

Put Rapid Development and Deployment of Analytics Within Users' Reach

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A quick look inside most enterprises reveals a majority of business users working without appropriate analytics. The analytics tools are there, but they are typically specialized tools designed for a limited number of users, and to generate highly sophisticated, very specific reports. The difficulty is in quickly accessing, reusing, or sharing this information across the organization. This leads to inefficiencies in locating and acting on business information, and translates into high development and deployment costs — especially if you consider costs on a per-user basis.

What would be required for more transparency and greater adoption of analytics across the company? Transforming analytic solutions from an “IT build” exercise to a selection of packaged, highly flexible, and modular applications for a broad set of users would reduce the costs of both development and deployment. Key features would include ease of

use, access to existing analytic resources, reliance on best practices, and reusability (see sidebar). The interface would also need to be tightly linked to users' roles and day-to-day tasks.

The extension of analytics to a broader user base is the idea behind SAP xApp Analytics. SAP xApp Analytics is a new breed of model-driven applications that can be rapidly modified, enhanced, and maintained to meet SAP customers' evolving needs. All SAP xApp Analytics applications are *composite applications*, categorized into 23 business packages and available to customers within just a few minutes of download from the SAP Service Marketplace at <http://service.sap.com/SWDC>.

Companies have already started using these composite applications, along with the SAP NetWeaver Visual Composer development environment, to build or customize their own portal-based analytics applications for a broad user

base. With this approach, even users with no prior experience with SAP, SAP NetWeaver BI, or Portals have been able to quickly deploy new applications across the enterprise. This article will show you how it's being done already, and how xApps tie in to daily business processes.

xApps: Incorporating Analytics into Business Processes

SAP xApp Analytics marks a departure from past analytics applications in two key ways: its flexible design and its focus on integrating with specific business processes.

Traditional analytics are based on historical data, intelligent forecasting methodologies, and algorithms that explore data rules and patterns. These applications operate “offline,” outside the flow of actual events. While they are useful for looking back, viewing measurements, and understanding variances, they offer limited help in reacting to dynamic, fast-moving business situations.

To adapt to this accelerated business pace, the focus turned to *real-time BI* that displays operational data in dashboards and monitors. But analytics must go even further — they must link the information in BI systems with the *execution of decisions*. Let's look at an example of how analytics can close the loop between information and action.

Consider a credit analyst working with mySAP ERP Credit Management who

What's Needed for Mass Adoption of Analytics?

- Preconfigured packaged analytic solutions using best practices for easy and inexpensive deployment
- Content architecture that allows for reuse
- Standard connections (via JDBC, XMLA, ODBO, etc.) to various data sources in SAP NetWeaver BI and/or OLTP
- Ability to quickly adjust existing analytic applications for new business needs
- Attractive and simple user interface

must ensure that appropriate risk controls are met for customers that have exceeded credit limits. For these high-risk customers, it's in the company's best interest to limit receivables and reduce the chances of nonpayment. As a result, the credit analyst constantly gets calls from sales asking if orders can be released for shipment.

SAP has developed a unique xApp Analytics solution that is embedded in this business process (see **Figure 1**). With the Blocked Order List interface, soon available within the credit manager's portal workspace, the credit analyst can check the sales orders that are blocked due to bad credit and view payment behavior, credit limit status per division, and other customer history — all from multiple data sources — in a single application on one screen. What's more, a simple click and the software releases or cancels the customer order in the backend system and notifies other pertinent systems. Now the credit analyst is in a much better position to respond to a nervous sales manager.

Such analytic composites demonstrate the real value of analytics: not just to view and distribute information, but to *take action*. SAP xApp Analytics enables business users to define strategic objectives and measurements and to act, guided by strategic insights based on their business functions and roles. And with model-driven tools available with the latest release of SAP NetWeaver, you can further tailor analytics to your business's specific needs.

