White Paper

Interactive Viewing with BusinessObjects Web Intelligence XI

- *Easily Understand, Explore, and Interact with Trusted Information*

Business Objects™

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Audience: BusinessObjects Web Intelligence customers, BusinessObjects full-client customers, analysts, BI administrators, organizations seeking to introduce ad hoc, end-user interactivity to BI end users with minimal training.

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Executive Summary

BusinessObjects™ Web Intelligence™ XI introduces a new interactive viewing framework that significantly enhances report consumer ability to understand, explore, and interact with information. Business users who receive reports created by their colleagues will no longer be restricted to viewing content structured in ways that hide the answers to their unique and ever-evolving business questions. While ensuring that system administrators remain in control of ad hoc access privileges and query and analysis power, Web Intelligence XI delivers a flexible, easy-to-use, and web-based interactive viewing framework to help your organization bring extreme insight to more users. Through a simple click of the mouse, users can view the metadata describing a report's structure and underlying details, filter information, create and position new tables and charts, and define custom variables. This wide range of features—never before available to report consumers—will forever change the nature of ad hoc user consumption of business intelligence (BI) content. With Web Intelligence Interactive Viewing, information consumers become active members of an organization's decision-making.

This document provides an overview of the Web Intelligence Interactive Viewing XI features and summarizes the benefits and opportunities they provide for new and current BI deployments. It also outlines the functionality and training implications for rolling out additional online interactivity to end users at all levels of the organization.

Web Intelligence 6x: On-Report Analysis

Web Intelligence 6.0 and subsequent 6x releases introduced some simple features for enabling end users to sort and filter tables. One such change involved the ability to move a mouse over a table, causing a pop-up menu to appear with a variety of sort and filter options. Customer response to these modifications was overwhelmingly positive due to widespread demand for simple modifications to end-user reports. IT departments and system administrators also liked the features for two key reasons:

1. End-user modifications only affect the report definition, thereby removing any danger of creating "run-away queries." This means that end users can modify reports in a safe environment.
2. End users can make simple report modifications without requesting expert intervention. This significantly reduces report modification backlog and makes self-service analysis possible.

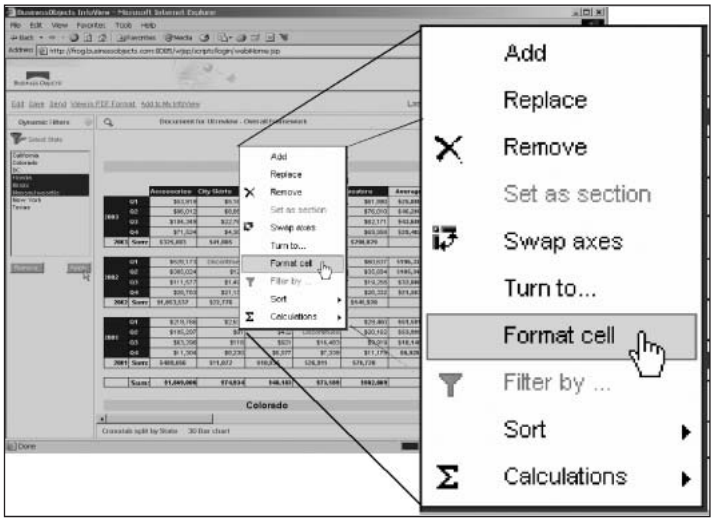


Figure 1: The Web Intelligence 6.5 on-report analysis menu.

Web Intelligence XI Interactive Viewing

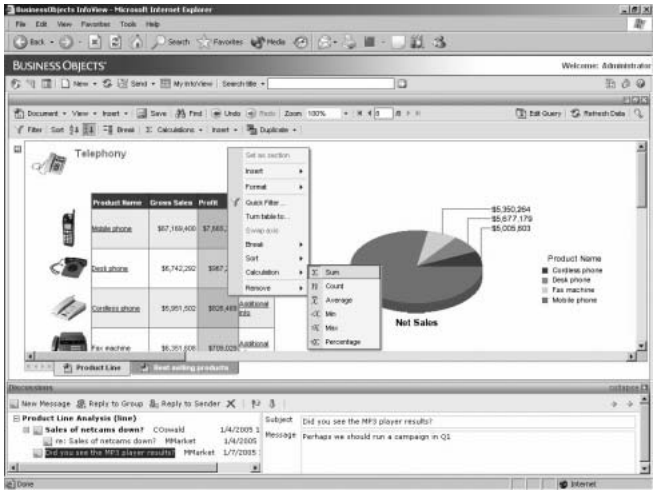
The interactive viewing framework introduced with Web Intelligence XI consists of a set of features that enrich the report consumer's experience with BI content by enabling end users to easily explore, modify, reformat, and otherwise edit reports over the web. This is different than other report viewing features that appear to enable an interactive experience in other tools, but limit end users to predefined drill paths and report-to-report linking. These features require the report creator to guess the types of interactions end users may require. On the other hand, Web Intelligence Interactive Viewing enables true ad hoc information access and analysis as end users (not report authors) define the explorations based on their unique needs.

