Programs

A History of Multidimensional Database Development

Although data access middleware products are geared primarily at decision support applicaitons, they are entering the mainstream of production database applications.

spring 1996 Apr 8, 1996 Digging for data. IBM's Intelligent Miner, Intelligent Decision Server tool kits ? Computerw orld ?

Decision support systems.
Data-mining software.

spring 1996 Apr 15, 1996 Cognos scores with PowerPlay update. Cognos' PowerPlay 5.0 Cognos Corp Burlington, MA (617) 229-6600 <http://www.cognos.com> PC Week ?

Decision support systems.
Client side multidimensional OLAP data modeling tool.
Converts database data into dimensional arrays.

OLAP products such as PowerPlay allow users to view corporate data dimensionally, as they would with cross-tab reports, but with more flexibility and power.

PowerPlay's transformer utility converts database data into dimensional arrays. Companies with larger data sets may want to consider implementing an OLAP server such as

Decision Support System -- Computer Programs

A History of Multidimensional Database Development

Essbase. Cognos also is working on its own server product.

Easy to modify the view, and thus forecast future business trends. Drill-down speed is almost instantaneous. Able to easily chart data, simply dragging and dropping appropriate dimension over the chart legend.

spring 1996	Apr 15, 1996	Data warehouse with an OLAP view.	Holistic System's Holos MicroStrategy 's DSS Agent (Server) Stanford Technology Group's Metacube	?	Datamation	<\$450,000 for OLAP system. \$5mil to \$7mil for the whole data warehouse over five years.	Decision support software. Database access software. Summary of OLAP tools. Technology information. Elaine L. Appleton
spring 1996	Apr 15, 1996	Think outside the OLAP box.	?	?	Datamation	?	Charles B. Darling DSS is App Dev

Decision Support System -- Computer Programs

A History of Multidimensional Database Development

Loading data in, matching data loading capabilities to volatility of your data source. Synchronization scheme for single and multiple data sets.

Multidimensional (MOLAP) data marts, drill through to relational detail as needed.

Balance need for consistency between mart and warehouse with overhead for updating the mart.

Data avalanche: (ROLAP) -- denormalized relational databases -- schemes to defeat denormalization dragon by detecting star schemes, adding special indexing types, and parallel processing.

Data avalanche: (MOLAP) -- trend toward linking hypercubes into a hierarchy of cubes. How do you navigate from cube to cube? How do you eliminate redundancy?

Ability to write data back to the OLAP database? And, how can you control that process and protect data integrity?

Decision Support System -- Computer Programs

A History of Multidimensional Database Development

- Nine rules for evaluating OLAP:
1. Forget about ROLAP versus MOLAP.
 2. Concentrate on OLAP as an app dev challenge.
 3. Find a tool that matches your OLTP-to-OLAP needs.
 4. Determine if OLAP can scale to meet your needs.
 5. Watch out for holes in the administration story.
 6. If there's a need to write to the OLAP database, decide who will have control, you or the users.
 7. Pick based on your applications, not the technology.
 8. Decide how much analysis you really need.
 9. Match performance and flexibility to the need for interactivity.

spring 1996	Apr 15, 1996	Build an app dev framework for DSS	?	?	Datamation	?
----------------	-----------------	--	---	---	------------	---

Charles B. Darling
 The main event -- what you're really doing is building a platform for decision-support application development. Which is an intellegent set of information. Can these products, which are solutions for problems in

Decision Support System -- Computer Programs

A History of Multidimensional Database Development

different categories, make my decision support app dev infrastructure better? Find tools that work well together. You're better off planning on having one set of tools today and a completely different set of tools five years from now.

Change of plan -- plan on changing: tools, business strategies, business tactics, IS architectures, infrastructures, data structures, marketplace. How much change can this tool handle? Category creep -- cumulative effect of small category changes can make analysis impossible. No good answers today. You have to store summary data as they existed in different points of time. (Change category = change identity). But if you do that the database gets huge. The only other way is to consolidate dynamically which is too resource intensive.

spring 1996	May 6, 1996	So much data, so little time.	Arbor Software's Essbase 4.0	Arbor Software Corp Sunnyvale, CA	PC Week	\$37,000 for five user licenses	Decisison support software. Multidimensional database server. includes related scoring key and artifice
----------------	----------------	----------------------------------	------------------------------------	--	---------	--	---

Decision Support System -- Computer Programs

A History of Multidimensional Database Development

(800) 858-
1666
<http://www.arborsoft.com>

on testing methodology.

Requires special care by administrators in designing the multidimensional database, that is the key to the product's power.

