Statement of Work (SOW) – Financial Newsletter Publication System

Project name: Financial Publication Company

Date: 06/09/2020

# **Overview/Executive Summary**

Abc Publishing company requires a deeper insight into all its newsletter services and their performance from a profitability perspective. Studying their performance would greatly help the business decision-makers in focusing on the high revenue-generating products more than the others. Besides, as the company publishes different types of newsletters, the prices of each of them vary significantly. Therefore, they intend to upsell some of the existing customers to opt for higher valued publications. Also, to ensure the customers can access their subscribed publication online, an authentication and authorization system needs to be built. The database would enable the company to have all of the above capabilities.

# **Objectives**

The objective of this project is to design a database system that can do the following.

* Create a base table for the product catalog and design it in such a way that it can support different subscription models.
* Tables for storing the customer data including their purchases and history.
* Gather information about the clicks, conversion rates, and other analytics data, which would help businesses to measure the success of a certain product.
* Have capabilities to store payment method information of the customers securely and process them duly.
* Facilitate the authentication and authorization, so that the customers can access the subscribed product.

# **Project Scope**

The objectives of the project are too broad. Therefore, the below scope definition would make the project more precise so that the effort to build such a system would be estimated accurately.

In scope:

* + Create product catalog tables.
  + Store customer information, their subscriptions, invoices, payments, and payment methods.
  + Capture clicks and conversions.
  + User authentication records including login username, encrypted password, and login history.

Out of scope:

* + User interfaces for the applications.
  + Data warehousing systems for reports and analytics.

# **Database Goals, Expectations, and Deliverables**

The databases in this business are going to be critical since many applications are going to connect to them at the same time. Therefore, the goals of the databases are to facilitate each of the above-mentioned capabilities and keep a provision for any future enhancements or change in the business workflows. The database is expected to save the transactional data with low response time even with multiple consumer systems. Many automated processes such as bulk cancellation and payment processing in a batch are expected to run out of the database systems.

The security of the database is as important as the performance of the systems. Role-based users will help the administrators to easily add or remove certain accesses from the users and monitor their activities.

Below are the deliverables for this project.

1. A transactional database with tables to save
   1. product catalog
   2. customer subscription information
   3. Authentication and authorization data
2. Client roles and users
3. Views and stored procedures

# **Database Benefits**

The first and foremost benefit of the database is it will replace the current file systems. It will automate many processes that the users are doing manually. The database would add the capability to visualize the data as a whole, perform actions on the records in bulk, prepare business intelligence reports. Having role-based users will control the unauthorized accesses and add security to the customer and the business data. The databases will also provide for saving and processing huge volumes of data efficiently.

# **Project Hardware and Software Tools**

* Diagramming tool: ER Assistant in the Citrix desktop
* Database to be used: Oracle 11g, using Virtual Desktop Applications (VDA) on Citrix
* Hardware and Software: UMUC (VDA) Intel(R) Xeon(R). The operating system is Linux.

# **SQL Usage and Style Guide**

In this project, Structured Query Language (SQL) will be used to translate the database design to an actual working system. A traceability matrix can be used to map each of the entity-relationship to the ER diagram. For data manipulation, the SQL queries will be utilized to write DML commands.

A nomenclature will be followed for creating the tables.

* Each of the product catalog tables will be prefixed with "cat\_"
* Customer information tables like account, contact, subscription, invoice, and payment will be created with a prefix of "sub\_".
* Authorization and authentication tables with a prefix of “auth\_”

Thus, the tables will be grouped and will be easily found in the workbench. The column values will be abbreviated to a certain extent. Dynamic SQLs will be written in the code keeping system security in mind, such as SQL injection.

**Database Guidelines**

For a customer-facing application, it is very important to maintain certain standards and follow the guidelines strictly. Below is a list of some of them.

* Optimal normalization of data.
* Break data with relationships and take the most advantage of the RDBMS.
* Add validations and constraints to avoid non-uniform and inconsistent data.
* Encrypt customers' data with a key that is securely stored in a different location.
* Create roles and assign users to appropriate roles.
* Maintain application-specific roles/users, instead of creating one user for all apps.

**Reference**

K. Shivprasad. (2014). *11 important database designing rules which I follow*. Retrieved from *https://www.codeproject.com/Articles/359654/11-important-database-designing-rules-which-I-fo-2*.