

Business Intelligence for SUPRA[®]

A Business Benefits Overview

WHITE PAPER

Cincom In-depth Analysis and Review



SIMPLIFICATION THROUGH INNOVATION[®]



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An Incremental Approach

An increasing number of business executives and managers recognize that key decision support resources can be found in the data that operational IT systems generate. These resources can help form the answers to business questions that range from simple reporting to inferential analyses.

- Am I targeting the right customers for our new sales initiative?
- Do I know the impact on product sales by discontinuing a service?
- Can I more accurately plan on seasonal buying trends?
- Am I looking at the right measurements for ranking my suppliers?
- Can I more accurately predict the profit lifecycle of a product?
- What dependent variables affect the initial revenues for new products?

To support using data resources in order to make these decisions, IT vendors created specialized systems, such as data warehouses and data marts, to turn operational data into a format that supports analysis of relationships and trends.

However, traditional commercial data warehouse and analytic solutions can cost hundreds of thousands of dollars to implement, and incur proportionate ongoing expenses. The software costs alone average \$3.5 million over a five-year period for the major enterprise warehouse vendors. Solutions have typically been based on complex, proprietary software technology and sometimes require proprietary hardware. Cost, complexity and risk are often a barrier to adoption by small and medium organizations. Data warehouse and analytic technology have not been available for agile projects where componentization, standards and Java support are important.

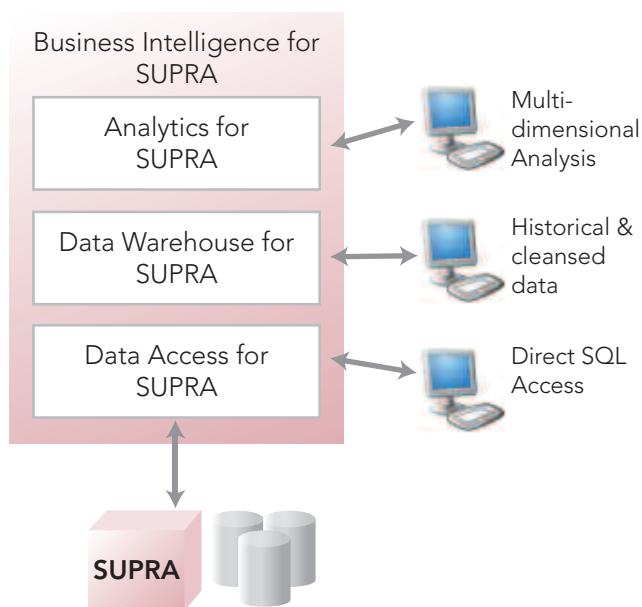
Cincom Systems, Inc. recognizes that many enterprises have depended upon operational systems that use our SUPRA PDM database, and therefore have an extensive history of operational data that can be an instrumental resource for decision support. Working with open source technologies and our industry-leading professional services for database technologies, Cincom has built three solutions that provide Business Intelligence for SUPRA.

The three solutions are:

Data Access for SUPRA gives you direct access to SUPRA operational data through the SQL language.

Data Warehouse for SUPRA, optimized for SUPRA, allows you to structure data, including data from other systems, toward your business intelligence objectives and includes the ETL tools needed to load the warehouse.

Analytics for SUPRA provides the components for easy development of analytic applications, provides the reporting framework to design and produce reports and provides the technology to develop analytic and ad hoc queries.



Data Access for SUPRA

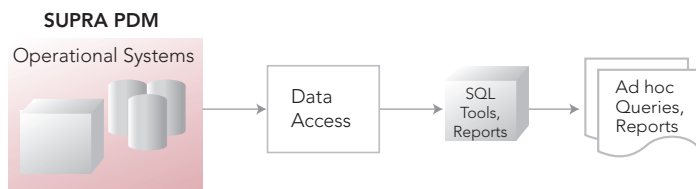
Access to SUPRA PDM data in a timely, ad hoc manner is vital to the operation of an organization. Many SUPRA PDM users are using custom procedures that extract the data, transform it into a relational format and load it into a relational database. However, the data may not be current, and the lack of flexibility in the customized inquiry limits the usefulness of all the data in the SUPRA PDM database. New requirements for additional data usually involve complex database development projects requiring a thorough knowledge of PDM data structures and file navigation.