Essbase makes it easy to plug in numbers to find out how they affect the financial model. (write back to the MOLAP database, for "what if")

New intelligent calculation feature, that recalculates values in cells affected by updates, speeding up online updates of data.

Spreadsheet clients work with Excel and Lotus 1-2-3.

Administrators will get little feedback if something is set up wrong along the way.

Essbase has a financial orientation, but Essbase is not the only game in town. Competitors include: Hyperion Software Corp's Hyperion OLAP, Oracle Corp's Express Server, and Pilot Software Inc's Pilot Decision

Decision Support System -- Computer Programs

A History of Multidimensional Database Development

Support Suite.

Match Essbase server with more powerful proprietary interfaces for data manipulation, such as Cognos' Powerplay 5.0, or with the included spreadsheet clients.

Deep analysis: double click to retrieve and display the highest level of summarized values for all dimensions in the database. Double clicking on any dimension drills down to the next level of detail. Double clicking the right mouse button drills back up to the previous level.

Visual clues, modified colors and font styles, come with a trade-off : dramatically slower times to refresh screens after drilling or pivoting.

Retrieval Wizard: dimensions, conditions, and axis of orientation for displaying dimensions.

Data pivoting: easy as dragging and dropping a dimension between the x and y axes on the spreadsheet.

Decision Support System -- Computer Programs

A History of Multidimensional Database Development

Reporting: For more attractive reports, Essbase users can turn to the formatting and output capabilities of Excel and 1-2-3.

But will it work? Design tools are more than adequate, but administrators still need to spend a lot of time working with their data sets.

Outline Editor, Outline Format:
Collapsible outline format represents the multidimensional data structure. Highest level represents the dimensions with each indentation representing a lower level of detail. Lower levels consolidate to higher levels within the same outline branch.

Essbase supports complex formulas and calculation scripts to provide maximum calculation flexibility in data models.

Designing the multidimensional schema requires careful planning. Mistakes in assigning dimension attributes can result in explosive growth in database size when data is loaded. Placing dimension members in

Decision Support System -- Computer Programs

A History of Multidimensional Database Development

incorrect order can result in lengthy recalculation times or miscalculations.

Access control -- powerful three-tiered scheme with a global level for an entire database, individual user, and user group, and a local data level. Access rights include: none, read, write, calculate, and design.

Tuning capabilities: control if index, data, and calculator cache sizes; sparse and dense dimension designations; two data compression schemes; and cube locking options.

Bring on the data:
Essbase loads data from Excel, 1-2-3, ASCII text, and SQL data sources.

SQL drivers support only SQL Server 4.2. Essbase did not accept the popular comma-delimited ASCII format.

Dynamic drill down only works with SQL Server 4.2.

Read article for platforms and platform requirements, assembly requirements.

Decision Support System -- Computer Programs

A History of Multidimensional Database Development

spring 1996	May 27, 1996	Beyond pie charts and spreadsheets.	?	?	Computerw orld	?	Decision support software. Technology Information Data mining
							James Martin, data visualization software, includes related article on how to start visualizing A solid ID architecture must be established before a company can make effective use of visualization software.
spring 1996	Jun 3, 1996	Browse corporate data instantly; InfoAssistant creates reports and queries in plain English.	Asymetrix Corp's InfoAssistant1 .0	Asymetrix Corp Bellevue, WA (800) 448- 6543 (206) 462- 0501 http://www.asymetrix.com	InfoWorld	\$695	A database browser to access data as easily as browsing the Internet. Windows 3.x, Windows 95, Windows NT. Users begin by creating a database connection configuration and a Fact Base that describes which objects will be in a catalog. Defining further parameters is easy. Performing queries and creating tables and reports is very easy. Queries can be saved and used for instant views. The online help and wizards are all excellent.

Decision Support System -- Computer Programs

A History of Multidimensional Database Development

						Infoassistant directly supports E-mail and the Internet.
spring 1996	Jun 3, 1996	DecisionSuite brings OLAP to multiterrabyte databases.	Information Advantage's DecisionSuite 3.5	Information Advantage Inc. Minneapolis, MN (612) 820-0702	InfoWorld	\$29,995 per server.
						InfoAssistant lacks built-in security, and the drill-down features are weak. Data access software for OLAP of extremely large data sets.
						DecisionSuite will allow users to view OLAP reports from a World Wide Web browser.
						DecisionSuite has intelligence that can decide on the fly how much of the processing should be done by the database server and how much can be done beforehand by the OLAP engine, which can do its own predefined table joins. This approach, in which both the SQL database and the OLAP engine process queries, promises to be more scalable.
						By giving users access to OLAP reports from a browser you won't need to replicate data marts all over the country.
						WebOLAP requires no client server other than a Web browser. It is an

Decision Support System -- Computer Programs

A History of Multidimensional Database Development

HTML application that sits on top of the Web server, which communicates with DecisionSuite server through common gateway interface (CGI). Users are limited to viewing and formatting predefined reports.

