



# Dublin Flowers

Proposal for Strategic ICT Implementation

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## A) Background information

### A1. Organisation

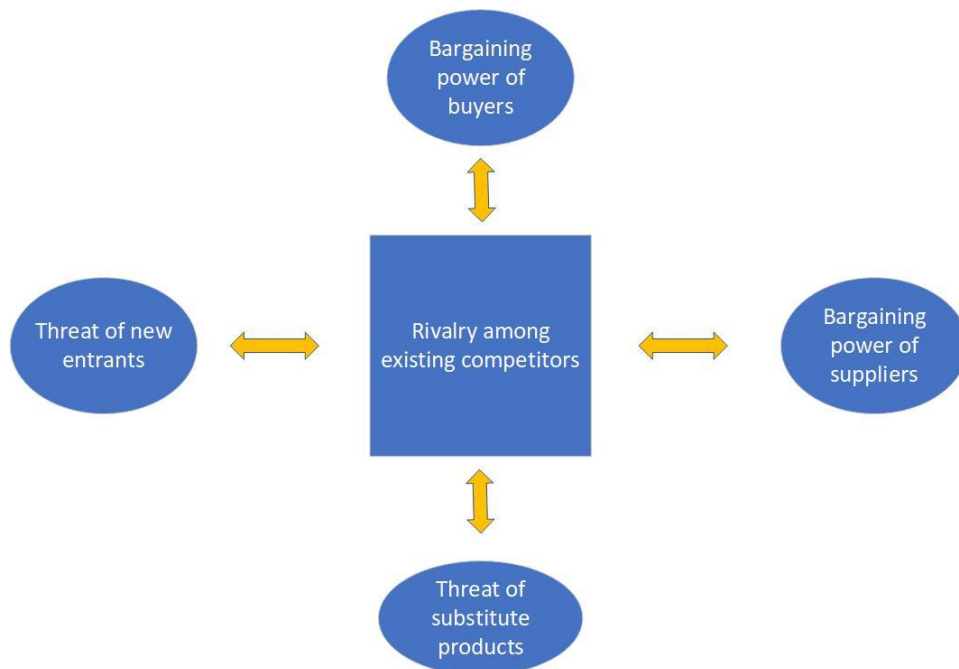
Dublin Flowers is a small flowers shop that is owned by a local man, which sells flowers as a primary product. Besides flowers, customers can also purchase balloons, cards and chocolates on the side. The business has been running for little over two decades. In the past, the owner has been able to operate at a consistent sales revenue. However, with recent increased competition, the sales have taken a hit. Due to the shop being local, it is limited in its reach. Besides relying on customers coming into the shop, the shop also currently targets the city halls, banquet halls, grocery stores and places near churches, so that maximum people can be engaged.

The owner has hired us as contractors to improve the sales numbers by targeting a wider range of customers, those who shop online. Because the shop does not have a website, the owner has to rely on local customers to come to his shop.

After careful consideration, we propose the following changes and implementations to be made. As contractors, we are aiming to change the business-to-customer engagement. We are readjusting the personal interaction by focusing on online purchases. It is important to mention that the shop will still have a physical store for local customers to go to, but the main focus will be the online sales. We aim to extend the existing local customer base to an online focused customer base whilst keeping the personal relationship between customer and owner.

### A2. Industry

It would be ideal to analyse what the market position of the business is. We will be using the A good the Porter's five forces to analyse this.



## Porter's Five Forces

### *Threat of new entrants*

The presence of large stores like Tesco and Lidl has affected small businesses in a terrible way. Customers find it easier to go into a large store and buy all that they need, including flowers, instead of visiting different shops for different items. Furthermore, small businesses cannot compete with the low prices these large stores are offering flowers, merely because they have less bargaining powers.

### *Bargaining power of suppliers*

Suppliers have more influence than buyers on the flower market, as well as setting up favourable pricing to fit their benefit. They can use this influence by threatening to increase prices or reduce buyer's profitability. Also, flower business depends on punctuality. Services rendered by suppliers have to be reliable and prompt.

### *Bargaining power of buyers*

The bargaining power of the buyer is relatively limited. Flowers are inferior goods, which mean that they are not a necessity. That being said, flowers are commonly used as gifts and hence, they are frequently bought. During special occurrences, such as Valentine's Day, Mothers' Day and Christmas, flowers are high in demand. Prices for flowers are high across the market, which means that customers will roughly be paying the same price at any shop across the city.

### *Threat of substitute products*

Sweets, greeting cards, perfume, plastic flowers are different kinds of substitutes that ease the way of greetings, presentations, decoration purposes, wishes (birthday, anniversary), special occasions. These products are readily available to everyone at cheap rates which changes the perception of people towards buying unique bouquets.

### *Rivalry among existing competitors*

Industry rivalry depends on various factors like the level of advertising, sales strategy, online and offline stores because in today's technologically advanced world everyone wants to save time and have a variety of products at hand to choose. So, by selling flowers for a different type of events online a lot of competition can be cut out, as flowers are seen as unique entities in this big electronic market. Online marketing will widen the scope of customers and eliminate the offline competition.

## B) Infrastructure

We suggest implementing the solution using Salesforce. Below are the critical evaluation of this online tool.

### Benefits

#### *Scalable*

A versatile web application is one that functions admirably with one client or 1,000,000 clients, and nimbly handles pinnacles and plunges in movement consequently. By including and evacuating virtual machines just when required, adaptable applications merely devour the assets essential to take care of demand.

Cloud stages are estimated on a compensation as-go-premise, so you are charged just for what your application employments. With windows sky blue, for instance, you pay by the hour for processing and by the gigabyte for capacity. This gives an application a chance to begin little, as an analysis should, and acquire merely little charges. Your money related risk is limited.

Given the compensation as-go-premise, there is no necessity of duty. If the investigation does not [pan out, you can close the application and quit paying. If it is a significant achievement at that point extending the application is quite clear, ask for more assets shape the cloud.

Since applications based on a cloud stage can begin little, at that point develop as required, they are a decent match for most advancement endeavors. Also, by bringing down the cost of disappointment, a cloud stage can make it simpler to explore — or even stay away from — inside procedures for attempting new things. Thoughts that may somehow, or another never get tried would now be able to have an opportunity to have any effect on your association. Making disappointment less expensive gives you a chance to work some more things for a similar cash, enhancing your chances of finding a fruitful business.

