PACKAGED ANALYTIC APPLICATIONS: ACCELERATING TIME AND VALUE

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Many organizations struggle to deliver compelling business intelligence solutions that meet the information needs of business users. The truth is, BI applications *are* hard to build. Developers need to get accurate requirements (difficult), synchronize data, extract, transform and load (ETL) and BI models (challenging), create compelling metrics (hard), design a visually intuitive dashboard (challenging), and populate it with clean, accurate and timely data (almost impossible).

And that's the easy part. Getting executive support, bridging business and IT needs, balancing speed and standards, hiring the right people and managing change can torpedo even best-in-class BI programs. Moreover, as the pace of technology innovation accelerates, business users are demanding more functionality, such as Web and mobile interfaces, advanced visualization, support for both structured and unstructured data, and sub-second response times made possible with in-memory technology. Clearly, BI managers face steep odds when it comes to meeting the needs of data-hungry business users.

PACKAGED ANALYTIC APPLICATIONS TO THE RESCUE

To succeed in this increasingly demanding environment, BI managers should consider implementing packaged analytic applications. These are prebuilt BI applications aligned with functional and vertical business domains that are built on a preintegrated, scalable data warehousing infrastructure. They are geared to organizations that want to accelerate the time it takes to deploy BI solutions and deliver an analytical complement to their packaged operational applications.
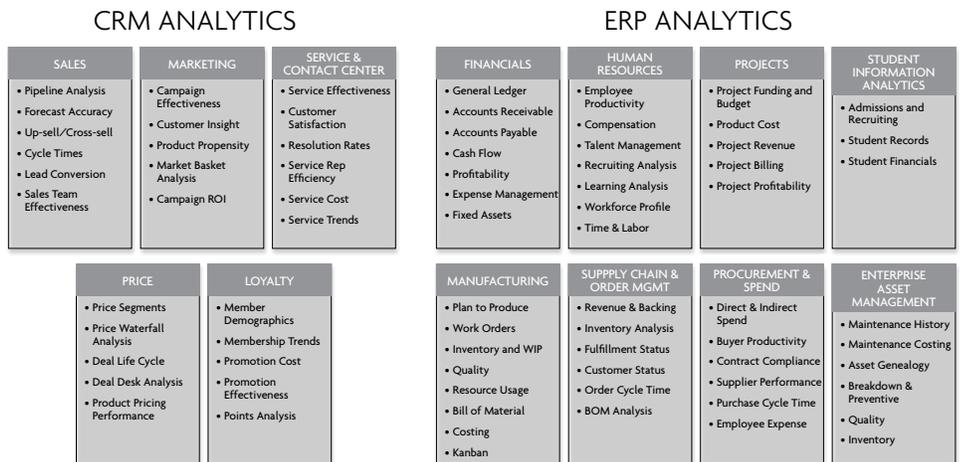
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A packaged analytic application integrates all the components required to deliver a BI solution:

1) Connectors to various packaged operational systems

2) An enterprise data model

3) ETL tools

4) A BI semantic layer

5) Query and reporting tools

6) Predefined metrics, reports and dashboards

Vendors of packaged solutions integrate these components using industry best practices and techniques. This means that customers get a best-in-class BI solution in weeks rather than months if they were to build a solution from scratch. Moreover, analytic packages are usually tailored to specific business domains, ranging from sales, marketing and finance to human resources, operations and supply chain. The best analytic packages all run off the same enterprise model and platform so that customers can start with one functional application and extend it with a comprehensive, integrated, enterprise BI solution one application at a time.

Customer cases. A lot of organizations have weighed the benefits of building versus buying BI solutions and have opted for packaged analytic applications. Oracle (the sponsor of this report) reports that more than 4,000 customers use its Oracle BI Applications, which support more than 100 applications, 3,000 reports, 9,000 metrics and 500 dashboards across dozens of functional areas (see Figure 1).