In order to provide users of SUPRA PDM the ability to access data in real time and in a relational format, Cincom provides Data Access for SUPRA.

Features of Data Access for SUPRA

- Provides dynamic and real-time access to PDM data
- Uses common desktop tools to access non-relational PDM data
- Accesses PDM data directly in real time
- No custom programming required to access PDM data
- No rewriting of applications to access PDM data
- Provides a reporting framework to design and deploy reports without programming
- Delivers reports in formats such as PDF, HTML, XLS, CSV and XML files

Data Access for SUPRA uses standard SQL APIs to access data in real time, thus minimizing the time required to develop new applications, reducing development costs and extending the life of your SUPRA PDM database.



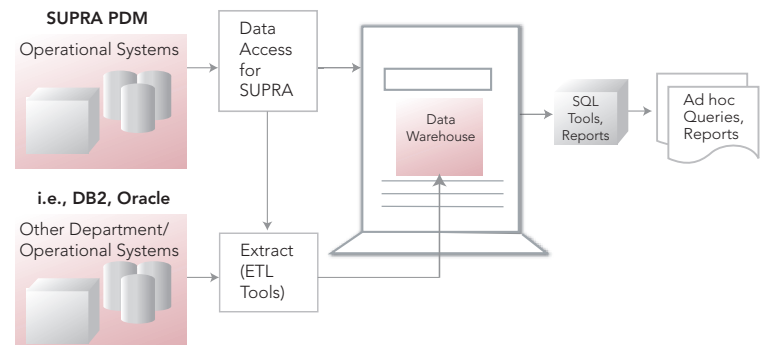
Data Warehouse for SUPRA

A Data Warehouse is a computer database that collects, integrates and stores an organization's data with the aim of producing accurate and timely management information and supporting data analysis.

Data Warehouse for SUPRA provides the Extract-Transform-Load components to help you develop and automate the construction and updating of your warehouse data. Data can be directly extracted using Data Access for SUPRA, or it can be extracted using SUPRA utilities. Data Warehouse for SUPRA supplies a relational database with support for developing J2EE and .Net applications. Also a reporting framework is provided to allow you to design and deploy reports without the need to program.

Features of Data Warehouse for SUPRA

- Reshapes your host data into the physical schema you design for the warehouse database
- Conforms heterogeneous data from multiple sources
- Cleanses data to enforce your business rules
- Handles large-volume initial loads and incremental updates
- Constructs ETL processes with a graphical tool without the need for programming



Data Warehouse for SUPRA also provides a mainframe extract utility to unload SUPRA PDM data into flat files. This can be useful for very large extracts where direct access to SUPRA PDM across the network may not be practical.

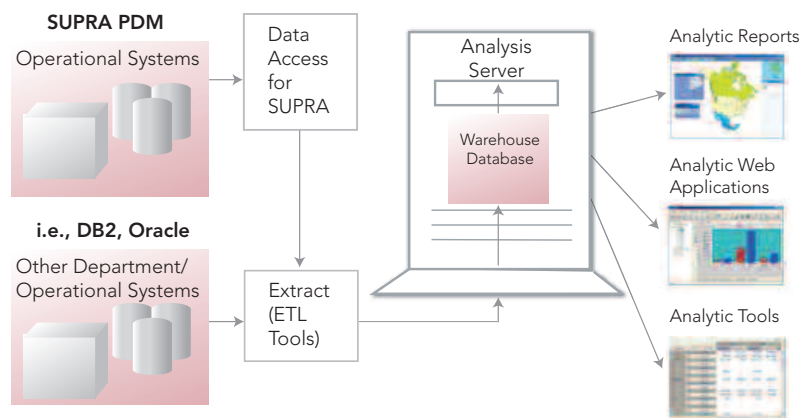
Analytics for SUPRA

Analytics for SUPRA enables multi-dimensional analysis of information from your operational SUPRA databases. This information is expressed in business metrics that can reveal product performance, profit trends or productivity comparisons. Multi-dimensional analysis not only allows you to quickly reveal business performance and trends, it also allows you to explore new analysis areas. Ad hoc analysis can let you reveal trends and performance metrics that would normally remain hidden if traditional querying and reporting techniques were used.

