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Vendor Performance Relationship Management

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Abstract

This Major Qualifying Project (MQP) is an extension of Communispace's *Vendor Performance and Relationship Management System* (VPRM) – which was developed as part of another MQP in the spring of 2013. This project is expected to enable better recruitment and asset design decisions by providing Communispace the ability to evaluate vendors based on their campaign performance metrics, assets, and previously quoted bids. Throughout this paper we outlined the Systems Development Lifecycle to show the process we went through to plan, analyze, design, and implement the improved VPRM.

Executive Summary

Many of the Management Information Systems (MIS) courses at Worcester Polytechnic Institute (WPI) provide students with simulation-based projects that are similar to those one would experience in the real world. Our project sponsor provided us with the opportunity to apply the knowledge we gained through our simulation projects to a business problem they were facing at the time.

The main objective of the WPI MQP team for this project is to expand the functionality of the Vendor Performance and Relationship Management system (VPRM) for Communispace. In the planning phase, we gathered the requirements of the new functionalities through meetings with various stakeholders and potential users of the new segment. We also determined our project plan and developed a unique methodology for the project, which will be covered in the later chapters.

After the planning phase, we analyzed the information gained through the meetings and developed a systems request and proposal to make the project objectives clear. This document and presentation was the main checkpoint before we went deeper into the project to design the interface and functionality of the system. After the major stakeholders reviewed our request and confirmed that all of the requirements were met, we began to develop prototypes of the system, starting with the user interface.

The project concluded with the design and implementation phases, where most of the systems development took place. We iterated through multiple prototypes of the system to ensure that it satisfied the needs of all VPRM users. Once the final system prototype was designed, we assembled both user and technical documentation for Communispace to help them easier support the system as well as provide users guidance for using the newly implemented functionalities. Communispace chose the WPI MQP team over outside consultants or internal employees because Communispace saw the largest return on investment and shortest break-even point by selecting the WPI MQP team.

Figure 1 - VPRM Main Menu (Final Iteration)

Authorship Statement

The following authorship statement details each section of the following paper and who was responsible for writing each section.

Adam Taylor wrote the Abstract and Greg Karp-Neufeld wrote the Executive Summary.

Shun Snoddy was responsible for writing Chapter 1: Introduction.

Chapter 2: Literature Review was written as a joint effort between all of the group members. Shun Snoddy wrote about Communispace Operations and gave an overview of what Communispace does. The Prior MQP section was by far the largest section of the literature review and as such was divided between Greg Karp-Neufeld, Greg Mannheim, and Adam Taylor. Shun Snoddy authored the sections on Market Segments and the Campaign business area. Greg Mannheim authored the sections on the Sourcing business area and the Project Methodology Options. Finally, Greg Karp-Neufeld and Adam Taylor detailed the System Development Life Cycle.

Chapter 3: Project Initiation – Planning Phase was written as a joint effort between all of the group members. Adam Taylor wrote the introduction to the Planning Phase. Greg Mannheim wrote the Feasibility Analysis. Shun Snoddy wrote the Campaign Feasibility Analysis and Greg Mannheim wrote the Sourcing Feasibility Analysis. Adam Taylor wrote the Joint Economic Feasibility and the Risk Assessment and Mitigation sections.

Chapter 4: Analysis Phase was written as a joint effort between all of the group members. Adam Taylor and Shun Snoddy wrote about the Campaign Analysis while Greg Karp-Neufeld and Greg Mannheim wrote about the Sourcing Analysis. Greg Mannheim and Adam Taylor made the Data Flow Diagrams, and the entire group came together to make the Entity Relationship Diagram.

Greg Mannheim and Greg Karp-Neufeld wrote Chapter 5: Design Phase. Greg Mannheim authored the Current Architecture, Proposed Architecture Changes, and the Design Process sections. Greg Karp-Neufeld authored the sections about Entering Data into the VPRM, Aggregated Search functionality, and Iterations and Weekly Demo Meetings.

Adam Taylor wrote Chapter 6: Implementation Phase.

Chapter 7: Recommendations and Conclusions were a joint effort between Adam Taylor and Greg Karp-Neufeld. Both Greg and Adam wrote about the Recommendations to Communispace, while Greg wrote about the Lessons Learned and Conclusions.

Appendices: The appendices were a group effort and written equally by all members of the group. Adam Taylor wrote up the Instruction Manual and User Guide and Greg Mannheim and Shun Snoddy wrote the Technical Documentation.

Acknowledgements

Our MIS MQP team would like to take this opportunity to express our gratitude to our Project Sponsor, Ms. Laura Naylor and the rest of Communispace Corporation. We are grateful to them for providing us with a real-world situation that allowed us to apply everything we have learned from the WPI MIS curriculum, culminating with a final VPRM deliverable.

We would also like to thank Mr. Jack Bergersen and Mr. Sean Burke for providing us with guidance and meeting with us weekly to help us talk through any issues we were facing as well as well as being there to run ideas by. Additionally, we would also like to thank our project advisor, Professor Eleanor Loiacono, for her support, feedback and guidance at every step of this project.

Finally, we would also like to show our appreciation to all of the stakeholders who will be the users of this system for their valuable feedback and input throughout the development process. Thanks to Ms. Michelle Fisher, Ms. Patrica Harnan, Mr. Garon Clements, Mr. Cory Cedrone, Mr. John Keeter, Mr. Mark DiGiammarino, Ms. Julie Levey, Ms. Meaghan Sayles, and Ms. Ashley Wade for their continuous feedback and patience during the development process. Without the valuable feedback from these stakeholders, we would not have been able to develop a system that would suit their needs.

Chapter 1: Introduction

This chapter sets the backdrop for our project and provides a general background to Communispace and why this project was necessary.

Communispace – General Information

Communispace Corporation is a market research company that was founded in 1999. It is a subsidiary of Diversified Agency Services, Inc. and a division of Omnicom Group, Inc. They specialize in working hand-in-hand with their client organizations to help uncover customer insights that are significant to their brand. Communispace was named the leader in providing Market Research Online Communities (MROCs) by Forrester Research.

To better meet their client's needs, Communispace expanded globally to Europe, Australia, and Asia in 2007. Their globalization continued in 2011 when they launched their first in-language Chinese community. In 2012, Communispace merged with Promise Corporation to expand their London team and complement their global network. In the same year, Communispace launched their 600th community, and also won awards, such as inclusion in the "Honomichl List of Top 50 Market Research Companies" and "Boston Business Journal Best Places to Work".

Communispace provides their client organizations with market research solutions by being the liaison between the organization and vendor. The process is relatively simple: the organization contacts Communispace about the specific market segment (for example, single females who jog on a daily basis) they are looking to survey. Communispace then contacts various vendors to search for individuals matching that specific market segment. From this information, Communispace builds consumer communities that contain the members of the market segment and allows them to communicate with the organizations through questions and answers using a unique software tool called Catalyst. This data is then organized into a report that helps the client uncover trends in the market segment. More detail on Communispace's operations and market segments can be found in the Literature Review section.

Problem Statement

The Vendor Performance and Relationship Management system (VPRM) has been a great tool for tracking the vendor performance of various panel vendors. Communispace uses the metrics captured in the VPRM to aid in future recruitment projects to determine which vendor would be the most effective for the specific project. This increases the probability of a successfully constructed community.

However, the original VPRM did not capture data related to their new method of recruitment, which is called Campaigns. Campaigns contain much more granular data metrics than that of the traditional panel vendor recruitment. Being able to track the metrics of assets in a Campaign and compare those with other assets is important to Communispace. This projects goal was to improve the VPRM in order to increase the efficiency of Communispace employees during the recruitment process, so that they know which assets were most effective in different situations.

In addition to Campaign metrics not being captured in the VPRM, the original VPRM did not capture the quoted metrics from the vendors either. The quoted metrics are gathered before the choice for vendors on a project is made. By having quoted metrics in the updated VPRM, Communispace is able to look at the vendors they did and did not choose for a particular project. Once the project is completed the VPRM the quoted metrics are used to compare them with the final metrics to see how well the vendors performed. With quoted and Campaign metrics now stored in the VPRM, Communispace has a centralized place to find and compare metrics to make better informed business decisions.

Project Overview

The project sponsor for this MQP was Ms. Laura Naylor (Senior Vice President, Member Experience and Operations). Our other main contacts were Mr. Jack Bergersen (CORE Operations Manager, Business Data Analysis & Data Automation), Mr. David Rosenberg (VP, Client and Consumer

Services), and Mr. Sean Burke (Business Data Analyst). For a detailed list of the stakeholders, please refer to Appendix B – Project Sponsors and Stakeholders.

The functionalities that were added to the VPRM through this project further benefit Communispace's ability to select the appropriate vendor and asset during the recruitment process. The VPRM acts as a filter when importing data from the Excel summary sheets and displays the Key Performance Indicators that are vital to the vendor and asset selection process. We also added the ability to create a more lean and easier to read report of the summary sheets.

This document proceeds in the following manner. In Chapter 2 we presented our Literature Review, which contains background information that is relevant to the project. Chapter 3 covers the Planning Phase, which includes the vital checkpoints for the project such as the Systems Request and Methodology. Chapters 4, 5, and 6 go over the Analysis, Design, and Implementation Phases (respectively) for both segments of the project. We conclude the document with Chapter 7, which covers Recommendations and Conclusions for this project as a whole.

Chapter 2: Literature Review

This chapter provides background on the previous Major Qualifying Project that this project originated from. This chapter also demonstrates our knowledge of and provides background to the development methodology that we used for this project.

Communispace – Operations

Market segmentation is very important to Communispace because their entire business model revolves around finding vendors that excel in providing data from specific market segments that their clients are pursuing. The VPRM system takes advantage of market segmentation by displaying vendor strengths grouped by market segments. This allows for the sourcing team to be more efficient and reduce the chance that a vendor performs poorly (which in turn increases the probability of a successful community).

Prior Major Qualifying Project

Introduction

During the 2012-2013 academic year, Derek Carey, Evan Doyle, and Dennis Leung created a VPRM system in fulfillment of Worcester Polytechnic Institute's Major Qualifying Project (MQP) requirement. Their MQP, sponsored by Communispace, streamlined the vendor selection and performance management process by creating an application that allowed Communispace employees to quickly access vendor performance metrics across specific projects. This enabled Communispace to deliver faster community turnaround times to clients, in turn, lowering overall recruiting costs. In preparation for our extension of this system, we reviewed the systems request, feasibility analysis, development methodology, and the technical architecture – enhancing our understanding of how the VPRM was designed and implemented.

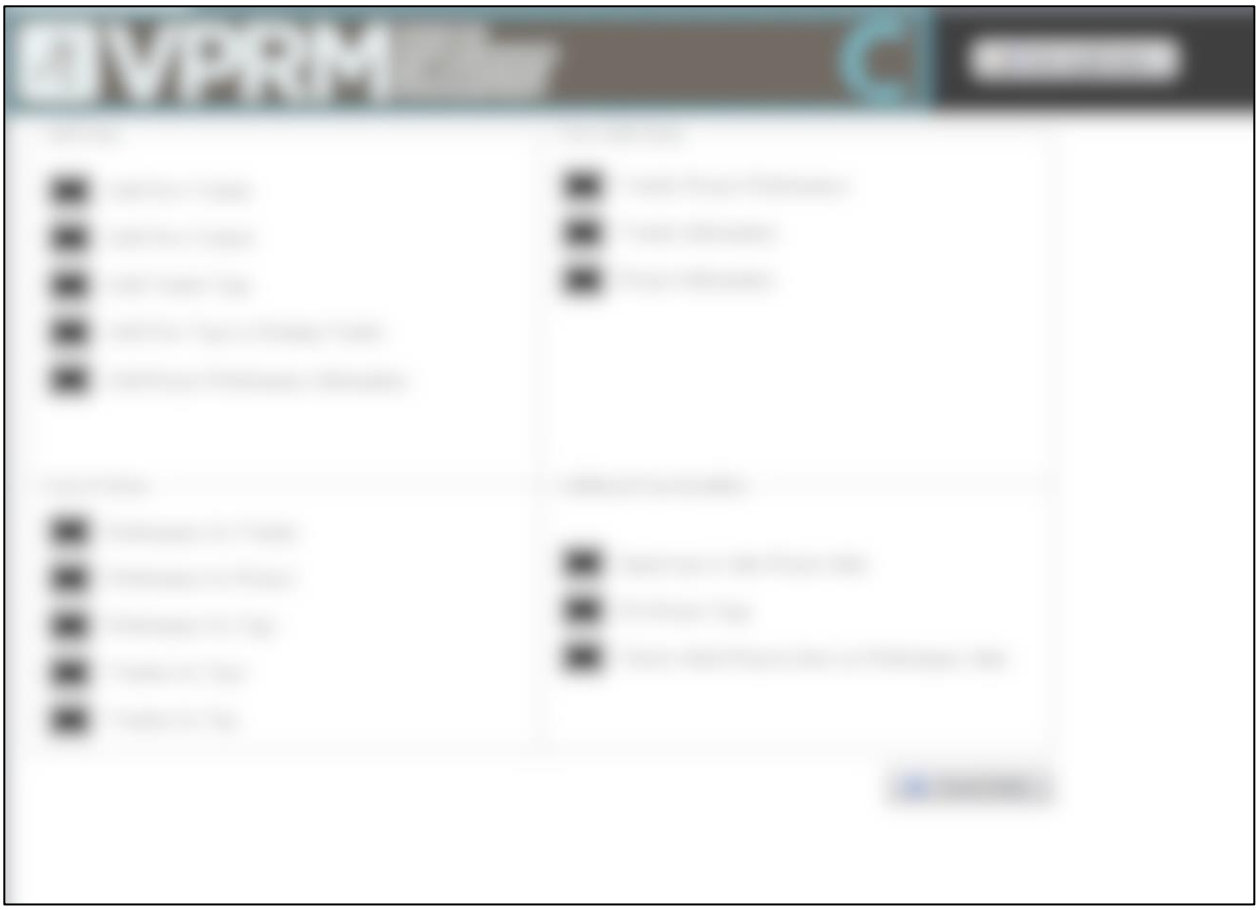


Figure 2 - Initial VPRM Main Menu Before Project

Systems Request

When first learning about the system that the previous MQP team developed, we started by looking at the systems request that they compiled and presented to the project sponsor, Ms. Laura Naylor. After reviewing this systems request, we gained a better understanding of what Communispace was hoping to gain out of this system. From this information, we were able to better evaluate Communispace's needs and ensure that all of their initial and present needs were met by our deliverable.

The purpose of a systems request is to provide insight into the business reasons that have prompted the need for a new system. The systems request also includes the following sections: contact information for the project sponsor, the business need, business requirements, business value, and special issues or constraints for the proposed system.

Looking at the previous systems request, it appeared that one of the primary reasons that this system was needed was to help Communispace gather information on its vendors. Communispace wished to create one centralized knowledgebase of its vendors rather than having it scattered amongst its Member Service Consultants (MSCs). Additionally, Communispace hoped to increase operational efficiency by allowing anyone on the CORE staff to quickly look up performance on vendors. Previously, Communispace staff was required to open various large Excel files and compare the performance on projects by hand. With this new system, Communispace is able to save hours of employee's time as well as quicken the delivery of results to its clients.

Requirements

After figuring out the Systems Request with Communispace, the previous group then gathered functional and non-functional requirements in order to get a better understanding of what the project entailed.

Functional Requirements

The functional requirements detail how data flows and how data is stored within the VPRM system. The VPRM system allows users to import vendor data from the various projects Communispace has with them. It also allows the users to view vendor performance based on the data collected from the vendors various projects. The information gathered in the VPRM provides past performance for each vendor on a project. All of the data that is imputed is found in the vendor's summary sheets.

Non-Functional Requirements

The non-functional requirements detail the operation, performance, security and cultural requirements of the VPRM system. The previous group went over each of these requirements; they have remained the same for this project. The VPRM system utilizes the Communispace network and computer terminals running Windows 7. It also uses Communispace's licensed software, including Microsoft Excel, Microsoft Access and Visual Basic.

Since the information in the VPRM is confidential, it cannot be taken off of the Communispace network, and only authorized users will be allowed to edit it. The system does not conflict with office culture and the information is protected in compliance with the Data Protection Act (Dennis, Wixom & Roth, 2012).

Feasibility

Prior to the developing the first iteration of the VPRM, the previous MQP team outlined the technical, organizational, and economic feasibility of a successful implementation. The *technical feasibility* analysis displayed Communispace's ability to adopt and utilize a reporting system in respect to technological barriers. The *organizational feasibility* analysis outlined the ability for Communispace to implement the proposed system given organizational and hierarchical barriers, such as managerial resistance. The *economic feasibility* analysis provides an estimate for the return on investment and the break-even point for the development of the VPRM. Each is discussed in greater detail below.

Technical Feasibility

In respect to technical barriers – application/technological familiarity, compatibility, and project size – the previous MQP team found there to be a low risk of failure. Even though there were various user types, the previous team "expect[ed] that all members [would] be able to use the frontend dashboard" they created for the VPRM "as [they provided] proper documentation to accompany it". Additionally, the technology used to develop the VPRM was already in use and compatible with the current system in place at Communispace. The project team also expected to finish the project on time and transition the necessary information to the Business Analyst Group.

Organizational Feasibility

Organizationally, the prior MQP team's analysis found that the learning curve would pose a moderate risk to the successful implementation of the VPRM. Since the users would need time to get accustomed to the new interface, there was a possibility that their willingness to use the application

would decrease. However, the MQP team also thought that the time savings and increase in productivity would cause users to use the system despite of the learning curve.

Economic Feasibility

During the planning phase of the first iteration of the VPRM, the Communispace project sponsor expressed a mixture of tangible and intangible benefits that she hoped to derive from the creation of a vendor performance management system. With her help the prior MQP team identified and documented an estimate of the expected return on investment and the break-even point, in addition to the tangible and intangible benefits. Their intangible benefits included "the ability to better select vendors or keep track of and test out vendors who have yet to be used with regular or any frequency". Their tangible benefits of the project were limited to the amount of time saved by employees with the implementation of the VPRM.

