Online Marketing Planning Tool

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The Online Marketing Planning Tool is a web-based software intended to assist corporate marketing managers identify common positions for marketing elements in retail spaces and identify which marketing elements should be placed in each of those positions at any given time.

Each installation of the software will be heavily customized for a single specific client and their needs.

# IT Infrastructure

Each installation will require at least one Amazon Web Services (AWS) EC2 instance and RDS database. Installations will share VPC and S3 resources, applying appropriate permissions and routing to prevent cross-contamination of data.

# Software Infrastructure

All code will reside in at least one GitHub repository owned by Tukaiz. External contractors will be considered collaborators within GitHub.

# Core Object Model

Several data objects represent and convey core concepts within the application. Additional objects may be required to serve secondary needs.

* User: An entity identifying a single person
* Role: A predefined set of permissions assigned to each User
* Schematic: A collection of Map objects, in addition to supplemental notes and meta-data, that can be rendered into a single document of Layouts
* Geography: A region of business operations
* Template: An SVG-based document, representing some meaningful aspect of physical locations, consisting of pre-determined Elements and some non-editable visual components
* Map: A specific instance of a Template associated with a Schematic, equipped with Elements which may or may not contain an Asset
* Element: An editable field into which an Asset may be applied
* Asset: A graphic file of type SVG, PNG, JPEG, or PDF
* Layout: A non-editable document consisting of a Template and one or more supplemental non-editable visual components

# Object Model Details

## User Model

Users will primarily be authenticated using SAML v2.0 Identity Provider (IDP) served by Yum! Brands. With each authentication request, the IDP will provide zero, one, or more Roles, along with a first name, last name, unique identifier, and email address.

This information may be cached locally within the application server. However, it is subject to the General Data Regulation Protection and California Consumer Privacy Act.

Further, new unregistered users may enter the application via this mechanism. They will be denied access if no Role is identified in the SSO response. They will be granted Reader access only if the Role is explicitly identified in the SSO response. They will be granted Editor access only if the Role is explicitly identified in the SSO response. It is possible to receive multiple Roles in a single SSO response, in which case, the most privileged Role is to be granted.

A direct login mechanism will be provided as well. Credentials will be stored locally. Minimum password complexity requirements for these users are:

* No shorter than 12 characters
* Must contain at least 1 lowercase character
* Must contain at least 1 uppercase character
* Must contain at least 1 punctuation mark from a standard US QWERTY keyboard *or* a character from the non-ASCII Unicode character set
* Must have a Levenshtein distance greater than 3 from a dictionary of known compromised passwords

Furthermore, a User may not re-use any of the past 10 passwords they have previously used and they must be prompted to reset their password every 90 days. Support for Multi-Factor Authentication provided by the Google Authenticator mobile application is desirable, but not required at this time.

Users are to be automatically logged out after 2 hours of inactivity; when this occurs, they will be returned to the login screen, from which they may easily access their IDP.

Critical activity will be associated with a User with corresponding timestamps:

* Logging in
* Logging out automatically
* Logging out intentionally
* Viewing a Schematic
* Creating a Schematic
* Updating a Schematic
* Copying a Schematic

This information will be applied to an external application log file; the server on which it is recorded will copy the data off of the application server.

## Role Model

Recognized Roles are Reader, Editor, and Administrator.

A User with the Reader Role is able to:

* Log in
* Log out
* View a filtered list of Schematics that have been marked Published and have not expired
* View a previously rendered PDF of all of the Layouts for each of these Schematics

A User with the Editor Role is able to:

* Log in
* Log out
* View all Schematics from all time
* Edit a Schematic
* View a previously rendered PDF of all of the Layouts associated with each Schematic that has been marked Published

A User with the Administrator Role is able to:

* Log in
* Log out
* Create Users who can authenticate locally without using SSO
* Manage Users who can authenticate locally without using SSO
* Delete Users regardless of how they authenticate, in accordance with the GDPR

## Schematic Model

A Schematic has several properties:

* Name
* Creation Date/Time
* Most Recent Update Date/Time
* In Store Date
* Launch Date
* Take Down Date
* Status
* Experience

Additionally, a Schematic is associated with:

* A set of Geographies
* A set of Maps
* A set of Assets

The Most Recent Updated Date/Time will be updated if either the properties of the Schematics, or the set of associated Maps and Assets is modified.

