American Video Game Company

CRM System 2023 Update Proposal

Business Vision for the Customer Relation Management System

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8-23-2023

Version 2.0

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A. INTRODUCTION

The American Video Game Company provides both digital services and physical products. Some digital services that the company provides include an online gaming service and mobile games. The company also sells physical products that include action figures, novels, comics, board games, and apparel. They plan on seeking new endeavors in the future that include working on producing movies based on characters and plots that are a part of their video game franchise. The current customer relation management system needs to be renewed to effectively and efficiently support the company's sales force team.

A.1. PURPOSE STATEMENT

I have been tasked to provide a solution that will help my team members through the software development process. The purpose of this proposal is to recommend a blueprint as to what the new internal CRM system should offer according to the requirements document provided by the American Video Game Company. The essential requirements include the user needs, business needs, and a high-level design blueprint on how the system will work and the necessary environment, tools, and methodology that will best support the implementation of this high-level design.

A.2. OVERVIEW OF THE PROBLEM

In context, the company has seen a 42% sale increase within the past two years. As a result of this sale increase, the current system is unable to scale up and handle this increase efficiently. The current system utilizes a set of disconnected tools such as a spreadsheet software and a database management system, since the tools are not integrated into one overarching system this means that individuals are responsible for manually updating one system to reflect the changes made to the other. This can lead to unnecessary duplicates of information, and data entry errors. This is troubling because this can affect the company's creditability, reliability, and trustworthiness with current partners and future endeavors.

A.3. GOALS AND OBJECTIVES

Our goal is to try our best to honor the American Video Game company's preference to keep existing business prosses as much as possible by enhancing current features and integrating the disconnected tools to allow for data sharing and improve data integrity. We want to however revamp the user interface to make it more user friendly, create a clearly defined support and maintenance structure for the application to run smoothly and have continuous improvements. We also want to select a hosting service that will allow the new CRM to scale up on demand without interfering with the company's daily activities. Some objectives that we want the system to meet include the ability to consolidate all contact and business information, an audit trail of company activities and interactions made with contacts (such as tracking tickets, sales, and feedback), improve security by creating access control based on roles and permissions for both internal and external users.

A.4. PREREQUISITES

Number	Prerequisite	Description	Completion Date
1	none	Document the business case. This is the initial phase of an project. It is where the idea is just a concept and there needs to be a justification for the need of this project and why it will be beneficial for the company.	8/14/2023
2	1	Gather the requirements from stakeholders and define clear objectives and goals that will serve as a guide throughout the software development life cycle.	8/21/2023
3	2	Planning is the next phase to execute. We must create a task list for what must be completed according to the requirements gathered, create a budget, create a risk management plan, create a communication plan. With these plans in place, we can refer to them any time throughout our project so that we will not encounter confusion.	8/31/2023
4	3	Pre-execution phase is next. Within this phase we must create a project schedule based upon the task list and assign resources that have been granted through the approved budget. This phase is what sets the foundation for the design, development, and implementation of the product.	9/3/2023

A.5. SCOPE

Within this proposal the scope will touch on the high-level design for the project such as the environment needed, business and user needs, functional and non-functional requirements, the best suited methodology for the project to follow, a mock-up design that will serve as a blueprint for the lower-level implementation, and finally a testing solution.

What will not be discussed or outlined in this proposal is the monitoring or controlling of the project, which is also known as execution or implementation in the software development life cycle. Found within this cycle is the lower-level implementation of the project which essentially turns the high-level requirements into executable code.