DecisionSuite 3.5 is available this month on Unix servers and Windows 3.1 and Windows 95 clients.

spring 1996	Jun 10, 1996	Smart, very smart. And Lucky.	DSS Web	?	PC Week	?	Patrick Houston
							MicroStrategy's DSS Web allows users to mine data through the Net.
							Turns economics of data mining on its head, no front end costs-- not in client hardware, software, support, or connectivity. Suddenly, it becomes cost effective for corporations to open up their data warehouses to broad constituencies -- suppliers, customers, and even consumers.
spring 1996	Jun 10, 1996	Platinum spruces up Forest & Trees: Version 4 combines	Platinum Technology Inc's Forest & Trees Version	Platinum Technology Inc. (800) 442-6861	PC Week	\$795 per enterprise seat and \$995 for an admin	Forest & Trees 4.0 is a business intelligence product that combines app building with ad hoc query and analysis capabilities.

Decision Support System -- Computer Programs

A History of Multidimensional Database Development

EIS app building, analysis	4	http://www.platinum.com	version.	Also includes a graph engine with wizards that perform functions such as local sorting, filtering, and summarization.
----------------------------	---	---	----------	---

Dynamic crosstabs for multiple variable and time-series analysis.

Supports 25 data sources as well as open database connectivity standard (ODBC).

summer 1996	Jul 29, 1996	Oracle leads OLAP pack to the Net.	Oracle's Express 6.0	?	PC Week	IQ/LiveWeb is priced from \$3,995 to \$19,995	Oracle leads OLAP pack to the Net. Others offering new products. Speedware Media/Web, IQ/Objects, IQ/LiveWeb
summer 1996	Aug 5, 1996	Forest & Trees cuts path to data needed for decisions.	Platinum Technology Inc's Forest and Trees 4.0	Platinum Technology Inc Oakbrook Terrace, IL (800) 378-7528 http://www.platinum.com	PC Week	\$995	Forest & Trees gathers, analyzes, and reports on data stored in legacy databases and lets developers build applications quickly while giving executives ready access to information. The advanced application building capabilities in F&T 4.0 set it apart from competitive products in the managed query field, such as Brio Technology Inc's BrioQuery, Cognos Corp's Impromptu, and Software

Decision Support System -- Computer Programs

A History of Multidimensional Database Development

AG's Esperant.

However, Cognos' PowerPlay matches F&T in application building strength and goes the Platinum product one better with multidimensional modeling and automated transformation of source data into PowerPlay's model.

For companies that must give analysts heavy duty OLAP applications for slicing and dicing multidimensional data, PowerPlay is a stronger choice. But if executive information systems and managed queries are what is needed, Forest and Trees will serve very well.

F&T includes native driver support for querying data from: DB2, Microsoft and Sybase SQL Servers, and Oracle databases. ODBC data sources are also supported, and F&T includes its own SQL engine to access ASCII, Btrieve, DataEase, dBASE, Lotus 1-2-3, Notes, and Excel, Paradox, and R:base files.

Does not provide direct support for concurrent access to multiple data sources.

Decision Support System -- Computer Programs

A History of Multidimensional Database Development

F&T contains number of admin options to manage a diverse group of end users.

F&T also provides govenors to prevent excessive use of system resources: Limits on amount of time a query is allowed to process and the number of rows a query can return in its result set. Can also set blackout periods, during which users could not access the system.

Installation took only minutes.

summer 1996	Aug 12, 1996	IBI engine links corporate data to the Web.	Information Builders Inc's WebFocus	Information Builders Inc. (212) 736- 4433 http://www.ibi.com	PC Week	\$6,500 for a Windows NT server, and up to \$105,000 for a large Unix server or IBM mainframe installatio n	WebFocus is a server based reporting and analysis engine for use on the Internet or corporate intranet. WebFocus allows users to access corporate data--including data from client/server and legacy systems-- over the World Wide Web via a Web browser. WebFocus retrieves data, converts it and transforms it into HTML reports with no coding on the developer's part. The reporting tool lets users who have
----------------	-----------------	--	---	---	---------	---	---

Decision Support System -- Computer Programs

A History of Multidimensional Database Development

only a Web browser run standard reports and parameter queries, and create ad hoc reports.

Content providers can also generate business information for intranet users by adding a hyperlink to current Web pages.

