Sword and Shield Consulting

S&S CRM Proposal

Customer Relationship Management System Proposal

James Revello

5-2-2024

Version 2.0

WESTERN GOVERNORS UNIVERSITY

CONTENTS

A. INTRODUCTION

Sword and Shield Consulting is excited to present our proposal for a custom Customer Relationship Management (CRM) System for MJ Logistics. This Customer Relationship Management System will allow MJ Logistics to have all of their customer-related business workflows and data in one place, so they always have the right tools at the right time for the job at hand. We believe our system will meet all business requirements detailed in the MJ Logistics CRM Requirements Document and that our company is well suited to the task. Our goal is to work hand-in-hand with MJ Logistics to create a custom-tailored CRM that can scale and adapt as MJ Logistics grows and evolves. We are devoted to Agile Development and believe our company can provide the flexibility and agility required to make this CRM a success even in such a fast-paced and rapidly evolving environment.

A1. INTRODUCTION AND PURPOSE STATEMENT

Our proposed CRM will be designed so that MJ Logistics can have a one-stop shop for their customer relationship management and other business workflows. We aim to provide a cloud-based system that can accommodate MJ Logistics' large population of remote workers, with redundancies built in so there is never downtime, and strict requirements for speed and performance so users never have friction between the tools they use and the job that needs to be done.

We also have tailored our custom CRM so that diverse job roles can have a central hub for work processes rather than fragmented user files, excel spreadsheets, and scattered manual business processes which can be lost as employees retire or switch job roles.

Our CRM will have diverse features to cover all functionality required in a day's work at MJ Logistics, including Reporting Dashboards, Contract Management Programs, Ticketing Systems, and more.

And of course, we have designed our CRM to be scalable and decoupled, so MJ Logistics can maintain the momentum of last year's success rather than screeching to a halt. As the business grows, our CRM will be able to grow too and accommodate more users, new business practices and requirements, and new markets— in the Agile Way!

A2. OVERVIEW OF THE PROBLEMS

Currently, MJ Logistics has scattered processes and documents from which employees do their work, as well as disjointed data management located on Excel spreadsheets. This causes redundancy and pigeonholed workflows where every job role and department uses different tools for similar jobs. In such an environment, new employees have to be trained on a high learning curve that will not translate to other roles or departments. If an employee leaves the company for whatever reason, these scattered tools may disappear with them, along with whatever data may have been stored locally. To ameliorate these problems, our CRM will have all processes and workflows built into a single system where best practices can be established for *all* employees to access, and knowledge can grow instead of being hidden away.

Additionally, MJ Logistics does not currently have a devoted CRM system. Without having ways to view data in an organized format built with quick reference in mind, leadership will not be able to make data-driven decisions and will instead be working in the dark. To fix this, our CRM will have dashboards executive summaries, and market forecasting available so all executive decisions are made with hard

facts and data at the forefront. These various summaries will be searchable and customized via filters so diverse job categories can use the same system and still feel like it is bespoke and tailored to their individual needs.

MJ Logistics has seen rapid growth in a relatively short period. They have some remote workers, and some in-office workers, and will be unable to accommodate growing users as company growth increases at a rapid pace. Our custom CRM will be highly scalable and rigorously tested so that everything can accommodate this growth and always work. With our CRM comes Sword and Shield's commitment to Agile Development, so our software can respond to rapid change and always meet company requirements regardless of the current market environment.

The current MJ Logistics workflows are complicated and far from user-friendly. Users would rather create their own Excel spreadsheets or manually perform job tasks rather than use the tools available to them. Our system will have graphical user interfaces for its various features and will be tested extensively so it is responsive and fast. Our system will be frictionless from the perspective of the user and will be made with the end user in mind. Our Agile development will ensure that the user will get the features they want and nothing they don't.

A3. GOALS AND OBJECTIVES

Our goals and objectives are as follows:

1. **Improve efficiency and remove redundancy.** All our processes will be accessible remotely and in the office. We will have systems in place to implement best practices. Our software solution will be made iteratively over time, to create functional software that the user *wants* to use. No more hidden Excel spreadsheets and redundant work in siloed areas of the company. No more lost data!