Visual Composer: Tailor xApps to Your Business Processes

SAP introduced Visual Composer as part of the SAP NetWeaver offering in 2005, and with it a model-driven development approach to building applications for the portal. The most recent release (version 7) now includes many features that support analytics development.¹

¹ Visual Composer version 7 is currently in restricted shipment. General release is scheduled for August 2006.

Visual Composer comes with a BI Kit that offers connectors to multiple data sources and a wizard that helps users link the right KPIs to the xApp. During design, the businessperson combines the process flow with the data flow logic and intuitively designs the layout (see **Figure 2**). Visual Composer also provides easy access to advanced visualization features — including the rich, robust functions of Adobe Flex technology. The iViews rendered in Flex have been optimized by special UI designers specifically for a broad range of business users.

The Visual Composer design time enables the business user to combine the data from multiple sources. It allows SAP xApps to go far beyond simple reporting and provide interactive environments for quick navigation and search of information from many different systems of record or interactive, graphical analytic displays.²

² For additional background information, see the sidebar "Model-Driven Development with Visual Composer" in the online version of this article at www.SAPinsider.com.

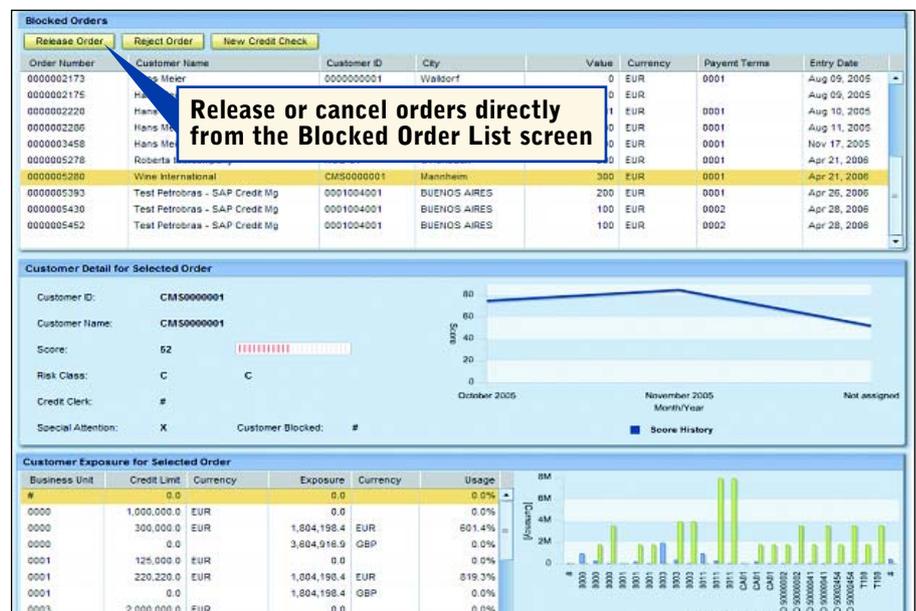


Figure 1 Blocked Order List: An SAP xApp Analytics Application Identifies Customer Orders Blocked Due to Credit Concerns