Features of Analytics for SUPRA

Analytics for SUPRA builds on advantages provided by Data Warehouse for SUPRA and Data Access for SUPRA. An analytic server is provided allowing you to organize data using the measures and dimensions that are important to business intelligence objectives. Components are provided to allow the easy development of analytic applications. A reporting framework is provided to allow you to design and produce reports using analytic data. Also, tools are provided to help you develop analytic queries and to perform ad hoc analysis of data.

- An analytic server provides scalable, multi-user, OLAP query support.
- Application development components make it easy to present OLAP pivot tables and charts.
- Support for Microsoft Excel allows easy creation of Excel pivot tables and charts using drag and drop operations.
- A reporting framework allows you to easily design and deploy OLAP reports.



Competitive Advantages

Optimized for SUPRA PDM

The process of transforming host data into a data warehouse can be complex and labor-intensive. For multi-dimensional processing, data must be “re-shaped” into a form that is suitable for analysis. This is usually referred to as the Extract, Transform, and Load (ETL) phase of data warehouse construction. Here, the data is extracted from SUPRA PDM, cleaned, conformed and reorganized, and then loaded into a data warehouse that is optimized for analytic processing. For SUPRA PDM, this can be especially complex as SUPRA implements specialized structures for navigation and performance optimization. Also, analytic applications and tools are typically implemented on Windows, UNIX or Linux, and the data types used by the host PDM must be properly converted. Business Intelligence for SUPRA understands the SUPRA PDM data structures and how to optimize the extraction of host data. It understands the platform-specific data types and how to convert them to forms that are suitable for multi-dimensional analysis. This automates the ETL process and frees you from the development of complex host extraction and conversion implementations.

Cost-Effective

Business Intelligence for SUPRA is a cost-effective, add-on solution set for SUPRA PDM. In comparison, third-party warehouse products can be very expensive. Also, third-party tools do not provide an ETL solution that integrates with SUPRA. So you also have the added cost of developing custom ETL procedures.

Low Risk

The cost-effectiveness of Business Intelligence for SUPRA gives you the flexibility to try solutions and demonstrate the benefits without a large software investment. For example, a “data-mart” solution could be implemented where the analysis focuses on a single subject area such as customers, inventory, shopping baskets and so on. Also, Business Intelligence for SUPRA is highly componentized and the components use standard interfaces. This gives you the flexibility of replacing or augmenting components.

Incremental Investment

Business Intelligence for SUPRA is implemented in layers providing you with the flexibility to solve a number of business intelligence problems. You can directly access your host database using SQL-based tools and applications. You can reorganize your transactional data into a data warehouse to integrate with other data and provide historical information. You can also use multi-dimensional analysis to reveal product performance, profit trends or productivity comparisons.

Incremental Services Delivery

Business Intelligence for SUPRA is designed not only for selective, incremental implementation and use, but also for implementation by IT personnel who have worked with SUPRA and have a working knowledge of developing OLAP applications.

For those companies that do not have all of these skills, Cincom offers standardized services offerings for each layer or solution that you decide to implement. Designed to make the solution functional in your environment, these services offerings can be expanded and extended to include specialized services you might need.

Further, Cincom has an extensive array of DBA support services for those companies that need additional SUPRA services on an ad hoc or ongoing basis.

Buy or Build?

The Business Intelligence for SUPRA solution can be built using third-party data warehouse and analytics products. To extract, transform and load SUPRA host data, custom procedures and programs must be developed. Unless the analysis requirements are very simple and data volumes are small, the functionality provided by Data Access for SUPRA and Data Warehouse for SUPRA provides significant cost savings over developing custom ETL processes.

Custom extraction processes for SUPRA usually take the form of COBOL host applications that navigate SUPRA PDM files and produce text files. These text files are typically used to load SQL warehouse databases on Windows or UNIX-based servers. The applications are written using the PDM data manipulation language (DML) and are specific to the database schema being used.

Developing custom extraction programs requires staff with programming skills in the SUPRA data manipulation language (DML) and SUPRA file navigation. Since the target data warehouse is typically SQL-based, programmers must also have good SQL knowledge. In order to extract data with reasonable performance, programmers must understand the best strategies based on PDM linkpaths, indices and keyed record access. Extraction programs must understand the host data types such as EBCDIC, packed and COBOL data formats, and convert these into types that are understood by the SQL warehouse database.

