

Print on Demand Solution

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This article introduces print on demand solution, one of OKI Data's printing solutions.

Solution Development Background

Recently, there have been strong requests for on-demand printing using corporate color printers in order to cut overhead costs¹⁾. During meetings conducted with customers, the most sought after print on demand solution was for POP (Point of Purchase) advertising. Among the numerous advertising media, POP advertising is an extremely simple marketing tool. POP advertising covers a wide range of printed materials used in stores including guide to product displays, product tags and price tags. It is also a means to entice customers to pick up products and facilitate purchases (**Figure 1**). OKI Data has developed a print on demand solution called SignDirector™¹⁾ especially for POP advertising.



Figure 1. Example of POP Advertising

Solution Development Concept

From the results of the customer meetings, the development of the print on demand solution, SignDirector, was based on the following three concepts.

- (1) Simplify POP advertising work as much as possible.
- (2) Reduce printing and delivery costs of POP ads.
- (3) Centralize management of POP advertising and color printers.

*1) SignDirector is a registered trademark of OKI Data Americas, Inc. in the U.S.A.

Previous POP Ad Printing

In many cases, businesses that utilize POP advertising are made up of a head office that creates, prints, sorts and delivers the POP ads and stores that actually use the POP ads. Typical workflow for a business using POP advertising prior to deploying SignDirector is shown below (**Figure 2**).

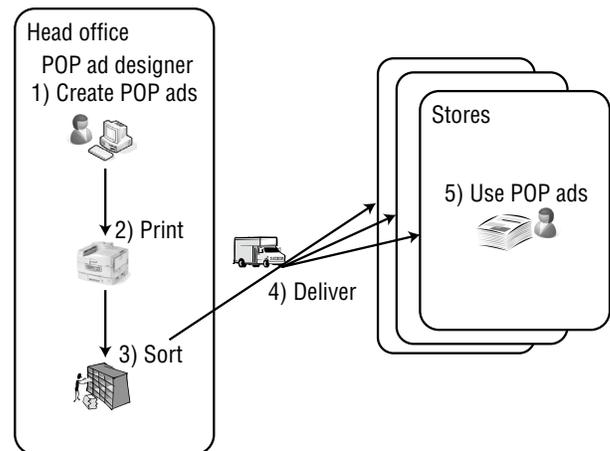


Figure 2. Previous POP Ad Printing

- 1) Designer at the head office creates POP ads
- 2) Finished ads are printed at the head office
- 3) Head office sorts the printed copies for each store
- 4) Copies of the ads are delivered to each store
- 5) Each store uses the delivered ads

The following issues have been pointed out with the above workflow.

(A) Printing issues

In step 2) above, the head office prints the finished POP ads for all the stores then sorts the copies for each store in step 3). However, errors can occur during the sorting process and the number of copies delivered may not match the number required by a particular store. If enough copies are not received, the store must go through the trouble of ordering additional copies or find another way to advertise. On the other hand, if

more than the required copies are received, they will be left over as stock. In either case, the result is wasted printing cost.

(B) Delivery issues

The sorting process in step 3) for delivery of the ads to each store is a heavy burden. Delivery costs that are incurred in step 4) are also a major problem. Furthermore, there is a risk that the ads will not be delivered to the stores on time.

(C) Management issues

The head offices are unable to keep track of whether the delivered POP ads were all used by each of the stores or were wasted without use.



Figure 4. SignDirector Screens

POP Ad Printing with SignDirector

With deployment of SignDirector, the previous POP ad printing workflow changes to the following (Figure 3).