2. **Facilitate data-driven decision-making.** Our CRM will ensure the most up-to-date information is always available at the user's fingertips. Each user will be able to customize a dashboard so the information they see is tailored to their job role and individual goals. Nothing will be superfluous and everything will be exactly what they need for educated problem solving and decision making.

3. **Preserve momentum and remain scalable.** MJ Logistics has seen a near 50% growth and we hope to keep the company on this upward trajectory. That means our system will be highly flexible and scalable so we can accommodate a growing pool of users. Our Agile development will ensure that, as business requirements change in this rapidly growing environment, our CRM will be able to change its trajectory and meet business needs.

4. **Keep the end user happy.** Employees who are handed a system or tool without any true input in its creation will often have to sift through features they don't want to get to the tools they need. Worse still, when software development and user needs are negotiated once and then never revisited, users can end up with tools and workflows that are out of touch with the true day-to-day requirements of the job. S&S will focus on regularly delivering useable software. Our system will be extremely responsive so there is never any wait time. It will be extremely customizable so users get exactly what they want and nothing they don't. And it will be simple and easy to use so training is a breeze.

A4. PREREQUISITES

Number	Prerequisite	Description	Completion Date
1	Data Compilation	Compile all business data from various Excel spreadsheets, databases, and user siloes	07/15/2024
2	Data Migration	Choose an off-site server supplier and migrate the data compiled in the previous step	07/30/2024
3	Training	Train personnel on Agile Methodology and best practices. Consider more granular Methodology if required (Scrum, Lean, etc.)	08/30/2024
4	Hardware	Update all hardware and software to meet business needs. Ensure networking is updated and capable of contacting servers with seamless response times (detailed further in the testing section)	09/15/2024

A5. SCOPE

Our custom CRM proposal will meet all business requirements set forth by the MJ Logistics CRM Requirements document. Users will be able to create customizable dashboards and summaries for at-a-glance reporting of data. Contract managers will be able to generate, review, and send contracts to various team members for authorization; they will also be able to manage a backlog of contracts based on expiration and follow-up tags. Sales teams will be able to track sales, generate automated quotes, manage orders, and generate tickets that track various customer contacts. Leadership will be able to generate market forecasts based on pertinent information and compare that data to other markets and situations so they can make educated decisions on the next steps for the company. Our system will be a one-stop shop that is easy to use and keeps all team members in the loop regardless of their job responsibilities.

Our CRM *will not* include software for employees to voice chat or message one another. If desired, MJ Logistics should seek third-party software to accommodate team meetings and communication. Likewise, our proposed CRM will not include project management or team organization software. It will not automatically assign tasks beyond the specific functionality detailed below, such as forwarding contracts to queues for approval. S&S will not be responsible for the installation or support of third-party software MJ Logistics chooses to implement.

A6. ENVIRONMENT

We propose MJ Logistics use off-site Cloud Infrastructure for its backend server hosting. This way, the company can easily scale its backend based on current needs by purchasing additional resources; this is in stark contrast to the overhead of buying and storing proprietary servers and hiring the security and employees to maintain them. A project manager should be assigned to the server contract to hold vendors to task and facilitate negotiation on support, updates, and business requirements. A Service Level Agreement should include an Uptime Guarantee of approximately 99.9 percent. It should also list expected response times for varying priorities of support from routine to mission-critical. 24-hour support is expected from any Cloud Provider. The service provider must be located within the United

States and have assurances of data security and protection. Both such as Microsoft Azure and AWS meet these requirements and can be considered for the contract. Our back end will be designed in the Java programming language within the IntelliJ IDE. It will use the Spring Boot framework and utilize Maven to manage dependencies.