To calculate the benefits associated with time saved, a cost of building and maintaining the system was subtracted from a calculation of the monetary value of the time saved for employees. For fair comparison, their cost/benefit analysis took into account various scenarios for building the system – building the system using a WPI project team, building the system using a consultant, and building the system using a current employee. Building the vendor performance management system using the WPI project team resulted in the lowest overall cost and highest project return on investment. The break-even point for the WPI project team was determined to be about half a year, while the return on investment is 1116% during a four-year time span. The MQP team also found that the project would be too costly to do with more than one consultant. Using one consultant slows down project completion and allows for no peer-review. The return on investment was calculated to be 973% during a four-year time span with a break-even point of ten months. Allowing a current employee to take on the new project was also a concern for the MQP team. The return on investment of this option was approximately 693% with a break-even of a little over seven months. A similar feasibility study was conducted for this system extension and is described in greater detail in the *Feasibility Analysis* section in Chapter 3.

Technology Review

In preparation for our project we reviewed the various data models they used. In reviewing the architecture we gained a better understanding of how our project fit into the original VPRM system.

Data Flow Diagram

A data flow diagram (DFD) illustrates how the data in the VPRM system flows in and out. This diagram helped our team better understand the processes of the current VPRM system. In the previous groups DFD, they showed two levels of the DFD. The first level of the DFD, better known as the context diagram, shows the VPRM system at a higher level to understand the broader concepts.

Figure 3 - DFD Context Diagram (Taken from Carey, Doyle, and Leung 2013)

In the context diagram of the DFD (Figure 3) we see that the requirements are first gathered from the client. Once Communispace has talked with the client and agreed upon the requirements, Communispace sends a contract to the client outlining pricing and contractual information. Communispace, at the point of contract approval by the client, talks with the vendors about community sourcing, including the requirements for the demographic and amount needed by the

vendor. The vendors then gather the data for Communispace, which Communispace stores in the Sourcing Tracking Sheet and Summary Excel Sheet.

The prior group's DFD then goes to a Level 1 diagram (Figure 4), detailing the various communications between departments within Communispace including Sales, Sourcing, Recruitment, and Member Service Consultants. This diagram helped us understand where information was being transferred to and from so that when we expanded the system we knew where to add information to send and/or receive.

Figure 4 - DFD Level 1 Diagram (Taken from Carey, Doyle, and Leung 2013)

Entity Relationship Diagram

While a DFD shows how information travels, an Entity Relationship Diagram (ERD) shows how information is stored. The ERD includes attributes, tables, and relationships. The previous group's ERD (Figure 5) shows where the information is stored in the SQL database and how that information is identified and connected.

For our group, this ERD showed us the information that Communispace has been inputting into the system for about a year. This helped us to improve the queries and reporting functionalities in the VPRM.

Figure 5 - ERD Backend Database (Taken from Carey, Doyle, and Leung 2013)

Front-End

In order to make sure that Communispace could use the VPRM system, the previous group had to create a front end using Microsoft Access so that Communispace employees could add information to the database. By choosing Access, it made the VPRM easier to develop under the their time constraints and allowed for Communispace employees experienced in Access to resolve issues once the previous group finished implementation.

Review of Development Methodology

As we mention above, before determining our approach, we studied how the previous team approached the task of creating the initial VPRM. The team held interview sessions with multiple stakeholders in the company to understand the business processes and workflows as well as some of the metrics involved in the VPRM.

The previous team chose to follow the iterative development methodology so that they could produce multiple iterations of their deliverable to the project stakeholders. This method was chosen as it best fits the scope and limitations of the project. Primarily, the iterative approach is best used when there are complex and unclear requirements as well as when facing a short time schedule. They hoped that by using this method, it would allow them to be flexible with the VPRM development. This method would allow them to not only ensure that all the needs were addressed, but also so that the development continues even after they left Communispace. With each iteration, the team held weekly demo meetings to obtain feedback from all stakeholders. This also pushed the team to come up with an improved product every week. Throughout these iterations, this years team took into account the user interface design considerations that the previous MQP team did so that the system would remain familiar to those that already use it.

User Interface Design

The VPRM system's interface was built upon three basic, but significant, principles that remain constant throughout the evolving field of interface design and human-computer interaction; these

principles are consistency, exploiting prior knowledge, and organization (Stone, Jarrett, Minocha, 2005). Consistency was used in the VPRM system to reduce the learning time of the sourcing team and other users, which is essential in a project with a short time constraint. Exploiting prior knowledge of the users was also implemented because the Communispace MIS team already had experience with an Access based interface. Organization can be seen throughout the entire interface, as the prior WPI team took proximity, similarity, closure, and symmetry into consideration when they built the interface. We focused on the consistency principle because we added on to the VPRM system, which already had an interface that has been adopted by Communispace. Our interface was built to look like that of the VPRM system so that the users did not have to learn and adapt to a new interface layout.

Market Segments

Another important consideration for this project is market segmentation. Market segmentation refers to process of dividing the total market into groups based geographical areas, demographics, psychographics, behaviors, and occasions. The members within each of these groups have similar likes, tastes, needs, wants, and preferences, while each individual group differs from one another (Ferrell and Hartline, 2011). By taking advantage of market segmentation, organizations (such as Communispace) gain the ability to "see ahead" and adjust their campaigns to attract more customers in the target market segment. In general, taking advantage of market segmentation increases profit and efficiency for organizations.

Four key segmentation categories are addressed when developing market segments. These categories include behavioral, psychographic, demographic, and geographic segmentation. Behavioral segmentation is very powerful but difficult to execute because the required research is usually expensive and time consuming. However, because it uses data from actual consumer behavior and product usage, the segments are often closely associated with consumer needs. Some variables associated with behavioral segmentation are benefits sought, product usage, occasions,

and price sensitivity. Psychographic segmentation is similar to behavioral segmentation in that it addresses state of mind issues and is difficult to measure. The variables used in this type of segmentation are personality, life style, and motives, which are useful because they are directly connected to buying behavior.

Demographic and geographic segmentation are both widely used because the required information is widely available and easy to measure. Demographic variables include age, gender, income, occupation, education, religion, and social class. Some of these characteristics are often directly associated to the needs of a particular segment. For example, Whole Foods Markets center around households with high income because the household has more disposable income to spend on the expensive products. Geographic segmentation often plays a large part in developing market segments because it looks at the region, city/country size, and population density of a specific area. Combined with demographic variables, organizations can conduct geo-demographic segmentation, or geo-clustering, which looks at neighborhood profiles based on demographic, geographic, and life style segmentation variables.

The segmentation approach must make sense in terms of five main criteria. Those criteria are identifiable, substantial, accessible, responsive, and viable and sustainable. An identifiable market segment requires the characteristic of the members within the market segment to be identifiable and measurable. A substantial market segment means that the segment is large and the profit potential exceeds the cost of segmentation. Accessibility of a market segment is also very important because the organizations must be able to communicate with the members (advertising, mail, telephone, etc.) and distribute products (channels, merchants, retail outlets, etc.). A viable market segment is one where the members of the market segment meet the basic criteria for exchange, such as being able to conduct business with the firm. Sustainability of a segment refers to the segments ability to be sustainable over time and allow the firm to develop a marketing strategy that is targeted towards the market segment.

As mentioned earlier, market segmentation is extensively used at Communispace. Although the current traditional recruitment methods take advantage of market segments, the new non-traditional recruitment method, known as Campaigns, bring market segmentation data to a more granular level.

Campaign

Communispace has recently adopted a new method of recruitment called Campaigns. They refer to Campaigns as marketing tactics or methods that are used to target a specific audience or market segment and consider them as non-traditional recruitment methods. The main difference from their traditional method is that Campaigns do not use panel vendors (a specific vendor type) during the recruitment process. Instead of panel vendors, Campaigns use vendors with vendor types such as social media, direct mail, and email.

The benefit to Communispace from the campaign structure (Figure 6) is that data can be captured at a more granular level, which gives Communispace the ability to compare KPIs across various categories. For example, Communispace launches a project and one of the audiences is “teens that drink soda on a daily basis”. They use the traditional panel vendor but also use Facebook and Twitter as their campaign portion of this audience, who each use two different assets when recruiting for this project. If Communispace wants to know which of the two assets that Facebook used were more effective, they would be able to determine that through a comparison of KPIs because the campaign architecture would allow them to capture data down to the asset level. It gives them the ability to roll up the data to the vendor-method level to see which vendor (and vendor type) was the most effective for a certain audience. The campaign architecture allows for flexible and effective comparisons to determine the best strategy to take when dealing with a specific market segment.

Figure 6 - The structure of a Campaign within Communispace

Sourcing

At Communispace the current VPRM is used to collect information about the projects that they do with vendors. However, this information is currently inputted into the VPRM after the project is completed which does not capture all the information in the process. After the client has come to Communispace with a project, Communispace looks for a group of users matching the demographic that the client would like to interact with. Communispace then starts to contact vendors who will gather the users. In the process of seeking out vendors, vendors provide quotes on what they expect to get and what they charge. This is an important part of the project because you want to make sure you use the vendors that return the most information for the least amount of cost. The Sourcing quoted metrics is what the Sourcing segment of the project will bring to the VPRM system.

Having this information in the VPRM allows for the comparison of what the quotes and the final metrics were for the project to see how well a vendor performed. These comparisons can be made with the current system Communispace has but they have to open up several documents and compare the numbers manually. By moving quotes into the VPRM, there is a centralized place to look at the metrics and deal with any comparison that Communispace wants to make with those metrics. Both this segment and the Campaign segment add additional information to the system and allow for the VPRM to keep the information for projects in a central location and allow for efficient and effective choices of vendors to use on a project.

Project Methodology Options

In order to create the VPRM extension, we needed to choose a method of the Systems Development Lifecycle (SDLC). These methodologies are known as Waterfall, Parallel, V-Model, Iterative, Agile Development, System Prototyping and Throwaway Prototyping. Each of these methods has benefits and weaknesses that can help in structuring our project (Dennis, Wixom & Roth, 2012).

Waterfall

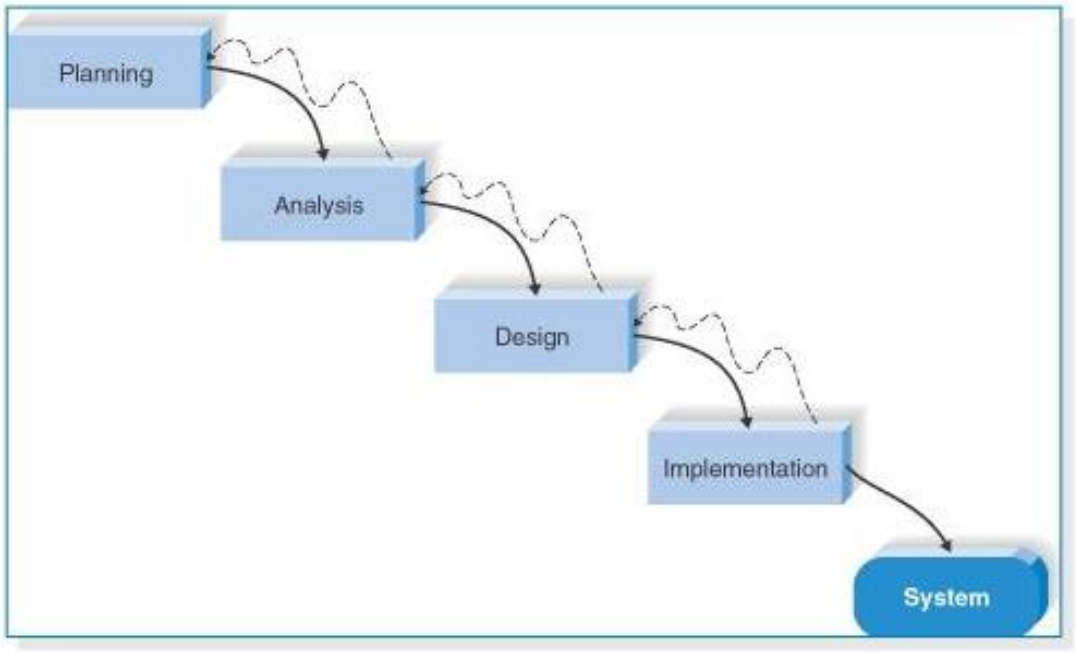


Figure 7 - Waterfall Development Methodology (Taken From Dennis, Wixom & Roth, 2012)

In the Waterfall methodology both the users and analyst proceed sequentially from one phase of the SDLC to the next. For each phase of the Waterfall's SDLC, large amounts of documentation are created and need to be approved. Waterfall is used for projects that are complex and have clear requirements. See Figure 7 above for an image of the Waterfall methodology (Dennis, Wixom & Roth, 2012).

Parallel

The parallel methodology is used to break up the project into sub-projects that are completed at the same time to then be combined into one system. This makes parallel a quick SDLC, however it creates many different deliverables that need to be completed. Parallel is used mostly on less complex development lifecycles since time would be wasted breaking up the project and could cause redundancies. See Figure 8 for an image of the Parallel methodology (Dennis, Wixom & Roth, 2012).

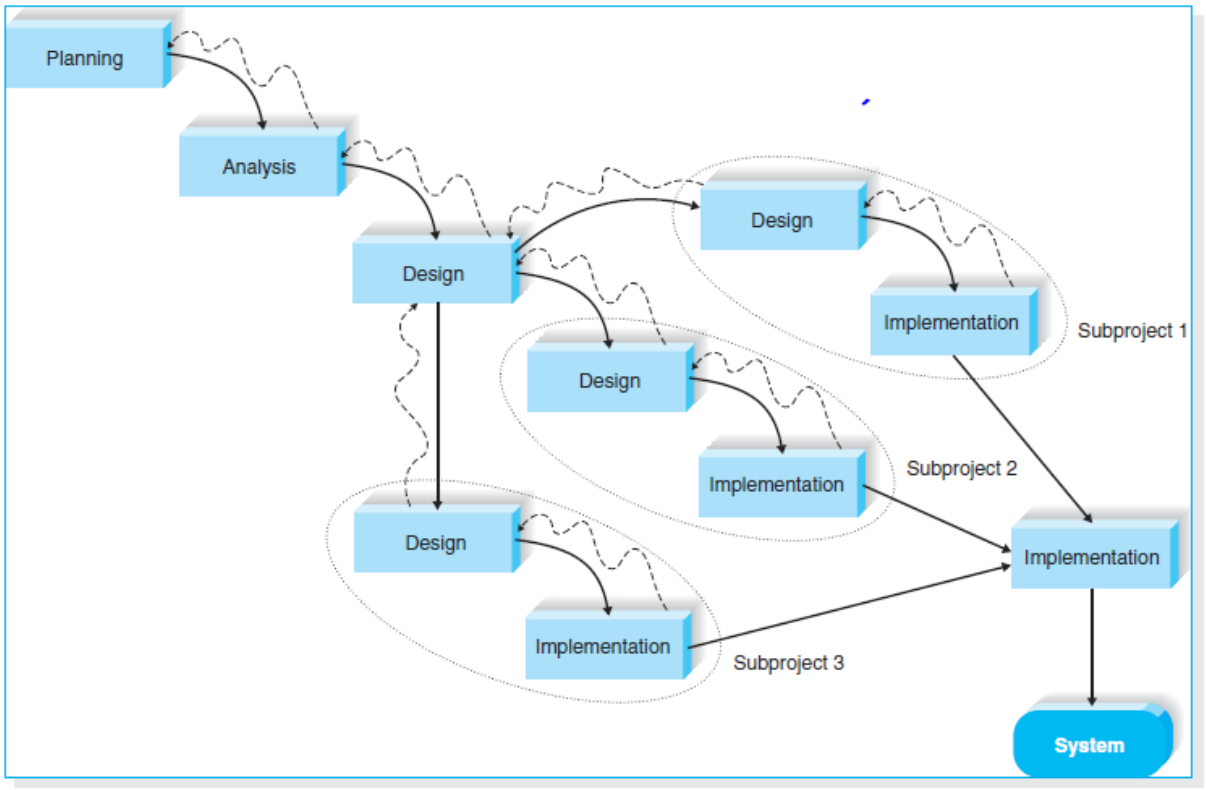


Figure 8 - Parallel Development Methodology (Taken from Dennis, Wixom & Roth, 2012)

V-Model

The V-Model focuses on testing throughout the SDLC. Such testing includes acceptance, system integration, and unit testing. All of this testing needs to be performed before implementation can begin. The V-Model allows for feedback and input while building the system, which can be helpful but can also take up a lot of time. See Figure 9 for an image of the V-Model methodology (Dennis, Wixom & Roth, 2012).

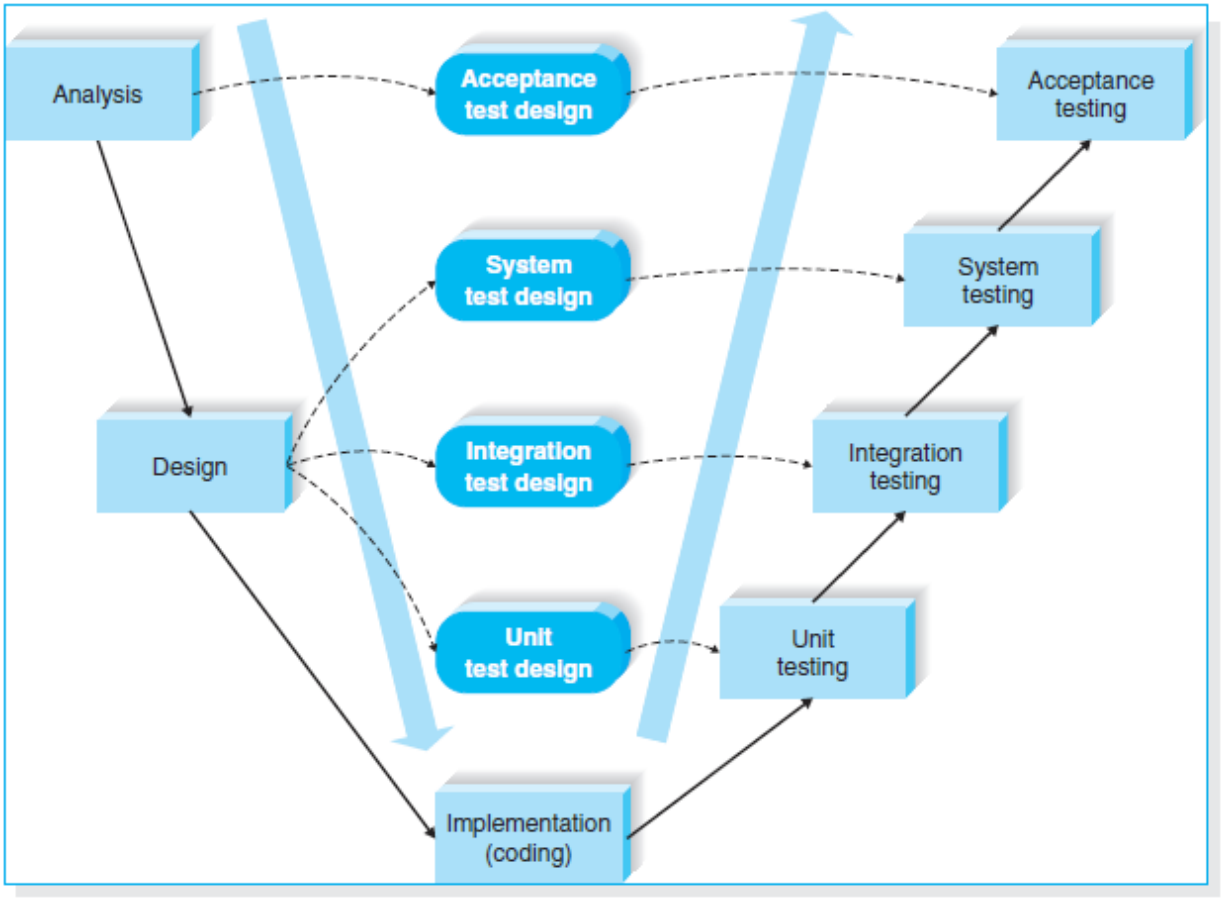


Figure 9 - V-Model Development Methodology (Taken from Dennis, Wixom & Roth, 2012)

Iterative

An iterative development method breaks up the project into sequential versions. In the first version of the development, it will contain the features and architecture, but the system cannot perform all the requirements just yet. For an iterative SDLC there is a basic system for the users to use earlier in the lifecycle. By giving it to the users early, developers can receive feedback and incorporate it in later versions. Iterative works well regardless of the clarity of requirements, various timelines, and various complexities. However, understanding how long until the company wants another version can vary depending on how solidified the current version is. See Figure 10 below for an image of the iterative methodology (Dennis, Wixom & Roth, 2012).