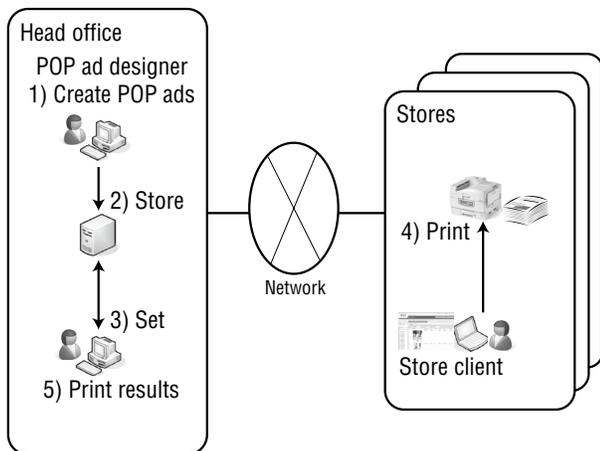


Figure 3. POP Ad Printing with SignDirector

- 1) Designer at the head office creates POP ads
- 2) Created POP ads are stored in SignDirector located at the head office
- 3) Head office sets which stores will receive the ads (equivalent to sorting and delivery) on SignDirector screen
- 4) Thumbnails of the available ads are displayed on SignDirector screen at each store where the required ads are selected and necessary copies printed out using the color printer at the store (Figure 4)
- 5) Head office, using SignDirector, keeps track of how many copies of which ads were printed at each store

Deploying SignDirector will solve issues (A), (B) and (C) mentioned in the previous section.

(a) Solving printing issues

Shifting the printing process from the head office to the stores will limit POP ad printing to a number of copies that is actually needed.

(b) Solving delivery issues

Since POP advertising data is sent directly from SignDirector to the color printer located at each store, cost of delivering printed media is eliminated.

(c) Solving management issues

Through step 5) in the workflow above, the head office is able to determine the actual number of POP ads that were printed.

Benefits of SignDirector Deployment

Benefits of SignDirector deployment are presented from the perspective of each organization.

(A) Management

From the management’s point of view, cost to deliver the POP ads from the head office to each store can be reduced. They can also expect cost savings from the elimination of wasted printing.

(B) Head office employees

Rather than handling actual prints, sorting for each store can be accomplished by making a setting once on the SignDirector screen. For future sorting, simply

call up the setting (delivery template) and link the POP ad files. This reduces workload each time sorting is required. Delivery templates can be managed by grouping them according stores or regions.

(C) Store employees

Store employees can print the necessary number of required POP ads whenever the ads are needed. There is no need to select paper type, make color settings, specify paper tray or perform any other complicated settings/operations. Using the SignDirector screen, the store employees simply need to select the POP ads, set the numbers of copies and push the print button.

Technical Overview of the Solution

Technical overview of the print on demand solution, SignDirector, is presented below.

(1) SignDirector process flow

The SignDirector process flow is shown in **Figure 5**.

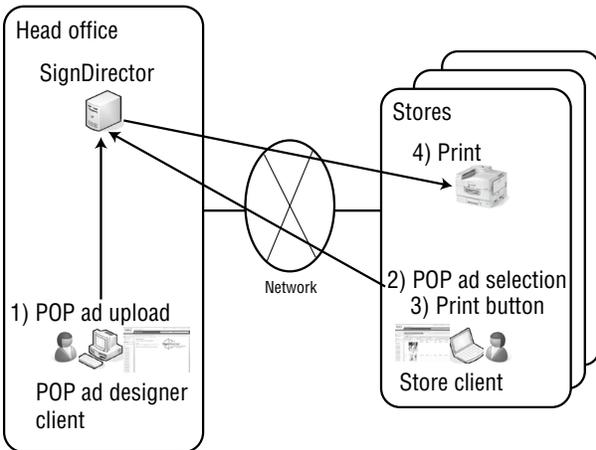


Figure 5. SignDirector Process Flow

The process flow is described below.

- 1) A designer uses the POP ad designer client to create POP ads then uploads the file to SignDirector using a Web browser. When uploading, print settings and file attributes are specified.
- 2) When a store user wishes to print POP ads, the user launches the Web browser with the store client to access SignDirector. User can then browse through the thumbnails of the available ads, make selections and specify the number of copies.
- 3) The store user clicks the [Print] button displayed on the Web browser.

- 4) When SignDirector receives a print instruction, it starts the print process on the color printer deployed at the appropriate store.

(2) SignDirector software configuration

Main components of the SignDirector software are shown in **Figure 6**.

