Using OLAP to improve your performance

A SUMMARY OF THE OLAP SURVEY 4 RESULTS

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Introduction

Online analytic processing (OLAP), or multidimensional analysis, has evolved into a vital and irreplaceable component of business intelligence (BI) applications. Any business issue worth contemplating is multidimensional by nature. OLAP reveals these dimensional relationships within your data, for example: analyzing revenue, cost, or profit against time, geography, and product.

The OLAP Survey 4 is one of the most comprehensive reviews of this technology—looking at customer perceptions and intentions, customer issues, and how vendors fare with the products they offer. The survey draws on the responses of 971 people answering dozens of questions on their OLAP purchase and usage.[1] It includes the results from a German-language version of the questionnaire, which was introduced to provide a broader geographic balance of users and products.

This is the fourth edition of The OLAP Survey, and it is over 300 pages in length. It benefits both from the experience of the previous three editions and the ability to analyze trends based on four data sets. No vendors are involved in any way with the survey. Unlike some other surveys, it is not commissioned, suggested, sponsored, or influenced by vendors.

Cognos profile

Cognos, an IBM company, is highly popular among OLAP users. In the OLAP survey sample, IBM Cognos PowerPlay® had the third largest share of users, after Microsoft Analysis Services and SAP BW.[2] Other surveys put this product share even higher.

Among specialist business intelligence vendors, IBM Cognos PowerPlay was also cited as the most likely product to be evaluated before buying an OLAP solution.[3] Looking at companies evaluating in terms of size, IBM Cognos PowerPlay's appeal was balanced across all sizes of organizations.

About this summary

This summary captures the survey's broad themes, in particular, those of interest to someone considering OLAP to solve a business issue. Therefore, it draws on the survey to provide information about:

- The benefits current users see with OLAP

- Current users' applications of OLAP

- Most common data sources and OLAP products chosen

- Customer problems and issues, and

- Buyer influences

The OLAP Survey 4 is published by Survey.com. More information is available at www.survey.com/olap

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[1] p. 20, The OLAP Survey 4.

[2] p. 35, The OLAP Survey 4.

[3] p. 89, The OLAP Survey 4.

Benefits and Applications of OLAP

OLAP is an approximately $4 billion market. This market is a satisfied one, according to results in The OLAP Survey 4.

Of those already using OLAP today, more than 90 percent would like to deploy the solutions more widely, and 38 percent say they plan to purchase more licenses of their current products.[4] The projects were generally successful, with 31 percent achieving or exceeding business goals, and almost 73 percent saying they had at least largely met their goals. Allowing for recently started, uncompleted projects, this is a good achievement.[5]

To understand more clearly the business benefits realized, the OLAP Survey 4 examined eight benefit areas.[6]

Faster or more accurate reporting

Faster and more accurate reporting, perhaps predictably, was the most likely benefit to be achieved. The vast majority—80 percent—said that this benefit had been proven, and over 40 percent said they had measured the improvement. This benefit seemed to be obtained consistently, regardless of organization size or location.

Better business decisions through more thorough or timely analysis

This is, of course, a worthwhile and highly desirable benefit, but it has one major snag: it is not possible to predict it while planning and attempting to cost-justify a project. Thus, while all OLAP projects would hope to achieve this benefit—and in the most successful projects, this benefit alone will pay for the whole project many times over—few projects could be justified in a hard-headed way in the hope of one day achieving it. In the results, close to 19 percent said they had proved and qualified this benefit, 37 percent said they had proved it, but not measured it, and an additional 33 percent either formally or informally claimed this benefit.

Improved customer satisfaction through enhanced product and service quality

Many CRM analytics and balanced scorecard projects hope to achieve this benefit. The theory is that better analysis of the quality and delivery of products and services will lead to improvements in customer satisfaction. For this to work properly, the service delivery and quality data needs to be tracked and analyzed, and OLAP tools provide a good way of doing this. Thirty-four percent said they had proven this benefit, and an additional 13 percent claimed the benefit.

Saved other non-IT costs (e.g., inventory, waste, financing)

Many of the more operationally focused OLAP projects claim to have uncovered wasted costs in the form of unused or slow-moving inventory, wasted resources, etc., which could be slashed once discovered. Over 32 percent said they had proven this benefit and almost 12 percent claimed the benefit. The percentage of "don't know" and "no answer" was over 30 percent on this benefit, perhaps suggesting that many sites do not even look for these savings.

Increased revenues through better sales and marketing analysis

Organizations often use this other CRM-related benefit as the justification for projects. The survey showed that 26 percent had proven this benefit, and 15 percent claimed this benefit.

