

Crystal Reports Case Study

Automatically Burst and E-mail Crystal Reports

“By combining the functionality of Crystal Reports with PDF-EXPLODE, we are now able to create and distribute hundreds of individual reports in under 15 minutes, a process that took us days in the past.”

[Martina Koziak, Chief Financial Officer, Page After Page](#)

Background

Martina Koziak knew she wasn't getting the most she could from Crystal Reports. As chief financial officer of Page After Page, a laser printer service company, she was introduced to Crystal Reports through her MAS90 accounting software and quickly realized she could leverage the report writer to increase staff productivity.

Koziak envisioned using Crystal Reports to streamline delivery of recurring customer communications, saving her staff hours of tedious work and making the company more profitable.

Challenge

Using Crystal Reports, Page After Page was able to efficiently generate information-rich executive statements from a custom-built Web-based service dispatch application (with a SQL Server back-end). But to distribute them, someone still had to generate corresponding mailing labels from MAS90 – not to mention print, collate, stuff, and stamp the mailings every month.

“Our old way of distributing reports required a huge amount of manual intervention,” Koziak explained. “Our process was error-prone, because reports from one system had to be matched with labels from another. Also, it was inefficient, with many customers receiving multiple letters since they were responsible for printers in different departments or buildings, or on different floors.”

Koziak knew she had to figure out how to streamline a business process that was disjointed. “Not only was it expensive to mail hundreds of pages of printouts to our clients every month, but delays in distributing the reports were affecting customer service, employee morale as well as our bottom line,” she explained.

Approach

Koziak found the solution in PDF-eXPLODE. This new Crystal Reports utility leverages Crystal’s data manipulation and formatting capabilities and its use of the standard Windows printer system. Installed as a printer driver, PDF-eXPLODE seamlessly adds the ability to “explode,” or burst, a report into individual PDF attachments that are automatically e-mailed based on tags included on each page of the report.

Steps

To achieve the streamlined process, Page After Page took the following steps:

Step 1

First, they combined their existing executive summary and label reports, which report against different databases. They inserted both as sub-reports into a new container report. The container report is designed to look like a cover letter to be more customer-friendly. This step eliminated the need for two reports with two outputs.

Using shared variables and conditional section suppression, the container report is designed to detect accounts that have no activity during the selected period and suppress the letter and the executive summary.

Step 2

Next, they created a formula field to generate PDF-eXPLODE tags with the e-mail address for each customer.

Here is an example formula:

```
'<pdfexplode>' + ltrim(rtrim({Contacts.Email})) +  
'</pdfexplode>'
```

Here is an example PDF-eXPLODE tag generated by the formula. The tag resembles an XML tag in format and contains the contact’s e-mail address:

```
<pdfexplode>robhorne@businessobjects.com</pdfexplode>
```

Then they inserted the formula field containing the PDF-eXPLODE tag into the report’s page header to indicate where each page is to be sent.

Step 3

Finally, they set the printer to PDF-eXPLODE so that instead of generating reams of printout, the executive summaries are e-mailed directly to customers as PDF attachments.

Results

Multiple pages for the same recipient are combined and e-mailed as a single PDF attachment.

The individual PDF attachments are sent via SMTP using the company's Microsoft Exchange server. SMTP eliminates the need to manually confirm security-block messages that pop up when using an e-mail client, such as Outlook or Notes.

"By combining the functionality of Crystal Reports with PDF-eXPLODE, we are now able to create and distribute hundreds of individual reports in under 15 minutes, a process that took us days in the past," Koziak added.

Productivity

When it comes to developer workflow and e-mail distribution of batch reports, you will find that using a pre-built component like PDF-eXPLODE eliminates the need to write code by hand. An example of a batch report is an invoice, where multiple invoices are printed and each invoice correlates to a report group delivered to a different recipient.

Leveraging Crystal Reports to manipulate and format data, and PDF-eXPLODE to burst, collate and e-mail report output results in significant gains in productivity. The magic lies in the way PDF-eXPLODE installs as a printer driver to transparently manage the entire report delivery process. In less than an hour working with PDF-eXPLODE for the first time, you should be able to create an e-mail distribution solution for an existing report that might have taken several hours with a more direct programming approach.