Figure 1. Oracle BI Applications

CRM ANALYTICS

SALES	MARKETING	SERVICE & CONTACT CENTER
• Pipeline Analysis • Forecast Accuracy • Up-sell/Cross-sell • Cycle Times • Lead Conversion • Sales Team Effectiveness	• Campaign Effectiveness • Customer Insight • Product Propensity • Market Basket Analysis • Campaign ROI	• Service Effectiveness • Customer Satisfaction • Resolution Rates • Service Rep Efficiency • Service Cost • Service Trends

PRICE	LOYALTY
• Price Segments • Price Waterfall Analysis • Deal Life Cycle • Deal Desk Analysis • Product Pricing Performance	• Member Demographics • Membership Trends • Promotion Cost • Promotion Effectiveness • Points Analysis

ERP ANALYTICS

FINANCIALS	HUMAN RESOURCES	PROJECTS	STUDENT INFORMATION ANALYTICS
• General Ledger • Accounts Receivable • Accounts Payable • Cash Flow • Profitability • Expense Management • Fixed Assets	• Employee Productivity • Compensation • Talent Management • Recruiting Analysis • Learning Analysis • Workforce Profile • Time & Labor	• Project Funding and Budget • Product Cost • Project Revenue • Project Billing • Project Profitability	• Admissions and Recruiting • Student Records • Student Financials

MANUFACTURING	SUPPPLY CHAIN & ORDER MGMT	PROCUREMENT & SPEND	ENTERPRISE ASSET MANAGEMENT
• Plan to Produce • Work Orders • Inventory and WIP • Quality • Resource Usage • Bill of Material • Costing • Kanban	• Revenue & Backing • Inventory Analysis • Fulfillment Status • Customer Status • Order Cycle Time • BOM Analysis	• Direct & Indirect Spend • Buyer Productivity • Contract Compliance • Supplier Performance • Purchase Cycle Time • Employee Expense	• Maintenance History • Maintenance Costing • Asset Genealogy • Breakdown & Preventive • Quality • Inventory

Oracle customers say the packages delivered fast turnaround and significant value. Here are some examples:[1]

• A broadband networking provider deployed packaged analytic applications for order management, financials and supply chain, each of which took a team of three people less than 10 weeks to deploy.

• In only four months, a manufacturer of building products implemented a procurement and spend analytics package that pulls data from 14 sources, allowing it to claim more than $1 million in supplier rebates within a few weeks of going live.

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[1] From customer interviews and *Oracle Business Intelligence Applications*, by Simon Miller and William Hutchinson, Oracle Press, 2013.

- A coatings company implemented two major applications — supply chain/order management and procurement/spend — running against two instances of Oracle E-Business Suite in six months.

- A European bank implemented sales analytics at an underperforming branch in three months, and shortly thereafter the branch rose from 23rd to third in overall sales because it was able to do a better job of cross-selling more products to account holders.

Time and costs. Figure 2 shows how packaged analytic applications shrink the time required to complete the four major tasks involved in building a BI solution: 1) back-end ETL mapping; 2) designing the data warehouse data model; 3) defining metrics, reports and dashboards; and 4) training and rolling out the solution. The biggest gains happen in the ETL mapping step. Packaged solutions can reduce the time required to map source data to a target data model by half. And since creating ETL maps is the most labor-intensive part of building a BI application, this generates a significant savings in time and money.

Figure 2. Time required to deploy a custom-built vs. a packaged analytic application.
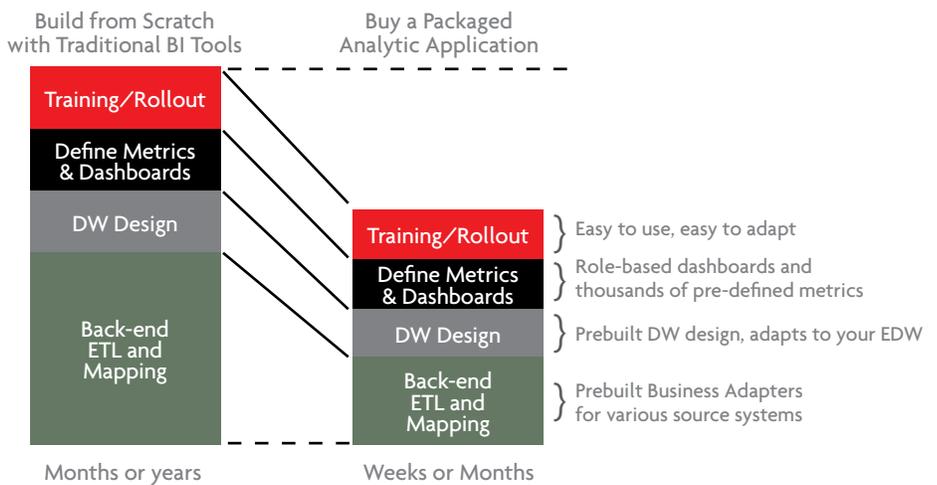
This assumes, of course, that the package contains ETL mappings for your operational systems. Niche package vendors, such as Salesforce.com, may specialize in supporting a single operational application, but large vendors support dozens of operational applications out of the box, including those from competitors. For example, Oracle BI Applications has predefined ETL mappings for SAP applications and IBM Maximo, as well as Oracle Fusion Applications, Oracle E-Business Suite, PeopleSoft, JD Edwards and Siebel. Some also offer a universal adapter that enables customers to integrate nonsupported source systems as well, which expands the attractiveness of packaged analytical applications for customers with heterogeneous source systems.