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[4] p. 1, The OLAP Survey 4.

[5] p. 5, The OLAP Survey 4.

[6] pp. 55-59, The OLAP Survey 4.

Saved headcount in business departments

Over 33 percent of respondents said they had proven this benefit, and almost 10 percent claimed this benefit. Of particular interest for this benefit, only 1.3 percent said it had become worse (meaning an increase in headcount resulting from the implementation of the system).

Reduced external IT costs (e.g., hardware, support)

This is a tough benefit to achieve, as you must offset the costs of the OLAP application from any savings. Despite this, a third of the respondents said they had proven this benefit, presumably because the OLAP application(s) often replace older, more expensive predecessor systems.

Saved headcount in Information Services

As with other headcount savings, not everyone wants to achieve this benefit. In some cases, organizations need fewer people to support the OLAP implementation than the perhaps more labor-intensive legacy reporting applications that it replaced, and in these cases, savings are possible.

Who is using OLAP and why?

This year's OLAP Survey 4 sample had heavy representation from healthcare/pharmaceuticals, IT, insurance, and retail. Consumer packaged goods manufacturing, retail, utilities/energy, and transportation had the highest rates of OLAP usage across industries.

Percentage of OLAP usage for selected industries[7]

Industry	Average % OLAP usage	% IBM Cognos PowerPlay usage
Healthcare/Pharma	8.5%	16%
Information Technology	8.0%	9%
Insurance/Div. financial	7.1%	9%
Consumer packaged goods	6.1%	8%
Business consulting/professional services	5.4%	3%
Manufacturing – Process	3.4%	4%
Transportation	3.4%	4%

The table below illustrates the answers from The OLAP Survey 4's question, "What is the primary purpose of the (OLAP) application(s)?"

OLAP applications[8]

Primary purpose of application	2004 results %	IBM Cognos PowerPlay %
General data warehouse reporting	47%	48%
Planning and forecasting‡	42%	33%
Sales and marketing analysis	38%	50%
Budgeting‡	33%	18%
Profitability/Yield analysis	26%	22%
ERP reporting	25%	22%
Executive information system	25%	21%
Financial consolidation & statutory reporting‡	24%	15%
CRM	16%	20%
Balanced scorecard‡‡	14%	12%
Logistics	14%	10%
Manufacturing production analysis, reporting	13%	16%
Activity-based management	12%	14%
HR planning/reporting	12%	7%
Quality analysis	10%	12%
Supply chain analysis	9.7%	13%
Healthcare or medical reporting	5%	10%
Scientific analysis	3%	2%
Clickstream analysis	2%	1%
Number of applications per site	4.2	3.8

The variety of applications shows the versatility of the product. Its top applications: general data warehouse reporting, planning and forecasting, sales and marketing analysis, and budgeting also demonstrate the value of OLAP compared with typical reporting against relational databases. People using OLAP in the sales and marketing or financial departments are unlikely to be highly technical users. Yet, to do their jobs effectively, they need to be able to see information from a variety of perspectives.

Sales and marketing managers need to evaluate sales performance over time, in specific geographies, based on price and audience type. Financial managers need to have layers of data underneath their spreadsheets to back up their assumptions and decisions. OLAP meets the needs and use styles of both of these audiences.

Web and extranet deployment

According to The OLAP Survey 4, respondents using IBM Cognos PowerPlay had a median Web deployment of 45 percent, ahead of Business Objects and second only to MicroStrategy.[9]

In terms of extranet deployment (providing Internet access to OLAP data to outsiders such as partners, customers, and suppliers), 14.1 percent of IBM Cognos PowerPlay sites said they had deployed OLAP over an extranet, which was above average. Customers further indicate the intention to deploy OLAP more widely with extranets, meaning this number should increase over time.

‡ IBM Cognos 8 Planning is purpose-built consolidation, budgeting, planning, forecasting, and financial reporting software for the office of Finance. It integrates with IBM Cognos PowerPlay to enable multi-dimensional analysis for financial data.

‡‡ IBM Cognos Metrics Manager is purpose-built scorecarding software, certified by the Balanced Scorecard Collaborative. It delivers linked scorecards, strategy maps, and connections to the underlying data sources (OLAP, relational data, and other sources) so users can drill into scorecard results to get the underlying detail.

Both IBM Cognos 8 Planning and Scorecarding products are part of the integrated corporate performance management offering from Cognos.

[7] p. 30, The OLAP Survey 4.

[8] p. 190, The OLAP Survey 4.

[9] p. 200, The OLAP Survey 4.