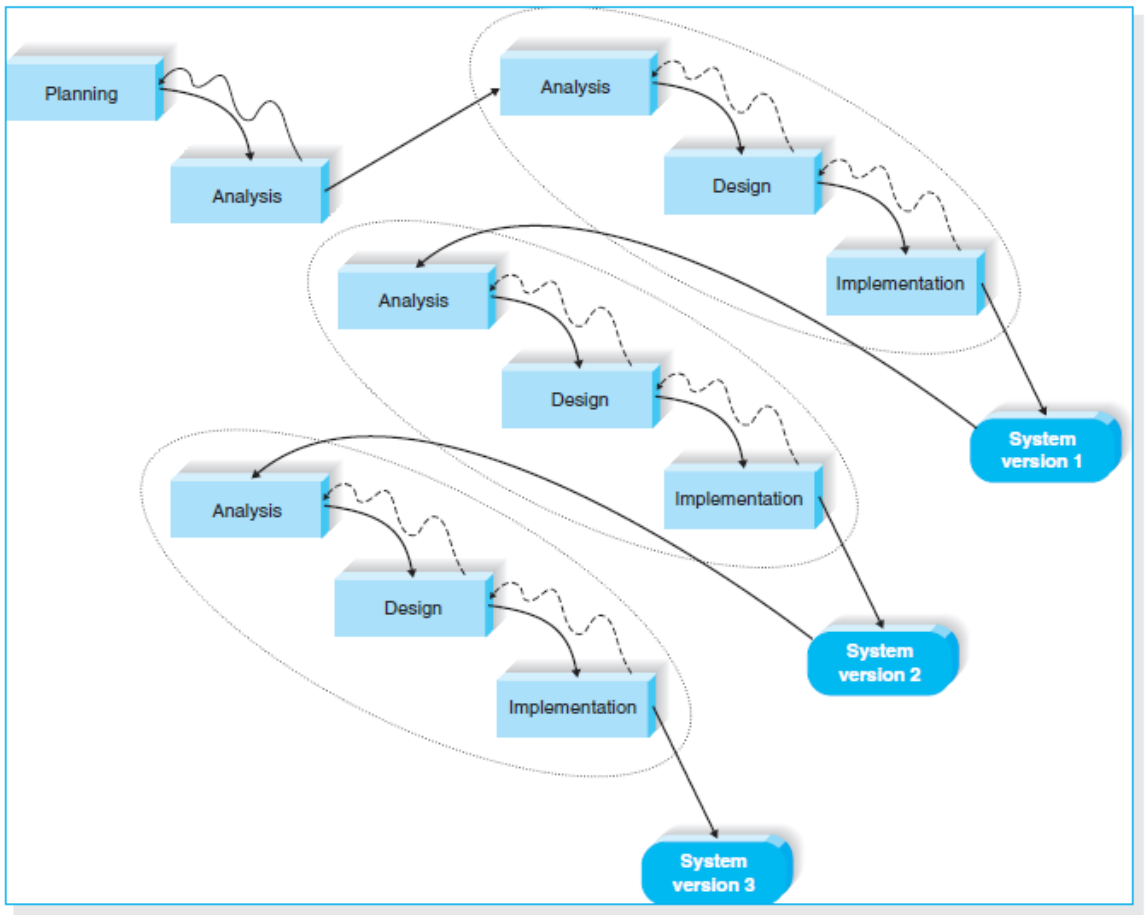


Figure 10 - Iterative Development Methodology (Taken from Dennis, Wixom & Roth, 2012)

Agile Development

Agile development relates to the Iterative SDLC, but involves going through the whole SDLC rapidly for each version. On average this process last about 1-4 weeks to develop one version in agile development. This style is ideal for non-complex and short projects. It also shares the same downside of Iterative SDLC where development can continue for extended periods of time. See Figure 11 below for an image of the agile methodology (Dennis, Wixom & Roth, 2012).

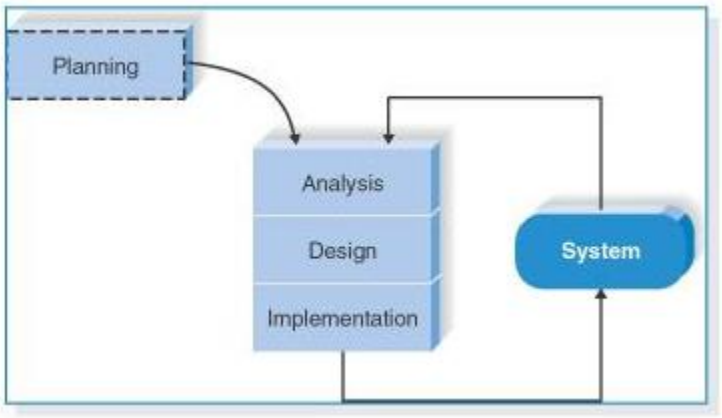


Figure 11 - Agile Development Methodology (Taken from Dennis, Wixom & Roth, 2012)

System Prototyping

In Systems Prototyping (Figure 12) all phases of the SDLC are performed concurrently. Feedback and criticisms from the end users are then used to reanalyze and redesign the system. Systems prototyping is not ideal for complex projects, however it allows for end users to have more input in the implementation phase. For a project group with s lack of experience this feedback is critical. See Figure 12 below for an image of the Prototyping methodology (Dennis, Wixom & Roth, 2012).

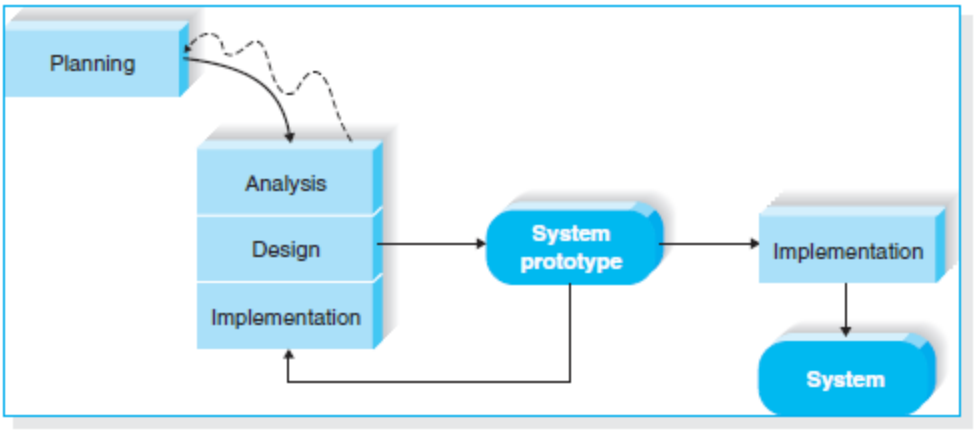


Figure 12- System Prototyping Development Methodology (Taken from Dennis, Wixom & Roth, 2012)

Throwaway Prototyping

A Throwaway Prototype is used primarily for testing design and not for use as an actual end system. By performing tests it addresses reliability issues for the system so that the final implementation is more stable. Throwaway prototyping would be more useful in designing a complex system and for an unfamiliar technology since it would allow for a lot of testing and learning. See Figure 13 below for an image of the Throwaway Prototyping Development methodology (Dennis, Wixom & Roth, 2012).

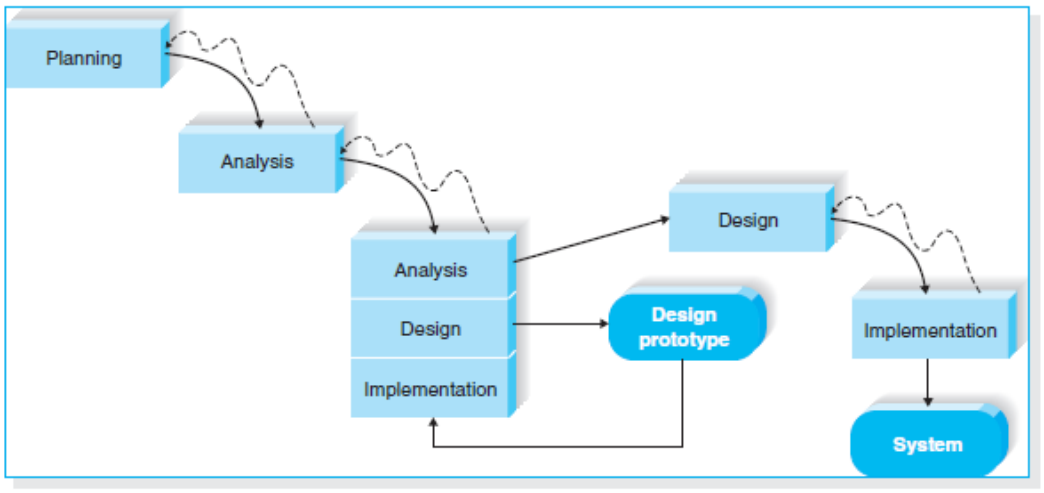


Figure 13 - Throwaway Prototyping Development Methodology (Taken from Dennis, Wixom & Roth, 2012)

Methodology Conclusion

Based on our projects requirements, timeline, and complexity developing the system using the Parallel Development methodology best fit our team. Our team worked on both aspects of our project, Campaigns and Sourcing, at the same time to make sure that we were able to complete each of these in a timely manner. With Parallel Development we were also able to quickly build prototypes of both aspects and review and test them. The feedback from the users of the system was critical to making sure that our project was beneficial to Communispace.

All of the methodologies have their benefits and weaknesses, which helped in deciding to choose a Parallel development. With our time constraints both a Waterfall and V-model would have been a poor choice for development, since both usually take longer to fully develop. While we did not choose to do a Prototyping methodology, we created prototypes to show the users of the system and asked for their help in creating a clearer vision of what the users wanted. See Figure 14 below for an image of the strengths and weaknesses of each methodology options (Dennis, Wixom & Roth, 2012).

Usefulness in Developing Systems	Waterfall	Parallel	V-Model	Iterative	System Prototyping	Throwaway Prototyping	Agile Development
with unclear user requirements	Poor	Poor	Poor	Good	Excellent	Excellent	Excellent
with unfamiliar technology	Poor	Poor	Poor	Good	Poor	Excellent	Poor
that are complex	Good	Good	Good	Good	Poor	Excellent	Poor
that are reliable	Good	Good	Excellent	Good	Poor	Excellent	Good
with short time schedule	Poor	Good	Poor	Excellent	Excellent	Good	Excellent
with schedule visibility	Poor	Poor	Poor	Excellent	Excellent	Good	Good

Figure 14- Development Methodology Strengths & Weaknesses (Taken from Dennis, Wixom & Roth, 2012)

The choice of a parallel development with prototyping was made during the planning phase of the project. By having a parallel development our team was able to do more Analysis and Design within a shorter time span. While Implementation is a hard part of Parallel development, we managed this by communicating within the team on the different aspects of the project. With the documentation that

we added to the VPRM the CORE team at Communispace can make any addition to our project to address any future needs. In the next section, the SDLC is broken down into each phase and will further explain our work process.

System Development Life Cycle

The Systems Development Life Cycle – commonly referred to as the (SDLC) – is recognized as the basic framework for developing information systems (IS). Within the SDLC there are four distinct phases that all IS projects have elements of. They are the planning, analysis, design, and implementation phases. These four phases, in addition to the deliverables associated with each of them, move IS projects toward implementation. In this section, we discuss each phase in the SDLC and their impact on the project in further detail.

Planning Phase

The *planning phase* is the first step within the SDLC. It helps business leaders and developers understand why an information system should be built and how the project team will go about building it (Dennis, Wixom & Roth, 2012). The planning phase has 6 key steps, problem identification, background research, feasibility studies, task scheduling, project staffing, and project management and execution.

Problem Identification

During problem identification, the system's business requirements, needs, and values are identified by interviews with the project's major stakeholders. The project manager (someone from the IS department or consulting firm) works with people across various departments in the organization to generate ideas. This allows everyone to provide their input and solidify what needs to be developed. At the end of the problem identification stage, the project manager presents a systems request to the stakeholders to briefly summarize the business need, and how a IS system will support the need to create business value.

Background Research

Once the systems request is completed, the project team initiates their background research. During this phase, the project team works with the stakeholders to determine what information is vital to the understanding of the business operations. As soon as this information is specified, the stakeholders facilitate knowledge transfer meetings with the project team. This allows the project team to fully understand the business processes that are already in place and how the proposed IS project impacts and brings value to the organization. Additionally, the project team uses this opportunity to identify and gather information from any other literature topics that would benefit them. After the background research has been completed, the project team prepares a feasibility study to determine the likelihood of a successful implementation, and then creates a schedule with their proposed deadlines and deliverables.

Feasibility Study

The feasibility study determines the technical, organizational, and economic likelihood of successfully implementing the proposed system. The technical feasibility analysis displays the organization's ability to adopt and utilize the system, in respect to their familiarity with the proposed application/technology, the application/technology's compatibility with the organization, and the project size. The organizational feasibility analysis outlines the ability for an organization to implement the proposed system given any organizational and hierarchical barriers, such as managerial resistance or user learning curves. The economic feasibility analysis provides the project stakeholders with an estimate for the return on investment and the break-even point, in addition to the tangible and intangible benefits, associated with the development of their proposed system. At the end of the feasibility analysis, the project team reports their findings to the project stakeholders for their approval to continue the project.

Project Staffing

When the feasibility study is completed, the project manager begins staffing the project. The skillsets that are needed to develop the system are identified, and the remainder the project team is

assembled. The staffing plan is then provided to the stakeholders for accountability and to ensure that the team is adequate for the task. After the project team is finalized, the project manager begins scheduling and assigning tasks.

Task Scheduling

As part of the planning phase, project managers specifically outline the tasks that are needed to complete the project. Additionally, they assign team members to each of the tasks and deadlines for each of the tasks. This allows the project manager to accurately gauge the amount of time and people needed to complete the project. Gantt Charts (in addition to computer software) are used to show a detailed view of the time distribution between tasks and major milestones.

Project Management and Execution

During the project management and execution phase, the scope, objectives, risks, and constraints are finalized with the stakeholders. The major stakeholders and project manager discuss the items above with the intention of mitigating any changes to the schedule and project. This is where the project team concludes their planning phase and starts their analysis.

Analysis Phase

The third step of the System Development Lifecycle is the analysis phase. It is at this stage where the project team identifies who will use the proposed system, what the functions of the system will be, and where and when it will be used. (Dennis, Wixom & Roth, 2012). To determine the answers to these questions, the team goes through three steps at this phase: development of an analysis strategy; gathering of requirements from the potential users; and presentation of a system proposal to the project sponsor and other decision makers at the company.

Analysis Strategy

The analysis strategy is used to help guide the team through the analysis process. It begins with a study of the as-is system and the problems with it that current users face. All of this information is taken and compiled to create a vision for the new, to-be system.

Requirement Gathering

During requirements gathering, the project team meets with stakeholders to find out exactly what the users are looking to get out of a new system. These can be one-on-one meetings, interviews, group workshops, or questionnaires. This involves developing a business process model that can be used to create other models of how the data will be used and flow throughout the system. By analyzing this data, the project team can design data processes that support the business processes.

System Proposal

Finally, the results from analysis including data gathered from talking to users and system and business process models are compiled into a systems proposal. This information is presented to the project sponsor as well as other stakeholders in the project. It is at this point where the project will either be reworked or given approval to move forward.

Design Phase

The third phase of the Systems Development Life Cycle is the design phase. Building and designing the business system that was planned and analyzed during the preceding two phases takes place during this phase. The design phase can be broken down into five steps that each build upon one another. The five steps are Designing System Architecture, Designing User Interface, Building Prototype, Test User Interactions, and Build Final Prototype.

Designing System Architecture

The software and various file formats must be thought of when designing the system architecture. The adoptability of the new system will greatly increase if the software and formats used are already implemented in the as-is system. The smooth adoption will reduce problems and the time required to implement the system.

Designing User Interface

The physical layout of the interface that the user will navigate through is developed during this step. Similar to designing the system architecture, the new system's interface should be based on the as-is system to reduce the time it takes to learn and adopt. This in turn leads to the system following one of the main user interface design principles, which is consistency.

Building Prototype

The functional elements of the system that address the system requirements are developed during this step. Once this step is complete, users will be able to test the prototype and give feedback or recommendations to improve the system.

Test User Interactions

User testing of the prototype weeds out any problems in the prototype and helps determine whether all system needs and requirements were met or not. This step is usually repeated until the prototype is a fully functional interface that meets all needs and requirements.

