**C868 – Software Capstone Project Summary**

**Task 2 – Section A**



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| **Capstone Proposal Project Name:** | Widget Sales Unlimited, LLC -- Appointment Organizer Plus+ |
| **Student Name:** | Gregory Farrell |

**Table of Contents**

*Create a professional looking Table of contents that includes your main and subheadings and the related page numbers. Use the automatic TOC generating function of Word or other word processing packages to make the process easier.*

*The headings that follow are only examples of what might be included. You will need to create headings that are appropriate for your application and process.*

***Remember that this needs to be a professionally formatted document with detailed information about your project that is easily accessible.***

# **Business Problem**

**The Customer**

Widget Sales Unlimited, LLC (aka WSU) is small to mid-size manufacturer and retailer of widgets and widget accessories, conducting business primarily within the continental United States. Founded in 1972, WSU began with just its two founders, J.C. Pennypacker and his cousin Frank Montgomery, producing widgets out of their aunt’s garage in Elmira, NY and selling to local farmers and small businesses out of the back of a pickup truck. Since that time, the company has grown steadily over the past 50 years and has evolved into a national leader in the widget and widget accessories industry. Today WSU is headquartered in Rochester, NY, with J.C. Pennypacker’s daughter Michelle serving as CEO, as well as several other children and family members serving on the board of directors and in various mid-level management positions throughout the firm. The company currently employs a total workforce of approximately 140 people throughout its home office, its wholly owned manufacturing arm in Corning, NY and a staff of approximately 50 traveling salespeople.

As of 2022, WSU conducts sales in all 48 of the lower contiguous states and divides those states into 6 regions that do approximately equivalent total sales: Northeast, Southeast, Mid-West, Texas+, California+ and Northwest. Over the past several years the company has seen consistent annual sales growth of ~8-10%, spread nearly evenly across all regions, and internal forecasts predict similar growth throughout the foreseeable future. With this growth in mind, WSU’s board of directors is concerned that the firm is approaching the limits of their current corporate infrastructure and has tasked Michelle Pennypacker-Stevenson with evaluating all the company’s current processes. Everything from corporate accounting controls to employee benefits plans to IT solutions is being evaluated and the company is prepared to invest wherever appropriate to ensure that scalable solutions are implemented in order to facilitate continued growth for many years into the future.

## **Business Case**

WSU’s salesforce is divided among of the 6 designated regions around the country and each salesperson spends approximately 40-45 weeks on the road each year. Broadly speaking, the customer base still primarily consists of small businesses and individual widget enthusiasts, and so the first and overwhelmingly most effective tool used by the sales team is the face to face, in-person appointment. It is this activity of individual appointments that has been identified as most correlated with the company’s overall sales, therefore monitoring these appointments and the progress of the sales team is of the upmost pertinence to upper management’s financial forecasting.

As it currently exists, each salesperson is issued a company laptop and maintains a spreadsheet of all their scheduled and completed appointment activity. The spreadsheets are then stored in the cloud as Google documents, accessible only to them and their regional manager. While regional managers do occasionally throughout the week check the activity of the individual salespeople of their region, as a practical matter the documents are most often accessed by their assistants, who at the end of the week aggregate the reports of the 6-10 salespeople assigned to each manager into one weekly report for the region. Also, at the end of each month an aggregate report showing the total number of completed and upcoming scheduled appointments for all salespersons, across all states and regions, is produced for upper management.

This current system is quite cumbersome and in addition to some security issues, including assistants having access to significant proprietary information, it’s become clear that it will become unstainable soon if the expected growth rate persists. We therefore propose that WSU migrate all appointment activity to a standalone Java application to be installed on each salesperson’s laptop, the workstations of the regional managers and whatever computers are used by upper management. The application will interface with a centralized database where salespeople will enter all information for upcoming and completed appointments. Management can then log into the client on their computers and check the status of any salesperson at any time or look at the total activity aggregated across state or region.

## **Fulfillment**

The fully developed application will interface with a MySQL database that is to be maintained on AWS. The application will operate for 3 distinct classes of users: primary users (salespeople), secondary users (managers) and a tertiary user (administrative). It will consist of several user-friendly UI’s that should require only minimal training for both the salespeople and the mangers to begin using immediately upon delivery. After entering accurate login credentials, primary users will be able to view, add, modify and delete all their existing contacts and appointments, both upcoming and deleted. Secondary users will be able to view all upcoming and completed appointments across the entire company and sort by date, region, state or individual salesperson. Tertiary users will be primarily administrative and will be able to add, modify and delete primary users.

# **SDLC Methodology**

The methodology used to manage this project will be a Waterfall approach. This method is the most appropriate because the requirements of the project are well known and understood, so it should lend itself naturally to a linear progression of completion without a great deal of unforeseen difficulties.