### Risks

#### *Outsourcing to an external provider*

Utilizing cloud administrations gives greater adaptability. However, it doesn't wipe out the dangers. Outsourcing implies banding together with another organisation. Imagine a scenario in which that organisation — our cloud stage supplier — doesn't satisfy your desires. Consider the possibility that they are not dependable, for example, and your applications are down over and over again. Imagine a scenario in which they are challenging to work with, neglecting to give the help or new highlights your IT individuals require. On the other hand, imagine a scenario in which they choose to leave the cloud stage business.

#### *Storing data outside your organisation*

The most significant worry in utilising a cloud stage is about their information: What if restrictive data or competitive advantages get spilt?? Before putting data on a cloud stage, it's imperative to ensure you

comprehend the controls that influence you and how they constrain what you can do with your information. Noteworthy information rupture likely means the finish of their business and an immense money related misfortune, giving them substantial motivating forces to keep the information they hold secure.

#### *Vendor lock-in*

Seller secure. The secure merchant issue in distributed computing is where clients are reliant (i.e. secured) on a single cloud supplier innovation execution and can't undoubtedly move later on to the other merchant without generous costs, legal limitations, or specific contrary qualities. Maintaining a strategic distance from merchant secure entirely most likely isn't conceivable, yet endeavouring to limit it in advance bodes well.

#### Advantages

There is also no need to purchase software and hardware systems to help maintain and keep the application running. Therefore, unlike most software, Salesforce requires no capital investment.

The integrated solutions allow users to work more efficiently and increase the value of each part of the customer life cycle. Moreover, Salesforce analytics and its reporting function gives its users the ability to expand their campaign capacity. As a result, overall productivity can be increased and profit can be maximized.

Since Salesforce is an application and no software is required, there is no need for constant updates as Salesforce will update automatically.

#### Disadvantages

Salesforce has its particular upkeep plan since keeps running cloud server individually. Therefore, there are times that the application won't be available. Clients can likewise lose an individual touch as during the time spent automation

Salesforce contains obstructions to selection. This implies despite the fact that Salesforce is shoddy, the cost to coordinate the application and overhauling their IT to fuse it into an organisation isn't the same as the cost of procuring Salesforce. It is conceivable that the value of incorporating it can surpass the expenses of the product itself.

#### References

Crmexposed.com. (2007). *Compare Salesforce.com Exposed Advantages - Disadvantages*. [online]  
Available at: <http://www.crmexposed.com/compare-salesforcecom-advantages-disadvantages.php>  
[Accessed 1 Nov. 2017].

David Chappell & Associates (2011). *The Benefits and Risks of Cloud Platforms*. Microsoft Corporation.

Salesforce. (n.d.). *SalesForce Advantages/Disadvantages*. [online] Available at: <https://salesforce237.wordpress.com/advantagesdisadvantages/> [Accessed 1 Nov. 2017].

## C) Logical Design

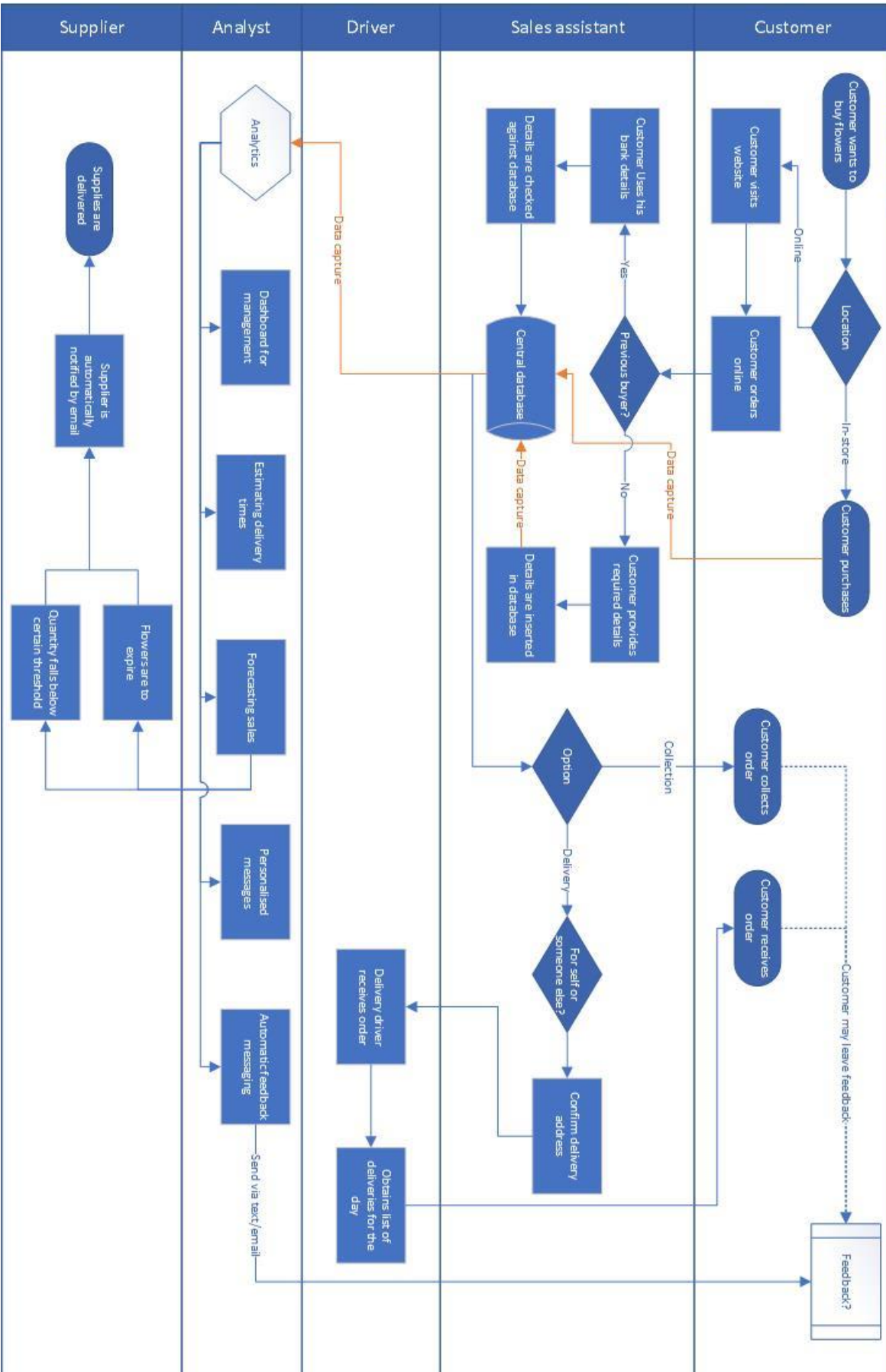
As shown in the flowchart, the customer can buy products in two separate places; the customer can walk into the shop to buy the flowers directly, or can order them by using the Internet. Either way, when a customer has purchased, the transaction details will be stored in the central database.