Build Final Prototype

Feedback and recommendations brought up by the user testers are taken into account when building the final prototype. The final prototype addresses all needs and requirements that were proposed during the planning phase. User documentation on the final prototype is included to support the future users of the system.

Implementation Phase

The final stage of the Systems Development Life Cycle is the implementation phase. At this point, the final iteration of the developed system is delivered to the project sponsor who, at their discretion, will chose whether or not to fully implement the new system into the business. During this phase the users receive training on the new system, documentation is given to the project sponsor, and the project is handed off to the sponsor.

Generation of Training Materials

In order to help in the implementation of a new system, user documentation must be given to the users of the system so that they will be able to use the system once it is in use. Without proper documentation and training, user adoption will be very slow.

Project Hand-off

After completing the project, the project is handed off to the project sponsors who complete additions to the system and the code so that it can be placed into production as well as add any additional features that they may want that had fallen out of scope of the project. It is also at this time that the IS team may do some quality assurance testing to ensure that it will work in their environment.

Chapter 3: Project Initiation – Planning Phase

Using our coursework at WPI and research outlined in the previous chapter, we were able to apply this knowledge in order to plan, analyze, and design an improved VPRM System. The first step in the project was to start at the beginning of the Systems Development Lifecycle – the planning phase.

In the planning phase of our project we met with several project stakeholders to setup the scope of the various elements that we needed to design for Communispace. We began by meeting weekly with our project advisor, Professor Eleanor Loiacono, to help guide us through the beginning stages of setting up the MQP. Once the contract negotiations between Communispace and WPI were completed, we met with the Project Sponsor, Ms. Laura Naylor, and several other stakeholders to kick-off our MQP. We discovered that we would be doing a continuation of last year's VPRM project. However, our project sponsor did not know what the scope and objectives were, so we then went back to Communispace to gather further requirements (see Appendix J – MQP Meeting Minutes – w/ Professor Loiacono, for meeting notes).

It was in these meetings with Communispace that we started to understand the objectives they wanted our team to achieve in improving the VPRM system. While Communispace's current VPRM system helps employees at Communispace look up past projects, they wanted it to capture more information to allow them to make better-informed decisions.

After gathering the project requirements we moved onto the project feasibility for Communispace. The feasibility made sure the improvements that we made were feasible in the economic, technical, and organizational structure Communispace has. It was important to review the feasibility to understand any limitations that Communispace might have had.

Scope and Objectives

The scope of this project was to: provide a holistic view of campaign level vendor metrics and assets, provide consultants the ability to evaluate/select vendors based on the previously quoted bids, and

eliminate the consultants' need to look through multiple "sourcing" Excel worksheets. User experience and design changes that are unrelated to these new features were out of scope. Our objective was to deliver these new features on time and within scope.

Methodology

After reviewing the project scope and time constraint, our team decided that it would be best to divide the team into two separate groups and conduct a parallel development procedure for the project as a whole. Each separate group took on one of the two segments (Campaign and Sourcing) and mainly focused on the one segment they were responsible for. During our team meetings, we updated each other on the progress of each segment so that both groups have at least a general idea of the other segment. The parallel development method allowed us to fit both segments of the project within the time constraint of three seven-week terms. This is mainly due to the fact that by splitting the group into pairs, we were able to set up meetings to gather requirements for both segments at the same time, i.e. one pair would meet with the Campaign specialists while the other met with the Sourcing specialists.

For each individual segment, both groups used the system prototyping methodology. Each prototype would be created in rapid succession so that stakeholder feedback could be implemented in the proceeding version and deficiencies could be quickly targeted and fixed. This methodology was beneficial to both groups since we were be able to directly meet with our stakeholders only once per week, which meant each meeting day was crucial in determining whether the prototype met certain requirements or not. Both groups created prototypes until the stakeholders agreed upon a final prototype, at which point we moved on to the implementation phase.

Project Plan and Timeline

The following outlines our planed deliverable deadlines, which guided us in gaging the process and setting goals for our team to follow. The Analysis was mostly complete during the beginning of B-term at WPI before the end of 2013. The major milestones are outlined in Table 1 below.

Table 1 - Project Deliverables and Deadlines

Deliverables (For both Communispace and the MQP)	Deadlines
Process Documentation and Flows • Interview various employees about their processes • Create process flow diagrams and review with aforementioned employees	November 13, 2013
Proposal Presentation	November 20, 2013
Prototype • Conduct user-testing to gain feedback on potential bugs or problem areas • Revise tool based on user comments	December 16, 2013
User and Technical Manuals • Will include: step-by-step guide for previously discussed use scenarios, • SQL/VBA code for easy transition to other universe if desired, • Screenshots to aid visually in execution of various tasks	February 28, 2014
Final Draft (MQP Paper)	February 28, 2014
Final Presentation	March 5th, 2014

A timeline in addition to the scope and staff helped the team plan for due dates and outline of project development. The Gantt chart was made to help visualize the timeline that we have setup. The Gantt chart (Figure 15) was created in Microsoft Project to show both our project advisor and sponsor. A High-level view Gantt chart can be found in Appendix F – Gantt chart.

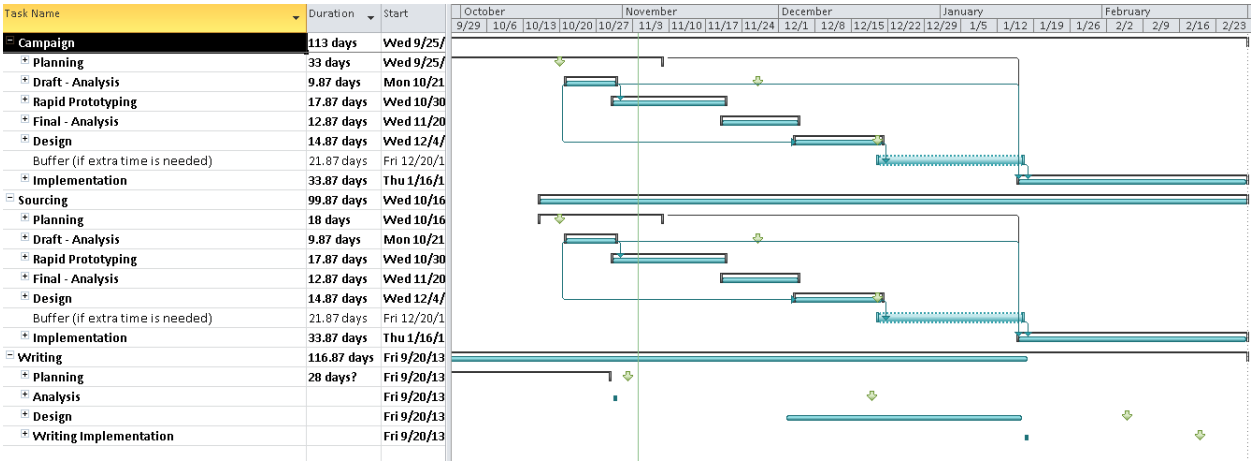


Figure 15 - Project Gantt Chart

Staffing Plan

As the Communispace WPI team we provided the sponsors with confidence that we have the skills and experience necessary in working on this project. All four members on the team have completed or are finishing up their requirements to obtain a Bachelors of Science in Management Information Systems (MIS). The MIS degree includes elements of accounting, marketing, business law, supply chain operations, leadership, human computer interaction, database management, computer programing, and most importantly for this project, systems analysis and design.

In applying the curriculum of WPI to Communispace, the most important elements were marketing, accounting, human computer interaction, database management, computer programming, and systems analysis and design. Since Communispace is a marketing solution provider, it was important for us to know about the principles of marketing and market segmentation. Accounting principles like return on investment, break-even point, balance sheets, and income statements allowed our team to make economic projections about the investment the VPRM extension. Human computer interaction helped us extend and slightly modify the interface design of the VPRM system. The data in VPRM system is stored in a relational database, which the team learned about in prior database courses where we were tasked to create and improve relational databases in Microsoft Access (Adamski, and Finnegan, 2011). To help expand the database system we wrote code that we learned in the various programming courses (Petroutsos, Evangelos, and Ridgeway, 2008). The most important principles we learned were the systems analysis and design principles. These principles allowed us to effectively plan, analyze, design, and implement our proposed additions into the VPRM. For a detailed description of each team's skill set member see Appendix C – Detailed Individual Staffing Information.

Stakeholder List and Roles

There were several stakeholders involved in the project that have benefited through the improvements made to the VPRM system. The primary stakeholder in the case of this project was

Ms. Laura Naylor, the Senior Vice President of Member Experience and Operations. As the sponsor, she helped in clarifying the projects requirements throughout the planning process. She also helped us understand more about the company and what Communispace wanted to get out of the project. In addition to meeting Ms. Naylor, our group met with Mr. Jack Bergersen and Mr. Sean Burke on a weekly basis. They both helped to make sure that we were continuing to go on the right track with the project. See Appendix I – Notes from Meetings with Jack and Sean, for our weekly meeting notes.

With our project we had two major groups of stakeholders that were involved who have benefited from the system additions. The groups that we have worked under are Campaign and Sourcing. The Sourcing additions are used by the Sourcing Consultant group, which includes Ms. Julie Levey, Ms. Ashley Wade, and Ms. Meghan Sayles. The Sourcing Consultants previously did not utilize the VPRM system, but with the additions we made, they plan to use the system in order to make more detailed decisions on the vendors they will work with. The Sourcing team, Mr. John Keeter and Mr. Mark DiGiammarino, will now use the same improvements the Sourcing Consultants will use in order to make sure all the sources on project return a benefit to Communispace. On the Campaign side we talked to Senior Consultant Ms. Michelle Fisher and director Ms. Patricia Harnan to get a better understanding on what the campaign part of Communispace entailed. For a complete list of stakeholder names and roles see Appendix B – Project Sponsors and Stakeholders.

Systems Request

After multiple Joint Application Design (JAD) sessions, Communispace provided us with enough information to create their systems request. The JAD sessions were performed by gathering all of our stakeholders in a room with use to flush out unclear requirements and agree on the project scope. In addition to the current functionality of the VPRM, Communispace identified the need for the VPRM to enable better recruitment and marketing decisions by providing a holistic view of campaign level vendor metrics and assets, by providing consultants the ability to evaluate/select vendors based on the their previously quoted bids, and by eliminating the need to look through multiple “sourcing”

Excel worksheets. These additions were expected to enable faster recruitment and improved profit margins by decreasing recruiting expenses, by increasing the probability of selecting the highest performing vendors and recruitment methods, and by enabling quicker and more accurate decision making in the recruitment process. For more information on the Systems Request, please refer to Appendix A – Consultant Report.

Feasibility Analysis

Since this project has two main elements – that contribute different risks and benefits – we decided to break the feasibility analysis into two parts. The Sourcing and Campaign feasibility analyses outline the technical, organizational, and economic feasibility. The Technical feasibility outlines any barriers in technology the additions to the VPRM could have caused. The Organizational feasibility outlines the ability for the extension of the VPRM to be implemented in Communispace organizational and hierarchical barriers. The final section of economic feasibility provides educated estimates on return on investment and break-even point. These figures helped to justify the development of the extension of the project.

Campaign Feasibility

Organizational Feasibility

The organizational feasibility addressed whether the client(s) would actually use the system when we built it and made sure that the users accepted the system. The original VPRM showed that the ability for quick and reliable reporting of data pertaining to vendors greatly increased efficiency and saved valuable time for the users. Therefore, implementing the same concept to our Campaign segment fit in with the organization and users. Additionally, the learning curve should not be that severe because followed the same interface as the original VPRM, which had already been used throughout the company.

As the Director of Campaign Management, Ms. Patricia Harnan had great influence over the Campaign segment of this project. She provided us with the specific functionalities that the

Campaign segment should have. Ms. Michelle Fisher and Mr. Jack Bergersen also had influence on the Campaign segment, as they provided us with a list of KPIs that should be tracked and displayed. This segment of the project encountered little to no resistance from the stakeholders and is organizationally feasible.

Technical Feasibility

The technical feasibility addresses the question "Can we build it?" and goes over the technical risks associated with the project. It is composed of five distinct sections: technological capability, application capability, technological familiarity, compatibility, and project size.

Technological Capability

Many applications and programs are used every day at Communispace. AtTask, SQL Database, various Microsoft applications, and Visual Basic are examples of the tools used at Communispace. The Campaign section used SQL server and Microsoft Access, which is mainly due to the fact that we added to the functionality of the implemented VPRM.

Application Familiarity

We were not worried about application familiarity because the VPRM had been implemented for over half a year and we followed the same interface design. Additionally, the CORE Group at Communispace uses the applications used to build the Campaign segment on a daily basis, therefore they had no problem navigating through the Campaign interface.

Technological Familiarity

As explained above, the CORE Group at Communispace (specifically the Business Analyst group within the CORE group) is familiar with the components that were used to develop the campaign segment of this project. They have taken control of the interface after we provided them with documentation at the end of the project.

Compatibility

The Campaign segment will be fully compatible with the VPRM because we added to the functionality, which means we based our project off of the already implemented VPRM system. We included user and system documentation in case any future projects require compatibility with the Campaign segment.

Project Size

The Campaign segment of this project was too small of a scope for a four person team but a perfect size for a two person pair. After meeting with Ms. Patricia Harnan and Ms. Michelle Fisher to go over the structure of campaigns, we met with Patricia on a weekly basis to gain feedback on our prototypes. We planned to finish the Campaign segment earlier than the Sourcing segment because our entire group of four worked on it for the majority of A-Term.

Sourcing Feasibility

Organizational Feasibility

In creating a new system for a company, one of the most important aspects to look at is to see how the proposed system fits within the company. The organizational feasibility attempts to ask the most basic question "if we build it, will they come?" In this case, the VPRM system had already been implemented and adopted by many users at Communispace and had been well received. The original system allowed employees at Communispace quickly reference vendor and project performance rather than dig through various Excel spreadsheets to allow them to make better decisions faster. The purpose of this project was to extend the system to be useful to more users, specifically those in the sourcing team. Their previous methods were inefficient and disjointed, which prompted a request from them to be able to have access and functionality within the VPRM.

Ms. Laura Naylor, the project sponsor, was a strong influence at Communispace as the Senior Vice President of Member Experience and Operations. This allowed her to carry significant influence over others at Communispace, which helped adoption of the system thus far. She also provided us with

specific requirements and goals for the VPRM system, and helped direct us towards the target staff that we hoped to benefit by improving the system. We met with many staff members who the improvements to the VPRM target, and they were instantly excited to be able to use the VPRM and get away from their current methods for analyzing vendors. From a managerial as well as end user standpoint, our proposed system was entirely feasible, as the user buy-in already existed. This allowed us to implement the system with little to no resistance by the organization.

Technical Feasibility

In this portion of the feasibility for the sourcing aspect of the project we outline if the extension of the system can be built. By answering this question we developed a solution to mitigate any technical risks that might be involved. This section covers all aspect of a technological feasibility centered on the sourcing aspect of the project.

Technological Capability

Communispace uses various applications and programs in their day-to-day business operations. These programs, such as AtTask, Saleforce.com, Microsoft Office, SQL Database, and Visual Basic provide functionality that Communispace needs. In our project we utilized SQL Server, Visual Basic, and Microsoft Access to support VPRM System.

Application Familiarity

The CORE Group at Communispace uses the VPRM and the programs described in the technology capability on a daily basis currently. We provided documentation as well as a startup guide to help users use the improved VPRM.

Technological Familiarity

Since the VPRM system continues to be used by a majority of the same users, our projects extensions continued to use the same technology in order to keep the familiarity of the system. However there were several new users of the functionalities that we added. In order to make sure there was an easy transition, we provided a simplistic and elegant user interface as well as

documentation for the Business Analyst Group to take over the control of the VPRM system at the conclusion of our project.

Compatibility

The extension of the VPRM was developed to be compatible with the current VPRM system and other systems at Communispace. We included user manuals and information on the extensions that were given to the project administrators.

Project Size

The Sourcing segment of this project was too small of a scope for a four-person team but a perfect size for a two-person pair. After meeting with multiple Consultants to learn about the needs for adding and comparing vendor quotes, we met with the Sourcing stakeholders on a weekly basis to gain feedback on our prototypes.

Joint Economic Feasibility

During the interview process, the project sponsors expressed several tangible benefits that they hoped to gain by extending the VPRM. A holistic view of campaign level vendor metrics and assets, the ability to evaluate/select vendors based on their previously quoted bids, and the elimination of the need to look through multiple "sourcing" Excel worksheets is expected result in:

1. More accurate decision making in the recruitment process.
2. Decreased recruiting expenses.
3. An increased probability of selecting the highest performing vendors and recruitment methods.

Mr. Jack Bergersen estimated that these benefits would translate to a 15% data cost savings year-over –year. To assess this project's economic feasibility, we used a cost-benefit analysis consisting of the break-even point and return on investment (ROI) equations (Kimmel, Weygandt, and Donald, 2011).

$$ROI = \frac{(\text{Gain from Investment} - \text{Cost of Investment})}{\text{Cost of Investment}}$$

$$BEP = \begin{matrix}\text{Number of} \\ \text{years of} \\ \text{negative} \\ \text{cash flow}\end{matrix} + \frac{\text{That year's Net Cash Flow} - \text{That year's Cumulative Cash Flow}}{\text{That year's Net Cash Flow}}$$

For a fair comparison, this cost/benefit analysis also took into account three development scenarios –developing the system using us (a WPI project team), a consultant, and a current employee. The assumptions for each scenario were based off information provided by Mr. Jack Bergersen and research on costs associated with employees and consultant work.

Cost Benefit Analysis

WPI Project Team

After conducting our cost benefit analysis, it was clear that Communispace should extend the VPRM using a WPI project team – as it resulted in the lowest overall cost and highest return on investment. With an average of 15-20 hours invested by each student over the course of a minimum of 24 weeks, Communispace received the best value per person per hour. Additionally, this development method yielded the fastest break-even point, allowing Communispace to recoup its investment in a year and about four months from the start of the project. The return on investment was 1087% during a four year time span. You can reference this table in Appendix D.

Table 2 - WPI MQP Team Cost-Benefit Analysis

TABLE TWO REDACTED

Consultant

If Communispace chose to develop the extended VPRM with a consultant, the costs to develop the system would have been much higher than the previous scenario and the return on investment would have been lower. This was also the case when Communispace chose to originally develop the system. The return on investment would be 657% during a four-year time span with a break-even point in two years. You can reference this table in Appendix D.