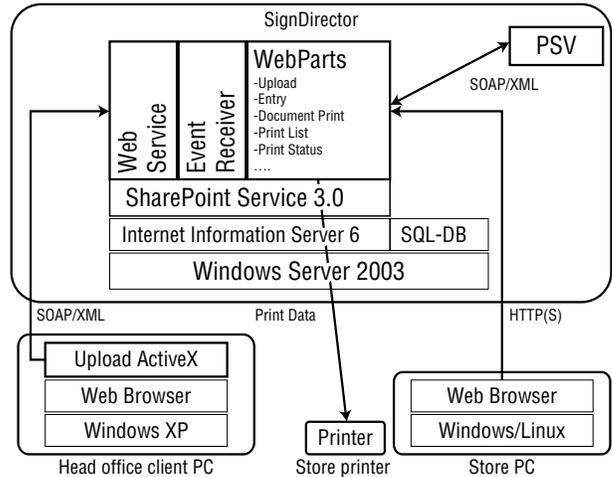


Figure 6. SignDirector Software Configuration

As shown in **Figure 6**, SignDirector is a Web application that runs on Windows Server^{®2)} 2003. For document management, Windows Server 2003's SharePoint⁺^{®2)} is used. The following proprietary components were developed to realize the print on demand solution.

(A) WebParts

WebParts are components that run on top of SharePoint. We developed WebParts that display results of various settings after SignDirector receives POP ad files from the client.

(B) EventReceiver

EventReceiver is a module for customizing behaviors related to an event that occurs on SharePoint. We developed a custom EventReceiver that saves data to SignDirector when the button on the list screen displayed by SharePoint is clicked.

(C) ActiveX^{®2)} control

Besides software for the server, an ActiveX control that operates on the client was developed. The ActiveX control creates thumbnail files from the POP ad files then saves the POP ad files and thumbnail files to SignDirector (**Figure 7**.)

^{*2)} Windows, Windows Server, SharePoint and ActiveX are either registered trademarks or trademarks of Microsoft Corporation in the U.S.A. and/or other countries.

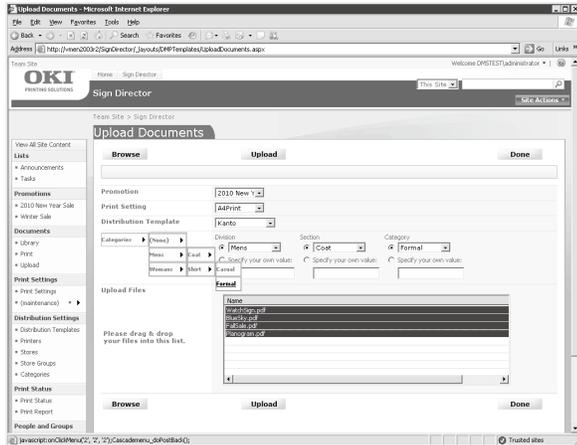


Figure 7. Developed ActiveX Control Screen

(3) Technical features

Technical features of SignDirector are as follows.

(A) Use of SharePoint

SharePoint was adopted as a development platform for document management due to its current popularity worldwide and its ease of deployment.

(B) SOAP/XML communication (Web service)

SOAP/XML is used for data communication between SignDirector and external components. In communicating with external components, proprietary technologies were avoided as much as possible opting for the flexible connection offered by Web service technologies.

(C) Use of external software

Rather than developing new software, we made it an objective to utilize external software for features that have already been implemented. Specifically, for printer registrations after SignDirector is deployed, the search for printers on the network is performed using the existing PSV (PrintSuperVision) together with Web services.

(D) Driverless printing

Since store clients only send print instructions and actual print data is created by SignDirector, store clients do not require print driver installation. A Web browser compatible with SignDirector is all that is needed for printing.

Therefore, costs of client replacement and disaster recovery can be kept low. With deployment of SignDirector, there is no need to create print data at the

client side. Hence, low performance clients can print just as fast as high spec clients.

Conclusion

This article introduced our print on demand solution, SignDirector. We plan to continue studying the real printing issues faced by customers and work to develop the best solution. Additionally, it is our objective to enhance cooperation between solutions through formulation and development of a solution framework. ◆◆

References

- 1) Hirohiko Nakazato, et al., Color Printing Solution, OKI Technical ReviewNo. 208, Vol. 73No. 4, pp. 8-13, October 2006

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