

## Executive Summary:

The client is in the business of offering printing solutions to its customers. The range of products offered by them is quite extensive – single sheets, booklets, unique pieces, circulation/rate cards, direct mail/BRC etc. In order to software-enable their workflows and run them in an efficient manner, Mindfire Solutions was approached to build 3 major applications for them. These web-based applications addressed the functions of designing and order placement, printing, and shipment. The combination of solutions offered has not only enabled the client to run its operations efficiently and also build scale as per their expectations.

## Technologies:

C#, ASP.NET MVC, Angular, Entity Framework, jQuery, Bootstrap, SQL Server, Crystal reports

## About the Client

**Name:** Confidential    **Location:** USA    **Industry:** Printing

## Designing & Order Placement:

Starting from template design, art selection to art creation, customers of our client can order their designed pieces of art for printing and also track the status of their orders until they are shipped to them. There are in-built template designs made available to the customers by the admin – some specific to the companies and some to campaigns like Summer Sale etc.

Customers can use the available templates present on the system or they can create their own templates and then the art to their liking. They can drag drop different text items like coupons, discounts, addresses on the images as well. Once a piece of art is completed, they have to add it to the shopping basket and order it. They can also track the existing orders or refer to the past ones from the “Order History” page.

## Print Management System

With a desire to serve their needs better, the client got customized versions of this application developed by Mindfire for some of its customers as well.

### **Printing App:**

This web-based application is used at the printing plant. Once the orders are received at the plant, they get converted to sales orders for the printing department and sent for printing. A method called gang-run printing is deployed by the client to handle its printing activities. This involves printing similar jobs from a multitude of orders/customers all at the same time. The approach has a significant impact in reducing costs related to production, press-set-up, paper etc. , the benefits of which can get passed on to the customers.

The application has the provision to handle the gang-run printing in two ways i.e. manual and automatic. In the manual process, the user has to select the specific sales orders and the application calculates the gang score using factors such as labor cost, paper cost, plate cost, running cost, print area and number of pieces. In case of automatic ganging, the application creates different combinations using all sales orders and prepares different gang scores. Later, the assigned personnel in the press select the best gang score and convert the sales orders to work orders. These work orders are then sent to the press for actual printing.