A.6. ENVIRONMENT

The proposed solution must be compatible with the following environments:

Desktop Environment:

- Latest version of Chrome and Chromium
- Latest version of Firefox
- I.E 9 and newer
- Safari 6.0

Mobile and Tablet Environments:

- iOS7 Safari
- iOS7 Chrome & Firefox
- Android 4.0 Chrome

REQUIREMENTS

The company has outgrown the current environment. The company currently has 2,000 users who will have access to the system. It is estimated that on average, 500 users may concurrently be using the system at peak time. We must implement a system that will be able to handle the current users but that will be scalable to support future user growth. To combat this problem, we have gathered a set of requirements that will be implemented within the new internal CRM system. Here are some requirements that we aim to address in this proposal:

- Archive information without deletion to maintain historical records
- Ability to maintain and manage contacts
- " hard delete" which must be restricted according to the user's role and access permission
- Provide a hosting solution that is scalable
- Forecasting the prediction of sales and revenue
- Provide order management

A.1. BUSINESS REQUIREMENTS

These business requirements will help ensure that the solution aligns with the strategic objectives and priorities of the organization. These clear and well-defined business requirements will serve as a reference point for development, testing, validation, and helping to deliver a successful solution.

Listed below are business requirements that must be meet within the new internal CRM system:

1. Contacts maintain their roles (one or many), and that they are specified to a particular organization, office, or department.
2. Contacts will be categorized according to their data type.
3. When creating or editing business or contact information the information must be verified
4. Partial entries may be excepted initially but there should be a feature that flags these partial entries so that they can be made complete later.
5. During interactions with contacts, whether through email, chat, or phone calls the system should allow notes to be added to the contact profile so that their preferences, feedback, and concerns and be noted and referenced when necessary.

A.2. USER REQUIREMENTS

The following user requirements will describe the needs, expectations, and desires of the end-users or the stakeholders who will interact with a software system.

Below are the user requirements that should be implemented in the high-level design:

1. Create a user-friendly interface that is intuitive for the user (GUI).
2. Users will be able to manage their own contract settings, and marketing preferences.
3. Provide access to business reports.
4. Provide the ability to forecast the prediction of sales and revenue.
5. Allow for a "soft delete" of data (remove data from the view without removing the data).

A.3. FUNCTIONAL REQUIREMENTS

The purpose of these functional requirements are to outline specific functionalities and features that the solution must have to be consider operative and ready for deployment.

Below are the functional requirements that must be included in the solution:

Data Management:

1. Enable version control of records with auditing, workflow, and roll-back.
2. Record activity against individual users for auditing and processes.
3. Accurately control data access, workflow, and editorial control based on user permissions.
4. Businesses should exist as a single overarching entity, with capabilities to detect duplication at time of entry.

Ticketing System:

Allow entry and tracking of communication and inquiry.

1. Track who called.
2. Reason or purpose for contact.
3. Record the date and time.
4. Note if a follow up is required or not.
5. Unique inquiries (no data duplication).

Reporting:

1. Detailed and higher-level reporting capabilities that include dashboards and executive-level summary reports.
2. Saving reports for future access.
3. Filters so that individual users can tailor reports. This allows for search optimization.

Sales:

1. System should have one-way or two-way communication between the CRM and MS Exchange/Outlook.
2. System should efficiently export and re-import data.
3. Perform win/loss analysis, competitive analysis, competitive product analysis, and discount approval analysis.
4. Ability to generate a quote, discount, and freight cost based upon specific currencies.
5. Electronic signature.
6. Inventory and product availability.
7. Predict sales and revenues through forecasts that help predict profitability.
8. Baselining, a snapshot view of forecast and compare to another forecast.
9. Ability to track orders.
10. Take in orders.

Data Types:

- Stakeholders – individuals, groups, or entities that have a vested interest in the outcome of a project.
- Businesses – organizations or companies that are either developing the software, using the software, or benefiting from its outcomes. Businesses may be clients commissioning a project, vendors supplying the technology, partners collaborating on a joint effort, or end-user organizations that will utilize the software for their operations.
- Contacts – generally refer to individuals who are associated with the project, organization, or business in some capacity. These individuals can be stakeholders, team members, customers, partners, vendors, or anyone else relevant to the software development process.