Web Intelligence XI delivers a truly "ad hoc" query and analysis experience to end users. The report definition on the Web Intelligence server uses the microcube, which handles the cached data brought back by the query, to enable end users to choose the types of interactions and combinations of interactions they wish.

Consumers of Web Intelligence XI reports have access to the following features:

- ►View report metadata (object definitions)
- ►View, edit, remove report, section, or block filters
- ►Basic cell formatting (fonts, colors, background, borders)
- ►Advance table and chart formatting (e.g. relative positioning, chart axis control, pivot tables)
- ►In-line table, chart, and cell resizing
- ►Recombine report objects and variables in tables and charts (replace "Region" with "Product" in a table to see product revenue numbers)
- ►Set breaks and sorts
- ►Insert calculation summaries (e.g. sum, avg)
- ►Add rows and columns to tables
- ►Create and duplicate tables and charts
- ►Turn a grid to a chart or a chart to a grid
- ►Create formulas and variables
- ►Edit cell formulas in-place

Who Uses Interactive Viewing?



The Web Intelligence Interactive Viewing XI framework is designed to allow both casual users and power users access and analyze information.

Web Intelligence XI is designed to meet the requirements of the largest possible range of decision makers in an organization. The interactive viewing framework targets roles that range from power-users, to business authors, to casual users, to extranet users. Essentially, this applies to any knowledge worker who requires interaction with reports to modify content and ask and respond to business questions. (See "Using Security Commands to Introduce Interactivity" for more details). And usability features such as a familiar Office-like user interface, undo/redo, drag and drop, feature redundancy, context sensitivity, and the security command settings all ensure maximum ease-of-use and minimal training.

Interactive Viewing XI and Usability

WebIntelligence XI Interactive Viewing delivers analytical functionality with little or no training required. Key features include:

Familiar Microsoft Office-like User Interface

The menus, toolbars, and buttons use a very familiar, Office-like style that should be familiar to even the most basic user.

Undo/Re-do

Undo and re-do buttons ensure that end users feel comfortable exploring a given feature. When users can return to a previous state, clicking on an unknown feature makes exploration easy.

Drag and Drop

Direct manipulation is the most intuitive way to manipulate objects such as charts, tables, and cells. Interactive viewing allows users to resize charts and row and column height by dragging the borders, as well as add/replace/remove items from tables by dragging and dropping.

Redundancy and Context-Sensitivity

Ease-of-learning requires that features appear in the appropriate context, whether right-click menus, in wizards, or dialog boxes. The interactive viewing framework provides the appropriate level of feature redundancy—users don't have to hunt for a given feature.

Security Commands

Because not all users will be ready for the wide range of features offered by Web Intelligence Interactive Viewing, a range of security commands exist to hide certain features for certain users. (see Introducing Interactivity Using Security Commands).

Report Consumer Benefits

With Web Intelligence Interactive Viewing, there are many key benefits for both ad hoc query authors and business users who consume reports. These benefits include:

- ►Revealing "hidden" answers to business questions
- ►Letting users control their analysis
- ►Increased speed of exploration

Revealing Hidden Answers to Business Questions

Parameter-driven reporting is the most common report distribution mechanism in today's BI market. The report creator, by choosing to expose certain report content at the point of opening and refreshing, provides end users with the option to define variations of (effectively filtering and/or including) the original report context.

For example, let's take a report that has the goal of answering the following business question: "What are the product line sales figures?" In this report, parameters may enable report consumers to define, for example, the dates framing the data's start and end-points or the products included in the query and report. The prompts can be quite exhaustive, enabling a completely tailored version of the report that feeds the query results into the report's structure. Report authors and developers, by creating a "one size fits all" report, can use prompts to ensure end users get only one version of the report, simply filtered to their needs.

- ►Prompt1: Start Date: 2001; End Date: 2004
- ►Prompt2: Products in list = Product 1, Product 2, Product 3

Now the end user has a report, formatted in the optimal way for presenting the chosen data range and products selected. This prompted report is the equivalent of adding the following suffix to the business question: ***"What are the product line sales figures…during 2001 to 2004 for products 1, 2, and 3?"***

This "filtering" is a very effective and controlled way for report authors to expose content to report consumers. The end users know that the report will answer their specific questions in a predictable way.