The first phase of the project will be to clearly gather all the requirements and features that will need to be included in the application for it to prove acceptable as a scalable solution. We will examine all the information currently being maintained on spreadsheets, conduct interviews with management and users and create an exhaustive list of everything that must be included.

The second phase will be to create a list of all the deliverables for the project and produce a timeline of all the projected deadlines for each. The deliverables will be the timeline, wireframes of the UI’s, a Java class diagram, a database entity relationship diagram, a fully developed and tested Java application, a user’s manual and an application maintenance manual.

The third phase will be to create mid-fidelity wireframes for each user interface screen and review these with WSU for approval.

The fourth phase will be to produce the Java class diagram and entity relationship diagram for the database that describe how the application and database will be implemented.

With all of the planning completed, fifth phase will be to develop the database and application.

The sixth

Considering the nature of your project, select a Software Development Life Cycle (SDLC) methodology that will be used to manage the project. Those may include…………. Be sure to describe the process you select first and why it’s a good fit. Then review the methodology phases and what part of the project will align with each.

For example:

The SDLC Methodology utilized in this project is Waterfall because... The requirements are well understood and defined. The customer is located a significant distance … testing is not logistically possible. The system will be implemented fully…The Waterfall methodology chosen will include the following phases…etc…

# **Deliverables**

Provide information about what deliverables are related to your SDLC method. List and describe those deliverables. Also, include examples to help clarify what specific type of artifacts will qualify.

For example:

There are 2 types of deliverables that are associated with the Waterfall SDLC that the customer has requested. They are project and product deliverables.

## **Project Deliverables**

These consist of items that are part of the Project Manager’s realm of responsibilities.

* Project Schedule
  + When and what will be worked…
* Test Plans
  + The testing steps that the customer uses to perform validation…
* Requirements Traceability Matrix (RTM) …etc…

## **Product Deliverables**

Product Deliverables represents what is produced to deliver to the customer.

* Wireframes
  + A low fidelity, rough representation of the application…
* Mockups/Layout
  + These are designs that are typically high fidelity but contain no functionality. The customer can review…
* Prototype…etc…

# **Implementation**

Explain how the project will be implemented. This has to do with how the software application will be put into the production environment, not how it will be created. So, consider the customer and timing required to meet its needs. When will validation and verification take place? What personnel will be part of the implementation and what roles will they serve?

For example:

The implementation of this application is simple…of this being a new system no outages are necessary and the deployment to production can be staged prior to the customer communicating with the user base to start…

Implementation coordinated by the Project Manager and involves several different groups in a variety of capacities. The Web Administrators …etc…

# **Validation and Verification**

Describe the methods that you'll use to prove that the software application functions sufficiently well to meet the customer's needs. Does it provide all the functionality required? How will those tests be performed and by whom? Identify how segments of the code will be tested. The Customer will perform Acceptance Testing prior to taking ownership of the application. The Acceptance Te

For example:

Testing will be a comprehensive full lifecycle test to ensure that the application has met the requirements as designed. The customer will complete multiple testing sessions with multiple users…etc..

# **Environments and Costs**

## **Programming Environment**

Provide a clear picture of what hardware and software are required to complete the project.

For example:

* Windows 2016 Server running IIS 7.5 or higher
* Microsoft SQL Server 2012 or higher
* …etc..

## **Environment Costs**

Provide an explanation of the costs associated with the software application. Some might be startup, first-time costs while others might be a percentage of licensing costs. Environment costs are relatively minimal. The environment where the system resides in a shared environment where costs are shared by the organizations. There is a nominal fee associated with maintaining the database of $500 a year that allows for unlimited storage size and 99.8% uptime. The web server is another fee of $300 a year that includes maintenance and upgrades of the following; Windows Server, IIS, and ColdFusion. The final cost is based on the thick or thin clients utilized by the customer. Each device that is attached to the network has a $40 annual fee which covers Operating System and Network upgrades.

## **Human Resource Requirements**

What is the time and cost for the labor to complete the application?

For example: The larger share of human resource is by the developers of the project followed by the PM. Developers consume approximately 75% of the hours and dollars associated with …etc.

# **Project Timeline**

For this section, you'll need to look at the phases of the project and provide information about the time required to complete each phase.

For example:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Phase | Milestone/Task | Deliverable | Description | Dates |
| Pre-development | Task 1 | Requirements | Meeting with customer and procedure review | 6/1/2018 – 6/30/2018 |
| Design | Task 2 / Design files | Low fidelity wireframe  High fidelity mockup | Create the UI that relates the look and feel of the project | 7/1/2018 – 7/15/2018 |
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