A.4. NONFUNCTIONAL REQUIREMENTS

These nonfunctional requirements will focus on how the solution will be perform. Important aspects that these requirements will address include security, usability, and scalability.

Below are the nonfunctional requirements that will be essential to the effectiveness and efficiency of the solution:

1. The process for collecting and storing data related to partners, stakeholders, and contracts must be in accordance with the law and best practices. The solution proposed must be compliant with data protection laws and regulations. All data must be house in the United States. Data that is processed, analyzed, or shared must not leave the United States boundary unless otherwise approved.
2. Have a clearly identified licensing model and defined ownership rights regarding any custom development.
3. Clearly defined roadmap for future updates, maintenance, and support structure.
4. A system that is scalable to meet the needs of a growing user base is important. An environment where enhancements or changes can be tested prior to deployment of production must be provided.
5. Provide robust security to protect sensitive information of clients. Implement security testing to identify vulnerabilities and ensure data protection.
6. Perform performance testing to evaluate the software's responsiveness and efficiency under different conditions.
7. Perform capability testing checking the software's capabilities and performance with various environments.
8. Perform accessibility testing which focuses on evaluating the usability and accessibility of a software application or systems by individuals with disabilities.

B. SOFTWARE DEVELOPMENT METHODOLOGY

The company has selected the waterfall software development methodology for this project. The waterfall methodology is a sequential approach to software development that organizes the entire project into linear phases. Each phase must be completed before moving onto the next phase. The term "waterfall" is a representation of how progression flows during the development process which is downward. Key characteristics of this methodology include linear progression, structured project management, there are clear milestones, stable requirements, and predictable timeline and budget.

B.1. ADVANTAGES OF THE WATERFALL METHOD

Some advantages that can be found with the waterfall methodology include:

- The waterfall method is predictable because each phase is preplanned and must be followed sequentially. The timeline can be predicted, and the budget estimation can be predetermined.
- This methodology is considered stable because it is a sequential process with distinct phases and well-define objectives, that can help maintain clear structure and minimize ambiguity.
- Since the requirements and design are so well detailed initially, when the development phase begins, discrepancies can be identified and addressed early in the project.
- The waterfall methodology emphasizes documentation during each phase of the project. This documentation can help with future maintenance, troubleshooting, and help guides.
- Easy maintenance, less refactoring is required because the project must successfully complete each phase of the development process before moving onto the next phase. No software solution is ever completely bug free, but the waterfall methodology helps reduce error drastically compared to other methodologies.

B.2. DISADVANTAGES OF THE WATERFALL METHOD

Some disadvantages that can be found with the waterfall methodology include:

- The waterfall methodology is inflexible. The drawback of this disadvantage is that if changes must be made it can result in costly and challenging results.
- There is limited customer involvement, because the waterfall methodology focuses on defining the project clearly in the beginning and sticking to the requirements and design as its main guide the customer feedback is limited. As a result, the completed solution may not align well with changing stakeholder and user needs.
- There is a higher risk of failure if the initial requirements are misunderstood or not properly deployed the project will be rejected by stakeholders this can be frustrating and considered to be a waste of both resources and time.
- The methodologies linear progression can hinder its adaptability to new emerging environments.
- Later initial release, users must wait until the end of the project to see a working solution. The need to wait can impact user satisfaction and business responsiveness.

B.3. ADVANTAGES OF AGILE METHODOLOGY

- The agile methodology is known for its customer-centric approach. This methodology prioritizes feedback and collaboration with stakeholders ensuring that the solution aligns with the user needs and

requirements. This increases the success rate of the solution being accepted by the end users and stakeholders.

- Agile is dynamic and embraces change. It allows team members to respond to changing requirements on behalf of the user or emerging technologies, this makes it more adaptable to a larger audience and new environments.
- Regular iterations and retrospectives encourage reflection and continuous improvement. Leading to a better optimized and efficient solution. This will increase user satisfaction and the businesses responsiveness.
- Agile reduces the risk that is often associated with larger scaled projects because its deliverables are released in small increments.
- This methodology enhances collaboration amongst cross-functional team members, stakeholders, and users. They are all involved throughout the iterative process and the communication they share between one another leads to better understanding of what is needed and expected as well as what decisions will create the best solution.