Web Intelligence Interactive Viewing is significantly different than parameter-driven reporting. With it, report consumers can use a wide range of BI features and formatting capabilities to reveal answers to significantly more business questions than those exposed in the original report. To demonstrate, it is important to recognize that any given report contains answers to dozens or even hundreds of different business questions (only a fraction of which are evident). Each level of aggregation and each object combination can contain the numbers users need to answer their questions. Consider the table below:

Detailed Sales Results 2001-2003

Year	Quarter	State	City	Sales revenue	Quantity sold
2001	Q1	California	Los Angeles	$308,928	2,094
2001	Q1	California	San Francisco	$210,292	1,415
2001	Q1	Colorado	Colorado Springs	$131,797	921

The measures "Sales revenue" and "Quantity sold" are aggregated for a given city. The report's numbers are presented at the lowest level, and this report answers questions at that level. However, the results displayed in a report often lead to other related questions. For example, the user may also want to know any combination of the following:

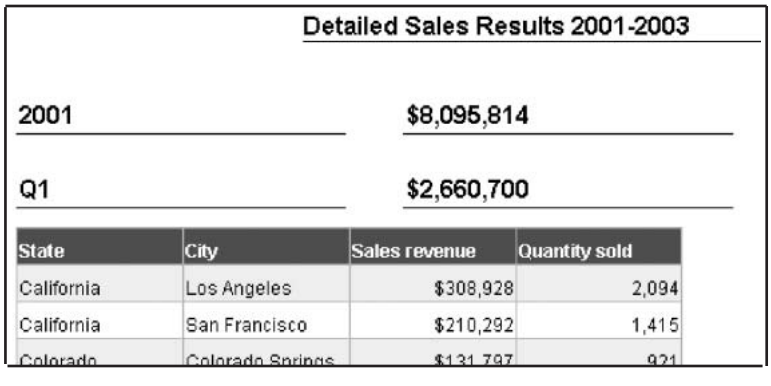
- ►What were the most successful quarters during the last two years?
- ►Which city sold the most units last year?
- ►Basic cell formatting (fonts, colors, background, borders)
- ►Advance table and chart formatting (e.g. relative positioning, chart axis control, pivot tables)
- ►In-line table, chart, and cell resizing
- ►Edit cell formulas in-place

There are many variations of the above questions where you can substitute different years, ranges, and levels of aggregation. There are a total of eight different values for "State," 11 values for "City," plus four "Quarter's" for each of the three "Year's." The combination of levels of aggregation for "Quantity sold" and "Sales revenue" is staggering. The triggering of a question is dependent on a host of factors including:

- ►The range of roles interpreting a report (e.g. operational personnel vs. executives)
- ►The time the report is used (e.g. ad hoc, vs. end-of-quarter, vs. end-of-year)
- ►The analytical skills of the report consumer
- ►Changes in the business climate since report was authored (e.g. new release from a competitor will necessitate new questions)

While a report author can conceivably build the answers to all of the above questions into the report, doing so would invariably backfire because the report would become overly complicated. Consumers of the report would have to navigate through a myriad of calculations and aggregations to identify their required information. By using the features available in the Web Intelligence Interactive Viewing XI framework, report consumers can define the "views" of the data they need—on-the-fly and with only a few clicks.

For example, a user can easily expose the yearly and quarterly revenue totals:



Detailed Sales Results 2001-2003

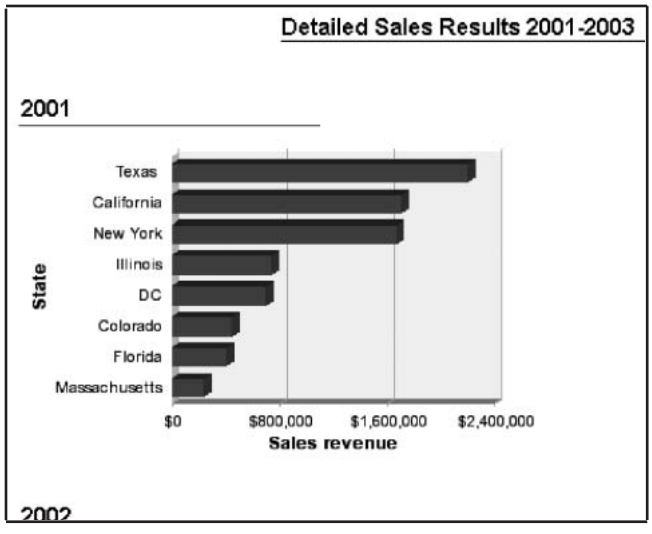
2001 $8,095,814

Q1 $2,660,700

State	City	Sales revenue	Quantity sold
California	Los Angeles	$308,928	2,094
California	San Francisco	$210,292	1,415
Colorado	Colorado Springs	$131,797	921