Once the details steps are completed, the customer has the option to have their orders delivered or whether they wish to come and collect it in the shop themselves. The customer can also choose to have his products delivered by our delivery driver. The delivery driver will only be authorised to access the delivery table, which will show certain orders to be delivered per date.

The analyst will only have read access to the central database. The analyst's job consists of many things, such as creating dashboards for management, estimating the delivery times for optimisation, forecasting sales, sending personalised messages and automated feedback messaging. Forecasting sales includes the analysis of sales in order to specify the most efficient supply thresholds. The supplier receives an automated email when the quantity of flowers falls below a certain specified threshold. This threshold can change depending on the demand for those flower bouquets and seasonality. This is why the analyst will have to forecast with those included features. The personalised messages are marketing campaigns, for example, a Valentine's Day reminder to buy flowers for their loved ones. Customers who recently purchased something at Dublin Flowers using the phoning-in method will also receive a feedback text/email with a quick way of scoring their experience of ordering via our phone system. This will allow us to improve it overtime, bearing in mind that not all customers will want to opt-in for this marketing or whether they will respond to such messages.

## Dublin Flowers

## Functions & Users



## D) Physical Design

Our ERD diagram includes the following tables:

### Customer:

It assigns an ID number called "CustomerID" to each customer and It also includes all their personal details

### Order:

As the name suggests, this table provides details about all orders made. It is also linked to the Customer table by "CustomerID" which means each specific order is assigned to a specific customer.

### Feedback:

Linked to the orderID so the feedback made by customer will be attached to a specific order. It includes score and suggestion attributes for customers to express their opinions.

### OrderInventory:

It is a linking table between order and Inventory and it also provides some details about the quantity of the certain products purchased in that order.

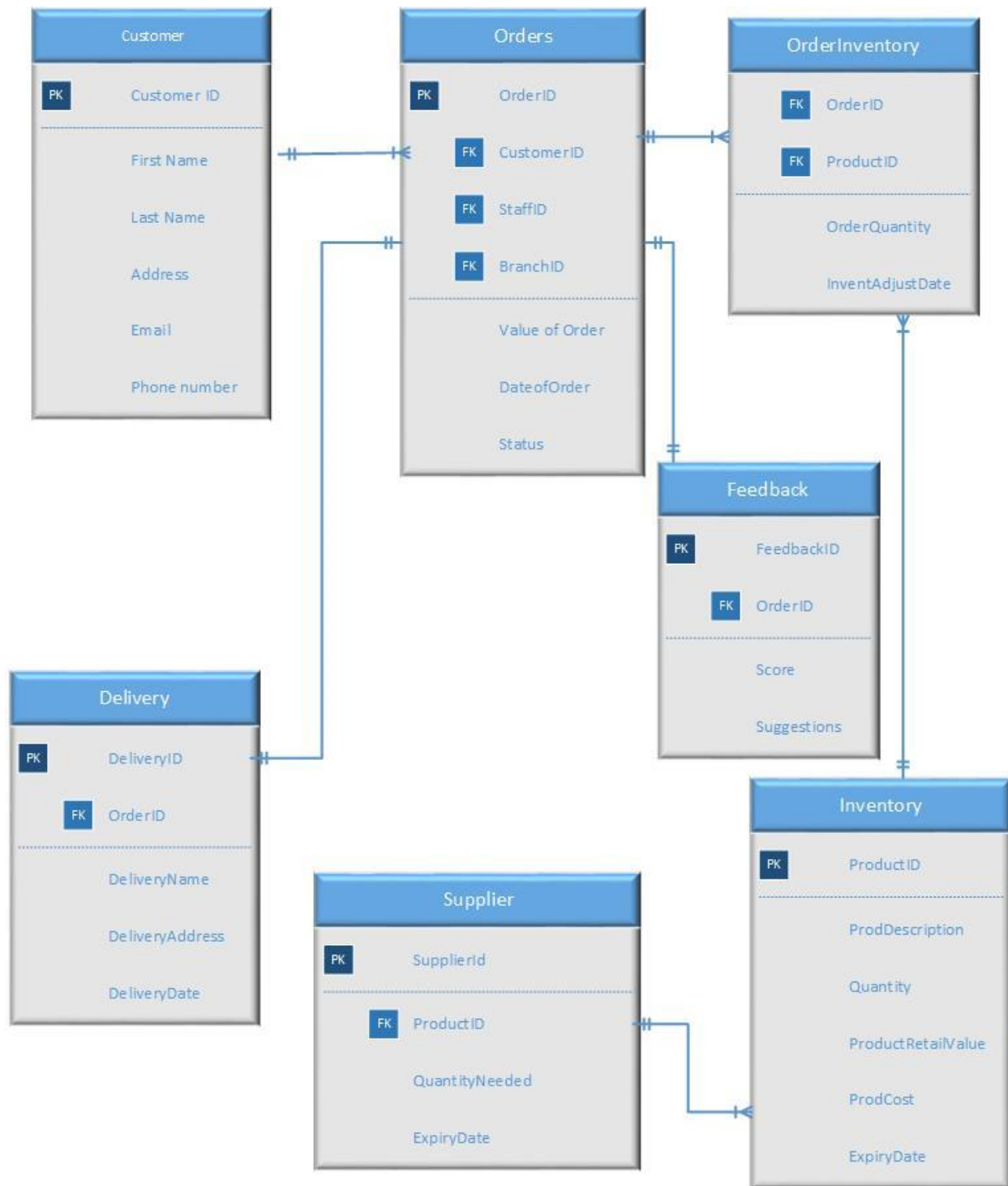
### Inventory:

It includes the list of all products present in store and details about them. It is also linked to the supplier table which makes it easier for the suppliers to check if stocks are running low.

### Supplier:

It has details about all suppliers the business is dealing with and it is also linked to the inventory table which gives the supplier an access to track the stock left in store.





Below is the data dictionary that is used as part of the Salesforce implementation.