The only development tasks that an organization needs to complete to implement analytic packages are: 1) install the software; 2) configure the application; 3) define security and roles-based views; 4) refine reports based on user feedback; and 5) test, train and deploy. In contrast, there are many additional tasks required to build and deploy a custom application, such as purchasing a variety of tools, installing and configuring those tools, creating a data model and ETL mappings, creating a metamodel for BI tools, and creating reports and dashboards from scratch.

The rule of thumb is that if a packaged vendor supports a majority of your source systems out of the box, you should definitely consider implementing a packaged analytical application. In this case, the gains achieved from deploying a package outweigh the costs of customizing the package to support your remaining requirements. If the package supports less than a majority of your source systems, you'll have to more carefully evaluate the pros and cons of your specific situation.

PACKAGED APPLICATIONS IMPLEMENT BI BEST PRACTICES

Enterprise view. An advantage of packaged analytic applications is that they enable organizations to deploy BI on a small scale for a single department and then expand seamlessly to support other departments using the same model and platform, delivering a consistent view of enterprise information. A robust packaged analytic application can help an organization create an enterprise BI environment on a single, integrated platform across all functional areas. (For examples, refer to Figure 1.)

In contrast, most organizations, in a rush to meet business needs, build distinct data marts for each department, none of which use the same data model or dimensions. The roll-your-own BI approach usually creates dozens of analytic silos that must eventually be replaced or consolidated into a single enterprise data warehouse at great expense.

Predefined content. Another advantage is that analytic packages embed best practices for analyzing data in each domain. That is, the packages contain predefined metrics, reports, dashboard templates and guided analytics that customers can use to track and analyze the performance of business functions. These metrics and reports represent the domain knowledge of experts who have implemented BI solutions at multiple clients and understand the best way to view and analyze information in specific functional areas. Customers can use the default reports and dashboards or tailor them to unique information requirements.

For example, a good analytical package might help a company optimize its orders and supply chain. It will provide reports that enable business users to:

- Understand billings, bookings and backlog, both current and over time.

- Understand where bottlenecks that affect or delay revenue recognition occur.

- Provide access to inventory levels and "finished goods bill of materials" structures.

- Understand cycle times throughout the order-to-cash process, as managed through the ERP system.

Transactional updates. Some packages also close the loop between analytical and operational applications using guided analytics. These are pieces of conditional logic that guide users through a series of reports or actions to address a business issue or anomaly in the data. Some guided analytics instruct users to drill down to related reports, while others trigger alerts or recommend various actions based on values in the data (e.g., update a database, kick off a workflow). Vendors that own both operational and analytical packages can tightly integrate the applications with closed-loop workflows, adding value beyond the standalone package. For example, an inventory analysis may reveal low inventory for a fast-moving good. The analytical system issues an alert notifying the product manager to order more product and perhaps suggests an amount and a shipper based on predefined rules.

Integrated data model. Most analytics packages support an integrated data model that consists of dozens of subject areas across multiple business functions and industries. Companies can install one subject area to get going and then add other subject areas later on. The integrated model conforms dimensions across subject areas to ensure that new applications integrate with the old ones and data remains consistent across all downstream reports and dashboards. For example, an organization might install a sales pipeline application and then add a sales performance module later on, or branch out into other functional areas, such as purchasing, supply chain or talent management. The integrated data model ensures that all reports use consistent data and metrics.