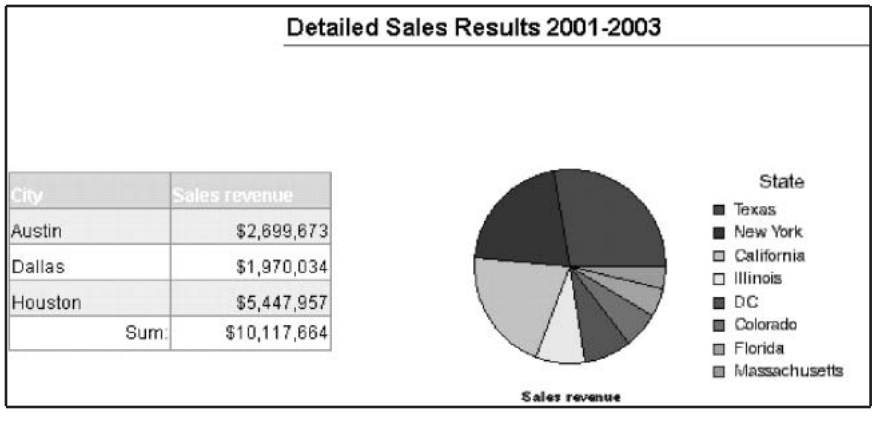
Four clicks and drag-and-drop to display yearly and quarterly totals. Report presentation has changed the questions it answers.

Or a user can get a top-to-bottom sort for the best performing states for each year:



Six clicks and an on-table drag resize to view sales performance sorted states.

Or a user might want to see how revenue in Texas cities compares to other states. The user may choose to compare the results side-by-side in a table and chart:



In seven clicks a user can see summed details of the revenue of Texas cities next to chart comparing Texas revenues to other states.

Each of these report views, and the implied questions they answer, are contained—but not visible—in the original parameter-driven report. None of the clicks implied knowledge of special workflows or advanced Web Intelligence features—only drag-and-drop, right-click "Remove column," "Sort," "Add Sum/Average" calculations, and the "Duplicate" button were used. Yet these simple steps transformed the report in significant ways. As end users begin to explore other features such as adding breaks, using the formula language, inserting columns, pivoting axes, relative positioning, and drilling, the ways they transform the data expands considerably.

Letting Users Control Analysis

Sometimes possible end-user explorations and a report's implied questions are predictable, and therefore configurable in a "guided analysis" scenario. Report-to-report linking is a very effective way to guide report consumers to thematically related—but nonetheless different—data explorations (e.g. from the product performance to the customer sales report) or detailed investigations (e.g. product category sales to a report showing individual product performance). However, like parameter-driven reports, setting up such links requires the report author to assume the possible contexts, explorations, and possible workflows users may want to follow. Guided analysis is less effective when you have, as with the sales revenue report above, dozens or more questions triggered by a user's exploration of a given report. Web Intelligence Interactive Viewing empowers information consumers to generate their own exploration paths. If the report creator has taken care to expose some common "themes" in the report, consumers can recombine and reformat a given report at will, without jumping to another report. (See the next section on Managed Analysis).

Increasing the Speed of Exploration

As mentioned in the previous section, report-to-report linking is commonly positioned as a "guided analysis" technique, but one which limits the exploration to the report author's preconceptions of which linked reports will respond to a given report consumer's questions. Another limitation of report-to-report linking is the simple fact that the linking action opens up another report. If that report requires prompts, data refresh from the server (refresh on open), contexts from the first report, and/or contains a lot of formatted information, an end user can face long delays before the results are displayed. For some explorations, where the users are not sure if the linked report is exactly what they require to answer their questions, this will be perceived as wasted time. And time is something business users typically do not want to waste.

Benefits for Business Report Authors

Web Intelligence Interactive Viewing XI not only delivers significant benefits for report consumers. It also provides the following benefits for query and report authors:

- ►Decreased report size and complexity making them easier to create and manage
- ►New opportunities for empowering consumers
- ►Reduced report backlog
- ►Reduced report network complexity

Decreased Report Size and Complexity

Today, many business report authors create BI documents that contain anywhere from two to 15 tabs. The first tab typically displays the highest level of information. Each subsequent tab displays a different version or view of the results. Essentially, these additional tabs expose as many possible analyses a report consumer may want. For example, the first tab shows sales results by region during the latest quarter, and additional tabs show results by city, month, salesperson, product, etc.

The pressure to include as much information viewed in as many ways as possible often impacts document usability. Consumers can have difficulties navigating through the tabs to locate the information that is most relevant to them. Report creators also are under increased pressure to maintain the documents to ensure that changes to one part of a report don't negatively affect another.

When report consumers themselves control the iterations, they can—in only a few clicks—view the report in a dramatically different way. This self-service approach significantly reduces the maintenance efforts required by business report authors. This allows them to spend more time on value-added tasks, such as creating other specialized reports that can respond to a different set of business questions, rather than trying to predict and/or react to report consumer questions.

New Opportunities for Empowering Consumers

Web Intelligence Interactive Viewing provides easy-to-use features for exploring, formatting, analyzing, and editing reports. Business authors can use basic formatting and reporting techniques to encourage report consumers to have a richer experience with their most relevant information. This report-building approach, called "managed analysis," can also lead to a dramatic improvement to the quality and efficiency of report consumer decision-making capabilities. (See the next section on Managed Analysis).