Extracting the data is only the first step. Data must also be transferred to warehouse servers, transformed into shapes that are suitable for analysis and loaded into warehouse databases. Custom transformation programs may be needed to de-normalize data for efficient analysis and to cleanse data for conformance to standards. Custom data-loading programs may be needed to implement recommended data warehouse techniques such as surrogate keys and to handle changes to dimensions.

Also, this set of procedures must scale with increasing volumes of data. This often means being able to run all extraction, transformation and load steps in parallel. The ability to “pipeline” or “stream” data from one step to the next so that data flows directly from extraction through transformations and into the data warehouse is also important.

Even for small projects where it appears cost-effective to develop custom ETL procedures, the long-term costs must be weighed. Much of the ETL will be coded in programs that may be difficult for new staff to understand. Data volumes may increase making it infeasible to update the data warehouse on a frequent basis. Also, it may be necessary to integrate new, disparate data sources with your SUPRA data.

Business Intelligence for SUPRA solves the challenges above by providing efficient SQL access for SUPRA and ETL components for reshaping and loading data using recommended data warehouse practices. Graphical components are used to develop views of PDM files and ETL steps. Programming skills and detailed knowledge of PDM applications and navigation are not required, and the Business Intelligence for SUPRA scales with increasing data volumes.

Justifying the Cost

You may think that the primary consideration in the development and implementation of any data warehousing solution is cost. But what is cost? The cost of any software license and support can be a daunting and confusing experience due to the complexity of licensing and support terms and conditions stipulated by different software vendors. To effectively create a cost-comparison model between a Business Intelligence for SUPRA solution and other third-party data warehouse solutions, we need to look at what goes into the total cost, and how Cincom's solution is much more cost-effective.

First, it is important to understand that a Business Intelligence solution is much more than a data warehouse and is not just an individual repository product. Rather, it is an overall strategy, or process, for building decision support systems and a knowledge-based applications architecture and environment that supports both everyday tactical decision-making and long-term business strategizing. The Business Intelligence environment enables a business to use an enterprise-wide data store to link information from diverse sources and make the information accessible for a variety of purposes, most notably, for strategic analysis. Business analysts can use the information for such strategic purposes as trend identification, forecasting, competitive analysis and targeted market research.

For Business Intelligence processing, data must be "re-shaped" into a form that is suitable for analysis. To achieve this re-shaping, SUPRA PDM transactional data must be extracted, conformed, reorganized and then loaded into a warehouse database that is optimized for analytic processing. Transforming SUPRA PDM data into a warehouse database would be very complex and labor intensive for third-party tools because they cannot do it effectively, and custom applications would definitely need to be written. However, Data Access for SUPRA allows you to directly access SUPRA PDM as relational data using SQL. Data Access for SUPRA optimizes the access and navigation of PDM files based on the information retrieved from the PDM directory (linkpaths, indices, and control keys). The ability to use the SQL language when extracting data from a host system can be a cost-effective, yet powerful advantage in the development of a data warehouse.

Also, high costs can inhibit the enterprise-wide adoption and timely implementation of third-party warehousing and analytic tools. Conversely, Business Intelligence for SUPRA, based on open industry specifications, works specifically with SUPRA PDM data and eliminates expensive or time-consuming processes to analyze the extracted data. Lower costs also result from faster implementation, increased developer productivity and ease-of-use and an integrated infrastructure, all of which are provided by the Business Intelligence for SUPRA solution.

In addition, with Business Intelligence for SUPRA, there is no need for expensive or extensive training to learn new tools or new systems. You can leverage the skills of your people by allowing them to work with systems they are already familiar with, becoming productive very quickly.

In conclusion, you may believe that along with the actual purchase price of new technology, other related costs – like training, installation and professional services – can add up to an expensive bundle. But, what is sometimes overlooked is that the hidden costs of maintaining the status quo can be even greater than implementing new technology. And going with new and unfamiliar third-party tools can also be cost-prohibitive.

And, of course, being able to make better business decisions can result in better products, better service, happier customers, increased sales and profits and all of the other trophies of a smartly run corporation – resulting in some companies becoming clear winners while others do not.