Table 3 - Consultant Cost-Benefit Analysis

TABLE THREE REDACTED

Internal Employee

Having the extensions made to the VPRM developed by an internal employee would have been more expensive than using the WPI MQP Team. The cost per hour to develop the system would have been higher, return on investment would have been lower, and the break-even point would have been longer. Also, only one employee would be able to be assigned to the project due to costs. The return on investment with this option was approximately 947% with a break-even of a little over a year and seven months. You can reference this table in Appendix D.

Table 4 - Internal Employee Cost-Benefit Analysis

TABLE FOUR REDACTED

ROI and Break-Even Point

Each method of developing the VPRM system, the WPI project team, outside consultant and internal employee, had different costs associated with them. The WPI team provided the best return on investment figures and the best break-even point. From an economic standpoint, the WPI team was the best economic investment, given that skill levels are similar. The table below details the calculated figures that portray return on investment and break-event point. You can reference this table in Appendix D.

Table 5 - ROI and Break-Even Point

	WPI MQP Team	Consultant	Internal Employee
ROI (4 years)	1087%	657%	947%
BEP	1.33	1.93	1.60

Project Worth

After speaking with Mr. Sean Burke and Mr. Jack Bergersen, we determined this project was worth [REDACTED] in four years. This number was derived from a 15% savings from their current cost to purchase data from vendors. The total cost to develop the extended VPRM was approximately [REDACTED], as WPI charged Communispace approximately [REDACTED] for the WPI project team, which consisted of four senior students and one professor, acting as an advisor. In addition to the

cost to hire the students from WPI, Communispace budgeted an additional [REDACTED] to anticipate delays and project scope changes and creep.

Assumptions

Some assumptions were made in creating the cost/benefit analysis for the three project scenarios. Based on the information provided by Mr. Jack Bergersen, the WPI project team assumed that the system would have saved Communispace 15% on their vendor data costs. Given that from May 2013 to December 3rd 2013, the total data costs were [REDACTED], we estimated that the entire data cost in 2013 would be $341,000. Based on information pulled from Glassdoor with verification from Mr. Jack Bergeson, an outside consultant would make about $31.25 an hour with a $15 per hour overhead charge at a total cost of $46.25 per hour. Additionally, we assumed it would take a consultant approximately 10 weeks, for a total of 400 hours, to develop this project. This took into account the complexity and requirements for this project and the standard project timeframe. We also assumed that these changes would have an effective life of at least four years.

Risk Assessment & Mitigation

We identified 3 major risks that we will potentially face over the course of this project – unclear project scope, high levels of project documentation, and unanticipated project complexity. The considered risks are internal to the development team and could have caused scheduling delays for our client deliverables.

Unclear Project Scope

Over the course of the analysis phase, we expected that this project would most likely be slowed down because the project stakeholders were unclear of what was included and what was excluded from this project. This risk could have delayed our transition into the design phase – potentially decreasing the amount of time available to program and implement the system. The team considered there to be a high probability of this risk occurring.

Ways to address this risk:

1. Allot more time to requirement gathering activities.
2. Build a two to three week buffer between the development phases.
3. Set a cut-off date when all decisions have to be completed.

Project Documentation

As part of our graduation requirements, we had to document the entire SDLC to demonstrate the knowledge gained from this development experience. For this reason, we expected there to be a high probability of missed deadlines because the amount of time needed to complete our project deliverables will be increased.

Ways to address this risk:

1. Build writing checkpoints into the project timeline.
2. Complete writing assignments in waves.

Unanticipated Project Complexity

Our project stakeholders expected the design and implementation of the campaign related features to be of low complexity. However, there was a moderate probability of risk that unforeseen complications would have increased the amount of time to complete programming and design tasks.

Ways to address this risk:

1. Build a two to three week buffer into the design phase to allow delays to minimally impact the implementation dates.

Conclusion

Based on our requirements gathering and feasibility analysis, the WPI MQP team determined that the new Campaign and Sourcing related functionalities to the current VPRM system would yield a positive ROI with a BEP less than two years. All of the stakeholders and users that we talked to at Communispace were supportive of the expansion and agreed upon the benefits that we projected the new functionalities to bring. Similar to the prior group, we took scalability into consideration when designing the final system to assure that new functionalities could have been added if needed.

Chapter 4: Analysis Phase

After the conclusion of the planning phase, we moved into the analysis phase where we used the systems request as a guide to gather the functional and non-functional requirements of the proposed system.

In order to accomplish the goals of the project with the timeline that the MQP team decided on in the planning phase, the MQP team split into two teams for the analysis phase – a campaign team and a sourcing team. The campaign team was comprised of Shun Snoddy and Adam Taylor, while the sourcing team was comprised of Greg Karp-Neufeld and Greg Mannheim. Each team met with key stakeholders who understood the business processes that the team was hoping to implement into the VPRM and reviewed with key users to understand the functionality that they wanted. This requirements gathering process involved creating use cases based on the information gathered from meetings with users and then reviewing the use cases with each user. From a technical aspect, it was also at this stage that the teams created data flow diagrams (DFDs) and entity-relationship diagrams (ERDs) to lay out a technical design for the VPRM. After the use cases were confirmed with each stakeholder, both teams began to create interface designs for the proposed changes.

Campaign Analysis

Communispace recently adopted a new series of recruitment methods called campaigns. Campaigns are the marketing tactics or methods that are used to target a specific audience or market segment. The main difference from their traditional method is that campaigns do not use panel vendors (a specific vendor type) during the recruitment process. Instead of panel vendors, Campaigns use vendors with vendor types such as social media, direct mail, and email.

Within our initial systems request, Communispace identified the need for the VPRM to provide a holistic view of campaign level vendor metrics and assets. Using the campaign structure pictured in Figure 16 allowed us to capture that data at a more granular level. This gave Communispace the ability to compare KPIs across various categories. This structure also gave them the ability to roll up

the data to the vendor-method level to see which vendor (and vendor type) was the most effective for a certain audience. The campaign architecture allowed for flexible and effective comparisons to determine the best strategy to take when dealing with a specific market segment.

Figure 16 - The structure of a Campaign within Communispace

Requirement Elicitation and Analysis Strategy

When gathering requirements, interviews and Joint Application Design (JAD) sessions were conducted to gain a better understanding of how we were to incorporate Campaigns into the VPRM. These interviews allowed us to define the campaign structure, gather our functional and non-functional requirements, and develop use cases, data models, and entity relationship diagrams. Additionally, these meetings were used to develop our first user interface prototypes.

Requirements Definition

Based on meetings between Ms. Laura Naylor, Mr. Jack Bergersen, and the sourcing and CORE teams, the following requirements were defined in order to outline the various business, user, and functional and non-functional requirements of the project. They are listed below.

Business Requirements

These are the requirements that supported the desired business functions of Communispace and the campaign team.

- Enable a holistic view of campaign level vendor metrics that demonstrate how well a campaign performed. Being able to compare the metrics between campaigns allows Communispace to make better-informed decisions. (For a list of KPIs used in the project, see the Glossary of Terms at the end of the document).
- Improved access to campaign level KPIs (Key Performance Indicators).
- Enable historical data analysis of prior (campaign) marketing tactics.

User Requirements

After going through our requirements gathering process with the Campaign stakeholders (mainly with Ms. Patricia Harnan), we determined that one of the main tasks that the Campaign segment must support was inputting Campaign data through the VPRM. Another main task was the ability to view and compare the KPIs of marketing tactics (Campaigns) used to recruit a given audience. This includeed the ability to:

- Build dynamic reports of desired campaign data (on the project and vendor level).
- Must be able to view the various assets used in a given recruit method.
- View campaign data across audiences/methods.

Process Oriented

The Campaign portion of this project had to accomplish three main processes. These included:

- Display and compare the KPIs of the most effective asset under the constraints specified by the user.
- Display the KPIs of various assets under the constraints specified by the user.
- Input Campaign data into the database.

Information Oriented

The information-oriented requirements needed to support the processes that take place within the Campaign segment were the following:

- Import KPIs from summary sheets.
- Import the actual asset used during recruitment.
- Compare KPIs when determining which asset was the most effective.

Non-Functional

Non-functional requirements were broken down into four sections. Operational dictated how our project ran and what software/hardware it utilized. Performance went over the lag times associated with data importation and interaction. Security looked at the level of security we much include in the system. Finally, cultural/political norms reviewed how the system will benefit the client. Because of the nature of non-functional requirements, both Campaign and Sourcing had the same requirements, thus these requirements will only be listed once.

Operational

- Utilize Communispace network and current VPRM system.
- Run on Windows 7.
- Run Microsoft Excel and Access.
- Must use a dashboard interface.

Performance

- Short lag time (important because main benefit of Campaign data in VPRM is that you don't have to wait for the summary sheet to open up).
- Multiple users able to view reports.
- Lock-down summary sheet when editing Campaign data.

Security

- Must not take confidential data off the Communispace network.
- Only authorized users can edit data.

Cultural/Political Norms

- Must not conflict with existing processes or working norms.
- Personal information must be protected in compliance to Data Protection Act.
- Similar look and feel to the original VPRM system.

System Prototyping

After reviewing our functional and non-functional requirements with our stakeholders, we began to create hand-drawn prototypes and use cases to help visualize and obtain a better understanding of the desired system workflow.

Prototyping Phase 1

Our first prototype consisted of the general layout for the user interface of the "display most effective asset" and "compare assets" functionalities. However, during our meeting with Ms. Patricia Harnan, we determined that the "display most effective asset" functionality was redundant because the "compare assets" functionality listed the assets from most effective to least effective. Therefore, we decided to only keep the "compare assets" functionality.

Below are images of the "display most effective asset" interface and the "compare assets" interface. We later chose to remove the right half of Figure 17 because we did not have the "display most effective asset" functionality anymore. However, we did utilize the "compare assets" interface. The user inputs the constraints (as seen on the left half of the Figure 17) and clicks a "Display" button, which brings up a separate window (Figure 18) that contains tables of KPIs. Ms. Patricia Harnan gave us positive feedback on the interfaces and encouraged us to proceed to make the next prototype in Access.

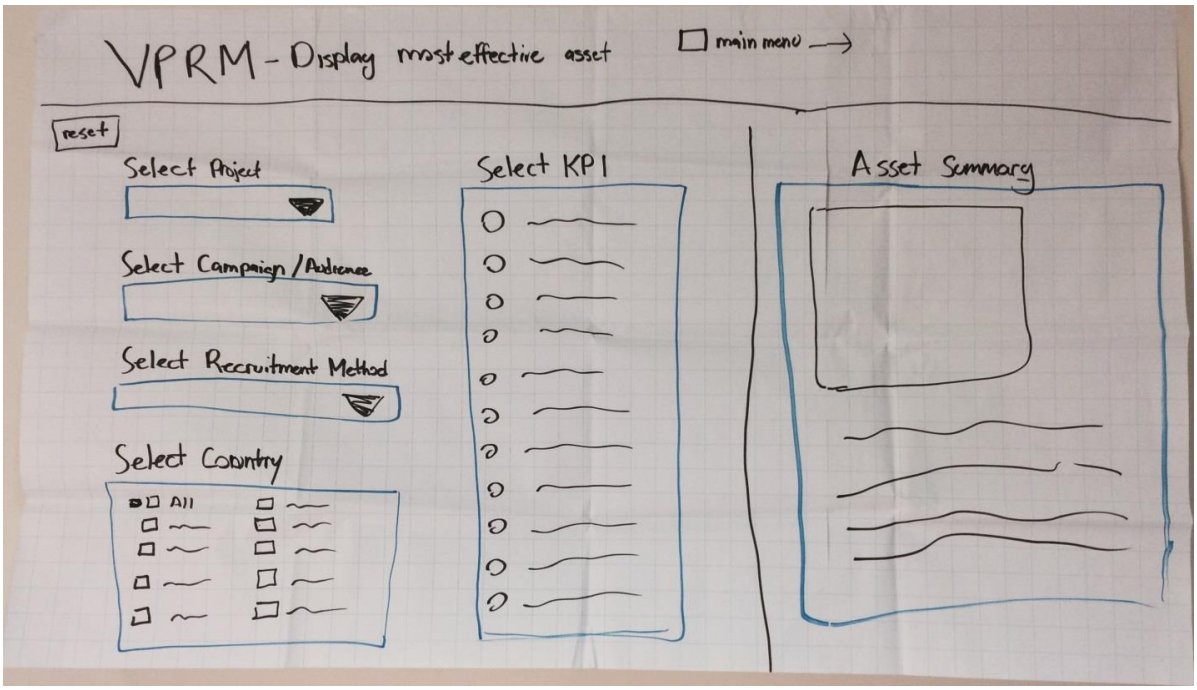


Figure 17 - Interface for “display most effective asset”. We will still use the left half of the interface

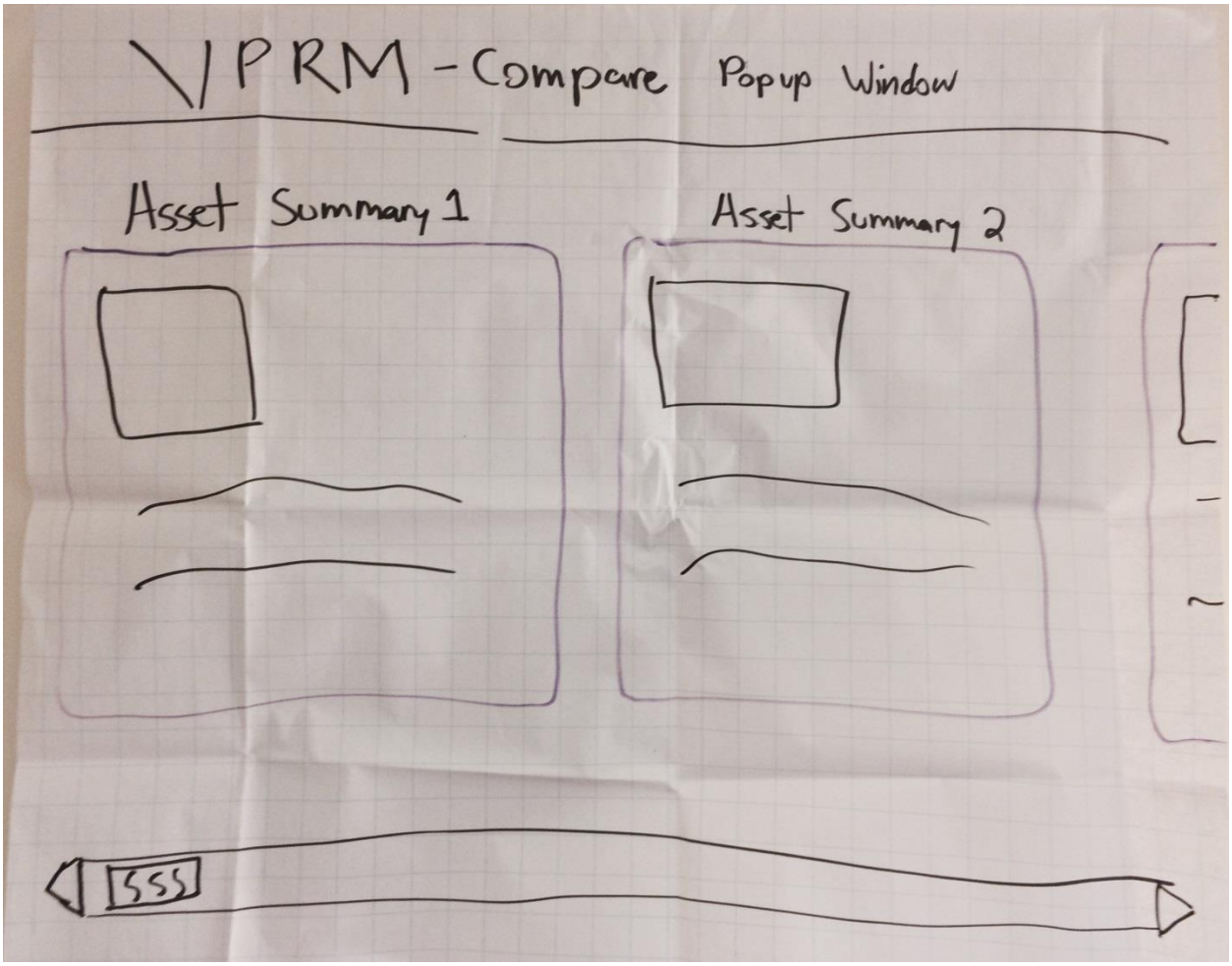


Figure 18 - Interface for the popup window for "compare assets". The summary for each asset contains a table with KPIs, along with a thumbnail of the asset

Use Cases

After determining the user and system requirements for the Campaign segment of the project, use cases were developed to show the steps the user would go through when using the actual system. The following three processes were vital to the Campaign segment: displaying assets for comparison, inputting Campaign data, and rolling up data to the Audience level. Please refer to Appendix E for formal use case format.

Process 1

Process 1 outlines the functionality of the Campaign segment that displays the assets from most effective to least effective under the user specified constraints. The process is triggered by clicking the "Display assets" button within the Campaign section of the VPRM. Major inputs include the

specific Project, Audience, Method, Country, and “most effective KPI” while the main output is a table of KPIs, with the option to view the actual asset.

The user first inputs the Project, Audience, and Method that contain the assets they want to view. They would also determine which KPI they deem is “most effective” during this case study. They then choose whether they want to view the assets within a specific country or across all countries. Finally, the user clicks the “display assets” button, which brings up a separate window that contains a KPI table for each asset, listed from most effective to least effective based on the user specified “most effective” KPI. Each asset will also include a button to view the actual asset that was used during recruitment.

Process 2

Process 2 outlines the functionality of the Campaign segment that rolls up data to the user constraints. The process is triggered by clicking the “Display assets” button within the Campaign section of the VPRM. Major inputs and outputs are similar to above, except the user would choose “Across all ____” for where they would like to roll data up to (ex. “Across all Audiences”).

The user first inputs the Project, then chooses “Across all Audience” or “Across all Methods” to display the assets within all Audiences and/or Methods, respectively. They would also choose the whether they would like to specify a country or have the data displayed over all countries. Once all constraints are inputted, the user clicks the “display assets” button to display all of the assets that fit the constraints specified by the user. Each asset includes a button to view the actual asset used during recruitment.