Object	Custom Field	Data Type
<b>Customer</b>		
	customer_id	int (autonumber) - <b>PK</b>
	firstnames	varchar(50)
	surname	varchar(50)
	street	varchar(150)
	city	varchar(30)
	eircode	char(7)
	email	varchar(50)
	phone_number	char(10)
<b>Feedback</b>		
	feedback_id	int - <b>PK</b>
	order_id	int (FK relationship with order)
	feedback_score	int - picklist
	suggestions	varchar(100)
<b>Supplier</b>		
	supplier_id	int - <b>PK</b>
	product_id	int (FK relationship with
	quantity_needed	int
	expiry_date	date
<b>Order</b>		
	order_id	int <b>PK</b>
	customer_id	int (FK relationship with
	order_date	date
	status	char(1) - picklist
<b>Inventory</b>		
	product_id	Int <b>PK</b>
	Product_name	Varchar(30)
	product_description	varchar(30)
	inventory_quantity	int
	product_retail_price	int
	product_cost	int
	expiry_date	date
<b>OrderInventory</b>		
	order_id	int (FK relationship with order)
	product_id	int (FK relationship with
	order_quantity	int

## Salesforce Implementation

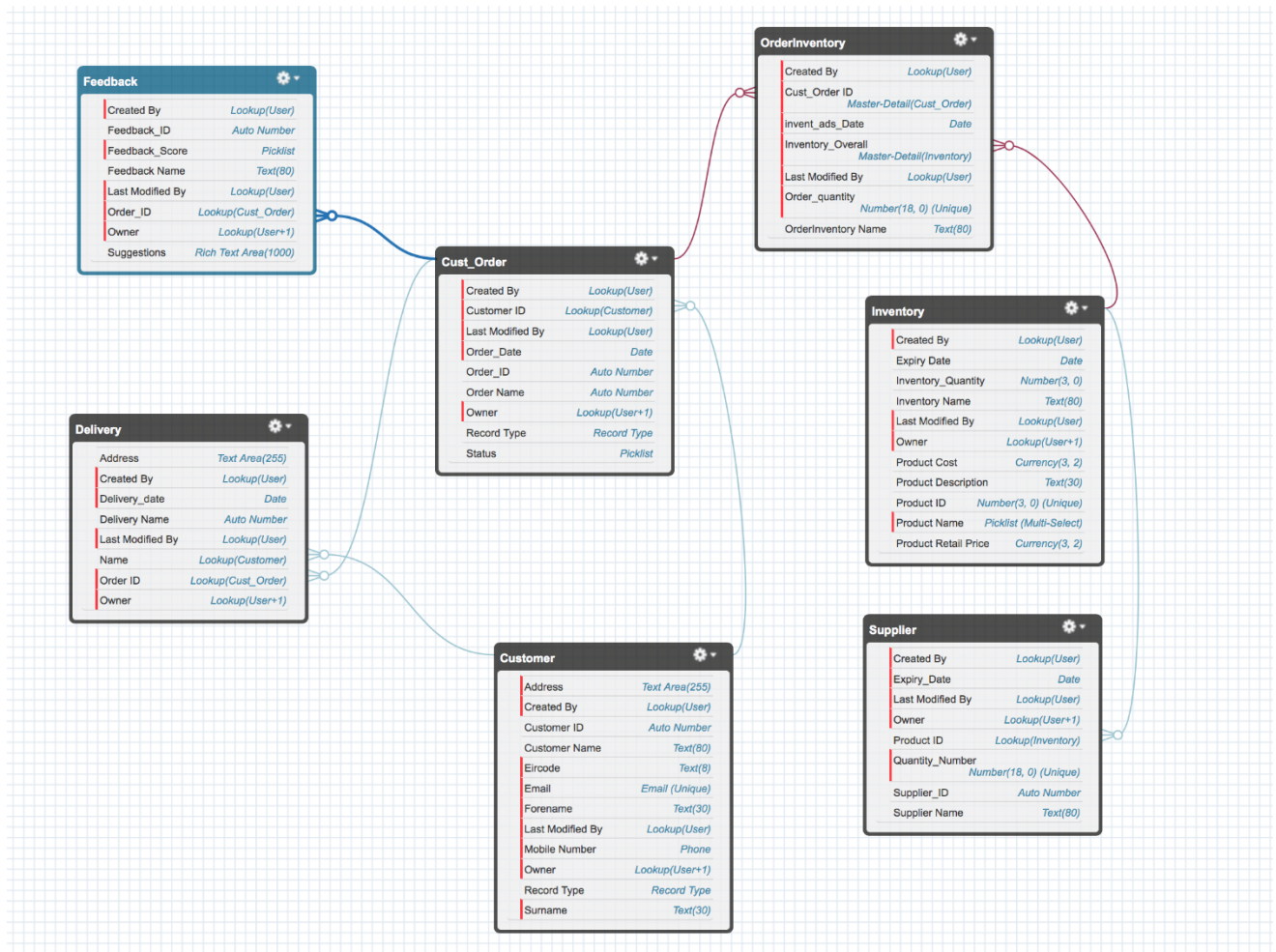
We decided it would be the best idea to make this business transformation using Salesforce. Below, are the steps that we undertook.

### User Experience Process

The process starts when a customer inserts their information into the VisualForce webpage. This customer will then be able to choose their product for the product that needs to be purchased which adds the order into the salesforce. Later, this order is processed for delivery based on the information that is entered into the salesforce and delivered to the customer by using the customer information available within the salesforce that is accessible by the delivery person. After delivery, salesforce leaves feedback message to the customer through which Dublin Flowers inspects the process if there are any for further improvements that need to be made.

### Development Process and Final Architecture

The development of the salesforce starts with the creation of the salesforce developer account. We decided to use Siddharth Sharma as the super user. He also serves as the system admin. This role would eventually be taken up by the owner of Dublin Flowers. After the creation of the account we moved on to the creation of the custom objects and their respective custom fields that help in making the architecture of the whole business process. Then come the entity relationship schema, which helps us get an idea about what kind of relationships the custom objects are going to have with each other. And the respective custom fields can be then created in accordance to the necessity of the project. Then, we linked the custom objects with each other via lookups and master detail relationships. Lookups act as foreign key to the custom objects linked within our case Order\_ID acts like a foreign key for the Delivery table, which is used to deliver the right package to the right person. Then the users were created with specific permissions to each user for assessing the information, which they are supposed to see and access (only the owner can have all the permissions). Then validation rules are made so that we can keep in check the processes that are being initiated. Then with the help of the workflow rules we made email alerts for the users to keep in check with the process flow and alert a user if something goes wrong. In order to test all features of the solution, we imported data from Mockaroo using the Data Import Wizard. Finally, we created the VisualForce web integration. The webpage acts as the front end of the solution. Lastly, we designed template dashboards and reports that can be used by specific users.



## Data Management

As this is a proposal for implementation, please bear in mind that only dummy data have been used as part of the testing phase. Mockaroo was used for the data creation.

## Objects

These are all the objects tables present in Salesforce. The description of each object is written next to it. All objects are currently deployed.