B.4. DISADVANTAGES OF AGILE METHODOLOGY

Listed below are some disadvantages of the agile methodology:

- Scope creep can occur where new features or requirements are continually added, this can impact the projects timeline and budget.

- There is a limited amount of predictability that comes with the agile methodology. It can be challenging to predict the projects outcome accurately which can be disadvantageous for business that operate under strict deadlines and fixed budgets.

- The dependency of frequent communication can be a hinderance if there is a time difference. This can lead to delayed progress.

- There is a lack of comprehensive testing within the agile methodology because the emphasis is placed on delivering deliverables in frequent iterations. This can be problematic because issues of accessibility and security can arise in the deployed solution.

- There can be resource allocation challenges that arise from the agile methodology. Agile teams require dedicated resources and because there is no well-defined timeline as to how long the project can last this can affect other business endeavors. Whether that be that the resource is not able to be 100% dedicated to the project or if the resource is 100% dedicated to the project but is then taken away from their actual department (leading to that department suffering because of their loss of resource(s)).

B.5. BEST SUITED

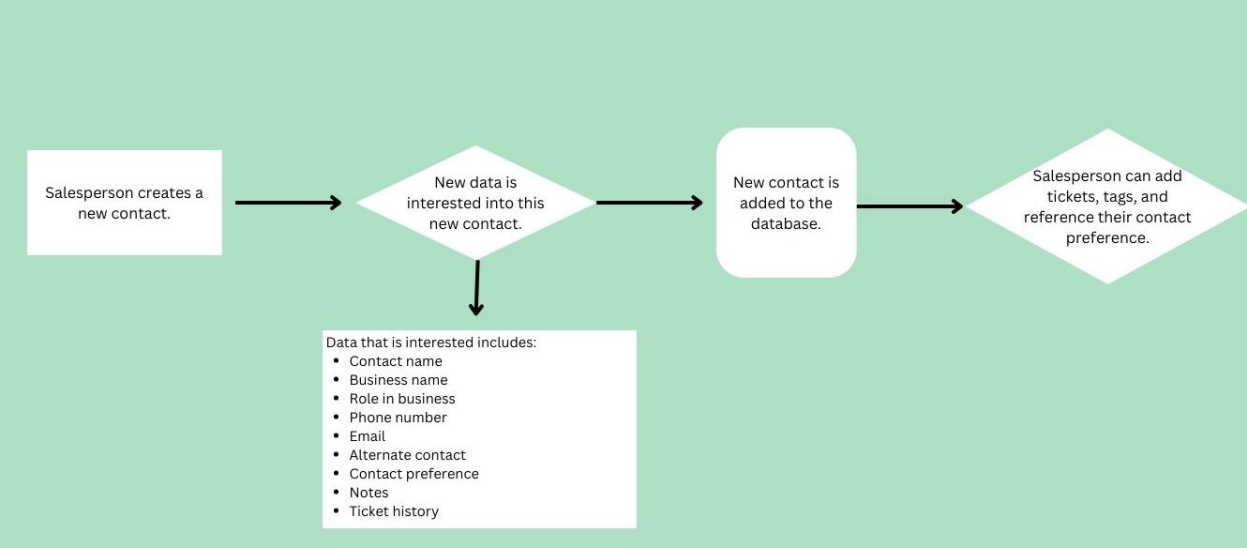
I believe for this specific project that the waterfall methodology will best be suited. The reason I have chosen this methodology is because the requirements that we have gathered are directly from the company and so we do not need the additional collaboration that the agile methodology provides because we know their business vision and expectations. We have well-defined and clear requirements, which means that the first phase of the waterfall methodology can now be considered complete. The requirements are so clear that we can now begin drawing a high-level

design for the system which leads us into phase two. Another reason I believe that the waterfall methodology is best suited for this project is because this project is not a new endeavor but rather the purpose is to enhance the current system and update it so that it can be used to its best efficient and scalable abilities.