New Schematics, whether copied from others or not, will have a status of Planning. After the Take Down date (Central Time), its status will automatically update to Expired. Editors may change the status to Planning, Published, or Expired at any time.

Upon changing the status to Published, a PDF will be rendered reflecting all of the Maps associated with the Schematic.

## Geography Model

This is a predefined set of region names. These can be used to filter lists of Schematics.

Regions may be nested. Initially, all regions will be US-specific and will be nested within a US Geography. At a later time, an International Geography with additional sub-Geographies may be added.

The default Geography for filtering and creating new Schematics is US.

Editors will use Geographies to define regional marketing campaigns.

When Schematics are filtered by Geography, less specific Geographies will be included. For example, there may simultaneously be a US and Chicago Schematics. When the Geography filter is set to Chicago, both the US and Chicago Schematics will show in the list of Schematics. Conversely, if those were the only two Schematics in the system and the Geography filter was set to New York City, only the US Schematic would show.

## Template Model

Each Template is associated with a two-layer SVG. One layer contains static non-interactive vector and/or raster art. The other layer contains pre-defined Elements, each of which has an identifier. The identifier is not required to be unique within a Template, let alone between Templates.

This concept allows the system to evolve the editable regions over time without affecting past Maps.

It is not necessary to associate Templates with one another. Many Maps will use the same Template.

Templates may be loaded at a low level without a front-facing interactive component. If a front-facing interactive component is provided, only Users with the Administrator Role may do so.

Templates may be either Active or Inactive. When a new Schematic is created, it will create a Map for each active Template in the system. When a Schematic is copied, however, the new Maps will use the same Templates as the old Schematic, regardless of their status.

Templates also define the relationship with Layouts; each Template has one associated Layout. Multiple Templates may use the same Layout.

## Map Model

As an instantiation of a Template, it is associated with a specific Schematic.

Having been instantiated, it will be possible for Users with the Editor Role to assign Assets to the Elements within a Map.

## Element Model

Within a Template, this is not modifiable.

Within a Map, each Element may contain either none or one Asset. However, as Layouts may show the previous Asset for that Element, it must still be tracked.

Further, when a Schematic is copied and an Element has an Asset, the Asset will be desaturated (made gray scale). When the user assigns an Asset to an Element, it will be fully saturated (the natural color of the Asset).

Assets may need to be scaled, skewed, and/or rotated to fit the entire Asset within the Element, while filling as much of the Element as possible without altering the aspect ratio of the Asset or Element. This is commonly known as “Scale to Fit”.

## Asset Model

While editing a Schematic, Users may upload Assets. These Assets may be used for any Element in any Map associated with the same Schematic.

When copying a Schematic, Assets currently occupying an Element in any of the Maps associated with the origin Schematic will also be associated with the new Schematic.

It is possible for the user to associate Assets with a Schematic and never use them in any Element. When the Schematic is copied, the new Schematic will not be associated with such Assets.

Users will be expected to create a plain-text identifier of their choosing when uploading Assets.

Users with the Editor Role may search for Assets based on a partial match of the identifier, case-insensitive matching each word in the search phrase independently of each other, applying AND logic. For example, if there was an Asset with the identifier “Dressed to Impress”, a search for “dress press” or “to resse” would match, while a search for “Impressed” would not.

## Layout Model

Much as how a Template contains non-editable art and one or more Elements, a Layout defines specific spaces on an 8.5”x11” US Letter size page for one or more of the following:

* Map of new and renewed Assets
* Map of removed Assets
* Schematic name
* Schematic live date
* Schematic experience

# User Interfaces

## Local Login

## List Schematics

## New Schematic

## Edit Schematic

## List Users

## New User

## Edit User