Reduce Report Backlog

Report request “backlog” is a continual challenge for those power users, analysts, or system administrators in IT who create reports for others. These requests often involve simply adding a column, filter, sort, or a basic calculation. By empowering report consumers to do basic report manipulations themselves, Web Intelligence Interactive Viewing reduces the need for report authors to make slight variations of report content for specific people. Instead they can concentrate on more value-added tasks that help drive organizational performance.

Reduce Report Network Complexity

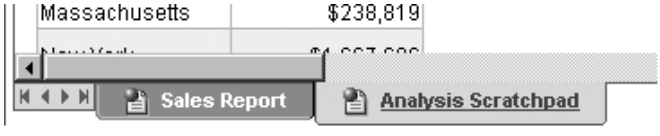
Report-to-report linking involves maintaining multiple reports to ensure that contexts are adequately passed without breaking the “recipient” report. A complex web of reports can lead to situations where setting the contexts and parameters passed between report A and B can break the context and parameters that had been set up to link reports B and C. Web Intelligence Interactive Viewing relieves this pressure on maintaining a web of linked reports. Instead, each report can be used by report consumers themselves to generate orthogonal or detailed versions.

Managed Analysis: Techniques for Facilitating Report Consumer Interactivity

When report authors build reports with consumer interactivity in mind, the reports become tools for more efficient and higher quality decision making. Below are some managed analysis reporting techniques.

Workspaces

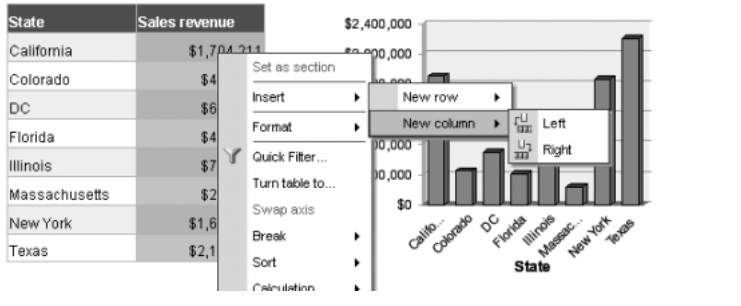
Workspaces provide "safe" areas where the consumer can analyze and edit the report content. Through the creation of additional report tabs (labeled "Conduct analysis here") and/or duplicated tables and charts (labeled "For your analysis"), report authors can provide report consumers with the gentle push sometimes required to initiate interactivity and ad hoc analysis. Workspaces can also help eliminate the fear of making mistakes and losing the original content



A new tab displays the same content as the Sales Report tab but also indicates how the content should be used.

Formatting

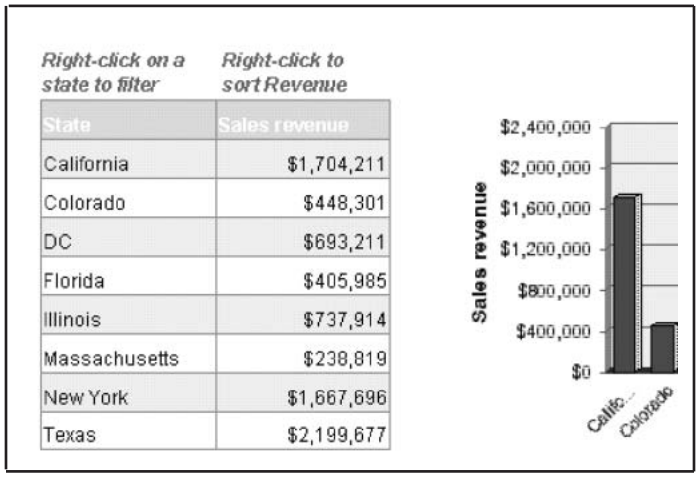
Often overlooked, proper formatting ensures that the report consumer can modify the content in ways which do not destroy the integrity of different parts of a report. For example, relative positioning can ensure that when one table's content changes (e.g. user adds a column) the table does not overlap with the adjacent table.



When relative positioning is turned on, users can add columns without making the table overlap the chart. The new column pushes the chart to the right.

Signposts

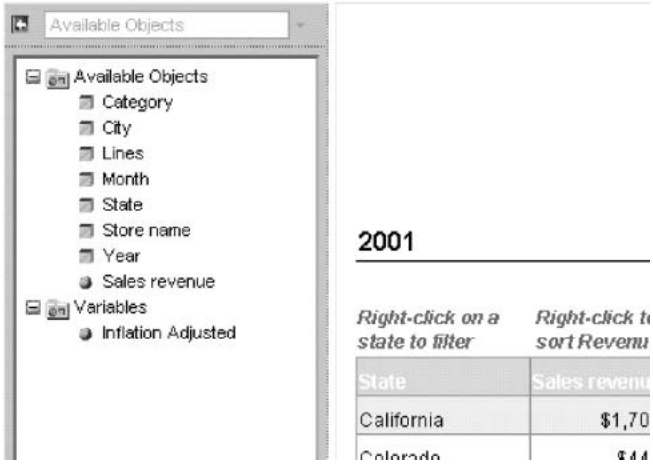
Report creators can make use of single-cells that act as a kind of "sticky note" instruction for report consumers. For example, by including a cell explaining, "Right-click to sort on Revenue," users will see that they can sort, but it can also trigger the realization that there are other ways to explore the information. Such signposts can also include free-form tables where analysis steps are explicitly indicated. Again, the signposts need not be exhaustive, but simply a means to signal possible exploration options and trigger deeper analysis.