C. DESIGN

The proposed design that I have provided include a flowchart and a GUI mockup. The flowchart is meant to give an overview of what processes, decisions, and database(s) are needed to make this specific action operatable. The GUI mockup design was meant to serve as a visual blueprint as to what components the internal CRM system should have and how they can be presented to the user.

C.1. FLOWCHART OF CREATING A NEW CONTACT



C.2. GUI (CHANGE TITLE TO FIT NEEDS)

Figure 1: Sample GUI Mock-up

GUI Control Mapping			
ID	Control	Property	Data Source
1	Navigation Bar	Allows you to navigate through the website effortlessly.	Web Controller
2	Search Bar	Query the database to receive a filtered response.	Internal Variable
3	Display	Displays the dashboard report for the user.	Internal Variable
4	Button	Interactive component that will specifically generate a new report on demand.	Internal Variable

D. TESTING

Provide a brief introduction to the proposed testing solution. The tests need to be from 3 completely different functionality aspects.

D.1. TESTING USER INTERACTION WITH USER INTERFACE

The sections that follow below will specifically test the user input and the system's response. Not only will we test to see if the system responds accurately but we will also ensure that the database is integrated properly and retrieves the accurate information that was queried by the user.

D.1.1. CREATE A NEW CONTACT

Test: A new contact is added to the system.
Preconditions: - An active database that is integrated with the CRM system. - Visible components that the user interface should have for the user to add a new contact.
Steps: The steps the tester must execute to test the feature. 1. Obtain contact information. 2. Select the "Create New Contact" button, which is located on the navigation bar. 3. Input the contact data into the contact form. (Ex: name, phone, email, business, role, etc…) 4. Click the save contact button. 5. Click on the search bar and type the contact to verify that it was added to the database.
Expected results: The contact should be retrieved when queried via the search bar or the user should find the contact under the "Contact Catalog".

Results of test (Pass/Fail):

Passed. The test results match its expected results.

D.1.2. TICKET SYSTEM

Test: Within this test we will be ensuring that tickets can be opened properly.

Preconditions:

- Active database that is integrated with the CRM system.
- The "ticket" button should be implemented and clickable.
- The ticket components should be operative and responsive to the user interactions.

Steps: The steps the tester must execute to test the feature.

1. Click on the "Ticket" button that is located on the navigation bar.
2. Double click the "create a ticket" button.
3. Input all the ticket information and tag the contact (if applicable).
4. Once the ticket is complete, click the "Submit" button to save the ticket with the ticket system.

Expected results: When you select the "Ticket" button you should find the ticket that you submitted and it should be ranked according to its severity level.

Results of test (Pass/Fail):

Passed. The test results match its expected results.

D.1.3. LOGIN (MULTI-FACTOR AUTHENTICATION)

Test: This test ensures that the system is secure and that validation is active when a user tries to enter the CRM system.

Preconditions:

- Active database that is integrated with the CRM system.
- User should be added to the system.
- Username, password, and contact verification preference should be valid.

Steps: The steps the tester must execute to test the feature.

1. Go to the American Video Game Company CRM.
2. Login in with your username and password.
3. Click “Login” button.
4. A verification code should be sent to your phone or email.
5. Enter your verification code.
6. Click “Submit” button.

Expected results: After the user has followed the steps above the database should verify that the user has authorization to access the internal CRM. If the user has the permission then they will be logged and the first thing they should see displayed is the dashboard that has an automatic report generated for that day and hour. If the user is not authorized, then they will receive an access denied message.

Results of test (Pass/Fail):

Passed. The test results match its expected results.