An Oracle White Paper
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Planning to Convert to Oracle BI Publisher

Introduction

Every enterprise needs to generate business documents for different requirements. Some of these requirements may be standard Industry reports in the form of Invoices, Purchase Orders, Bill Of Material, Management reports, operational reports to measure project progress against planned targets etc.; while other requirements could be totally different such as creating shipping label with barcodes, printing cheques etc. For global companies, the challenge goes a step further where reports have to be generated in the language of the country where its unit is. This is where enterprises look for a solution that can simplify the entire document generation and maintenance experience. Oracle BI Publisher has been the first choice for customers as a single solution environment for all their business documents.

This whitepaper highlights some of the benefits of Converting to BI Publisher, the conversion strategy, how to convert reports and how to estimate the conversion effort.

Benefits of Converting to BI Publisher

BI Publisher is Oracle's strategic enterprise reporting product that enables customer to create highly formatted, pixel perfect reports by use of commonly used desktop tools such as Microsoft Word, Adobe Acrobat etc. and to create lightweight interactive management reports by use of highly intuitive drag and drop style web based layout editor.

Simplified Report Maintenance

BI Publisher separates layout & translation from data logic. This allows for greater flexibility with report layouts, and report maintenance. By separating the data logic from the layout, it also allows for greater flexibility when it comes to optimizing the document generation process. Divide & conquer!

Better Managed

As part of a move to Oracle CRM, **Gallup** undertook a project to convert about 200 Crystal reports to BI Publisher. Prior to converting, users had to navigate thru their legacy CRM system and these 200+ reports to generate the documents they needed. Many reports were duplicated to support different languages and minor changes in layout. It was quite cumbersome and fatiguing to users to find and generate the documents they needed.

In the process of moving to BI Publisher, they were able to reduce the total number of reports down from over 200 to just 30 reports - 85% reduction in the number of reports. The reduction was possible owing to the fact that BI Publisher separates Data from Layout and Translation thereby, supporting multiple language templates against a single data set; condensing multiple reports into just a few BI Publisher reports. Gallup was able to complete the conversion in about 3 months with following resources:
1 full time Report Developer – reports and layouts ;
1 part time Apps DBA – install and configure;
1 part time Apps Developer – Data Model advice

Gallup acknowledges the following as a huge win for their team:
-- Lower maintenance cost
-- Simplified report repository

Faster Development

With BI Publisher development the business user can build their own report layouts by themselves. IT staff can concentrate on extracting data in the most efficient manner. Deployment time is faster - the business user can build the report they want first time without having to let the engineer 'interpret' the requirements. Testing cycles are greatly reduced. Any changes to the report can be implemented by the business user rather than tying up IT development cycles.

MasterCard was using a 3rd party tool to develop and make changes to the Purchase Orders for 50 different Operating Units across the globe. Each of these included specific terms and conditions for each operating unit and national or regional requirements. Using this 3rd party tool it took MasterCard about 3 months to develop new a Purchase Order or make changes to the terms and conditions. The process involved a business analyst, developers from IT and even a consultant from the 3rd party software vendor.

After BI Publisher implementation, the business analysts, without the need for help from an IT developer or from a 3rd party vendor, can now turn around changes or add a new PO for an operating Unit in 3 to 5 days – 12 times faster with just one resource compared to the time taken by three resources previously.

Conversion Strategy

Analyze Reports

It is critical that you spend some time analyzing your reports before converting them into BI Publisher reports. This will give you an opportunity to plan the conversion strategy in a very effective way. You should get an understanding of underlying data sources, complexity of the reports, size of the reports, redundancy etc. This also gives you the opportunity to decide which reports are no longer needed and can be eliminated.

Categorize reports by data

If there are multiple reports that use common set of data, then such reports can be kept in one category. If one or more reports go against same data source, tables or views and only differ by the fields used in the report, then those reports are candidates for consolidating. For BI Publisher, this would mean a single Data Model definition for multiple reports, thereby reducing the duplicate data extract definitions associated with multiple reports.

Categorize reports by complexity

Next, we can group the reports by complexity. Most often 40-60 % reports in an organization are simple reports generating tabular output with standard chart visualization. Around 30-40 % reports are medium complex that have custom functions, complex calculations, and advanced features such as use of Sub Reports in Crystal Reports, or cross tab reports etc. Remaining reports may be highly complex reports using complex data extraction rules, complex crosstab layout, complex charts etc. By creating such category, we can divide the work, prioritize, and allow a smooth learning curve for the Conversion team before the team starts to convert medium or highly complex reports.

Evaluate report sizes

It is always a good practice to understand the report whether its output will be small or large. For large size reports the throughput performance should be noted so that once the reports are converted to BI Publisher they perform similar or better. Also, for such reports complex calculations are recommended to be executed in the data model layer instead of executing those in Layout layer.