Label	Master Object	Deployed	Description
<a href="#">Cust_Order</a>		✓	It contains the details of the customers who have ordered.
<a href="#">Customer</a>		✓	Various consumers who will purchase flowers, balloons, cards and chocolates. During special occasions: such as Valentine's Day, Mothers' Day and Christmas is the peak time for business.
<a href="#">Delivery</a>		✓	It contains the delivery address & phone number of the customer so that the package is delivered on time and to the right place. Delivery date is also included as the order needs to reach the customer as per the request.
<a href="#">Feedback</a>		✓	The rating/reviews given by the customer for the quality of services/products and delivery on a scale of 1 to 10.
<a href="#">Inventory</a>		✓	It includes the list of all products present in store and details about them. It is also linked to the supplier, which makes it easier for the suppliers to check if stocks are running low.
<a href="#">OrderInventory</a>	<a href="#">Cust_Order</a> , <a href="#">Inventory</a>	✓	Its the Junction Table of the Database.
<a href="#">Supplier</a>		✓	The one who brings in fresh flowers, balloons, cards and chocolates to the shop/branch. Automatically gets the notification when the inventory is down and gets the required items accordingly.

## Users authorization

We have created several users and profiles according to the business' current organisational structure. Not all users are currently active.

Full Name ↑	Alias	Username	Last Login	Role	Active	Profile	Manager
<a href="#">Albertson, Lavinie</a>	lalbe	<a href="#">lavinlea@nci.com</a>	13/12/2017 14:46	<a href="#">SVP_Sales &amp; Marketing</a>	<input type="checkbox"/>	<a href="#">Standard Platform User</a>	
<a href="#">Albertson, Michael</a>	malbe	<a href="#">malbe@nci.com</a>	13/12/2017 16:13	<a href="#">Channel Sales Team</a>	✓	<a href="#">ProfileSalesAssistant</a>	<a href="#">Sharma, Siddharth</a>
<a href="#">Baker, Maddie</a>	mbake	<a href="#">maddiebaker@nci.com</a>	15/12/2017 14:28	<a href="#">SVP_Sales &amp; Marketing</a>	✓	<a href="#">ProfileAnalyst</a>	<a href="#">Sharma, Siddharth</a>
<a href="#">Chatter Expert</a>	Chatter	<a href="#">chatty.00d0o000000yv4euas.qcuapdlb2kei@chatter.salesforce.com</a>			✓	<a href="#">Chatter Free User</a>	
<a href="#">Dawe, Bart</a>	bdawe	<a href="#">bdawe2@loc.gov</a>			<input type="checkbox"/>	<a href="#">Identity User</a>	
<a href="#">Dawe, Bart</a>	bdawe	<a href="#">bdawe@nci.com</a>	13/12/2017 15:15	<a href="#">Installation &amp; Repair Services</a>	✓	<a href="#">ProfileDelivery</a>	<a href="#">Sharma, Siddharth</a>
<a href="#">Luno, John</a>	jluno	<a href="#">jluno4@goo.ne.jp</a>		<a href="#">Marketing Team</a>	<input type="checkbox"/>	<a href="#">Identity User</a>	
<a href="#">Luno, John</a>	jluno	<a href="#">jluno@nci.com</a>	13/12/2017 15:18	<a href="#">Customer Support, International</a>	✓	<a href="#">ProfileSupplier</a>	<a href="#">Sharma, Siddharth</a>
<a href="#">Pottberry, Chet</a>	cpott	<a href="#">cpottberry1@google.com.au</a>			<input type="checkbox"/>	<a href="#">Read Only</a>	
<a href="#">Sharma, Siddharth</a>	SShar	<a href="#">siddharth_sharma@nci.com</a>	16/12/2017 23:17	<a href="#">CEO</a>	✓	<a href="#">System Administrator</a>	
<a href="#">User, Integration</a>	integ	<a href="#">integration@00d0o000000yv4euas.com</a>			✓	<a href="#">Analytics Cloud Integration User</a>	
<a href="#">User, Security</a>	sec	<a href="#">insightssecurity@00d0o000000yv4euas.com</a>			✓	<a href="#">Analytics Cloud Security User</a>	

As you can see, each user is assigned a certain profile. It is the profile that helps with the authorisation and permissions of the objects.

- **ProfileAnalyst**

	Basic Access				Data Administration	
	Read	Create	Edit	Delete	View All	Modify All
<b>Orders</b>	✓	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓	<input type="checkbox"/>
<b>Customers</b>	✓	✓	✓	<input type="checkbox"/>	✓	<input type="checkbox"/>
<b>Deliveries</b>	✓	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓	<input type="checkbox"/>
<b>Feedbacks</b>	✓	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓	<input type="checkbox"/>

	Basic Access				Data Administration	
	Read	Create	Edit	Delete	View All	Modify All
Inventories	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
OrderInventories	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Suppliers	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The analyst is given the read and view permissions, create and edit customers along with access to inventories and suppliers, because the analyst has to give insight about what of kind products are being sold, for instance. Furthermore, the analysst will have to observe what the customers are buying and searching to predict what products can be added or their quantities be increased in the inventory to benefit from the analyses.

- **ProfileDelivery**

	Basic Access				Data Administration	
	Read	Create	Edit	Delete	View All	Modify All
Orders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Customers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Deliveries	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Feedbacks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The delivery profile is the profile designed for the delivery driver. This profil has only access to the deliveries object as they only need to know where and when the package has to be delivered. The idea behind this is so that the delivery driver has an updated list of deliveries for that day. This profile cannot create or edit anything else.

- **ProfileSupplier**

	Basic Access				Data Administration	
	Read	Create	Edit	Delete	View All	Modify All
Inventories	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
OrderInventories	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Suppliers	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The supplier profile just needs to know when to deliver the items that are low in the inventory. high is notified by an email alert. Each supplier will receive an email when the business has to be restocked.

- **System Administrator (aka manager/owner of Dublin Flowers)**

	Basic Access				Data Administration	
	Read	Create	Edit	Delete	View All	Modify All
Orders	✓	✓	✓	✓	✓	✓
Customers	✓	✓	✓	✓	✓	✓
Deliveries	✓	✓	✓	✓	✓	✓
Feedbacks	✓	✓	✓	✓	✓	✓

	Basic Access				Data Administration	
	Read	Create	Edit	Delete	View All	Modify All
Inventories	✓	✓	✓	✓	✓	✓
OrderInventories	✓	✓	✓	✓	✓	✓
Suppliers	✓	✓	✓	✓	✓	✓

The owner of the shop has all the permissions because the owner is the super user and has to manage all the process going on. All the sales, number of items in the inventory, confirmation of an order, order details, delivery details, the reviews the shop is getting from the customers, the items to be bought from supplier. All the above-mentioned processes have to be monitored by the owner in order to run the business successfully.