Finally, the best analytical applications run a robust BI platform that enables organizations to deliver reports and dashboards via the Web or mobile devices without additional programming or configuration. They incorporate new interactive visualizations, such as trellis charts, tree maps and bubble charts, that enable users to explore data at the speed of thought and then publish their findings as interactive dashboards to colleagues in their department or beyond, depending on permissions.

WHAT PACKAGES DON'T DO

Of course, packaged analytic applications are not a panacea. If an analytics package does not support the specific analytical subject areas your organization needs (e.g., sales, procurement, talent management), then it may not make sense to invest in it. Or if the package doesn't support your company's source systems, the cost to customize and upgrade the application may outweigh its benefits. Or perhaps the package is missing functionality your users require, such as mobile delivery or advanced visualization. In each of these cases, you will need to assess whether it makes sense to customize the package to support the functionality you need or build it from scratch.

And not all packaged analytic applications are created equal. Some lock customers into inflexible data models and outdated technologies that are on different release cycles. Companies soon outgrow these types of packaged analytical applications or customize them so much that they are impossible to upgrade. In other cases, the analytic packages become another data silo that costs time and money to integrate later on. In other words, a poorly designed packaged analytical application creates a nightmare with no easy fix.

Vendor resources. Creating a robust packaged analytical application requires a huge commitment from the vendor. Very few companies are up to the task. Some may start fast and fade as they get bogged down updating ETL mappings with every new release of supported source systems. Or their environment becomes overly complex and costly as they extend their architecture to support customer-driven customizations and unique security models. Or they run out of time, money and energy to keep enhancing the software with critical functions like double-byte language support or hot new features such as mobile dashboards and in-memory visualization.

So you need to evaluate your packaged analytic application vendor as much as its software. How committed is the vendor to delivering packaged analytical applications? How big are its development and maintenance teams? How deep are its pockets? How does this fit into its larger strategy? How willing is it to support operational packages from competitors? You need to factor in all these questions when purchasing packaged analytical software.

RECOMMENDATIONS

It's clear that packaged analytic applications promise a host of benefits and should be evaluated as part of any BI initiative. Every organization will need to apply a different calculus when deciding whether or not to make the leap into packaged analytical applications. Here are some things to consider:

1. **Packaged sources.** If your organization uses mostly off-the-shelf applications to run its operations, you should definitely consider implementing a packaged analytical application. Try to find a vendor that is large enough to offer a complete packaged suite of applications, including the ones you need to run your business, no matter how arcane. Also, make sure the package supports your particular source systems and has a flexible data model that you can customize and update easily when new releases of the application come along.

2. **Both packaged and unpackaged sources.** If your company has a mix of packaged and non-packaged operational applications, you'll need to calculate the costs of creating custom adapters to the nonsupported sources and extending the data model to support their content. If a majority of your source systems are supported, the cost-benefit analysis will likely tilt in your favor. Below that, it depends on how attractive the packaged content is to your organization.

3. **Mostly unpackaged sources.** Here, it makes more sense to build a custom data warehouse, unless of course your company plans to overhaul its source systems and replace them with more standard application packages.

4. **Existing data warehouse.** When an organization already has an enterprise data warehouse, there is a less obvious need for a packaged analytical application. But that doesn't mean you should rule out a packaged approach. If the data warehouse is underutilized and business users are not happy with the existing BI tools or reports, then a packaged approach might be just what you need to salvage a stalled or failing BI program. Since executives hate to throw good money after bad, they will be more receptive to a packaged approach that accelerates deployment and minimizes risk.

EVALUATION CRITERIA

Once you decide to make the leap into packaged analytic applications, you'll need to establish criteria for evaluating various packages. Here are some considerations:

• Does the package have sufficient functionality?

• Are the modules tightly integrated?

• Is the architecture consistent across all applications and modules?

• Does it use a common set of security, administration, development, API and scheduling tools?

• Does it support slowly changing dimensions?

• Are the applications tailored to your industry?

• Does it create a legitimate data warehouse?

• Does it use a model-driven approach to change management?

• Does it offer a rich set of configuration settings to tailor the application to your specific requirements without changing the core data model?

- Does it document how to upgrade customizations?

- Does it include best-of-breed tools for ETL, reporting, analysis and dashboards?

- Can it work with tools other than the ones included in the package?

CONCLUSION

Prebuilt analytical applications accelerate time to value and minimize the risk of a failed initiative. Moreover, the best ones are built using industry best practices and the latest technologies, meaning customers get a best-in-class BI solution. If a majority of your operational data resides in a packaged application, you should evaluate the value of a packaged analytical application for your organization.