Decoupled from our backend infrastructure will be our front end, which will accommodate the latest updated versions of Chrome, Firefox, Microsoft Edge, Safari, iOS and Android, and Windows 11. All hardware must meet the requirements for the latest operating system and should ideally be purchased with future-proofing in mind. We will not support antiquated software browsers and operating systems for testing purposes, overhead, and general security concerns. Our front end will be developed in Angular to create dynamic, single-page applications for our CRM while communicating cohesively with our Java backend.

B. REQUIREMENTS

Below, we will address four distinct user requirements listed in the CRM Requirements document provided by MJ Logistics. In this case, we will be focusing on a comprehensive business reporting system that can be customized to various user roles and responsibilities. We will also detail a scalable Cloud Infrastructure that can support 500 employees at any given time (with room for growth as years pass). We will also provide a Contract Management System that will allow for detailed reporting, tracking, and updating to ensure nothing falls through the cracks. Finally, we will have a Market Forecasting system that will allow executives and stakeholders alike to look at MJ Logistics' progress and how it will fare in given market conditions.

BUSINESS REQUIREMENTS – REPORTING SYSTEM

Arguably one of the most important features of a Customer Relationship Management system is comprehensive reporting. Our custom CRM will provide a Reporting System with dashboards and executive summaries so all users and stakeholders can keep a thumb on the pulse of the business at large. There will be an intuitive user interface that will have filters and formatting options for relevant searches. Additionally, users will be able to both query and export data for generating job-specific reports instead of using mismatched and possibly redundant Excel spreadsheets. To aid in ease of use, the reporting feature will have a true graphical user interface, which will allow non-technical users to perform queries and access functionality with mouse clicks alone. Additionally, all reports and filters are savable, so specific users can re-use specific reporting templates that are tailored to their various assignments. We hope these features will enable all members of the organization to quickly check on the health of the business and have pertinent information right at their fingertips.

USER REQUIREMENTS – CLOUD INFRASTRUCTURE SUPPORTING 500-2000 EMPLOYEES

As of right now, the MJ Logistics Company has 2,000 employees, managers, executives, and general users. At any given time, 500 of these users might access the system during peak hours. However, since the company has experienced nearly 50% growth in the last year alone, we should create the CRM with scalability in mind and anticipate that this user base will grow within the next few years. Without a flexible and scalable infrastructure, future growth could harm our system by either slowing it down significantly or causing it to crash entirely. Both possibilities will cause downtime and prevent mission-critical business from being conducted. In the same vein, the CRM must be fast enough to minimize friction and ensure that users *want* to use the new system without pulling their hair out. As time goes on, users expect faster and faster response times on their applications, especially if those applications are web-based like our proposed CRM.

FUNCTIONAL REQUIREMENTS – CONTRACT MANAGEMENT SYSTEM

Functionally, our CRM will include a contract management package that can track and facilitate MJ Logistics' contracting workflow from start to finish. This will include creating contracts, forwarding them to legal and management for approval, and sharing contracts with stakeholders for signing. We will also implement a contract tracking interface so contracts requiring review can be assigned to contract managers for follow-up, whether they are due for an update or due for termination.

The contract management interface will allow a contract manager to easily access contracts and check their status at a glance with an easy-to-use GUI.

NON-FUNCTIONAL REQUIREMENTS – MARKET FORECASTING

From a higher level, our CRM will implement a forecasting feature that will be able to predict profitability and growth and ensure executives can maintain course for maximum profits and revenue. To account for various markets, we will present currency adjustments for any foreign markets we might consider entering. The forecasting package will allow managers to adjust on the fly, allow users to generate specific forecast periods to review and compare, and keep the entire company aligned with their goals despite their segmented job requirements. All forecasts and filters will be savable and retrievable so users can set their preferences once and have a system that simply *works.* The key to our forecasting feature is that it is simple, easy to use, and provides only the information the employee wants.

C. SOFTWARE DEVELOPMENT METHODOLOGY

In the following section, we will examine the Agile Methodology which has become a mainstay for software development since its inception in the early 2000's. We will also compare it to a more command-and-control style methodology which features a rigid structure and an intuitive design pipeline: the Waterfall Method. After this section, we will discuss which Methodology we would recommend for MJ Logistics and why.

