

# Criteria for OLAP Evaluation

**Author:** Dhananjay Patil  
**Organization:** Evaltech, Inc.  
**Evaltech Research Group,  
Data Warehousing Practice.**  
**Date:** 08/13/04  
**Email:** erg@evaltech.com



## Abstract:

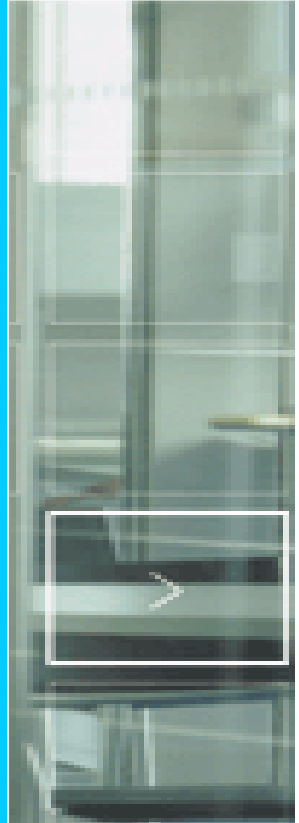
To carry out a quantitative comparative evaluation, the criteria need to be structured further and to be prioritized through use of a formal method for setting priorities in the context of a specific application.

Does the OLAP tool being evaluated have enough capacity for **Decision Support System** application?

This article includes the detailed description of OLAP evaluation criteria.

## Intellectual Property / Copyright Material

All text and graphics found in this article are the property of the Evaltech, Inc. and cannot be used or duplicated without the express written permission of the corporation through the Office of Evaltech, Inc.



## Summary

To carry out a quantitative comparative evaluation, the criteria need to be structured further and to be prioritized through use of a formal method for setting priorities in the context of a specific application.

Does the OLAP tool being evaluated have enough capacity for **Decision Support System** application?

This article includes the detailed description of OLAP evaluation criteria.

## OLAP Evaluation Criteria

Does the tool being evaluated have enough capacity for your DSS application?

Whether the tool is able to scale to the number of dimensions required by DSS application?

To evaluate this, you need to know what dimensions are required, and therefore to do a requirements analysis.

While that approach is specific to ROLAP development, the first three steps of the approach apply equally well to other types of OLAP development. The systems approach describes the steps to be followed in arriving at basic measurements tracked in OLAP applications, and dimensions that will be used to view and segment the units of analysis whose measurements are being tracked, into groups sharing values of attributes that are components of the dimensions.  
The approach will get to the number of dimensions required for the application, and then compare tools according to their capacities to fulfill the requirements

Sometimes ad hoc analyses need to access the basic data underlying the data mart or data warehouse. Does the tool have this "drill-through" Ability or not?

Most OLAP tools will interface with Oracle, Sybase, and Informix, and many have no problem with MS SQL Server. But obviously care must be taken here to see that the OLAP tool supports the version of the database for the data warehouse

Ability of the OLAP tool to integrate directly with relational databases and non-numeric relational data, ROLAP tools have a built in advantage in this respect. But individual MDOLAP tools have established connectivity with various relational databases, as Sybase IQ. But there is need to know how tools being considered interface with relational database? This criterion is a specification of the previous one applied to relational databases.

OLAP tool must have the ability to perform calculations at run-time, because the requirements of ad hoc queries are often unanticipated by designers and may not have been directly accommodated in the aggregation or compilation schemes of OLAP tools. The ability of a tool to perform calculations rapidly at run-time is a critical determinant of ad hoc query capability .

OLAP product must have the data loading performance. This criterion is more critical if the DSS is a frequently updated database. Depending on the business environment, loading can range from a daily affair on

✓ **Up to an annual update**

Know what update frequency is required, and calculate the required carrying capacity of the tool accordingly. Match the requirement with benchmark results on the tool being considered.

✓ **Openness to standard reporting tools**

In particular, can the product work along with the approved reporting tools in your organization? Or if not so constrained can it work with considered reporting tools?

✓ **Ad hoc query performance**

Benchmarks need to be run to compare products on ad hoc query performance. Benchmarks should test query and reporting tools alone and in combination with OLAP products. Do OLAP products meet requirements for ad hoc query performance? How do they compare to one another when working along with your database? Benchmarks need to be run on comparative performance, and against any standard specified in the requirements analysis.

✓ **Training required for the OLAP product.**

Most OLAP products require only light end user training. But how do they compare to each other? And what kind of training is needed for power users and data warehouse/data mart administrative users? There should be ability to produce full multi-user read-write applications with industrial strength security. This comes down to ability of the tool to prototype the DSS application. Is the required security available in the prototype? How does it benchmark?

✓ **There should be ability of the tool to integrate with organization's enterprise wide environment by using standard middleware and client/server communications.**

✓ **Cost of ownership, training, and installation.**

✓ **Ability to manage a three-tier decision support system in real-time**

The OLAP tool needs to be able to manage query and report traffic simultaneously with communications with the data warehouse or data mart relational database server, with other analytical server-based data mining tools, with groupware applications, and with the Internet.

✓ **Support in the tool for workflow automation**

The OLAP tool may need to support a programmed workflow as an important component. Can it be integrated with workflow tools that produce this kind of application?

✓ **Support for tuning against tool produced performance statistics**

Does the tool provide statistics that you can use for performance tuning? Without these probably won't be able to get the performance need. Extent of analytical capabilities relative to what DSS application needs, and compared to other tools.

✓ **OLAP tools vary widely in their analytical capabilities**

Some produce basic analytical statistics, while others provide substantial statistical analysis capability. What type of need in application? What kinds of capabilities will have outside of the OLAP tool? If these are substantial, how will the OLAP tool interface with your analytical tools?

✓ **Support for OLE, and COM or CORBA distributed architecture**

How distributed will your DSS architecture be? Tools will differ in the degree to which they can make use of distributed computing capabilities.

**Conclusion**

At the time of planning to implement a distributed architecture, an OLAP tool should have following criteria.

- Support for real-time query governing and flow control.
- Support for custom application development with standard front – end tools such as Visual Basic, Powerbuilder, and C++.
- Tool support for Internet deployment.
- Support for Dimension Table designs

This criterion applies to ROLAP tools. It refers to support in constructing star and snowflake designs, and for queries against star or snowflake dimensional data models.