Reduce number of reports

Once all the above analysis are performed, you should look at reducing the number of reports. In BI Publisher a single report can have multiple layouts. Therefore, if there are reports that go against same data, they all can be brought under single report. Even if the reports are to be separated into different folders to be accessed by different teams, the reports can connect to a single data model.

Create Data Model to Handle Data Design

The data design of any report will map to a Data Model in BI Publisher. The Data Model can handle highly complex data requirements including before and after report triggers, cascading parameters, aggregations, multiple query and multiple data source scenarios.

Create RTF Template to handle Layout Design

The RTF template is the most common layout template format for BI Publisher today and is able to handle almost all complex layout requirements.

Convert data handling functions into database functions

As you are aware by now that BI Publisher separates the three layers – data, layout and translation in its core architecture. Therefore, any data handling functions are recommended to be handled in the Data Model. Since BI Publisher can read database functions and these functions perform better than the same functions written in middle-tier, it is recommended that such data handling functions are converted into database functions.

Convert layout formatting functions into XSL / Java functions

Any layout related function such as conditional formatting functions, calculations based on layout arrangements (e.g. crosstab report) can be done in the RTF template. In some cases, when a function is being used by almost all the reports, we can write that function in a java class and the java class can be called from the RTF Template, invoking the function similar to any java function call.

How to Convert the Reports?

Manual Conversion

At first glance, manual conversion may appear to be the most time consuming way to convert reports. However it has its own advantage of deeply understanding the report and designing the report fresh. This gives a chance to the organization to clean up any unnecessary or inefficient code written in their existing reporting tool and make use of BI Publisher Data Model editor and Report Editor to create a better and more efficient report. With a step by step conversion approach, the effort can be simplified. The Data Model Editor of BI Publisher 11g provides a visual approach to designing the data definition supporting custom formula expressions, joins, multi-query parent child relationships, multiple data sources, cascading parameters etc. The template builder, on the other hand, allows user to connect to BI Publisher Server without opening a browser and to design layouts by using wizards for tabular or form type data arrangement and for creating charts, pivot tables etc. Also, with manual conversion, user can take advantage of web based layout editor to design layouts by simple drag and drop technique and thereby adding an interactive output to the list of outputs.

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Using Conversion Assistants

Oracle provides conversion assistants for Oracle Reports and Actuate. These can be downloaded from Oracle Support site or from the link provided in OTN. The Conversion Assistants are helpful when you have large number of reports to be converted. Even when using a Conversion Assistant, it is strongly recommended to do a thorough analysis of the reports you want to convert to eliminate those no longer needed, to categorize reports and to plan your conversion as described above.

The tools will create a one to one conversion for each report. Once the conversion is done, you can still group the reports together by data extract. These conversion tools will be able to convert most of the simple and medium complex reports. There will be some manual change required for conversion of highly complex reports.

Following conversion tools are available today:

- Oracle Report to BI Publisher Conversion Assistant
- Actuate Report to BI Publisher Conversion Assistant
- Actuate Report IO Creator tool

Please find the documentation on download and use of the above tools in BI Publisher OTN page.

Oracle does not provide any conversion tool for Crystal Reports. The following white paper describes a step by step approach on how to convert a Crystal Report.
http://download.oracle.com/otndocs/xmlp/CrystaltoBIP.pdf

How to Estimate the effort and resource required?

For any report conversion the following resources may be required:

- Report Developer for using Conversion Tools, Creating Reports, Layouts (full time)
- Apps Developer/Report Developer for creating Data Model (part time)
- Database Administrator for access to data sources (part time)
- BI Publisher Server Administrator for folder and report administration (part time)
- Security Analyst for any security related work (part time)

If the Apps Developer creating the Data Model is a different person than the Report Developer, creating Data Models could be a part time job. If the Report Developer is creating reports and layouts and the data models it is best done as a full time job for the duration of the project.

A general thumb rule would be 3 man days for manually converting a simple to medium complex report and 5 man days for converting a highly complex report. The time taken will reduce over a period of time with experience in conversion.

Using the Conversion Tools, the conversion time would be reduced tremendously and may require few hours to 1 man day for converting a simple to medium complex report. For converting a medium to highly complex report, the effort may vary between 2 – 3 days. The time taken will reduce over a period of time with experience in conversion.

Conclusion

While, there is a progressive enhancement with each release of Oracle BI Publisher adding new capabilities, Oracle is committed to continuously improve the Conversion Tools for an easier conversion from Oracle Reports, Crystal and Actuate reports. The reports created using the Conversion Tools will comply with any existing or future releases.

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