Buyer influences, data sources, and other specific results from The OLAP Survey 4

In this section, we will look at some specific results from The OLAP Survey 4 in terms of the areas of greatest interest to companies considering who should be on their OLAP shortlist:

- Functionality and performance

- Data sources for OLAP products

- Implementation

- Common customer issues

- Buyer influences.

Functionality and performance

When choosing an OLAP solution, most people focus on product functionality and ease of use. As in previous survey years, these two issues continued to be ranked at the top, ahead of price and performance. IBM Cognos PowerPlay was in the top tier for product selections that favored functionality and ease of use.[10]

Respondents had typically valued functionality more than performance when choosing products. However, according to author Nigel Pendse, the survey suggests this was a mistake and provides evidence that query performance should be treated as the single most important factor to consider when choosing OLAP products.

Looking at query performance, MicroStrategy, SAP BW, and BusinessObjects all had slow query times, even allowing for data volumes. Compared to these vendors, IBM Cognos PowerPlay had the fastest median query time, with a significantly higher performance rate.[11]

## Data sources for OLAP products

OLAP draws on data sets that contain the information in multiple dimensions. These data sets are in turn drawn from relational sources.

Oracle databases were by far the most popular data source (28.3 percent) followed by Microsoft (22.2 percent), flat files (17.6 percent) and IBM databases (12.2 percent). NCR Teradata was cited as a data source by 2.3 percent of sites.[12]

Among sites using Microsoft databases, IBM Cognos PowerPlay was the most popular third-party OLAP tool.

Among IBM database sites, Microsoft Analysis Services, Essbase, and IBM Cognos PowerPlay were the top three products.

Among NCR Teradata sites, Business Objects, Microsoft Analysis Services, and IBM Cognos PowerPlay were the top three tools of choice.
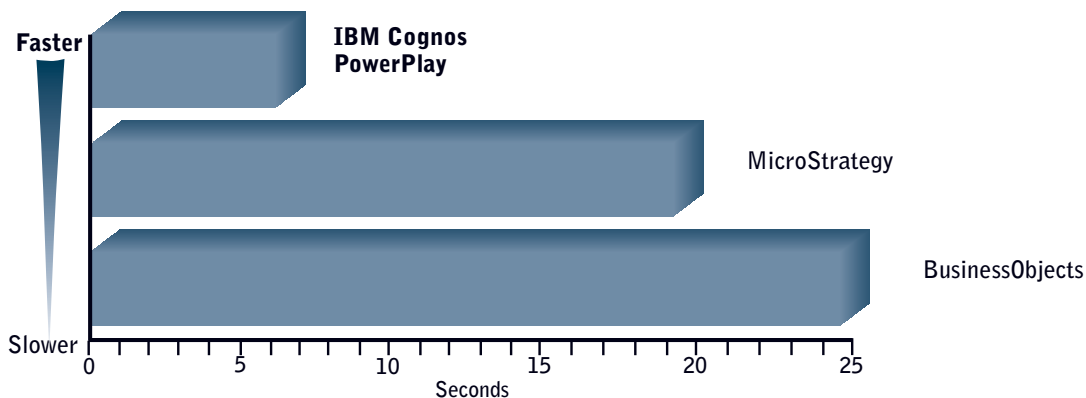
Median query times for selected products, in seconds.

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[10] p. 72, The OLAP Survey 4.

[11] p. 263, The OLAP Survey 4.

[12] p. 232, The OLAP Survey 4.

Implementation

With OLAP deployments, as with many things in business, speed is a virtue. The OLAP Survey found that implementation times made a big difference in the achievement of business goals. Projects that went live within three to six months were much more likely to meet their goals than those which took longer.

Product choice also has a significant impact on implementation times. Among the business intelligence suite vendors, IBM Cognos PowerPlay had the fastest median implementation timeline, with an average length of five months.[13]

Common customer issues

Deploying enterprise-scale software is a difficult business. However, customers spending tens or hundreds of thousands of dollars expect many more benefits than headaches. As demonstrated in the benefits section, and through customer intention to purchase more software, satisfaction levels with OLAP are striking. Part of this equation is the relatively low levels of customer problems.

Twenty-eight percent of sites reported no significant technical or business problems with their applications, which was an improvement over previous years.

In addition, although any problem limiting customer success is a vendor's concern, people-related or internal problems—such as company politics and administrative problems—were as likely to be reported as technical or data problems that are more in a vendor's specific area of control.