Partitioned multitier reporting minimizes network traffic by allowing administrators to run reports on the same server as the Web server, or on a separate application or database server.

summer 1996	Aug 12, 1996	Internet-mania spurs demand for document management.	Interleaf's RDM text processing software	?	Computerw orld	?
			Interleaf's BusinessWeb			

The increasing use of the Internet is creating a need for document management systems that can be integrated into Web sites.

KMS, a commercial printing service, gives customers the ability to access its document repositories and check on the progress of their orders independently, using Interleaf's RDM text processing software, and distributes Interleaf's BusinessWeb to its customers.

Decision Support System -- Computer Programs

A History of Multidimensional Database Development

fall 1996	Sep 16, 1996	Data warehousing on NT picks up speed.	Microsoft's SQL Server IBM's Visual Warehouse 2.0 Informix Software's MetaCube 3.0 Praxis Inc's OmniReplicat or Planning Science's Gentia Web Server Andyne Computing Ltd's GQL 4.1	?	InfoWorld	MetaCube is between \$500 and \$1,000 per user.	<p>Includes related article on document management.</p> <p>Microsoft's SQL Server database on Windows NT being beefed up to make NT a more viable data mart platform.</p> <p>SQL Server 7 will gain a series of API's that will allow third-party vendors and users to take operational data and transform it to a decision-support format.</p> <p>Microsoft expected to announce new meta data standard on Windows NT that will let third parties, such as query tool vendors, integrate their wares without having to understand the underlying data format. Microsoft's Exchange messaging platform will let administrators better manage data warehouses.</p> <p>IBM will unveil features of Visual Warehouse 2.0, a tool for building data marts, or small data warehouses, including an NT engine, ODBC support, and a more scalable architecture.</p>
fall 1996	Sep 16,	IQ Software	IQ Software's	?	Computerw	IQ/Live	IQ Software will give away 50,000

Decision Support System -- Computer Programs

A History of Multidimensional Database Development

1996	gives out its reporting software for free.	IQ/Live Web	orld	Web from \$3,995 to \$19,995	copies of its IQ/Live Web intranet reporting software. (for one client copy)	
					IQ/Live Web lets a user query a database, create a report, and place it on a server.	
fall 1996	Oct 21, 1996	Query, reporting tools offer data access, OLAP functions.	Arbor Software's Crystal Info for Essbase, Arbor Software's Crystal Reports for Essbase, Oracle's Discover, Actuate Software's Actuate Report Server	?	InfoWorld ?	Arbor Software, which sells the Essbase database for OLAP, has opened up that multidimensional database to Seagate Software's Crystal Info and Crystal Reports reporting tools. Similarly, Oracle has revamped and renamed its reporting software to add OLAP functions to Oracle's relational database. And, Actuate Software has focused its efforts on report distribution with its Enterprise Reporting software. Crystal Infor for Essbase contains Crystal Reports 5.0 reporting tool with added analysis features, and Crystal Info Scheduler for batch or offline execution of reports.

Decision Support System -- Computer Programs

A History of Multidimensional Database Development

The connection to Essbase is via Arbor's OLAP API, promising better performance than other front-end tools for Essbase.

Crystal Info Server lets users off-load report execution from desktops to one or more servers. The software supports 20 different formats for exporting reports, including Microsoft Excel. Reports can be distributed via e-mail or over the World Wide Web via Arbor's Essbase Web gateway.

Oracle's new Discoverer is designed to bring ad hoc OLAP functions to the end-user of Oracle's relational database. However, it does not work with Oracle Express, the company's multidimensional database.

Discoverer will come in an end-user edition and an admin edition that lets admins create the business abstraction layer, which will define OLAP functions for end users.

The Actuate Report Server handles the distribution of report data. Actuate's software features hyperlinks that

Decision Support System -- Computer Programs

A History of Multidimensional Database Development

fall 1996	Oct 28, 1996	Analytica 1.0.1 surpasses spreadsheets.	Decisioneerin g Inc's Analytica 1.0.1	Decisioneerin g Inc Denver, CO (800) 289- 2550 http: //www.decisioneer.com	PC Week	\$695	<p>connect to other reports or HTML pages.</p> <p>Dicisioneer Inc's Analytica 1.0.1 is a Macintosh- based modeling tool that provides an intuitive scheme for building visual layouts of business models and improves on the decision-support capabilities of standard spreadsheets.</p> <p>The program uses a palette of object types to show a model's structure directly instead of obscuring it behind a grid interface. Users can choose from input variables, probabilities and index nodes to flexibly create and modify such data structures as lookup tables.</p>
-----------	-----------------	---	--	---	---------	-------	--