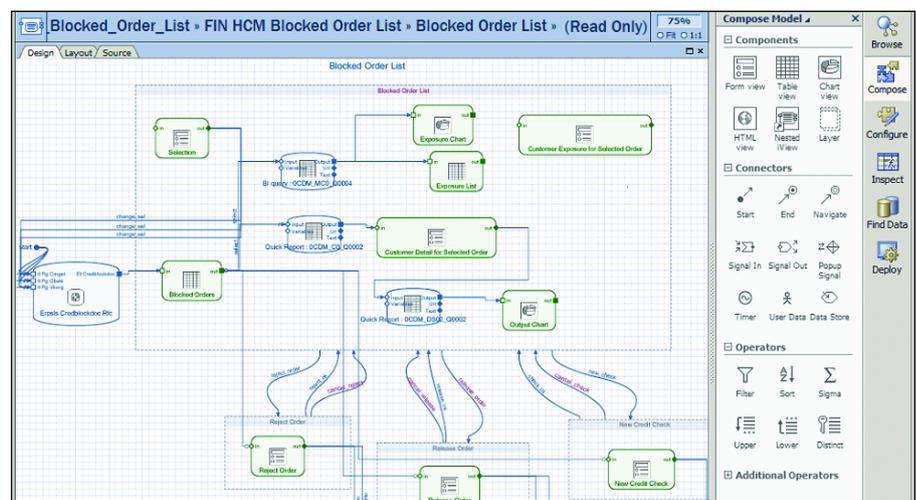


Figure 2 SAP NetWeaver Visual Composer — Blocked Order List Design Time

Four Steps to Building Your Own Composite Analytics with Visual Composer

SAP xApp Analytics is ready to use out of the box, but is also designed for easy modification to meet business needs.

In some cases, the xApp's process flow is based on specific process standards, so modifications are unlikely — for example, where the application supports a standard process for financial compliance such as Sarbanes-Oxley.

Other xApps serve as a starting point for fine-tuning reporting and KPI definitions. With help from Visual Composer, you can use xApps as the basis for custom development or to create a new composite application. Developing a composite application with Visual Composer involves a few basic steps:

Step 1: Set the Look and Feel of Your Interface

The design of composite analytics starts with a use case, which simply describes the scenario and business role to be supported. It outlines the variety of business user needs and behaviors based on their industry and role. This use case is tailored to a *floor plan*, which translates information requirements and user needs into an initial UI design (see **Figure 3**). If you're modifying the original reporting functions in the Blocked Order List xApp, for example, you choose from predefined patterns to create a model that can accommodate the additional charts or KPIs the credit analyst needs.

Step 2: Choose Component Patterns and Charts

The floor plan is the starting point of determining further design and process elements, including the process and data flow.

Step 3: Set the Process and Data Flow

Next you'll need to set up the process and data flow logic, with help from predefined

What Exactly Is a Composite Application?

The term *composite application* refers to an application that utilizes enterprise services to gain access to the functions and business objects of underlying mySAP Business Suite applications, as well as other systems.

Future composite applications rely on *enterprise services* — that is, Web services tailored to a role in a business process — to provide the mechanisms that allow service consumers like SAP xApps to use consolidated data from many different systems of record and provide functionality to change data or kick off processes. Descriptions of the interfaces to enterprise services are stored in a central Enterprise Services Repository.

For more information on SOA and enterprise services, as well as composite applications from SAP and partners, please visit www.sdn.sap.com.

1. Pick a floor plan.



Quad View



Hierarchical View

Floor plans are available to help set the look and feel of your analytics user interface.

2. Configure component patterns and chart types.

Static Atomic



Chart

Static Composite (related, but not interactive)

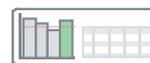


Chart + Table

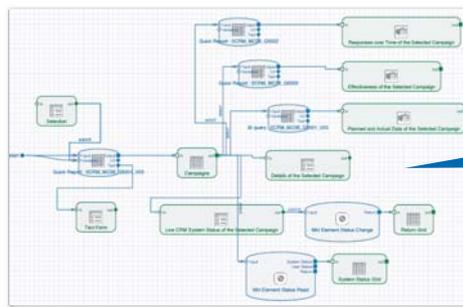
Dynamic Composite (related and interactive)



Table → (Chart + Form)

Examples of patterns and chart types are available to help determine formats for each set of queries and KPIs.

3. Create a data flow model in the Visual Composer design time.



Visual Composer supports drag and drop for setting data flow, screen design, and layout.

4. Adjust layout appropriately.



Visual Composer also allows you to adjust the final interface and individual iViews according to end-user needs.

Figure 3

The Four Steps to Building Analytics with Visual Composer

SAP models. Some SAP xApp Analytics applications are designed so that everything is handled through the navigation in the user interface. But more advanced SAP xApp Analytics applications may use mechanisms like guided procedures that support more complicated, flexible processes.³ You can configure these xApps to include additional steps by invoking interfaces in other applications or mechanisms like Adobe Interactive Forms.