Process 3

Process 3 outlines the functionality of the Campaign segment that allows the user to input Campaign data. The process is triggered by clicking the “Input Campaign data” button within the Campaign section of the VPRM. Major inputs include choosing the Project, Audience, and Method in which the

new asset will be associated with, along with the actual KPI data and actual asset that was used. The major output is the asset information that is stored within the VPRM.

The user begins this process by choosing which Project, Audience, and Method they want the new asset to be associated with. They then input the KPIs for the asset and upload the asset that was used during the recruitment process. Finally, the user clicks the "Add asset" button to complete the process.

System Proposal

To alleviate the problem of not having any way to compare the effectiveness between Campaign assets used in a recruitment process, we proposed an extension of the current VPRM that specifically accommodates for Campaigns. This segment of the VPRM gave the user the ability to specify which Project, Audience, Method, and Country they want to focus on when comparing assets, as well as allowed them to input Campaign KPIs and upload the asset used during recruitment. This provided much easier access to Campaign data, which is very important because Communispace is shifting from the traditional panel vendors to the non-traditional Campaign recruitment method.

Sourcing Analysis

Initially, the VPRM was created for Communispace so that it can track historical vendor performance. As use of the system has grown, Communispace wanted to be able to view data it received as quotes from vendors alongside the existing performance metrics at the end of a recruit. This allowed Communispace to better evaluate vendor performance and make better decisions when choosing a vendor. Additionally, this added functionality of tracking quoted metrics from vendors consolidated Communispace's data into one central data location rather than having is spread out across multiple Excel documents as it previously stood.

Requirement Elicitation and Analysis Strategy

When gathering requirements, interviews and Joint Application Design (JAD) sessions were conducted to gain a better understanding of how to extend the tracking of recruit metrics in the

VPRM. These interviews allowed us to define the recruit workflow that was previously in use as well as the desired process, gather our functional and non-functional requirements, and develop use cases.

Requirements Definition

Based on meetings between Ms. Laura Naylor, Mr. Jack Bergersen, and the sourcing and CORE teams, the following requirements were defined in order to outline the various business, user, functional and non-functional requirements of the project. They are listed below. Note: Non-Functional requirements are not listed in this section, as they are the same as the non-functional requirements for the Campaign portion of the project listed earlier in the paper.

Business Requirements

These are the requirements that supported the desired business functions of Communispace and the sourcing team.

- Enable better access to recruitment KPIs on both the pre and post recruit levels.
- Allow side-by-side comparison of pre and post recruit KPIs.
- Enable Communispace to generate reports of vendor performance similar to current reports from Excel documents.

User Requirements

After going through our requirements gathering process with the Sourcing stakeholders, we determined that one of the main tasks that the Sourcing segment had to support was inputting quoted data into the VPRM for comparison against other vendor quotes and versus delivered results on a project. This included the ability to:

- View and compare the KPIs of a recruit.
    - Build dynamic reports of desired recruitment data (on the project and vendor level).
- Input/Upload quotes from vendors.
- Input/Upload updated recruit data.
- Edit recruit data.

Process-Oriented

The Sourcing portion of this project had to be able to accomplish three main processes. These included:

- Display quoted metrics alongside post metrics.
- Allowing the input of quotes for a project into the VPRM.

Information-Oriented

The information-oriented requirements needed to support the processes that take place within the Sourcing segment were the following:

- Enter quoted metrics from vendors.
- Select which vendors will be used for a given project.
- Compare KPIs when determining which vendor performed the best.
- Generate URLs for a recruit.

Analysis of Communispace Sourcing Process

In order to best determine how to implement further sourcing information into the VPRM, the MQP sourcing team met with Communispace's sourcing team to determine the workflow for handling recruits and tracking their metrics in the VPRM. Displayed below is a draft of the process first done on paper and adjusted during meetings. After going through several iterations of this workflow on paper, the MQP sourcing team created a Visio diagram with the finalized process flow. Below the second diagram, there is a description of what happens at each step. These were created and verified through multiple meetings with different stakeholders in the system to ensure that it fit everyone's needs.

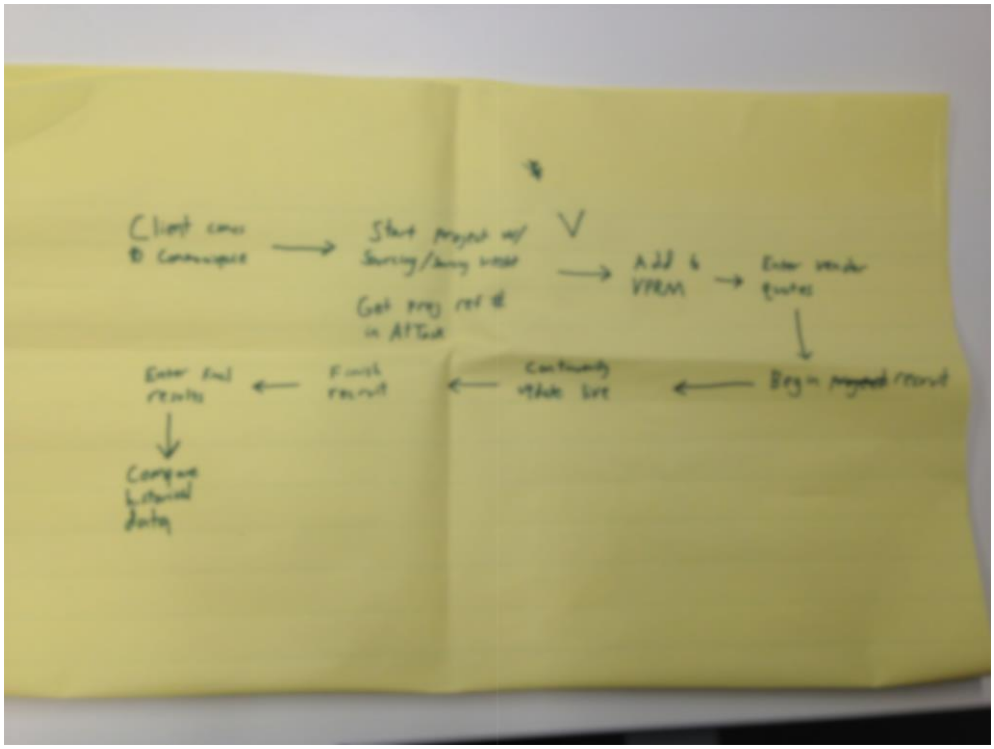


Figure 19 - First Draft of Sourcing Workflow

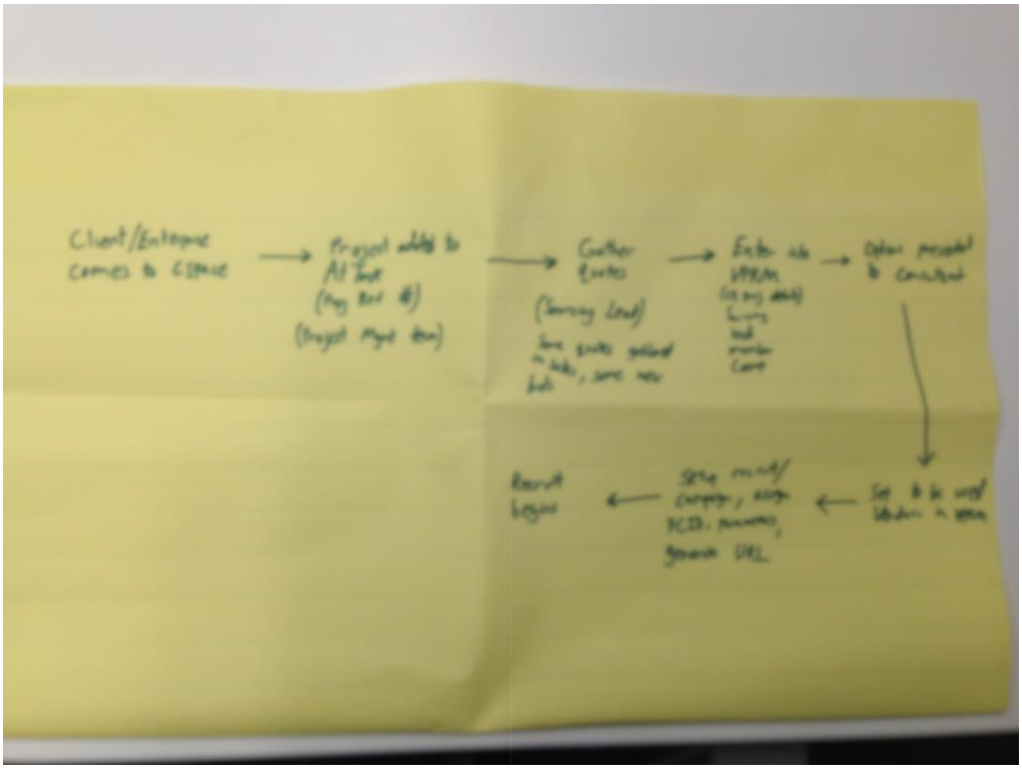


Figure 20 - Final Draft of Sourcing Workflow

Figure 21 - Finalized Visio diagram of sourcing workflow

Client/Enterprise comes to Communispace

Before a project begins, a client/enterprise comes to Communispace looking for help to reach a specific target segment.

Project Added to AtTask

At this stage, a project manager will be assigned to the client's project and they will enter the initial project information into AtTask from SalesForce. It is at this point that the project will gain a project reference number, which will eventually become the primary key for the project in the VPRM.

Project Entered into the VRPM

After the project has been added to AtTask, Sean Burke will download data from AtTask on a weekly basis and import the specified data into the VPRM. This is done using the "Import up-to-date project data" function in the VPRM. There are some special cases where Sean will update the VPRM with new projects mid-week if requested. At this point, the project has no project quotes or performance

associated with it. Project is specially flagged if client/Communispace provided data is being used. All project details specified in AtTask are carried over into the VPRM. Anything that is not specified can be filled in by MSCs at a later point.

Quotes are gathered for vendors

At this point, quotes are gathered by the sourcing lead from vendors or compiled from email chains containing quotes during pre-sales activities. All of this data is taken and entered into the projects in the VPRM that are currently listed as live. A project is considered "live" from the moment it is entered into the VPRM until the date set as the closing date.

Vendor options are presented to the consultants and selected vendors are set in the VPRM

Next, each vendor option is presented to the MSCs and sourcing management who decide which vendors to utilize for the project. Once the selection has been made, the vendors that are chosen for the project are set to be active and the others will become inactive and remain in their quoted state. When a vendor is considered active, the quoted metrics are saved and are later compared against the post metrics.

Recruit begins

Recruitment of members for a community begins from vendors who were chosen in the previous steps. No information is entered into the VPRM at this stage.

Final recruit metrics are set and the project is set to be completed

In this final step, Data Associates (DAs) will enter project performance data at the completion of a project that they obtain from the project summary sheet. The project is then set as completed and can be evaluated with the quoted metrics.

Use Cases

Enter Quotes into the VPRM

One of the main functionalities that will be added into the VPRM is adding the quoted metrics for a project when MSC and other Sourcing staff gather them.

> Example:
> The sourcing team found 4 potential vendors for “Project A” that they think could help with the project. The quoted information is then entered into the VPRM to store all information the vendors provide.

Select Quotes to be Used and Begin Recruit

Once all the quotes are in the system the sourcing staff has to choose which of the vendors they want to use. We will allow them to see all of them in a view similar to the Sourcing spreadsheet. Once they have selected the vendors the recruit begins for the project.

> Example:
> Once the sourcing team has gathered all the quotes for “Project A”, the sourcing team needs to decide which vendors they want to use. Once the team has reviewed the vendors they choose which ones are going forward. In the VPRM the sourcing team will then check which one they want to continue with and then indicated that “Project A” is starting recruitment.

Viewing Projects Performance and Comparing

After the information is inputted about the quoted and final metrics of a project they would like to be able to compare what the vendor quoted and what the actual final metric is to make sure that vendor is performing as they quoted.

> Example:
> Once “Project A’s” final metrics are inputted the VPRM then will be able to compare what the vendor quoted and what the final metrics of the project were.

Entering Final Metrics and close-out Project

Once the final metrics are inputted into the system the project will be indicated as complete. Once the completion is made the comparing functionality will be available to use.

System Proposal

To provide Communispace with better insight into vendor performance, we proposed an extension of the original VPRM that accommodated more information for recruits with vendors. This segment of the VPRM gave users the ability to track a recruit's performance from start to finish in one central location and allowed immediate comparison of vendor performance. This added functionality allows employees of Communispace to operate more efficiently by reducing the need to look through multiple data sources to gain vendor performance insight.

Joint Process and Data Models

Data Flow Diagram

The Data Flow Diagram is used to help in understanding the process of how data moves throughout the system and where information is stored (Watson, 2004). We created this document to start understanding how the data is currently handled in the VPRM and then added our additions.

Context Diagram

The Context diagram, see Figure 22, is a high level understanding of what the users are putting into the VPRM and what the users receive from the VPRM.

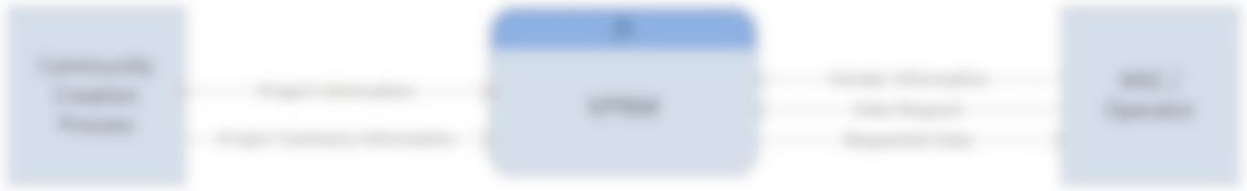


Figure 22 - Existing Context Diagram

Level 0 – Existing

We then went into further detail to understand how the VPRM handled the data within. Figure 23 shows the existing level 0 in the VPRM. By understanding how the original VPRM worked we could then understand how to add our parts.

Figure 23 - Existing Level 0 Diagram

Level 0 – Proposed

With the knowledge of the current level 0 (Figure 23) we then added our additions to the diagram below (Figure 24).

Figure 24 - Proposed Level 0 Data Flow Diagram

Entity Relationship Diagram

The Entity Relationship Diagram, see Figure 25, helped us better understand the necessary fields and relationships that were needed to make the improvements that we planned (Watson, 2004).

[REDACTED]

Figure 25 - Entity Relationship Diagram

Chapter 5: Design Phase – Campaign and Sourcing

After the conclusion of our analysis phase, we moved into the design phase where we began to develop the new features of the VPRM and went through multiple iteration cycles with stakeholders to arrive at a final product.

System Architecture Design

Current Architecture

The current (original) VPRM was built in Microsoft Access and was mainly composed of buttons, combo boxes, and free input boxes, all of which were labeled. The color scheme and layout of the interface was simple and clean, with minimal buttons on each page to avoid confusion. The dashboard contained the most buttons because it contained a button for each of the functionalities that the VPRM had to offer.

One comment that we noticed was common throughout our conversations with the stakeholders was that the labels used in the VPRM were confusing because they did not tell the user enough information about the object. For example, many of the functions within the current system mention the term “tag”. Without any other information, users did not understand what a “tag” was, when it actually referenced the audience that the recruitment was targeting. Confusing labels such as these have been fixed throughout the system so that users understand what the labeled field means or what the labeled button does.

Proposed Architecture Changes

Since we were adding new functionalities to the current VPRM system, we followed the same architecture design of the current system in terms of color scheme, layout, and input/output methods. We added separate buttons into the main dashboard for some of the Campaign and Sourcing capabilities, which bring the user to a page containing functions for each respective

section. Additionally, we added an aggregate search function that allows users to more easily search across projects, vendors, and audiences and providing key performance indicators at each level.

In order to make the system more user-friendly, we have labeled our buttons and fields appropriately so that the user does not get confused when confronted with a functionality they have not used before. Extending this to the entire VPRM system to essentially "clean up" the labels is within the wish list of Communispace and the WPI MQP team, but may remain out of scope due to size of the project and limited time frame.

User Experience and Interface Design

To make sure that all stakeholders got the experience they wanted out of the VPRM extension, we went through multiple design sessions and demo meetings with the stakeholders.

Design Process

In order to make sure that the interface was what Communispace intended it to look like we went through an iterative design process. In this process we gained a further understanding of the interface that all of the stakeholders desired and ensured that it is consistent with the rest of the VPRM. Before creating our first working prototype, we went through multiple designs on paper and in Visio with our stakeholders either in design sessions or through email correspondence. With this feedback we proceeded to make a functional prototype. After our first prototype was made, we went through demo meetings with Communispace stakeholders to obtain their feedback. Taking this feedback we created a final version that is outlined in our Final Storyboard in Chapter 6: Joint Implementation Phase.

Use Scenario Development

To better understand how the users will use the system, we created use scenarios where the user had a specified task through a use case. The use cases helped us understand how to best implement new functionality in the VPRM. By walking through each scenario with stakeholders, we gained a better understanding as to how the users work best, which helped us form the VPRM to fit

their desired workflow. The use scenarios are presented within the use cases in Chapter 4: Analysis Phase.

Interface Structure Design

In starting to plan the interface we created an Interface Structure Diagram to help understand the basic components and functionality the VPRM provides. An Interface Structure Diagram (ISD) shows how the screens and reports are related and how the user will move from to the other. The ISD is shown in Appendix L.

Entering Data Into VPRM

When designing the input methods used within our segments of the project, we took into account the current method of inputting data into the VPRM. The current VPRM used a combination of combo boxes and regular input boxes. The combo boxes were used when the user must select an input from a given list of objects (such as Projects, Audiences, and Vendors), whereas the input boxes were used for freely inputting data (such as metrics). We determined that this system of inputting data was efficient and effective; therefore we used it within our Campaign and Sourcing functionalities as well. After speaking to our stakeholders, we chose to make use of continuous forms for inputting quoted data to enable them to more efficiently enter data into the VPRM. This will be shown later in our storyboard section.

Aggregated Search

When looking at how to best display metrics across, projects, vendors, and/or audiences, we came up with a method to create a search functionality that aggregates key metrics on different levels. This successfully consolidated three previous search functions (Search Performance by Project, Search Performance by Vendor, and Search Performance by Tags) into one search function that allows users to dynamically choose at what level they want to view metrics. The form allows for all combinations of searches to view specific metrics: search across a project, vendor, country, or audience, or any combination of the four.