## Custom Fields

- **CustOrder**

Custom Fields & Relationships		
Action	Field Label	API Name
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">Customer ID</a>	Customer_ID__c
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">Order Date</a>	Order_Date__c
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">Order ID</a>	Order_ID__c
<a href="#">Edit</a>   <a href="#">Del</a>   <a href="#">Replace</a>	<a href="#">Status</a>	Status__c

The order ID is the primary key

- **Customer**

Field Label	API Name	Data Type
<a href="#">Address</a>	Cust_Address__c	Text Area(255)
<a href="#">Customer ID</a>	Customer_ID__c	Auto Number
<a href="#">Eircode</a>	Eircode__c	Text(8)
<a href="#">Email</a>	Email__c	Email (Unique)
<a href="#">Forename</a>	Forename__c	Text(30)
<a href="#">Mobile Number</a>	Mobile_Number__c	Phone
<a href="#">Surname</a>	Surname__c	Text(30)

The customer ID is the Primary key

- **Delivery**

Action	Field Label	API Name	Data Type	Indexed
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">Address</a>	Address__c	Text Area(255)	
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">Delivery date</a>	Delivery_date__c	Date	
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">Name</a>	Customer_name__c	Lookup(Customer)	✓
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">Order ID</a>	Cust_Order_ID__c	Lookup(Cust_Order)	✓

Here Order ID is a foreign key to Delivery table.

- **Feedback**

Action	Field Label	API Name	Data Type	Indexed
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">Feedback ID</a>	Feedback_ID__c	Auto Number	
<a href="#">Edit</a>   <a href="#">Del</a>   <a href="#">Replace</a>	<a href="#">Feedback Score</a>	Feedback_Score__c	Picklist	
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">Order ID</a>	FDB_ID__c	Lookup(Cust_Order)	✓
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">Suggestions</a>	Suggestions__c	Rich Text Area(1000)	

Feedback\_ID is the primary key.



- **Inventory**

Action	Field Label	API Name	Data Type	Indexed
<a href="#">Edit</a>   <a href="#">Del</a>	<u>Expiry Date</u>	Expiry_Date__c	Date	
<a href="#">Edit</a>   <a href="#">Del</a>	<u>Inventory Quantity</u>	Inventory_Quantity__c	Number(3, 0)	
<a href="#">Edit</a>   <a href="#">Del</a>	<u>Product Cost</u>	Product_Cost__c	Currency(3, 2)	
<a href="#">Edit</a>   <a href="#">Del</a>	<u>Product Description</u>	Product_Description__c	Text(30)	
<a href="#">Edit</a>   <a href="#">Del</a>	<u>Product ID</u>	Product_ID__c	Number(3, 0) (Unique)	✓
<a href="#">Edit</a>   <a href="#">Del</a>   <a href="#">Replace</a>	<u>Product Name</u>	Product_Name__c	Picklist (Multi-Select)	
<a href="#">Edit</a>   <a href="#">Del</a>	<u>Product Retail Price</u>	Product_Retail_Price__c	Currency(3, 2)	

- **OrderInventory**

Action	Field Label	API Name	Data Type
<a href="#">Edit</a>   <a href="#">Del</a>	<u>Cust_Order ID</u>	Cust_Order_ID__c	Master-Detail(Cust_Order)
<a href="#">Edit</a>   <a href="#">Del</a>	<u>invent_ads Date</u>	invent_ads_Date__c	Date
<a href="#">Edit</a>   <a href="#">Del</a>	<u>Inventory Overall</u>	Inventory_Overall__c	Master-Detail(Inventory)
<a href="#">Edit</a>   <a href="#">Del</a>	<u>Order quantity</u>	Order_quantity__c	Number(18, 0) (Unique)

Master detail relationship has been setup between Customer\_ID and Cust\_Order , Inventory overall with Inventory.

- **Supplier**

Action	Field Label	API Name	Data Type	Indexed
<a href="#">Edit</a>   <a href="#">Del</a>	<u>Expiry Date</u>	Expiry_Date__c	Date	
<a href="#">Edit</a>   <a href="#">Del</a>	<u>Product ID</u>	Product_ID__c	Lookup(Inventory)	✓
<a href="#">Edit</a>   <a href="#">Del</a>	<u>Quantity Number</u>	Quantity_Number__c	Number(18, 0) (Unique)	✓
<a href="#">Edit</a>   <a href="#">Del</a>	<u>Supplier ID</u>	Supplier_ID__c	Auto Number	

Product\_ID is a foreign key to the Supplier table.

## Layouts

The default layouts were used for the object. Salesforce offers default layouts, such as for example the order layout. As you can see in the screenshot, our CustOrder object uses the Salesforce order layout.

Action	Page Layout Name	Created By
<a href="#">Edit</a>   <a href="#">Del</a>	Customer Layout	<a href="#">Siddharth Sharma</a> , 13/12/2017 12:07

Action	Page Layout Name	Created By
<a href="#">Edit</a>   <a href="#">Del</a>	Delivery Layout	<a href="#">Siddharth Sharma</a> , 13/12/2017 13:14

## Validation Rules

**Validation Rule Edit**

SaveSave & NewCancel

Rule NameQuantity\_Check

Active☒

DescriptionA minimum number of products that need to be ordered from the supplier.

**Error Condition Formula**

**Example:** `Discount_Percent__c > 0.30` [More Examples ...](#)  
Display an error if Discount is more than 30%  
If this formula expression is **true**, display the text defined in the Error Message area

Insert Field

Insert Operator ▾

Quantity\_Number\_\_c > 5

Check Syntax

Functions

-- All Function Categories ▾

ABS  
AND  
BEGINS  
BLANKVALUE  
BR  
CASE

Insert Selected Function

ABS(number)  
Returns the absolute value of a number, a number without its sign

[Help on this function](#)

**Error Message**

**Example:** `Discount percent cannot exceed 30%`  
This message will appear when Error Condition formula is **true**

Error Message

The minimum number of products not supplied.

This error message can either appear at the top of the page or below a specific field on the page

Error Location

☐ Top of Page ☒ Field

Quantity\_Number ▾ ⓘ

This validation rule helps in sending an email alert to the owner that if the quantity of any particular item is less than five, supplier must be notified that quantity has to be increased.

## Workflow Rules

We implemented several workflow rules.