Text labels at the top of columns can act as signposts that signal to end users that there are possible manipulations they can do.

Query Scope

By including extra objects in the original query results, report authors can help end users with orthogonal explorations. For example, the business question the given report answers is, "What are the product line sales?" If the report author adds "Regions" to the query results, even though it is not displayed in the report, report consumers can then have access to this object as an alternative direction for data exploration. While the extra objects should not be exhaustive, they can support such orthogonal analysis directions that end users may typically have.
This provides another benefit. With additional objects included in the results set, report consumers can conduct such explorations in a safe "sandbox" of the report results instead of being required to construct their own queries to add additional context.



Extra objects in the Available Objects option of the context panel provide users with more options (e.g. product-related content) than the geographic content available in the report.

Organizational Benefits of Interactive Viewing

The innovation and ease-of-use that Web Intelligence Interactive Viewing provides also results in the following benefits to the entire organization:

- ►Enhanced decision making
- ►Keeping information in the trusted BI infrastructure

Enhanced Decision Making

Web Intelligence XI delivers features for business users across the spectrum of query, reporting, and analysis needs. Without interactive viewing, report consumers would be obliged to interpret reports only as the original author had conceived and developed them. This is fine in a managed or production reporting environment, where there are rigorous requirements defining both the report contents and the people who consume them. Organizationally, however, this may not be the best solution for the entire user population. Such an approach can take the decision-making power out of the hands of many end users who are best positioned to creatively analyze and reveal the key decision drivers in their reports. And while many of these users have a pent-up demand for report interactivity and analysis, others may not even be aware of the possibilities. As a result, it becomes important to provide the flexibility that Web Intelligence Interactive Viewing delivers before the users recognize the potential. Interactive viewing returns the business decision making to the most relevant individuals. This in turn reduces the time required for decision making.

Keeping Information in the Trusted BI Infrastructure

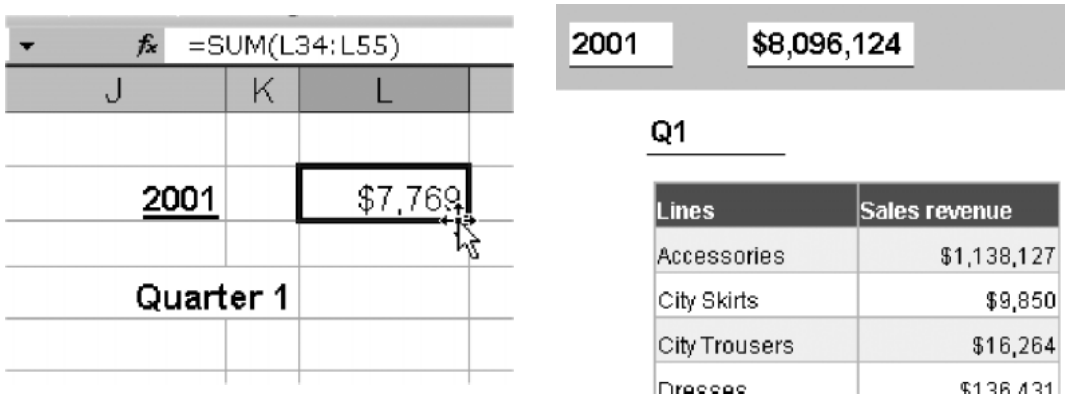
BI project owners, IT, and business report authors are frequently pressured by report consumers to export their Web Intelligence documents to Microsoft Excel. Report consumers often demand this feature because they need to make simple report modifications. But be aware. There are many risks involved with the "Save as Excel" feature—from the potential for calculation errors, to untraceable pockets of out-of-date information, to security breaches as information gets passed outside secure domains.

The decision to move data to Excel should not be taken lightly—either by IT, report authors, or consumers. Excel is a spreadsheet that does not have the advantages of the Web Intelligence report engine to understand the contextual and semantic relationships between objects. While in Web Intelligence, manipulating a table automatically triggers a recalculation of the revenue values related to countries, regions, or cities—Excel interprets each column's content as unrelated numbers with a random label as a heading. The users must define how, if, and when cells and columns should be added and recalculated.

When a Web Intelligence document is converted to Excel, the values are preserved, but the formulas and variables that may have been defined in the original document are not. The person saving the data must also have retrieved the data at the lowest detail level required by the end user. In this way, it is a true "data dump" from the source database, data mart, or data warehouse. End users must then do summing and other calculations and manipulations themselves (e.g. "grouping" by sections, sums, percentages, etc). Aggregation tasks like these create the opportunity for errors. And because IT no longer controls the data, errors by one user can proliferate as the Excel content is shared.