Once a user has selected the criteria they want to search performance across, the form shows aggregated metrics in one table and then a tabbed sub-form. Within the tabbed sub-form, users can view information on the project, the vendor, and the audience as well as quotes, reported metrics, and a comparison of the quotes versus the reported metrics. In addition, users are able to view member composition as well as campaign assets. This aggregate search form brings all of the data that was previously spread out across the VPRM into one convenient place.

Iterations and Weekly Demo Meetings

Throughout the design phase, our team held weekly demo meetings with stakeholders to obtain feedback that would influence subsequent iterations of the VPRM. This began with designs on paper and quickly moved to Visio diagrams in the analysis phase, and finally to Access forms in the design phase. For each iteration we held meetings with each key stakeholder and had them either revise drawings with us or step through actual forms to accomplish a task. During the meetings we recorded the feedback from the stakeholders and then took it into consideration for the next iteration.

The following sections showcase the storyboards of the functionality that we implemented into the VPRM and describes how some of the functionality has changed at each iteration based on stakeholder feedback. Subsequent iterations are based off of feedback from the previous weeks demo meetings. Both the MQP team and Communispace agreed that taking an iterative development approach was the best way to develop the VPRM as it allowed us to thoroughly address Communispace's needs. There were times that we thought we met the needs of the users, however the weekly demo meetings helped uncover usability and data management issues.

During each demo meeting, we met with different stakeholders who worked in different areas of the VPRM. This allowed us to focus on specific forms that were applicable to each stakeholder so that they would be satisfied with the system that we proposed. We also held weekly check-in meetings with Mr. Sean Burke and Mr. Jack Bergersen at the beginning of our day at Communispace to go

over each new or modified form and presented a plan as to how we were planning on presenting it to the stakeholders that day. It was also during these meetings that we gave them updates on problems we were facing while implementing features. We would like to thank all of our stakeholders for taking time out of their busy schedules to meet with us and review our iterations.

Storyboard of First Iteration

Based on multiple design sessions and email exchanges with VPRM stakeholders, we were able to develop a set of storyboards that demonstrates how a user at Communispace would navigate through our proposed VPRM changes.

In this section, Figures 26 - 28 illustrate how the proposed changes to the VPRM will address the needs of Communispace that we initially gathered. The storyboard was used in conjunction with demo meetings to help walk users through the improved system and see where changes still needed to be made before the final iteration. Storyboard screenshots demonstrate a performance search using the aggregate search functionality and adding quoted metrics to a project.

Aggregate Search Functionality

Figures 26 and 27 below showcase the aggregate search form in both the initial state of the form and then the form showing project performance. When a user first goes to the aggregate search page, they will see three combo-boxes (Project, Audience, and Vendor) as well as three checkboxes (Across Projects, Across Audiences, Across Vendors). The user can then interact with the form in the following ways and obtain different information. Depending on what is selected, this page provides aggregate metrics that dynamically change based on inputs. Additionally, there is an area where users can view information about a selected project and/or vendor based on inputs as well.

- View Performance for a Project
    - When searching performance for a project, this will display aggregate metrics for the project across all vendors and audiences associated with the project.
- View Performance for a Vendor

    - When searching performance for a vendor, this will display aggregate metrics for the vendor across all projects and audiences associated with the vendor.
- View Performance for an Audience
    - When searching performance for an audience, this will display aggregate metrics for the audience across all projects and vendors associated with the audience.
- View Performance for a Project and a Vendor
    - When searching performance for a project and a vendor, this will display aggregate metrics for the vendor on that project across all audiences.
- View Performance for a Project and an Audience
    - When searching performance for a project and an audience, this will display aggregate metrics for the audience on that project across all vendors.
- View Performance for a Vendor and an Audience
    - When searching performance for a vendor and an audience, this will display aggregate metrics for the audience associated with that vendor across all projects.
- View Performance for a Specific Vendor, Project, and Audience
    - When searching performance for a specific vendor, project, and audience, this will display the metrics for the specified audience from the specified vendor on the specified project.
- View Performance Across all Projects, Vendors, and Audiences
    - Finally, you have the options to search across all projects, all vendors, or all audiences, or all three at once using the aforementioned checkboxes. If you select “Across Projects”, you will see aggregate metrics across all projects at which point you have the option to narrow down the aggregate metrics by selecting a vendor and/or audience. This same process applies to “Across Vendors” and “Across Audiences”. You can also search by selecting more than one checkbox creating searches such as viewing performance for an audience across all projects and

vendors, viewing performance for a vendor across all projects and audiences, viewing performance for a project across all audiences and vendors, or viewing performance across all vendors, projects, and audiences.

Figure 26 - Aggregate Search Form in Initial State

Figure 27 - Aggregate Search Form Showing Project Performance

Adding Vendor Quotes

Figure 28 below showcases the form for adding vendor quotes for a project into the VPRM. When the user first navigates to the Add Project Performance Quoted Data form, they start by searching for and selecting a project. Once a project is selected, they can begin to fill out either project details or sourcing quotes. Member composition information can be added by pasting the information into the window that opens when "Add Member Composition" is clicked. To add quotes, users must first select a source name and target audience and then click "Add Quote" which will add a row to the table below. The user can then proceed to fill in all of this data for that quote. If the user would like to add another quote, they can choose another source and target audience and click "Add Quote". This will add another entry below the first one that will contain the second quote. This can be done an unlimited number of times for a project. If a user accidentally adds a quote, they are given the option to delete the record. All of this data is written to the database in real time, so there is no need for a save button. If the user would like to enter quotes for another project, all they have to do is click on the "Reset Form" button at the top of the screen.

Figure 28 - Add Vendor Project Performance Quoted Data

First Iteration Demo Meetings – 2/12/14

The demo meetings we held on February 12th, 2014 allowed us to showcase our initial design to the key stakeholders. This first iteration was designed based on the information we gathered and presented in our systems proposal. One additional feature that was not part of the original proposal, that we chose to implement, was the Aggregate Search form that consolidated the original search functionality in order to make the VPRM easier to use.

At the time of the demo meetings, we had the aggregate search functionality and the adding of quotes functionality working. During these demo meetings we gave the users a tour of the new forms that we made and then gave them some time to have a hands-on experience with the new forms. Through both the tour and hands-on segments, stakeholders gave us feedback on issues ranging from the labeling of fields to changing the way data is tracked. The largest issue we faced during these meetings was the inability to assign both a target audience and region to a project – as it currently stood, they were single fields. Stakeholders indicated that they would like to start keeping track of the target audience and the region of a project separately. This functionality was not in the initial scope of the project, however after talking to Mr. Sean Burke and Mr. Jack Bergersen, they

encouraged us to implement this functionality, since stakeholders would be unlikely to use the final VPRM without this feature.

Meeting with Ms. Patricia Harnan

Adam Taylor and Shun Snoddy met with Ms. Patricia Harnan and demonstrated the functionality for adding campaigns and viewing assets within the VPRM. During this meeting, Ms. Patricia Harnan stated that all of her requirements were met by the system that we had designed.

Meeting with Mr. Jack Bergersen and Mr. Sean Burke

The MQP Team met with Mr. Jack Bergersen and Mr. Sean Burke at the beginning of the day to review all of the implemented functionality thus far. During this meeting, the team walked through each newly implemented form and discussed what requirements each form met. During this meeting, Mr. Jack Bergersen noted that users may want to start associating both a target audience as well as a geographic region with a project and not one or the other as we had currently implemented. We assured them that we would check with the stakeholders in subsequent meetings throughout the day and give them an update on that later in the day. As it turned out, most of the stakeholders did want us to be able to implement functionality for attaching a target audience and geographic region for the project. We updated Mr. Jack Bergersen and Mr. Sean Burke of this and they requested that we add this functionality to the scope of our project. This feature of the VPRM was not in our initial scope as previous meetings with stakeholders revealed that they would like us to replicate functionality of their sourcing spreadsheet document. This spreadsheet only allowed for associating a single target audience/country to the project.

Meeting with Mr. Garon Clements and Mr. Cory Cedrone

Greg Mannheim and Greg Karp-Neufeld met with Mr. Garon Clements and Mr. Cory Cedrone to review the changes we made to the VPRM with them. Mr. Garon Clements and Mr. Cory Cedrone were initially made stakeholders when we were looking into including live metrics during the run of a recruit or campaign – this has since fallen out of scope. Because they were no longer considered

primary users of the VPRM, we mostly reviewed the aggregate search function with them and obtained their approval for the overall system. Although they were not going to use the system, we thought that it would be valuable to have another set of eyes look at the system.

Meeting with Ms. Michelle Fisher and Mr. John Keeter

During this meeting, we demoed the adding vendor quotes and aggregated search functionalities to obtain feedback from two key stakeholders, Ms. Michelle Fisher and Mr. John Keeter. During this meeting we gave them an overview of our newly implemented features and let them play around with the features themselves. Other than a few syntactical issues, we received positive feedback about the layout. However, they did bring up the issue of wanting to add both a target audience as well as one or more countries to a quote. We told them that we would look into it as it did lie out of our set scope. As mentioned in notes from our meeting with Mr. Jack Bergersen and Mr. Sean Burke, they requested that we add this to our scope. Additionally, they did bring up the fact that a lot of the information located in Section 1 of the adding vendor quotes page is information that can be pulled in from AtTask so that the MSCs do not need to fill in that information again. That is something that is out of scope for our project, however we have brought that suggestion to Mr. Sean Burke and he has said that it is something he will look into adding to the VRPM after we hand our project off to them.

Meeting with Ms. Julie Levey and Ms. Meghan Sayles

During this meeting, we demoed the adding vendor quotes and aggregated search functionalities to obtain feedback from two key stakeholders, Ms. Julie Levey and Ms. Meaghan Sayles. During this meeting we gave them an overview of our newly implemented features and let them play around with the features themselves. Overall, the feedback we received from them was positive and they were large supporters of what we had implemented. They also brought up the issue of being able to associate a target audience and one or more countries with a quote; this further showed us that we needed to look into implementing this. Additionally, to prevent confusion, they requested that we create a page that allows them to solely view quotes and not make edits to them – this was in the

initial plan, we had just not implemented it yet. This added page would help create a disparity from where users go to add/edit and where they go to view the vendor quotes in the VPRM.

Second Iteration Storyboard

After the first iteration demo meetings, we took all of the feedback we were given by stakeholders and worked on implementing the changes for the second iteration. By the time of the second demo meetings we did not have all of the proposed changes working, however we were able to demonstrate a proof of concept. The following storyboards outline changes made to existing functionalities as well as detailing new functionalities that did not previously exist.

In this section, Figures 29 through 34 illustrate how the proposed changes to the VPRM will address the needs of Communispace as well as show how we reacted to the feedback we were given. The storyboard was used in conjunction with demo meetings to help walk users through the improved system and see where changes still needed to be made before the final iteration. Storyboard screenshots demonstrate a performance search using the aggregate search functionality, adding/editing quoted metrics to a project, viewing vendor quotes, adding vendor performance, and adding campaign asset information.

Aggregate Search Functionality

Figures 29 and 30 below showcase the aggregate search form in both the initial state of the form and then the form showing project performance. This version of the form has been modified from the original version to fit with the feedback we obtained in the previous weeks demo meetings. The following section details the changes that were made to this form. When a user first goes to the aggregate search page, they will now see four combo-boxes (Project, Audience, Vendor, and Country) as well as four checkboxes (All Projects, All Audiences, All Vendors, and All Countries). The user can then interact with the form in the following ways and obtain different information. Depending on what is selected, this page provides aggregate metrics that dynamically change based on inputs. Additionally, there is an area where users can view information about a selected project and/or

vendor based on inputs as well. There are also two buttons that in future iterations will either take users to a page to view asset information for a project or to a page for comparing quoted versus final metrics.

- View Performance for a Country
    - When searching performance for a country, this will display aggregate metrics for the country across all projects, vendors, and audiences associated with the country.
- View Performance for a Project and a Country
    - When searching performance for a project and a country, this will display aggregate metrics for the project in that country across all vendors and audiences.
- View Performance for a Vendor and a Country
    - When searching performance for a vendor and a country, this will display aggregate metrics for the vendor in that country across all projects and audiences.
- View Performance for an Audience and a Country
    - When searching performance for an audience and a country, this will display aggregate metrics for the audience in that country across all projects and vendors.
- View Performance for a Project, a Vendor, and a Country
    - When searching performance for a project, a vendor, and a country, this will display aggregate metrics for the project with the vendor in the country across all audiences.
- View Performance for a Project, an Audience, and a Country
    - When searching performance for a project, an audience, and a country, this will

display aggregate metrics for an audience on a project within a the country across all vendors.

- View Performance for a Specific Vendor, Project, Audience, and Country
    - When searching performance for a specific vendor, project, audience, and country, this will display the metrics for the specified audience from the specified vendor on the specified project in the specified country.
- View Performance Across all Projects, Vendors, Audiences, and Countries
    - Finally, you have the options to search across all projects, all vendors, all audiences, or all countries, or all four at once using the aforementioned checkboxes. If you select “All Projects”, you will see aggregate metrics across all projects at which point you have the option to narrow down the aggregate metrics by selecting a vendor, audience, or country. This same process applies to “All Vendors”, “All Audiences”, and “All Countries”. You can also search by selecting more than one checkbox creating searches such as viewing performance for an audience across all projects, vendors, and/or countries, viewing performance for a vendor across all projects, countries, and audiences, viewing performance for a project across all audiences, countries and vendors, viewing performance for a county across all projects, vendors, and audiences, or viewing performance across all vendors, projects, audiences, and countries. If a user chooses to select more than one, but not three out of four checkboxes, the combination of the two selected checkboxes will help narrow down the remaining fields.

Figure 29 - Aggregate Search Form in Initial State

Figure 30 - Aggregate Search Form Showing Project Performance

Adding/Editing Vendor Quotes

Figure 31 below showcases the form for adding vendor quotes for a project into the VPRM. For the most part, this form remains unchanged from the previous iteration other than fixing a few syntactical errors and adding the functionality for adding one or more countries to a quote. We also modified the comments box in each quote so that there would be a preview of comments, if there were any, and would open a larger text box when clicked on. This was implemented so that users would be able to see whether or not there were comments on a quote so that comments would not be overlooked. Before adding a quote, the user still has to select a vendor and audience and click "Add Quote". This will add a new row to the quotes table where the user will be able to start adding quote information. We were able to allow users to associate multiple countries with a quote by providing them with a list box in each quote row where they can select multiple countries by clicking on them. This will take the countries and place them into a concatenated string in the countries column. One known bug regarding the list of selected countries is that the selected countries do not appear selected until you click on the quote at which point it refreshes the row and the highlights selected countries.

Figure 31 - Form for Adding and Editing Quoted Project Data

Viewing Vendor Quotes

Figure 32 below showcases the functionality that allows users to view quotes on a project and select the quotes that are to be used on said project. This view is nearly identical in functionality to the Adding/Editing Vendor Quotes form except that none of the fields are editable except for being able to select a vendor for a project. When a vendor is selected for a project, it adds the date to the row so that users can see when a vendor is selected for a project. Additionally, we have built in the functionality at the request of stakeholders so that a user can sort quotes by any of the key metrics in either ascending or descending order.

Figure 32 - Viewing Project Quote Information

Input Performance Data

Figure 33 below showcases the newly revised Add/Edit Vendor Performance Form. This form is similar in functionality to the original Add Vendor Project Performance form with the addition of new fields to include inputs for our added functionality to the VPRM. These new fields include additional KPIs that will begin to be tracked for campaigns. In order to make the data accessible at a more granular level, in addition to a vendor, this new input performance data form allows users to select an audience, country, and asset for a project when adding performance data, all of which was never captured before.

Figure 33 - Input Performance Data Form

Adding Campaign Assets

Figure 34 below showcases the new form that is used to upload assets into the VPRM so that they can be associated with a project. In this form, users are presented with three input boxes: Name, Notes, and File. Here users are able to enter the name of the asset something relating to the project. In the next field users can enter notes about the asset to provide more information about how the asset was used. Finally, when users click on the File field, it will prompt users to select a file to upload as their asset. Finally, once users have these fields filled out, users click on the “Add Asset” button, which will upload the file path to the VPRM.

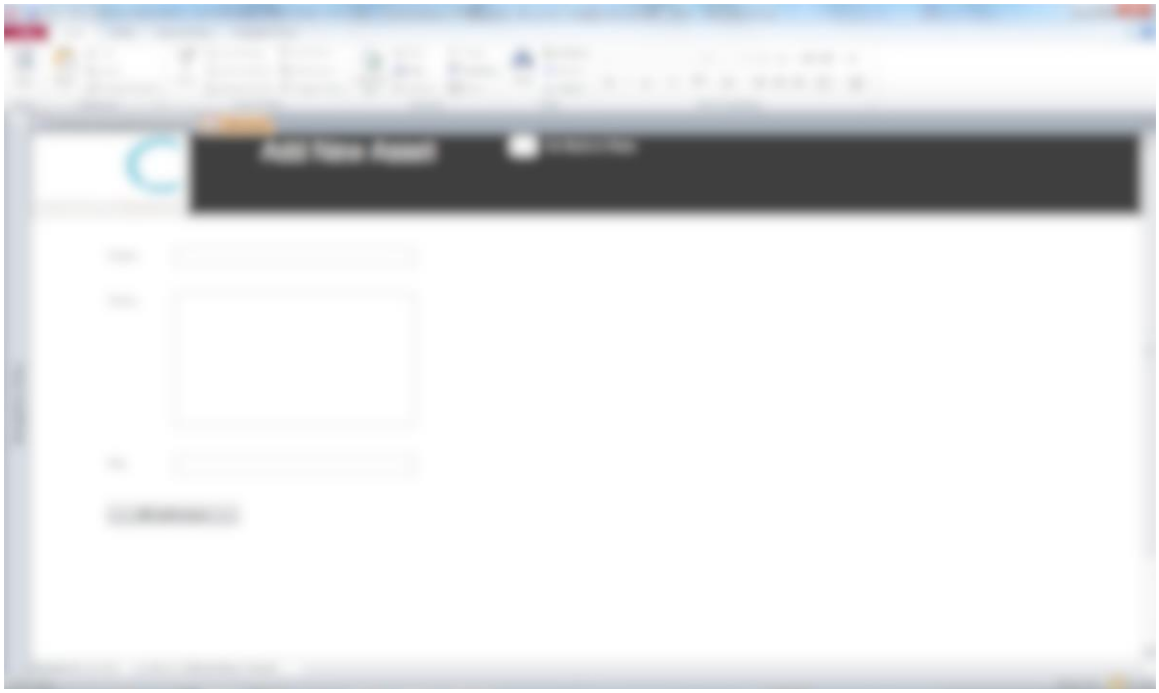


Figure 34 - Adding Campaign Assets Form

Second Iteration Demo Meetings – 2/19/14

Meeting with Ms. Julie Levey, Ms. Meaghan Sayles, and Ms. Ashley Wade

During this meeting, Greg Mannheim and Greg Karp-Neufeld demonstrated the added functionality of being able to associate one or more countries to a project quote as well as the improved interface for adding comments to a quote. Additionally, we showed them how we plan to implement the functionality for searching by country, however we did not have it functioning at the time so we could not show it to them in depth. Overall, other than a spelling error or two that they noticed, they were very satisfied with our progress and were excited to get to start using the VPRM.