Rule Name ↑	Description
<a href="#">Enter_Full_Name</a>	Concatenate the forename and the surname
<a href="#">Low_Inventory</a>	For low inventory email
<a href="#">Orders pending</a>	For orders pending email

- **Enter\_Full\_Name**

The field rule within this workflow rule is Update\_Customer\_Name. Here it concatenates the forname and surname that are entered by the customer using the web page. If this would not be in place, it would create random values for customer names.

Field Update Edit

SaveSave & NewCancel

Identification

Name

Update\_Customer\_Name

Unique Name

Update\_Customer\_Name

Description

Concatenate the forename and lastname

Object

Customer

Field to Update

Customer: Customer Name

Field Data Type

Text

Re-evaluate Workflow Rules after Field Change

☐

Specify New Field Value

Text Options

Ⓐ Use a formula to set the new value

Show Formula Editor

Forename\_\_c + " " + Surname\_\_c

Use formula syntax: Enclose text and picklist value API names in double quotes: ("the\_text"). Include numbers without quotes: (25), show percentages as decimals: (0.10), and express date calculations in the standard format: (Today() + 7)

SaveSave & NewCancel

- **Low\_Inventory**

Low inventory has a email alert rule by the same name. The workflow rule is used to send email alerts to suppliers. See below for email alerts.

Object

Inventory

Rule Name

Low\_Inventory

Description

For low inventory email

Evaluation Criteria

Evaluate the rule when a record is:

☐ created
 ☒ created, and every time it's edited
 

You cannot add time-dependent workflow actions with this option.

☐ created, and any time it's edited to subsequently meet criteria

How do I choose?

Rule Criteria

Run this rule if the following criteria are met

Field	Operator	Value	
Inventory: Inventory_Quantity	less or equal	5	AND
--None--	--None--		AND
--None--	--None--		AND
--None--	--None--		AND
--None--	--None--		

Add Filter Logic...

- **Orders\_Pending**

There is also an order pending workflow rule. This rule is used for when there are orders pending. The sales assistant will receive the email. Orders are required approved, because the business can only handle a certain amount of orders in a day. Using this system, the work load can be managed.

SaveCancel

Object

Cust\_Order

Rule Name

Orders pending

Description

For orders pending email

Evaluation Criteria

Evaluate the rule when a record is:

☐ created
 ☐ created, and every time it's edited
 ☒ created, and any time it's edited to subsequently meet criteria

How do I choose?

Rule Criteria

Run this rule if the following criteria are met

Field	Operator	Value	
Cust_Order: Status	equals	Order Waiting for Owners Ap	AND
--None--	--None--		AND
--None--	--None--		AND
--None--	--None--		AND
--None--	--None--		

Add Filter Logic...

## Email Alerts

- **Alert type 1**

The first email alert is send to Michael, who is the sales assistant. He has to approve each order, which depends on the number of orders that have been received that day.

This is the template in Salesforce

**Email Template Detail**

EditDeleteClone

Folder	Unfiled Public Email Templates
Email Template Name	Order_Pending
Template Unique Name	Order_Pending
Encoding	Unicode (UTF-8)
Author	<a href="#">Siddharth Sharma</a> <a href="#">[Change]</a>
Description	Notification email on pending orders
Created By	<a href="#">Siddharth Sharma</a> , 03/10/2017 16:20

EditDeleteClone

**Email Template**

Send Test and Verify Merge Fields

Subject | Orders pending !!

Plain Text Preview |

Dear Michael,

There are orders waiting to be approved.  
Please take care before business end

Thanks,  
Dublin Flowers

We tested this email by inserting a new order. The email arrived several minutes afterwards. Here is the result.

## Orders pending !!



Siddharth Sharma <x16148371@student.ncirl.ie>

Today, 17:54

Martijn Cool ↵

Dear Michael,

There are orders waiting to be approved.  
Please take care before business end

Thanks,  
Dublin Flowers

- **Alert type 2**

This is second email alert. This is send out to the supplier when inventory level is less than or equal to five, for any given product.

### Email Template Detail

Edit Delete Clone

Folder	Unfiled Public Email Templates
Email Template Name	Low_Inventory
Template Unique Name	Low_Inventory
Encoding	Unicode (UTF-8)
Author	<a href="#">Siddharth Sharma</a> [Change]
Description	Standard email response to Low_Inventory
Created By	<a href="#">Siddharth Sharma</a> , 03/10/2017 16:20

Edit Delete Clone

### Email Template

Send Test and Verify Merge Fields

**Subject** | Low Inventory [Dublin Flowers]

#### Plain Text Preview

Dear John,

This is to remind you that we are currently low on stocks.  
Please visit the list of required supplies.

Thanks,  
Dublin Flowers

We tested this email by setting the inventory level of product id 5 to a quantity of 2. The email arrived several minutes afterwards. Here is the result. This email would be received by the supplier. The supplier will be able to check the records then. This email only serves as a reminder, so that the suppliers do not have to continuously check.



webpage Site Guest User <x16148371@student.ncirl.ie>

Today, 17:17

Martijn Cool ↘

Dear John,

This is to remind you that we are currently low on stocks.  
Please visit the list of required supplies.

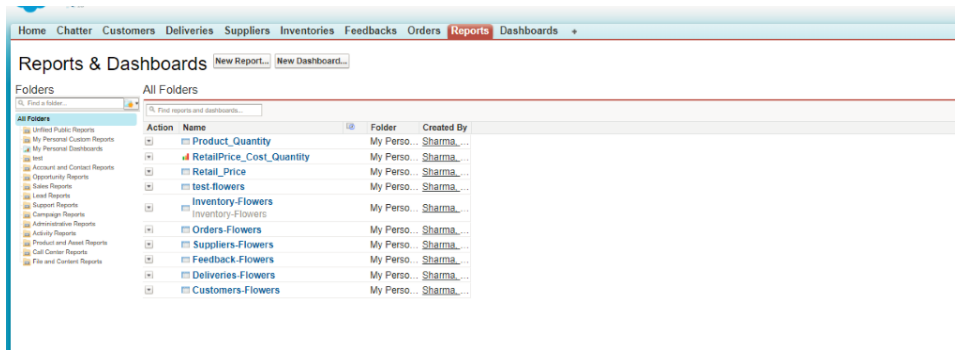
Thanks,  
Dublin Flowers

#### Record Types

Action	Record Type Label	Description
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">Customer_Records</a>	All the records are here

Action	Record Type Label	Description
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">Cust_Order_Reports</a>	Reports for all the orders