On the whole, product failings cause less of a problem than fractious people. On average, IBM Cognos PowerPlay had fewer serious technical problems reported per site than SAP BW and BusinessObjects, which were worse than average. In terms of the ratio of technical to environmental problems, IBM Cognos PowerPlay came in with a better score than IBM Cognos TM1, MicroStrategy, SAP BW, and Business Objects.[14]

When problems do occur, product support becomes a significant factor. In terms of support quality ratings, MIS Alea and IBM Cognos TM1 scored well, followed by Oracle OLAP Option. IBM Cognos PowerPlay was the only other product rated above average.[15]

Data volumes—is bigger better?

It clearly costs more to deploy applications with larger data volumes: beefier hardware, more consulting and probably more expensive software, particularly at the high end. But are expensive sites with larger data volumes deriving more business benefits than those with smaller volumes?

This is not an academic question, because it is often possible to choose how much detail to include in an application, and it is usually not clear if the hoped-for extra benefits that arise from having more detail available will outweigh the additional costs.

On the whole, there does seem to be a very small increase in benefits with higher input data volumes, but goal achievement is highest with small projects, perhaps because larger, complex, more ambitious projects are more likely to hit problems and take longer.

Some benefits clearly seem to increase with larger data volumes, including increased revenues and saving non-IT costs, but others, including better decisions and better reporting seem to be almost unaffected by data volumes.

Given the increased risks and higher costs, there seems little business benefit in most cases to move beyond 100 GB of input data if there is the option not to.[16]

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[13] p. 161, The OLAP Survey 4.

[14] pp. 180-181, The OLAP Survey 4.

[15] p. 117, The OLAP Survey 4.

[16] p. 255, The OLAP Survey 4.

Buyer influences

After setting the business and technical requirements for a software solution, determining the shortlist is the next important task.

Industry analyst research is the single biggest factor influencing the creation of short lists. Overall, 44 percent of OLAP buyers cited industry analyst research as an influence. This rose to 50 percent in the largest deals.

Gartner Research was the most influential analyst, selected by 31 percent of the survey. The OLAP Report was second, with 30 percent.

Gartner regularly profiles Cognos in the business intelligence marketplace. Gartner rankings, opinions, and research are available through Cognos at **www.cognos.com**.

BELOW AVERAGE	ABOVE AVERAGE
BusinessObjects	
MicroStrategy	
IBM Cognos PowerPlay	
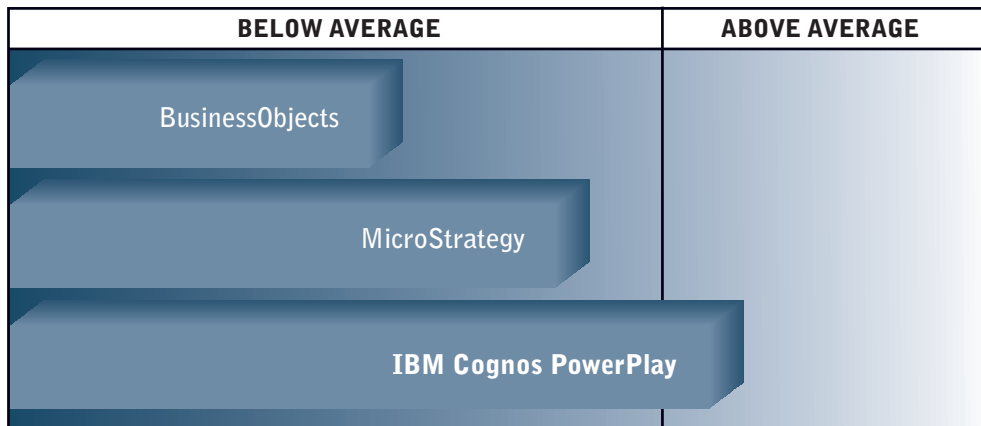
Support quality ratings by selected product.

Summary

OLAP's multidimensional analysis lets business users analyze information and measure performance. It is a vital component of business intelligence, and a growing area of BI. Companies deploying OLAP realize a number of proven benefits. This combination of need and proven benefit contributes to one of the highest satisfaction rates in technology.

IBM Cognos PowerPlay is the number one OLAP product in the world. When looking at business issues or opportunities in your company, you should consider OLAP as one of the potential solutions. When considering OLAP, you should consider the acknowledged leader in this space, Cognos.

About Cognos, an IBM company

Cognos, an IBM company, is the world leader in business intelligence and performance management solutions. It provides world-class enterprise planning and BI software and services to help companies plan, understand and manage financial and operational performance. Cognos was acquired by IBM in February 2008. For more information, visit http://www. cognos. com.

For more information

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