C1. ADVANTAGES AND DISADVANTAGES

ADVANTAGES OF THE AGILE METHOD

The first advantage of the Agile method is that it allows for incremental and consistent releases of useable software. This means our users will be able to use CRM features *immediately* and provide feedback on which features should be added next. In this way, Agile would allow us to build our CRM with the most important low-hanging fruit *first* so we can hit the ground running.

The second advantage of the Agile method is that it stresses regular communication between stakeholders, users, and engineers. With good user stories in mind at the start of our development, we won't overhaul our CRM features only for no one to use them. And with consistent feedback, as we continue to develop, we will always ensure we end with useable features that meet end-user needs. Conversely, we will minimize the addition of features and bloat which no one would necessarily want.

The third advantage of Agile is it is extremely flexible and welcomes change. MJ Logistics is growing at a rapid pace. By having a methodology that welcomes changing requirements rather than dreading them, we will be able to adapt to the ups and downs of a rapidly growing business. We will remain competitive in a constantly evolving market and target trends much faster. Finally, we will ensure our CRM is always scalable and modular because flexibility is a cornerstone of Agile methodology.

DISADVANTAGES OF THE AGILE METHOD

Despite S&S's clear preference for Agile development, it is not a one-size-fits-all methodology, and it has its faults.

The first disadvantage of Agile is its steep learning curve. Team members will have to adopt new values and change perspectives rather than just following a rigid checklist created at the beginning of a project. This requires a lot of personal effort and changes the dynamic of teams.

Second, Agile Methodology stresses face-to-face contact for communication and is designed with this in mind. While this seems like a strength at first blush, in this case, it complicates matters since MJ Logistics has a large portion of its workforce in remote positions. For example, daily standups and partner coding lose fidelity as you slip from face-to-face to video conference, to voice chat, to simple messaging.

The third disadvantage of Agile is that its flexibility (arguably its biggest strength) can be met with tentativeness by management. When managerial control shifts from traditional leadership into the hands of a motivated development team, the manager loses some semblance of control over

the requirements and planning portions of development. Self-organizing teams are extremely adaptive, but the benefits of such a team aren't immediately apparent and it will take time for managers to buy into the process if they are used to a more rigid command and control structure. Agile requires extensive training and a good cultural fit to get right.

ADVANTAGES OF THE WATERFALL METHOD

The first advantage of the Waterfall method is that it is extremely straightforward. The Waterfall method takes a typical command hierarchy and puts it to work in a clear set of sequential steps. Stakeholders meet, agree on requirements, and then build out those requirements over time. This minimizes strain on managers and team members since they do not need to rehaul their way of working, they simply need to stick to the plan.

The second advantage of the Waterfall method is that it has a highly structured pipeline where business requirements are set at the forefront of the project. At any given time, a team member can look at the planned requirements and know exactly what they need to work on. By having a detailed plan, teams can be set on distinct plan requirements and work in parallel without overlap or redundancy.

The third advantage of the waterfall method is it is very much "what you see is what you get." All stakeholders will have a say in the initial planning stage and agree upon the ultimate requirements that will be set forth for the project. This means a large company like MJ Logistics can take diverse departments with differing goals and ensure that the agreed-upon development plan will be agreed upon by all interested parties.

DISADVANTAGES OF THE WATERFALL METHOD

The first disadvantage to the Waterfall method is it is highly inflexible. It is a long-form pipeline and the project team cannot simply go back and make changes once the planning stage is over (at least, not without re-covering a lot of ground and re-doing the work). This is especially true as the project gets further and further into development.

The second disadvantage to the Waterfall method is it is not responsive or reactive. Business requirements change over time, and unpredictability scales exponentially as project deadlines project further in time. Considering how rapidly MJ Logistics is growing, this is especially concerning as company goals change and new resources (more revenue, more employees, etc.) become available. By the time a long-form Waterfall project is complete, it may not be the software the company needs anymore.