Using a traditional programming approach, you would typically follow five basic steps to achieve an automated invoice e-mail solution:

1. Create a Crystal Reports report that produces the desired invoices.
2. Add a parameter to filter the data to a single customer.
3. Write a program in a development environment such as Visual Basic, .NET, or Java to loop through the customer table.
4. For each customer, look up the e-mail address and call the Crystal API to export the invoice for the specific customer. Maintain a log of which invoices were sent successfully or failed.
5. Compile and deploy the application.

Using the PDF-eXPLODE approach, the process is trimmed down to two steps, eliminating the most time-consuming steps that involve manual coding:

1. Create a Crystal Reports report that produces the desired invoices.
2. Insert a PDF-eXPLODE e-mail tag in the page header (or repeating group header) area.

Organizations with a large number of customers, suppliers, partners and/or employees who need to manage high-volume communications of data-driven documents among their various constituencies will experience significant productivity gains by taking the Crystal Reports and PDF-eXPLODE approach.

Success Factors

To gain the most from PDF-eXPLODE and further streamline business processes, the following best practices should be applied:

Capture recipients without e-mail addresses

The PDF-eXPLODE tag can be conditionally generated so if it does not include an e-mail address, the PDF attachment can be e-mailed internally to a customer service representative, or another staff member. This internal staff member then can either send the attachment by regular mail and/or call the company to identify the preferred e-mail address

Here is a sample formula:

```
if {Contacts.Email} <> '' then
    '<pdfexplode>' + ltrim(rtrim({Contacts.Email})) +
    '</pdfexplode>'
else
    '<pdfexplode>customerservice@pageafterpage.com</pdfexplode>'
>
```

In addition, using a conditional suppress formula, the correspondence can include a conditional paragraph requesting a preferred e-mail address so it can be sent electronically in the future.

Identify unsent e-mails

PDF-eXPLODE keeps a log of all e-mails and whether they were sent successfully or encountered a problem. The log is a valuable tool to help the user quickly and easily identify and resolve any issues.

Track undeliverable e-mails

Even if an e-mail is sent, it may not be delivered, bouncing back because of typos or outdated information. To make sure all e-mails are delivered, users can set up a From account (an e-mail Inbox) specific to PDF-

eXPLODE that can be monitored by an internal staff member to check for undeliverables, correct the address, and resend the PDF attachment.

Resend undelivered e-mails

If users need to resend a specific e-mail or resume a mailing midstream because of a systems failure, it is helpful to include a parameter in the report to select a specific customer or a range of customer accounts. This parameter will allow the user to easily resend reports to just those recipients who need them without having to resend the entire batch.

Scalability with Crystal Reports Server

Taking a look again at Page After Page, Martina Koziak has myriad reports she needs but she'd like to further streamline their distribution. Now her colleagues oversee the distribution of each report through PDF-eXPLODE, clicking the **Print** button to start each job. While this process saves considerable time, each report has a different frequency and time, requiring coordination and manual intervention. Koziak would ideally like to incorporate a process that automatically distributes the reports without any staff involvement.

Enter Crystal Reports Server. Crystal Reports Server expands the enterprise-wide scalability of PDF-eXPLODE with enhanced scheduling. It provides businesses like Page After Page with the ability to schedule reports to PDF-eXPLODE. On its own, Crystal Reports Server allows users to schedule distribution of an *entire* report. However, when it is coupled with PDF-eXPLODE, the report can be burst by group and distributed at a certain time to designated recipients.

The Crystal Reports Server scheduling feature allows reports to be scheduled for specific frequencies and times. For example, users can specify whether they want a report to run "now," "once" at a future date, hourly, daily, weekly, monthly or by a user-defined calendar. Users also can schedule by event, timing distribution to the existence of a file on a drive, completion of another scheduled job or an administrator-initiated "trigger" within the Central Management Console.

To schedule distribution of quarterly statements, for example, Page After Page could use Crystal Reports Server's calendar-based scheduling feature. Koziak would simply define the calendar in the program to reflect the quarterly processing cycle; give the calendar a descriptive name such as "Quarterly Statements"; and select the specific days the program should run. Once the calendar is created, the quarterly statement report could be scheduled to run based on the calendar.

When first using Crystal Reports Server, it is recommended that users test the scheduling feature before sending a full report. Also, they should take advantage of its success/failure notification feature, which alerts users via e-mail to whether a job has been successfully completed or not.

- ▶ Learn more about [PDF-eXPLODE](#).
- ▶ Learn more about [Crystal Reports and Crystal Reports Server](#).
- ▶ Learn more about the [Diamond Developer Community](#).

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