FROM THE SPONSOR

Oracle Business Intelligence (BI) Applications, part of the Oracle Business Analytics product family, are complete, prebuilt BI solutions that deliver intuitive, role-based intelligence for everyone in an organization — from frontline employees to senior management — to enable better decisions, actions and business processes. Oracle BI Applications deliver the following key advantages:

Faster Implementation, Lower Risk and Better Business Results

The majority of BI solutions available are costly, require many months to implement and are difficult to modify as business requirements change. In contrast, Oracle BI Applications are prebuilt solutions designed for faster deployment at lower cost and lower risk, and with better business results. These solutions enable organizations to gain insight from a range of data sources and applications, including Siebel, Oracle E-Business Suite, PeopleSoft Enterprise, JD Edwards, Fusion and third-party systems such as SAP. Oracle BI Applications include prebuilt data models, more than 5,000 metrics and best practices based on Oracle's experience across tens of thousands of CRM and ERP automation implementations. In addition, Oracle BI Applications are built on the Oracle BI Foundation, a comprehensive, modern and market-leading BI platform. This enables organizations to realize the benefits of a packaged BI application, such as rapid deployment, lower TCO and built-in best practices, while also being able to easily extend those solutions to meet their specific needs or build completely custom BI applications — all on one common BI architecture.

Speed-of-Thought Performance

As analytic applications become more sophisticated and data volumes explode, the need for speed and efficiency is more important than ever. Oracle BI Applications are certified for use in conjunction with Oracle Exalytics In-Memory Machine without application changes. Oracle Exalytics In-Memory Machine is the industry's first engineered system for analytics that combines market-leading BI Foundation, in-memory analytics software, and best-in class hardware engineered and optimized to work together to deliver extreme performance for BI and Enterprise Performance Management applications. Users can visually navigate and drill into information at the speed of thought, without limits on the complexity of their questions or the volume of the underlying data. Oracle Exalytics drives a new class of smarter and more powerful analytic applications that simply isn't possible using conventional BI software and generic hardware configurations.

Decision-Ready Analytics and Best-Practice Content

The ability to monitor metrics and key performance indicators (KPIs) is the lifeblood of performance management. Oracle BI Applications include over 3,000 reports, 5,000 metrics and 500 dashboard pages across dozens of functional areas, as well as prebuilt ETL adapters and business logic to tap into a multitude of common operational applications and data sources. With Oracle BI Applications:

- **Finance professionals** have visibility into cash flow, gross margins, operating expenses, account balances and business unit profitability.

- **HR professionals** can gain insights into headcount trends, employee attrition rates and the effectiveness of training programs.

- **Procurement and supply chain professionals** can track parts and material trends, supplier performance, trade discounts and warranty return costs.

- **Marketing professionals** can monitor the efficacy of promotions and campaigns and make adjustments that maximize success rates.

- **Sales professionals** can more effectively forecast revenues and transactions, manage the pipeline and track key opportunities.

- **Service managers** can optimize call center and depot staffing levels, identify problem areas that need attention and respond more effectively to customer service calls.

- **Manufacturing operation managers** can reduce production costs, improve product quality and improve customer service levels.

- **Executives** can get cross-enterprise views of their businesses, incorporating metrics and KPIs from multiple lines of business and data sources.

Insight to Action

Historically, BI tools have been developed separately from line-of-business applications, requiring users to switch from one application to another when acting on their insights. Oracle BI Applications closes this analysis loop by enabling users to initiate workflows and business processes right from their dashboards. For example, a key element in effectively leveraging human capital is successful management of turnover. Using Oracle Human Resources Analytics, an HR analyst can quickly identify key employees who are at risk of leaving and determine whether individual salary actions are needed. If a salary action is required, the analyst can notify the supervisor to take action at the transaction level into the system of record by giving an off-cycle salary adjustment.

Mobile, Anytime, Anywhere

To compete effectively in today's marketplace, companies need to deliver the right information to the right person at the right time — wherever they are. Oracle BI Applications provide timely metrics, reports and proactive alerts on mobile and tablet devices with no further development.

For more information on Oracle BI Applications, please visit www.oracle.com/businessanalytics or contact your Oracle account representative.