The third and final disadvantage to the Waterfall method is that it requires set negotiation in the initial planning stage. There are a lot of stakeholders within MJ Logistics who may have different or even conflicting goals to suit their jobs. When detailed requirements are laid out, these stakeholders must make considerations and compromises to reach a consensus. The end product may be something everyone could *agree on*, but not necessarily something everyone wants or needs.

C2. BEST SUITED

Despite Agile becoming an industry standard and giving birth to even more granular methodologies such as Lean and Scrum, it is not *always* the best choice for a company. Many great systems have been developed with Waterfall and Agile alike. Waterfall was used for decades by businesses that were largely successful and were still able to adapt to changing markets. However, the specific weaknesses of Agile (namely, the high learning curve and cultural challenges) are largely outweighed by its flexibility and adaptability. For this reason, we believe Agile is best suited for this CRM project.

While Waterfall's rigid structure allows for fast understanding and less overhead on the front end, over time it will create situations in which the business must re-cover previously trodden ground or even restart projects from scratch because requirements changed as MJ Logistics grew or as new markets were entered. The sheer size of MJ Logistics means there are a lot of individual needs within disparate and conflicting teams—which is why some teams have ended up with scattered manual processes and Excel spreadsheets.

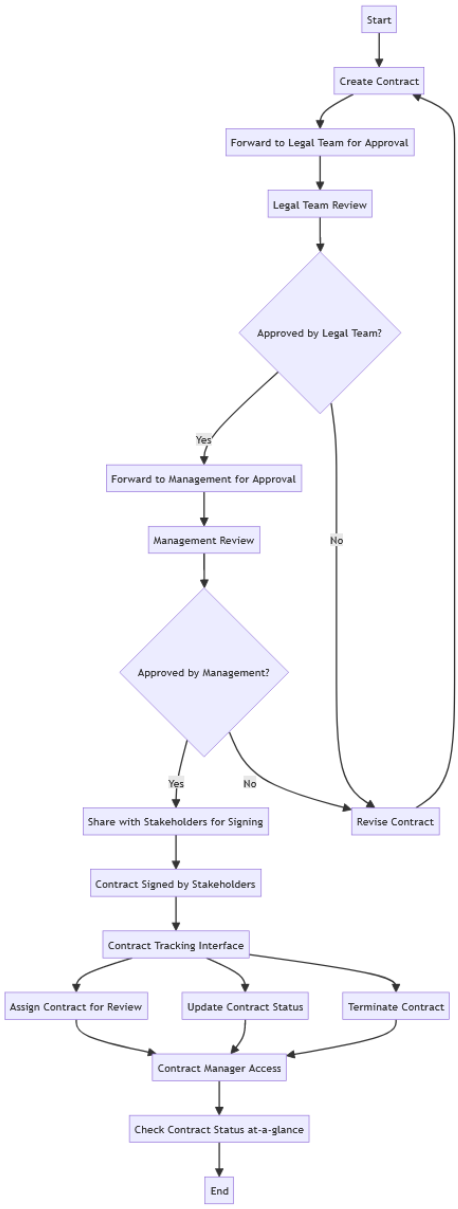
Implementing a new Customer Relationship Management system will rehaul how the company does business and will undoubtedly be a massive undertaking requiring the commitment of time and resources. To push out one large system all at once, as Waterfall methodology would prescribe, means the company would screech to a halt as users relearned how to do their jobs. While this could be mitigated by running old and new systems in parallel, there is always the chance users may not like the agreed-upon CRM when it is finished, because it was written with contract negotiation in mind rather than user stories and use cases. Then we would once more have scattered, self-tailored Excel spreadsheets and manual processes created despite the CRM, because employees needed to create ad-hoc tools to get their jobs done.