### **Shipment App:**

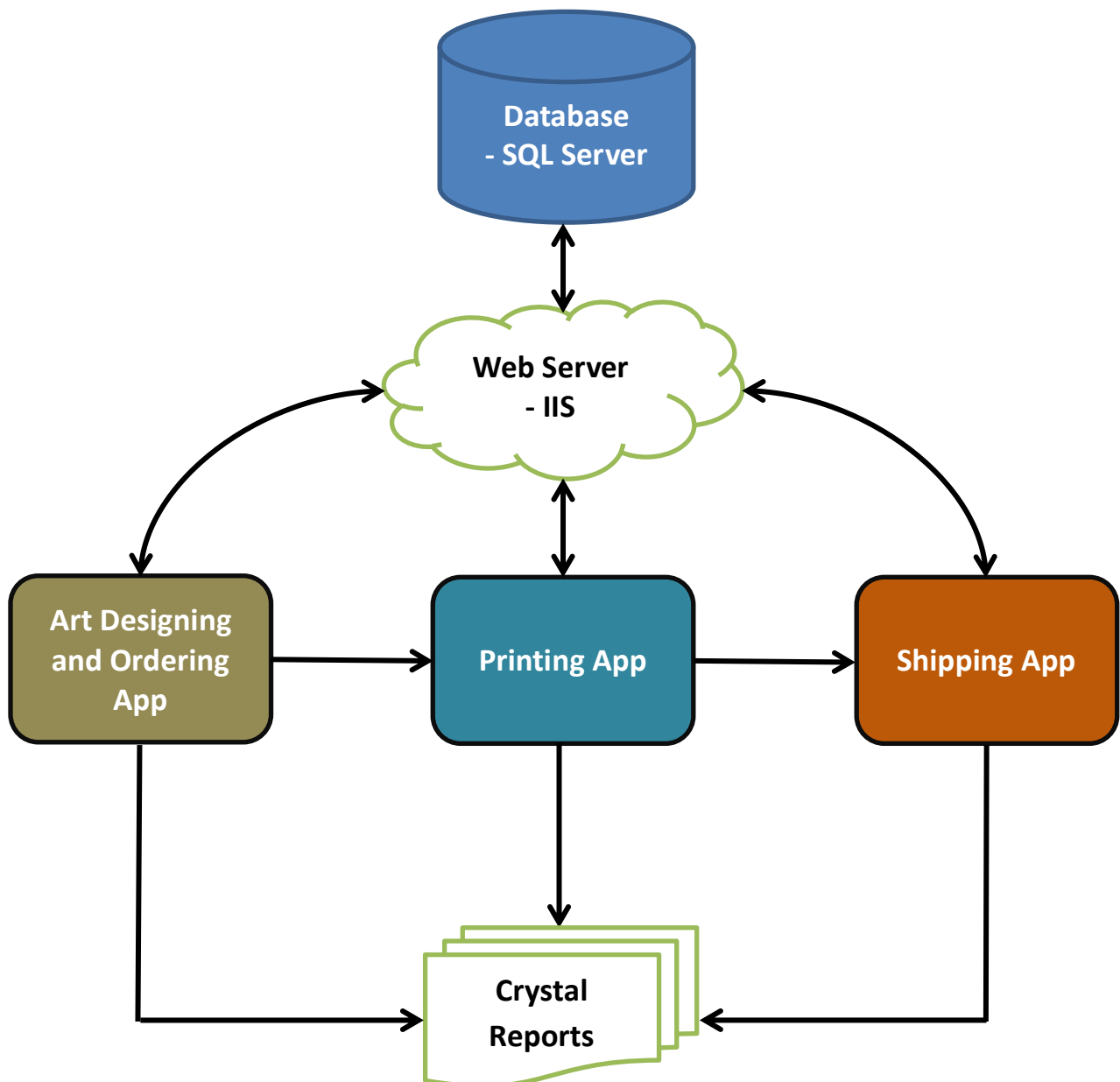
Once all the printing work is done, the deliverables have to be shipped to their respective addresses by available carriers. This application uses the size and width of a given item, its type and its count to decide on the best packaging needed for its shipping. The shipping manager can view all the shipments grouped by addresses and date-of-shipping. Accordingly, the loads get prepared and the best possible carriers are identified.

This application also manages the purchase orders of the printing company. All kinds of printing materials, machinery purchases etc. can be ordered using modules meant for facilitating it.

## Reporting:

Each of the applications has a reporting feature wherein various types of reports and graphs can be viewed and downloaded for offline use.

## Architecture Diagram



## Screenshots:



Screen1: Designing and Order placement



Screen2: Printing App

Orders **Ganging** 837 MsparkSSTest\_50\_S\_Ctd\_4x12\_NB

Back Next Start Over

Products

50\_S\_Ctd\_4x12\_NB

SOLines

Rollwidth Rollwidth

Machine all

Printweek Printweek

GangComment GangComment

Q

TempGangList

	GangCombinationId	GangId	NumberUp	NumSOLines	SIPS	MachineCode	RollWidth (in)	Cutoff (in)	GangScore (10 <sup>-3</sup> 5/m <sup>2</sup> )	
-	168	233	9	5	5,192	Web1_1	17	22.75	0.171992	
	GangMemberId	ProductId	ProductCode	DateRequestedShip	FlatWebPlus	FlatHeightPlus	SOLineId	SOLit	SOLCode	Qty
	1228	147	50_S_136_4x12_NB Aug 15, 2016	4	12	1070	245	Aspen136a		5,192
	1235	147	50_S_136_4x12_NB Aug 15, 2016	4	12	837	181	Aspen136a		5,119
	1233	147	50_S_136_4x12_NB Aug 15, 2016	4	12	836	181	Aspen136a		2,451
	1234	147	50_S_136_4x12_NB Aug 15, 2016	4	12	836	181	Aspen136a		2,451
	1231	147	50_S_136_4x12_NB Aug 15, 2016	4	12	986	225	Aspen136a		2,645
	1232	147	50_S_136_4x12_NB Aug 15, 2016	4	12	986	225	Aspen136a		2,645
	1229	147	50_S_136_4x12_NB Aug 15, 2016	4	12	1282	318	Aspen136a		2,619
	1230	147	50_S_136_4x12_NB Aug 15, 2016	4	12	1282	318	Aspen136a		2,619
+	167	35	6	5	5,290	Web1_1	17	22.75	0.173928	

Screen3: Shipping App