Even if users don't make mistakes during their manipulations, the simplified data dump results in each user starting from scratch. There will likely be widespread task redundancy as users make the same sets of manipulations on the data. And the potential for wasted resources, as each individual manipulates the report (e.g. same formatting, same basic section), is rampant.
By remaining in the Web Intelligence Interactive Viewing XI framework for report manipulations and analysis, both users and IT gain clear advantages:

- As the report is manipulated from detailed summary and back again, the report engine recalculates totals automatically based on the context defined in the Business Objects semantic layer. Moving a cell containing a revenue total for Q1 to the year "section" in Web Intelligence does not require a detailed formula entered by hand. Excel, on the other hand, requires users to redefine the reference as =Sum[Row references]). With Web Intelligence, the powerful underlying report engine calculates the sum automatically.



On the left (Excel) dragging Quarter 1 Sum across from 2001 will not change the value—the user must redefine the calculation. On the right, Web Intelligence Interactive Viewing automatically recalculates the sum based on the context of the Year 2001.

- Since Web Intelligence provides definitions of the report's metadata, users can see at once the definition of variables as well as the definitions of the objects used in the report. In Excel, on the other hand, users don't have access to the underlying report metadata which may lead to a misinterpretation of the way the data (for example, Profit) was calculated in the report. Is "Profit" marketing's definition or did it come from the finance department?
- Despite IT's best efforts, data sources have errors because of entry or because of latency of the extraction, transform, and load (ETL) jobs—sometimes this incompleteness or inaccuracy makes its way into reports. The BusinessObjects XI platform enables IT to control who has access to certain reports and to remove those reports before the bad content proliferates. Built in data validation and auditing controls within BusinessObjects Data Integrator XI also help ensure that BI users are working from trusted information. Once report data is saved to Excel, however, data can no longer be trusted and erroneous data can proliferate as it is sent around from user to user, or appears in PowerPoint, Word, or other Office files.

In many cases, instead of Excel data dumps, there should be careful consideration when identifying which content should remain within the interactive viewing framework of Web Intelligence XI.

Deploying Interactive Viewing

Web Intelligence Interactive Viewing XI provides a wide number of features to report consumers. So it is important to consider these features differently than traditional ad hoc query creation tools (e.g. the Web Intelligence XI Java report panel).

Existing Ad Hoc Query and Analysis Deployments

Organizations that already have ad hoc BI deployments can also benefit the from Web Intelligence Interactive Viewing. It's an indication that they are already aware of the need for end-user created report content, self-service editing, and on-the-fly modifications to BI content. The obvious direction here is for organizations to enable more users to benefit from interactivity while continuing to ensure that IT remains in control of who accesses what information and how. The goal should be to maintain access to ad hoc query tools for the current user-base, but identify the likely targets for Web Intelligence Interactive Viewing. There are several things to look for when identifying potential users. First, is data complexity the original reason that more users didn't have access to the query creation tool? In many organizations with multiple universes and complicated, detailed object naming conventions, training on the data and query generation is often more intensive than on the analysis side of the tool itself.

Many users may not have access because of the complexity of the training required (or lack of budget). In such cases, other users can be given access to interactive viewing because they simply need to manipulate the report content created by others. Since the Web Intelligence Interactive Viewing features modify the report but do not require changing the query, users do not have to interact with a universe structure that was designed without their input. With ease-of-use interactive viewing, however, they can still benefit from a wide range of analytical reporting features.

The second consideration for rolling out Web Intelligence Interactive Viewing to new users is the effect of overall ease-of-use on the original decision to grant or deny access to the query generation interface (e.g. the Java report panel). If the BI application project owners determined that the user interface is too difficult for the average user, then they should consider interactive viewing. Given the Web Intelligence Interactive Viewing focus on usability and ease-of-use, it is more likely that end users can use them on a daily basis.

Alternatively, an organization may choose a subset of ad hoc query users and complement their ad hoc query capabilities with access to the Web Intelligence Interactive Viewing features. Many users of the Web Intelligence Java report panel like the all-in-one query and analysis user interface, but after a report has been saved, they must go through the step of opening up that report in the Java report panel in order to do any modifications. The pairing of query definition (the query side of the Java report panel) with interactive viewing means that users have the flexibility to edit and transform their reports directly in the Web Intelligence file rendered inside the BI portal.

Existing Operational Reporting Deployments

Many organizations have very formal report creation processes involving very refined gathering of requirements, meticulously validated reports, and distribution to hundreds or thousands of report consumers. These deployments are successful in cases where the requirements are well-researched and the business questions are predictable.