Getting Started

You may feel that you have all the decision support information you need to remain competitive, or you may have already bought or built a data warehouse-type solution. In this case, we hope you are satisfied and wish you good luck.

But in today's business environment, most companies are continually looking at how they can become leaner, faster or smarter than the competition. Business Intelligence for SUPRA can be an important solution to help you achieve growth, revenue or profit goals. To determine if Business Intelligence for SUPRA or any other analytic technology can provide benefits, you may wish to answer some questions first.

Remember the Business Mission

Too often we make decisions for all the wrong reasons. We may be seduced by the latest technology, or we may feel that since our competitor uses a certain solution, we should also. But if we are going to succeed in our industry or market, we need to understand what it is that can make us successful or outstanding providers.

For example, Cincom is successful in the manufacturing industry when we help our manufacturing clients be more competitive by providing them with software technologies that help them rapidly design and manufacture highly engineered products.

And, we are successful in the software development arena when we provide our clients with software development tools and environments that allow them to design, code and debug applications faster than their competitors.

If we make strategic business decisions that do not support these missions, our clients will not be successful, nor will we.

You probably already know your business mission – it's probably even written down somewhere. Use it as a guide in the succeeding steps.



Determine What's Needed

Next, you will want to decide what analysis needs to be performed and where the data resides. A good way to make sure you have covered all bases is to have each operational area that will (or should) be affected to develop a wish list of the types of reports, trends or analysis you think you need. Each item on the wish list should include who would use the results and for what purpose.

Then, compare each item with your business mission. Would the provision of a report or analysis support or strengthen the achievement or improvement of performance toward that mission? If not, don't discard the item; just make sure that it has less importance in the design and sourcing of your warehousing and analysis plans.

Now look at the operational systems that generate the data that will be analyzed. If the systems are enterprise-wide and reside on the same computing environment, your sizing and scoping tasks will be probably easier. If those systems reside on various different environments with different storage and language environments, then the task becomes larger. Just make sure that using that data for analysis supports the business mission.

Identify the Alternative Solutions

This is probably the easiest part of the process, especially if you have issued Requests for Proposal before. Your current IT vendors are a good place to start, as well as the market leaders in Data Warehousing, Data Mining and Data Marts.

Identify the Required Resources

Implementing and supporting the different alternatives probably represent different staff support costs. For solutions that come from a source other than your current IT vendors, you will either have to hire or contract for implementation and support. If the solution comes from a current vendor, you probably already have the skill sets needed to support the solution.

You may wish to augment your current staff during the initial implementation phase. Cincom offers a comprehensive suite of professional services offerings to define, implement, and test whatever level of the Cincom solution you chose. Just as our Business Intelligence solutions are incremental and cost-effective, we can provide augmented support for your IT staff with these services.

Combined with our Remote DBA and Support services, we can offer a complete array of services when, and how you need them.

Determine the Return on Investment

Knowing the costs and payoffs of the solutions you consider are imperative. Included in these costs will be costs of additional personnel, additional software, additional hardware capacity and support. Balanced against these are the payoffs you receive in better operating efficiencies, increased revenue or profit improvement.

Your Cincom Account Executive, using your sizing and analysis requirements, will develop a comprehensive cost estimate. Then using your payoff estimates, he/she can determine what your return on investment should be, and when you will begin recognizing it. He/she will provide you with that ROI analysis and model so that you can perform "what if" estimates or ranges so that you are comfortable and confident with choosing Cincom to meet your Business Intelligence needs.

About Cincom

For nearly 40 years, Cincom's software and services have helped thousands of clients worldwide simplify the management of complex business processes. Cincom specializes in the areas of business where simplification brings the greatest value to managers who want to grow revenue, control costs, minimize risk and achieve rapid ROI better than their competitors.

Cincom serves clients on six continents including BMW, Citibank, Boeing, Federal Express, Ericsson, Penn State University, Milacron, Siemens, Rockwell Automation and Trane.

For more information about Cincom's products and services, contact Cincom at 1-800-2CINCOM (USA), 1-513-612-2769 (International), send an e-mail to info@cincom.com or visit the company's website at www.cincom.com.

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