Within Visual Composer, the BI Kit offers tools for building queries based on diverse data sources. It extends connectivity beyond the SAP backend system based on BI Java connectors⁴ and offers tools for building queries on diverse data sources. Through the BI Kit, the designer navigates either to BI using BI queries and query views or to a set of transactional enterprise services.

In the Blocked Order List, for example, the BI Kit wizard allows you to choose a BAPI from the ERP system, which gives access to the table of blocked orders, and find the query in the related BI system to display the customer's payment history. The same wizard can help a business analyst modify this xApp to add additional information from various sources.

By using nested iViews, you can also portion larger composite analytics as reusable objects. Instead of automatically loading all the data on the first load, the nested iViews load the data incrementally upon user's demand, improving performance significantly.

Step 4: Fine-Tune the Layout

Once the basics of the new xApp have been created, end users can review the application's design and performance. Technical changes can easily be made due to the modular approach of the application itself and the Visual Composer

design environment, which supports an iterative design process between the designer and the business user.

How One Company Used Visual Composer to Get Five Analytics Running in Four Weeks

So what does the full implementation process look like? Let's consider the example of global home appliance manufacturer Whirlpool Corporation — which implemented five analytics models to support human resources, cost center, and sales business processes — and how it quickly opens up analytics development to those without SAP system expertise.

Implementing new applications based on SAP xApp Analytics starts with the installation of Visual Composer on the portal. Installation is simplified because when VC is installed, it is also automatically installed into SAP NetWeaver Portal, and the 114 pre-delivered SAP analytics models can be imported into Visual Composer for immediate use.

To facilitate the rapid implementation of SAP xApp Analytics, SAP provides a five-day Quality Assurance (QA) service and an Analytics Starter Kit (ASK). The QA service helps the customer project team implement SAP xApp Analytics — from on-site training and planning to go-live check. The ASK provides supporting templates and documents across five development phases, starting with the Assessment Workshop.

Whirlpool used the ASK and QA service to implement five applications, the first of which was based on SAP's headcount model and provides quarterly diversity headcount information. The second was based on the SAP Line Manager (My Budget) model. Two more were custom-built for human resources and cost center accounting applications, and a fifth model was a real-time sales application. These analytics applications now access data in the SAP BW module, SAP R/3 Enterprise, and non-SAP systems.

In the first phase, Whirlpool's two-day **Assessment Workshop**, the company evaluated SAP-delivered content. They selected the appropriate SAP xApp Analytics applications to implement, and then conducted a simple gap analysis to determine the suitability of the SAP-delivered models for satisfying Whirlpool business requirements. Using the information from the Assessment Workshop, SAP provided detailed information on applicable analytic applications, the business processes being supported, the business value for developing these analytic applications, and the business owners for these applications, as well as the project timeline, team, and resources requirements.

For the **Project Kick-Off**, the on-site SAP Analytics team conducted a three-day training workshop and described the contents of the ASK, which included:

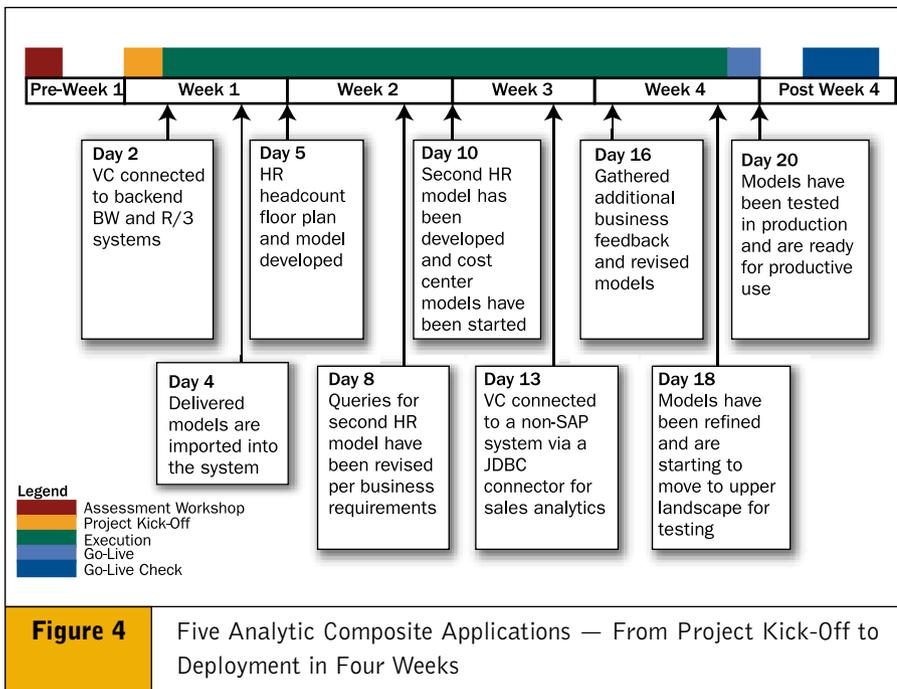
- A four-week project plan
- A roles and responsibilities matrix
- A blueprint template
- An implementation guide
- OSS guidelines
- A design guide and procedure
- Other templates, tips, and tricks

The **Execution** phase continued with a more detailed gap analysis for each SAP xApp Analytics application, according to Whirlpool's business requirements. After installing Visual Composer, the company implemented SAP xApp Analytics and connected it to backend SAP and non-SAP systems.

This phase was followed by a design process, in which the project team, together with key business users, defined their changes to the predefined applications. The team created the supporting queries in the SAP BW module and then revised the analytics models. During the design process, several meetings with a key business user further refined the application. Once the modification of

³ For more on guided procedures, see the article "Task-Oriented Support for Your Department's Informal Processes — Without Calling on IT" in the April-June 2006 issue of *SAP Insider* (www.SAPinsider.com).

⁴ BI ODBO, BI XMLA, BI JDBC, and BI SAP Query connector.



the analytics model and backend system connections were executed, a testing phase completed the development.

After the first analytics application was implemented, the project team split into groups and started working in parallel on the same development procedure for the additional four analytics applications. The greatest credit to xApps is that one of the team members with no prior experience with SAP, SAP NetWeaver BI, Portals, or Visual Composer was able to develop and deploy these analytics models as part of this process.

The **Go-Live** steps involved transporting the iViews to the production portal environment. Just *19 days* after the project started, Whirlpool successfully deployed the five SAP xApp Analytics models accessing data in two SAP BW systems, two SAP R/3 Enterprise systems, and a legacy non-SAP system running on AS/400 to their productive system environment (see **Figure 4**).

The final phase, the **Go-Live Check**, included a review of project challenges and experiences, consolidating end-user feedback, revising contents of the ASK, and developing an Analytics Strategy

Group at Whirlpool, which has already planned the ongoing phases for analytics.

Summary

If mass adoption of analytics requires preconfigured analytics solutions, best practices, reusable architecture, and the ability to quickly connect and adjust

these applications, then SAP xApp Analytics and Visual Composer are a significant step toward wider use of analytics. SAP xApp Analytics is ready to run right out of the box. If enhancements are needed, these model-driven applications can be rapidly modified and maintained, as coding is no longer required to build a user-friendly application for business users. As a result, the development of these applications is no longer reserved only for developers. This is a credit to the tremendous enabling capability and modular approach of SAP xApp Analytics and the accessible development environment of Visual Composer.

The first version of SAP xApp Analytics will be released for general availability in Q3 2006. Visual Composer will also be available at that time. SAP will continue to make further SAP xApp Analytics applications available that allow business users to use analytics out of the box, helping them make more informed business decisions.

For more information, please visit <http://service.sap.com/analytics>. ■

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