For all these reasons, I would suggest MJ Logistics use the Agile Methodology to ensure the proposed CRM will be released iteratively based on function priority/value. Keeping user stories in mind will ensure the CRM is always exactly what the user wants. Keeping users involved in development will ensure that any mistakes or failures in communication are immediately rectified. In general, it will ensure features that are desired are implemented correctly and features that are not wanted are never built in the first place. We will ensure MJ Logistics keeps its momentum after the highly successful growth seen in the previous year by formulating the new CRM one useful feature at a time. We will always ensure our end-product is modular decoupled and flexible, so MJ Logistics can likewise be flexible to market changes and remain competitive in a rapidly evolving and ever-changing world.

D. CREATE TWO REPRESENTATIONS OF THE SOFTWARE SOLUTION

Below we will examine example visual representations of both the Contract Management System and Reporting System. The former will have a detailed flowchart of work processes which we can consider when developing the software. The latter will be an ERD of the Reporting System so we can see the relationships of our users, filters, dashboards, and data.

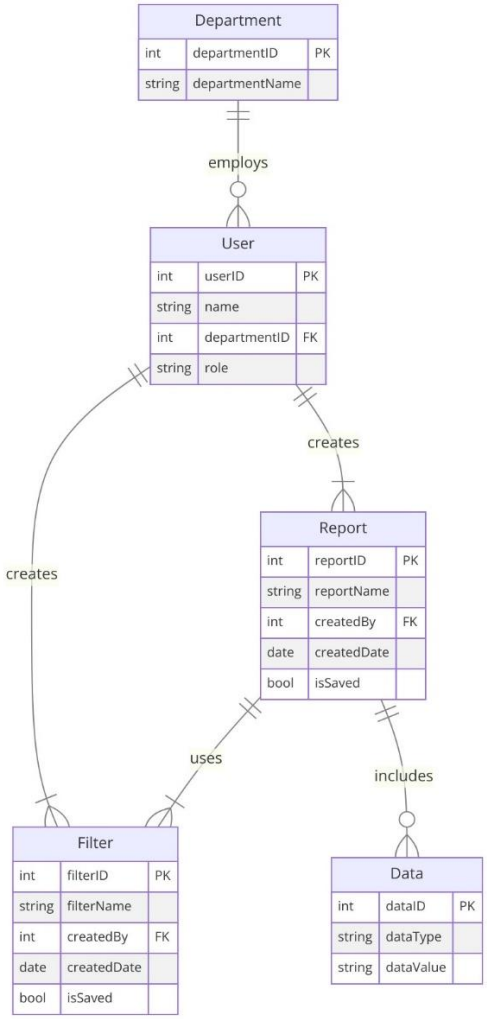
REPRESENTATION 1 – FLOWCHART OF CONTRACT MANAGEMENT SYSTEM



As you can see in the above flowchart, our CRM will have simple logic to guide the workflow of contract management and keep things on track. The flowchart visualizes the process through which contracts will be filtered, starting first with creation, approval, and review, possible revision or management approval, possible revision, and stakeholder signing, and then finally submission into

a separate contract tracking interface which will be used to maintain a searchable backlog of contracts.

REPRESENTATION 2 – ERD OF REPORTING SYSTEM ENTITIES



Above we can see an ERD of the Reporting System functionality. Each user is a subset of a given department. They can create filters and reports, and generate reports with or without those filters in mind. This way, they can tailor reporting based on their department role, and the filters they chose, and even save those states for future use.

E. TESTING

TEST – TICKETING SYSTEM

The requirement to be tested:

The system can track communications with customers and save reference data for said communication in reliable tickets.

Preconditions:

1. Several test communications are created with varying contact information, ticket summaries, and other fields
2. All databases required for ticketing are established and functioning
3. The testing system has an up-to-date browsing software operating system
4. A test customer and test user are generated

Steps:

1. Log into the test customer account
2. Submit a randomly selected premade ticket summary
3. Enter the contact information detailed in the pre-made test ticket summary
4. Submit the ticket
5. Log into the test user account
6. Pull the ticket from the queue and review
7. Update the ticket with a summary response
8. Save the ticket
9. Use the search feature to ensure the ticket can be retrieved after saving
10. Verify the ticket was successfully saved

Expected results:

We expect that our tickets will be successfully submitted and updated in the database. We also expect it will be retrievable from the actionable ticket queue, updatable with additional information, and savable. Finally, we expect the ticket will be retrievable for later review and follow-up even after being closed.