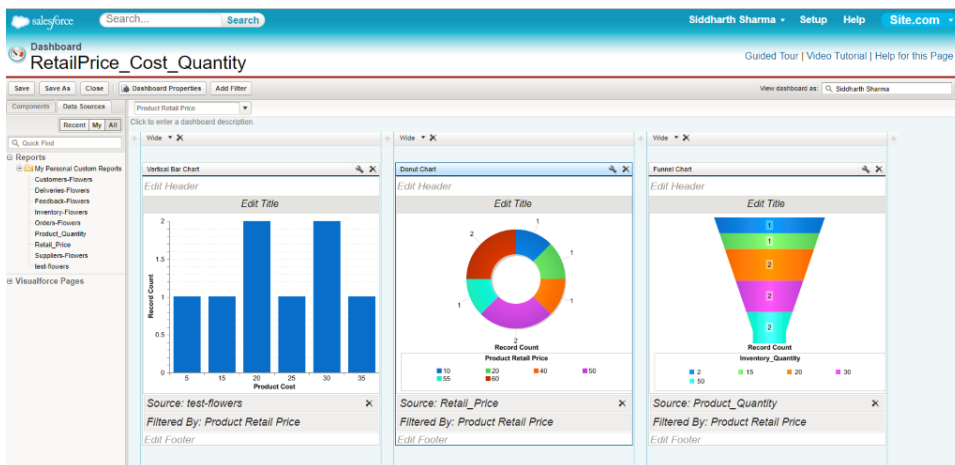
## Management Reporting



After creating costumed reports for our 6 objects in "Custom Report Types" (customers, Inventory, orders, suppliers, feedback, deliveries) it is time now to create a dashboard for them.

Dashboards section is going to be used as the main reporting tool. As different people working for the business have different roles, different reporting dashboards should be created to serve these roles.

The dashboard created and illustrated in the screenshot below is made for an analyst to give him an idea about retail price, cost and total quantity. Another dashboard could be created for a manger that might be interested in different numbers and pointers. Permissions could be added to these dashboards to make sure only the right people access the right data.





## Web Integration

This is the front end of the solution. It is here that customer will input their details.

The screenshot displays a web form with two main sections. The first section, titled 'Customer Details', contains input fields for Forename, Surname, Email, Mobile Number, Address, and Eircode, each with a red error indicator. A 'Save' button is located at the bottom of this section. The second section, titled 'Order Details', features a 'Product Name' dropdown menu with options: 'Available balloons', 'bouquet 1', 'bouquet 2', and 'bouquet 3'. Next to it is a 'Chosen' input field with left and right arrow buttons. A 'Save' button is also present at the bottom of this section.

The way this works is by merging two VisualForce pages into one site. Below are the three pages that were created and their respective apex code.

Action	Label	Name	Namespace Prefix	Api Version
<a href="#">Edit</a>   <a href="#">Del</a>   <a href="#">Security</a>	<a href="#">webpage</a>	<a href="#">webpage</a>		41.0
<a href="#">Edit</a>   <a href="#">Del</a>   <a href="#">Security</a>	<a href="#">orderPage</a>	<a href="#">orderPage</a>		41.0
<a href="#">Edit</a>   <a href="#">Del</a>   <a href="#">Security</a>	<a href="#">customerPage</a>	<a href="#">customerPage</a>		41.0

- **Web Page**

This is the main web page. It combines customerPage and orderPage

```
<apex:page >
    <apex:include pagename="customerPage"/>
    <apex:include pagename="orderPage"/>

</apex:page>
```

- **Order Page**

Order page is used for the order details part.

```

<apex:page standardController="Inventory__c">
  <apex:form >
    <apex:pageBlock title="Order Details">
      <apex:pageMessages />
      <apex:pageBlockButtons >
        <apex:commandButton value="Save" action="{!save}"/>
      </apex:pageBlockButtons>
      <apex:pageBlockSection >
        <apex:inputField value="{!Inventory__c.Product_Name__c}"/>
      </apex:pageBlockSection>
    </apex:pageBlock>
  </apex:form>
</apex:page>

```

- **Customer Page**

Customer page is used for inputting the customer details.

```

<apex:page standardController="Customer__c">
  <apex:form >
    <apex:pageBlock title="Customer Details">
      <apex:pageMessages />
      <apex:pageBlockButtons >
        <apex:commandButton value="Save" action="{!save}"/>
      </apex:pageBlockButtons>
      <apex:pageBlockSection >
        <apex:inputField value="{!Customer__c.Forename__c}"/>
        <apex:inputField value="{!Customer__c.Surname__c}"/>
        <apex:inputField value="{!Customer__c.Email__c}"/>
        <apex:inputField value="{!Customer__c.Mobile_Number__c}"/>
        <apex:inputField value="{!Customer__c.Cust_Address__c}"/>
        <apex:inputField value="{!Customer__c.Eircode__c}"/>
      </apex:pageBlockSection>
    </apex:pageBlock>
  </apex:form>
</apex:page>

```

### Critical Evaluation of Solution

The whole idea of creating this project was to expand the business of a local flower shop which goes by the name of Dublin Flowers. The shop was restricted to the local customers and we helped the owner to gain more exposure by going online. Along the way we faced a few difficulties but eventually we made a CRM for our business model that combines a modern business ideas to traditional ways.

The future scope of this CRM would be a live website for the shop. One area that the solution can improve in is a way for customers to save their own details. At the moment a customer has to re-enter his details everytime he/she wants to make an order. The proposed option would be for the customer to use his/her customer Id when ordering again. Another area we wish to improve in the future is adding additional triggers to the ones we already created. One last suggestion for future improvements is an automated feedback system that automatically inserts customer feedback into the feedback table.

### Team Integration & Management

For accomplishment of the successful project, planning and ease of communication within the team is of paramount importance. Such effective communication was achieved by using the right set of modern day tools, such as Skype for group audio and video chat. WhatsApp was used on a constant basis to stay in touch with one another. The service was used for exchanging quick ideas, planning of meetings. We decided to use Onedrive and Word Online for our documentation. This allowed to keep consistency among our work. For example, if someone adds something to the report, it would instantly change for everyone. This avoids the hassle of keeping track of multiple copies of the documents. One Drive was also used for transferring files within the team. Lastly, we also met up several days as a group. By spending time in person at college library, it allowed to share ideas more easily. This was especially effective when designing the Salesforce platform.

We have decided to distribute the team member contribution as follows:

Name	Contribution (%)
<b>Siddharth Sharma</b>	30
<b>Martijn Cool</b>	30
<b>Mohammed Abou Hassan</b>	27
<b>Harshraj Rathore</b>	13