1. If there is a significant backlog of requests to iterate reports to show variations on the same content, this may indicate an opportunity to deploy Web Intelligence Interactive Viewing. IT backlog is one of the most important drivers for a self-service model, a model which is difficult to attain when report authors are busy reacting to ad hoc end-user requests. By generating a few "standard" IT sanctioned Web Intelligence reports, some or many users can be given access to interactive viewing features so that they can then do simple (or more advanced) manipulations to change the report content.
2. In general the maturity of the organization's operational reporting deployment can create pockets of more expert report consumers—those who are familiar with the report presentation and know what they want to do with it. BI project owners can typically determine the presence of "expert" consumers by looking at the nature of report consumer requests for iterations. If some users are responsible for many of the requests for adding columns, calculations, and different visualization techniques for the existing report data, these users could become part of the new ad hoc interactive viewing user base.
3. As in the case of rolling out to users already performaning ad hoc query and analysis, the same considerations for ease-of-use should make deploying interactive viewing more possible.

Organizations New to Business Intelligence

Organizations that do not have a historical or organizational familiarity with analytical reporting can use Web Intelligence Interactive Viewing as a spring board to widening access to the full ad hoc query and analysis capabilities. Typically, the primary concern of organizations new to BI is how to introduce the concept of using reporting to inform and drive decision-making—making it part of the organizational business processes. Only after achieving basic acceptance by end users (reports are being regularly accessed and iterations are requested and delivered) can organizations move to providing more users (e.g. non-IT) with access to query tools.

Web Intelligence Interactive Viewing can be used to introduce the concepts of ad hoc query and analysis to a BI implementation. As with the case of operational reporting, business analysts or IT can create Web Intelligence reports that end users can then interact with. IT administrators can also initially restrict, via security commands, access to only the most basic features (see below) until end users gain an understanding of the types of things they can do on top of a report. And thanks to the single, trusted BusinessObjects XI platform, the security commands can be used to gradually enable access to more and more features.

Conclusion

Web Intelligence Interactive Viewing XI targets roles that range from power-users, to business authors, to casual users, to extranet users. It introduces features that significantly enhance a report consumer's ability to understand, explore, and interact with information. Report consumers can now become active members of an organization's decision-making process. Hidden answers to business questions can be revealed. Users can control their own analysis. Exploring information becomes available with a few easy mouse clicks. And for report authors, the size and complexity of the reports they need to create and manage is significantly reduced. Thanks to the self-service model of the Web Intelligence Interactive Viewing XI framework report backlog is diminished and the IT organization can now focus on more strategic tasks.

Appendix I: Training Considerations for Interactive Viewing

Web Intelligence Interactive Viewing is designed to require as little training as possible. The goal is if a user understands basic web-based navigation and Microsoft Office interactions, he or she can use the majority of the analytical features without difficulty. However in some cases, the data is complicated and for some user populations, a certain amount of training may be necessary. In cases where the user base is less technical savvy (e.g. lots of support calls for basic Office tasks such as Word document editing), it may require training on the tool and a feature overview. With this type of user base, the most important consideration is how to provide confidence in using the functionality and remove any fear users may have in modifying documents. Thus the most important feature to emphasize is "undo," allowing users to remove any mistakes or undesired modifications during their analysis.

Appendix II: Using Security Commands to Introduce Functionality

Web Intelligence Interactive Viewing includes a range of security commands that can be used to restrict the initial access of features by users or groups of users. Over time, as users increase their skills and familiarity with BI content, extra features can be gradually introduced. These security commands, available via the Central Administration Console of BusinessObjects Enterprise XI, enable hiding/showing groups of features. This makes it easy to hide, for example, the formula and variable editing toolbar from end users who are not familiar with the Web Intelligence formula language. Below are the security commands related to Web Intelligence Interactive Viewing:

- Enables interactive HTML viewing (as per license)
- Interactive: Use Formatting Toolbar and Formatting menus
- Interactive: Use Reporting Toolbar and Reporting menus
- Interactive: Use Formula Language Toolbar / Create Variables
- Interactive: Use Contextual (right click) menus
- Interactive: Display Document Summary
- Interactive: Display Applied Filters
- Interactive: Display Available Objects

The table below shows a recommended deployment using the above security commands.

User Type	*Initial Feature Access and/or Restrictions*
Beginning Office user: has difficulty with Excel, Word, and basic Office skills	Yes: Enable Interactive HTML Viewing Yes: Display Document Summary No: All others
Intermediate Office user: Knows Excel basics, requires basic editing for analysis	Yes: All above plus… Yes: Display Applied Filters Yes: Formatting Toolbar and Formatting Menus Yes: Reporting Toolbar and Reporting Menus
Advanced Office user: Excel user/some familiarity with data	Yes: All above plus… Yes: Use Contextual (right click) menus Yes: Display Available Objects
Web Intelligence or BI query tool users	Yes: All above plus… Yes: Use Formula Language Toolbar/Create Variables (Equivalent to all commands set to "on")
Extranet user	Follow above steps but keep in mind that available objects and Document Summary provide object definitions which you may not

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