Pass/Fail:

Our ticketing system functionality will pass so long as both the test user and test customer can log in successfully, the user can generate the ticket, the ticket is successfully added to the queue and retrievable, and the user response is correctly saved and retrieved after closing.

Our ticketing system will fail if there is a failure to log on, the ticket cannot be entered into the system, the ticket never updates the user queue, failure to save the ticket, or failure to retrieve a ticket that has been previously closed.

TEST - CONTRACT CREATION AND APPROVAL

The requirement to be tested:

The Contract Management System must allow an authorized user to generate contracts and send them to the legal team for approval.

Preconditions:

1. Example contracts must be created which are generic and cannot be confused with real ones
2. An example contract manager and example legal team member must be created to send and receive

Steps:

1. Log into the contract management system as an example user
2. Create a contract using the generic example template
3. Ensure all required fields are completed so no compliance errors are thrown
4. Save the contract
5. Use the Send feature, routing the contract to the example legal team member
6. Confirm the legal team member received the contract with all fields containing the correct data

Expected results:

We expect the user login to be successful, the generic example template to meet all conditions required for saving and submitting, the contract to save successfully without errors, and the send feature to add the test contract to the example legal team member's queue, and for the contract to match the template which was submitted to confirm no data was lost or changed during the sending.

Pass/Fail:

Our test case will be successful if the user can log on successfully, the template saves correctly with all appropriate fields filled, and the example legal team member was able to receive the contract without any loss of data.

Our test case fails if there are any failures to log on, there is a failure to generate a new contract, a given field cannot be entered, the contract does not update upon saving, the send feature fails to route the contract to the appropriate legal team member, of the legal team review shows incorrect or incomplete data.

TEST 3 - CRM REPORTING SYSTEM

The requirement to be tested:

The CRM Reporting System can generate dashboards, and executive summaries, search via filters, and save and reuse both reports and filters

Preconditions: 1. An example user is created which has full authorization and no restrictions in which data can be accessed. 2. Example data is accessible within the CRM so dashboards and summaries can be generated
Steps: 1. Access the Reporting System with the full-privileges user account 2. Create a dashboard and executive summary using the sample data 3. Save the dashboard and executive summary layout 4. Randomly apply filters and note any errors 5. Save the applied filters 6. Log out and back in 7. Ensure saved states are accessible on subsequent login
Expected results: We expect the user will be able to generate dashboards and executive summaries from sample data, apply filters to tailor the dashboard to their specific preferences, and save the state of their dashboards and filters without any loss of data or errors.
Pass/Fail: Our test case passes if the tester was able to log into the account, and was able to use full privileges to generate a dashboard and executive summary. The dashboard and executive summary will have to be saved successfully and successfully retrieved on a later login. Likewise, the tester must have been able to apply filters and see them reflected in the returned content The filters used must have been successfully saved and successfully retrieved on later login. Any failure to log in, generate a dashboard or summary, save the layout of a summary, or retrieve it later will constitute a failure of the test. Likewise, failure to apply a filter, failure for the filter to generate the appropriate content, generation of content inconsistent with the filter, and failure to save/retrieve the filter will constitute a failure of the test as a whole.

F. SOURCES

Mermaid. (2024). *Mermaid Diagramming and Charting Tool*. https://mermaid.js.org/

Western Governors University. (n.d.). *[C188 Performance Assessment Overview]*. Panopto. https://wgu.hosted.panopto.com/Panopto/Pages/Viewer.aspx?id=3c498dcf-44ec-46d4-9602-abed014328bc

Western Governors University. (n.d.). *[C188 Webinar Dr Tomeo]*. Panopto. *https://wgu.hosted.panopto.com/Panopto/Pages/Viewer.aspx?id=ea95921e-23a0-4b71-bb5e-ad630025ff04*