Meeting with Mr. John Keeter, Mr. Mark DiGiammarino, and Ms. Michelle Fisher

During this meeting, Greg Mannheim and Greg Karp-Neufeld demonstrated the added functionality of being able to associate one or more countries to a project quote as well as the improved interface for adding comments to a quote. Additionally, we showed them how we plan to implement the functionality for searching by country, however we did not have it functioning at the time so we could not show it to them in depth. We promised them a fully functional system next week in which they would be able to enter some of their own test data to allow them to get a true feel for the system.

Meeting with Ms. Laura Naylor, Mr. David Rosenberg, Mr. Sean Burker, and Mr. Jack Bergersen

Finally, at the end of the day we met with our project sponsors, and showed them, specifically Mr. David Rosenberg and Ms. Laura Naylor, our progress on the VPRM. This meeting was very important as Mr. David Rosenberg and Ms. Laura Naylor had not seen our progress on the VPRM due to their busy schedule and we wanted to show them our progress before our final week of development. Due to the incomplete functionality of the VPRM at the time, they were unable to get a true feel for the system, however they were very satisfied and impressed by our progress.

Final Iteration

The final iteration of our extension of the VPRM system, upon handoff, is outlined in the following storyboards. There are a few new forms mentioned in the storyboards below that were not there before, otherwise the following are just minor changes to existing forms. At this point, we have implemented all of the functionalities that were proposed in the project scope as well as changes based on stakeholder feedback.

Adding/ Editing Vendor Quotes

Figure 35 below shows the addition of the Estimated Incidence Rate field for each quote as well as removing the quote number that was in the previous iteration. We also changed the type of number for each quote whether it is just a number, a currency, and percentage. We also greyed out several fields in the Project Details section of the adding quotes section to prevent users from changing them since they never should change.

Figure 35 - Form for Adding and Editing Quote data in Final iteration

Viewing Vendor Quotes

In Figure 36 below several minor changes have made to the User Interface including a functional country list box, a functional country combo box, and added another radio button. The new radio button is the default value and shows all projects whether they are complete or incomplete. The country display now works for each of the quotes so t*h*e user can see which countries they selected. We now have a country drop down, combo box, which allows the user to narrow down the quote's being displayed to a particular country.

Figure 36 - Viewing Project Quote Information in Final Iteration

Comparing Quotes with Final Metrics

In Figure 37 below shows the new form for comparing quote information to it final vendor performance. On this page users can search for a project and then narrow them done by vendor and audience if they choose to. This will help them to better see the difference of the information when they first made the quote and the final information. This form was in development in the second iteration but wasn't shown to stakeholders until the final iteration when it was complete.

Figure 37 - Form for Comparing Quoted and Final Metrics

Aggregate Search Functionality

In Figure 38 below, the Aggregate Search form with minor changes is shown. Two of the tabs (Quote and Compare) were moved to buttons and the country combo box was taken out of its test phase. The two new buttons become enabled after the user specifies a project. Viewing metrics at the asset level has also been fully implemented.

Figure 38 - Aggregate Search form in Final Iteration

Adding Campaign Assets

A change we made to the adding assets form seen below is the additional input of a project. The user must now associate a project with the asset when inserting it into the database. This change was made so that users who the input performance metrics can easily choose the asset they are inputting data for.

Figure 39 - Form to add an Asset

Final Iteration Demo Meetings – 2/27/14

Meeting with Mr. John Keeter, Mr. Mark DiGiammarino, and Ms. Michelle Fisher

During this meeting Greg Mannheim and Greg Karp-Neufeld allowed the meeting members to add Quote data into the system with some real examples of quote that they been using. We had to guide them through how to do things since this was the first time we have given them the ability to get hands on with the forms that we have made. We also showed them the viewing quotes and compare quote versus final pages to make sure they were showing proper information. We had run into several minor problems that we would fix within the next day or two. They did talk several other ideas that we kept in mind to help in any future expansion that they wish to do.

Meeting with Ms. Julie Levey, Ms. Meaghan Sayles, and Ms. Ashley Wade

During this meeting Greg Mannheim and Greg Karp-Neufeld allowed the meeting members to add Quote data into the system with some real examples of quote that they been using. We had to guide them through how to do things since this was the first time we have given them the ability to get hands on with the forms that we have made. We also showed them the viewing quotes and compare quote versus final pages to make sure they were showing proper information. We had run into several minor problems that we would fix within the next day or two. They did talk several other ideas that we kept in mind to help in any future expansion that they wish to do.

Meeting with Mr. Garon Clements and Mr. Cory Cedrone

During this meeting Greg Mannheim, Greg Karp-Neufeld, Shun Snoddy, and Adam Taylor demonstrated the functionality of adding vendor performance to the VPRM. Since some of the screen layout and requirements for the page have changed we wanted to demonstrate to them the changes made to make sure it was ok with them.

Meeting with Ms. Patricia Harnan

During this meeting Shun Snoddy and Adam Taylor demonstrated the functionality of adding asset information and viewing asset metrics. We walked through how to add information to an asset and upload the asset to a folder on the network drive. We also went through how to view performance metrics at the asset level because it involved an additional step after going to the Aggregate Search form. Our stakeholder had some minor suggestions, which we implemented and reviewed with her in the following hour.

Chapter 6: Implementation Phase – Campaign and Sourcing

During the implementation phase, we, the Campaign and Sourcing project team, completed the program development, testing, and documentation activities together in unison. Combining the various implementation activities in this way proved to be a lot simpler and more efficient than the parallel development done in the Analysis and Design phases. We discuss the items above in addition to the migration, training, and system support plans, in greater detail throughout the remainder of this chapter.

Program Development

Gregory Mannheim and Shun Snoddy acted as our primary technical leads and SQL developers during the program development. After several meetings, with both the sourcing and campaign stakeholders, we were able to create a unified program design that incorporated all of the campaign and sourcing design requirements. In addition to the requirements defined in the Analysis section, we added several other features including:

- Multiple Country Support.
- Sorting and Filtering Quotes by Projects, Vendors, Countries, and Audiences.
- Simplified Universal Search.
- Advanced Data Aggregation.

Over the course of three-week development cycle, Shun and Greg developed and modified several SQL scripts and several UI elements within Visual Basic for Applications (VBA) to enable the “Search Performance”, “Quote Information”, ”Add/Edit Quote Information”, “Add/Update Performance” forms, and asset subforms in Microsoft Access. Additionally, there were multiple code changes made due to the increased scope of the “Advanced Data Aggregation” and user interface changes from the stakeholder demo meetings.

At the conclusion of program development, the MQP team presented the final prototype to Mr. Jack Bergersen and Mr. Sean Burke. When the final prototype was approved, the MQP team began user acceptance testing.

Issues / Difficulties during Program Development

The following items are issues that we faced while developing the extension of the VPRM. These included challenges due to the fact that there were certain functionalities in SQL or Access that we had never used before and thus had to learn on the fly. Additionally, dealing with scope creep and how it affected other parts of the project was another challenge that we faced.

- Continuous forms for Quotes.
- The need to create different (sub)forms for adding, viewing, and comparing quotes (pre vs. final).
- Major Scope Creep – Countries and concatenated fields.
- Dealing with the table structure of VPRM.
    - Supporting Countries (changed country table).
    - Adding audience, assets, and countries as composite keys in the Vendor Performance Table.
- Tag to Audience conversion.
- Auto updating combo boxes and KPIs, hard to implement.

Testing

During the previous VPRM development cycle (2012 to 2013), there was not enough time for the prior MQP team to perform quality assurance (QA) testing before the end of the implementation phase. In that case, Mr. Jack Bergersen and Mr. Sean Burke were left to do the testing on their own. However, our development schedule allowed us to perform some QA testing before handing off the project – as we chose to program and test using an agile methodology. Gregory Mannheim and Shun Snoddy, our SQL and VBA developers, wrote code for an Access module (or single unit) of the VPRM and then subsequently tested for bugs after each update to the code (unit testing). Then following

the development and unit testing of the rest of the Access modules, our SQL and VBA developers ran integration tests to make sure that the data properly flowed between the different Access forms and subforms, After integration testing, Adam Taylor and Gregory Karp-Neufeld performed system testing to verify that the use cases (in Chapter 4) were properly captured in the VPRM – everything worked as expected. Once the program development and initial testing was complete, we met with Mr. Jack Bergersen and Mr. Sean Burke to demo the VPRM. With their approval, we then began our User Acceptance testing with the campaign and sourcing stakeholders.

Training Plan

Prior to making the new system live and after the testing phase was completed, the team performed several group training sessions. Through these sessions, users were allowed to try out the new system and ask questions as they went through it. The goal was to have everyone become more familiar with the system by the time it is fully implemented.

Migration Plan

Once the training is completed and all users feel comfortable with the new system, Mr. Sean Burke will work independent from the MQP team to get the improved VPRM to a live state. This will include linking the VPRM to the live databases on Communispace's servers and updating the version number so that all users will see the new version on their computer.

System Support Plan

At the conclusion of the project, the goal is to have Communispace self-supporting. Unfortunately, we will not be able to collaborate with any system maintenance after the project is finalized. After going through multiple training sessions and providing adequate support and technical documentation to Communispace, Communispace should be able to support the VPRM internally. We strongly believe that the team at Communispace has the skillset in-house to be able to solve any problem with the system, either technical or usability, that they may encounter. Additionally, this paper includes the contact information of the MQP team in the event that any questions and/or problems arise.

Documentation

In conjunction with our support plan, we provided the project stakeholders and system users with complete documentation of our extension to the VPRM. Included in our documentation, we provided a USB Flash Drive with all of the IP created to develop the system, a user-training manual with screen shots, a developer/admin guide, and commented development code. See Appendix G for the training/instruction manual and Appendix H for the technical documentation.

Chapter 7: Recommendations and Conclusions

The following recommendations will provide the CORE team at Communispace with a few of our suggested improvements, in addition to the wish list items that were generated during the stakeholder meetings. Below are some key elements that we recommend be modified in subsequent iterations on the VPRM system. In this section we also discuss our lessons learned and conclusions that we have drawn from the entire project experience.

Recommendations

The following recommendation will provide the CORE Team at Communispace with additional features that were suggested by stakeholders that were out of scope for this project. However these recommendations could be looked at for implementation in future versions of the VPRM whether they are developed internally or by a future MQP team. The following recommendations focus on making the process for data entry more efficient for users, however we also have recommendations on how the back-end of the system could be improved as well. The recommendations include, importing existing data, making the structure more clear and extensible, and allowing the VPRM to help at other times in a project timeline.

Importing Existing Data

As it stands now, our extension of the VPRM does not include any way to automate the entering of data. There are certain areas of the VPRM where a user needs to enter specific information about a project that already exists and is entered elsewhere. In order to save time for users, stakeholders have shown interest in the following in future revisions of the VPRM: Ability to upload a member composition document, including the information in Section 1 of the Adding Quotes form in the AtTask upload, ability to upload performance metrics from an Excel document. After development, it became clear that users would be unable to enter certain member composition data just by copying and pasting data into the text box since sometimes it is formatted into tables. Rather than a text box, they'd like to see an upload and download feature for member composition. When looking at Section

1 of the Adding Quotes page, stakeholders brought to our attention that much of this information already lived in AtTask for a project and asked if it would be possible to import this automatically so that they did not have to enter the information in two different places. We discussed this with Sean Burke and he said it could be part of the import he does when he imports projects from AtTask and that this is something that he would look into. Finally, when users are entering project performance data into the VPRM, they have to enter all of the metrics in by hand. Some users have also expressed interest in the idea of being able to upload the Excel document that they are taking this information from and seeing if Access could parse this data into the proper fields so that they do not need to enter this information twice.

Making Database Structure Clear and Extensible

While working on the VPRM, we found on multiple occasions that there was a discrepancy on the naming of tables on the database server. One such example is that the projects table is called "Projects", however the countries table follows the naming convention of "tblCountries". We would encourage Communispace to look at standardizing their naming conventions so as to make troubleshooting and future development easier to understand. Additionally, while working with the data, we noticed that the table structure was not very extensible due to the heavy reliance on composite keys and large tables with many fields. We would encourage Communispace to restructure the data so that their table structure could be more extensible as future development comes up. Throughout our project, we attempted to add extensibility and "future-proof" any new relationships we added to the database to help alleviate the issue in the future.

Further Extending the VPRM

As stakeholders began to see our finished product, they started to visualize more ways that they could use the VPRM to help them achieve their goals. One such functionality was to be able to add a project to the VPRM without having to do an import through AtTask. Our stakeholders found that it could be very useful, given our improvements, if they could enter pre-sales projects so that they

could quote a project to a client as a sales activity before it became an official project in AtTask. When attempting to sell a piece of business, a sales representative would be able to enter a pre-sales project in the VPRM and add quotes to it for the desired target audience and geographic region. Using this functionality, they would be able to use the VPRM to not only track current business, but also help them sell new business.

Lessons Learned

Throughout this project, the team faced many challenges and surprises that we did not initially expect – this taught us many lessons that we believe will be valuable throughout our careers. There were multiple times during the development process that we experienced scope creep due to stakeholders bringing up new needs for a given feature that either we failed to discover or they did not envision during the initial requirements gathering. One of the best examples of this was the issue we encountered with the separation of country on audience tags. In our initial requirements gathering we had determined that in the adding of quotes to a project, users could assign a target audience to a quote and would maintain separate quotes for each country. From this finding, we built the system with the idea that that they would enter a quote for each country and target audience. During our first demonstration of this, the users brought up the fact that there are many occasions where a quote for a target audience is the same for multiple countries and that they should be able to enter a single quote for multiple countries and a target audience so long as all the quotes were the same. Additionally, it was at this time that we found out that they would want to be able to search project performance by country. This was technically outside of the defined scope that we had initially proposed, however since this would be a major factor in user adoption, we were encouraged to and chose to implement the system.

The best way that we could have avoided this issue would have been by running through more test cases with the users of the system so that they could imagine that they were using the system. Some of this could have been done through more in-depth role-playing meetings where we would have

taken the mockups we made and pretended that we were interacting with them. Although there is no guarantee that this would have solved all of our issues, it may have helped to have a "hands-on" session with the mockups before we went into design of the final prototype. Luckily, because in our planning phase we built in an extra two to three weeks for any issues that may come up, we were able to have some timeline flexibility that allowed us to still finish on time despite the aforementioned scope creep.

Conclusions and Reflections

Since its completion last year, the Vendor Performance and Relationship Management System has become integral to day-to-day operations at Communispace Corporation. The extension that we have implemented and documented in this report helps the VPRM meet Communispace's growing business model and will hopefully continue to grow with them. Throughout this project, the MQP team was tasked to rely on four years of learning about different aspects of business and MIS and bringing that knowledge into a practical, cumulative experience. Throughout this project it was important to keep track of both business and technical needs and restrictions of our project and consistently ensuring that we would not be sacrificing one for the other.

The project team was tasked with extending the functionality of a system that was created by a previous MQP team along with major modifications made internally by Communispace. This required the team to obtain a thorough understanding of how the system worked and was developed so that they were able to build off of an existing system. We feel that the Systems Analysis and Design coursework we did while at WPI more than adequately prepared us for this experience as we had already had experience on multiple occasions making changes to already existing systems and having to quickly learn how they were designed.

The start of the project was slower than we anticipated as Communispace worked on deciding what they would like to see us change in the VPRM. Because Communispace is growing so quickly, it took a few weeks for Communispace to define what they wanted out of our project. Additionally, before we

began our project, Communispace needed to define how some of their internal processes worked so that we would be able to have an understanding of what we were designing. Through multiple extensive meetings and workflow brainstorming sessions, we were able to come up with a clear understanding of Communispace's needs, at which point we were able to further dive into the analysis phase at a more accelerated pace.

Overall, this project taught us a lot about project management and system development. Although we had all practiced system development together in a previous MIS course, there was more or less a linear path we could take and not much room for changes and surprises. The experience at Communispace gave us a true experience as to what it is like to be working with real stakeholders and their ever changing wants and needs. Additionally, each person on the MQP team is interested in eventually holding a role as a technical consultant or project manager. We believe that this MQP taught us a lot about how a project actually works within a company and how in our upcoming career, we can try to better prepare for situations such as scope creep or missing unforeseen needs of the user. We hope that this project benefits Communispace just as much as it has benefitted our future careers.

Appendices

Appendix A – Consultant Report

In this appendix we will go over the various documentation we created early in the project to figure out the requirements and the what the request for the extension will be.

System Request

Project Sponsor: *Project initiator*

- Laura Naylor

Business Need: *The business-related reason for initiating the system*

- Enable a holistic view of campaign level vendor metrics
- Improve access to campaign level KPIs
- Enable better recruitment, marketing, and design decisions
- Enable historical data analysis of prior (campaign) marketing tactics
- Enable insight into the marketing effectiveness of various marketing tactics

Business Requirements: *The business capabilities that the system will provide*

- Generate static reports (similar the current system)
- Build dynamic reports (on the project and vendor level)
- Must use a dashboard interface
- View and compare the KPIs of marketing tactics used to recruit a given audience (segment).
- Must be able to view the various assets used in a given recruit method.
- View campaign data across audiences/projects
- View rolled up audience data

Other Requirements:

- Allow new records to be created and existing records to be edited.
- Allow new category attributes/tags to be added.
- Allow for a comment section with a Vendor in order to record a note.
- Include a user manual.
- Include technical documentation including code commenting, and architecture map to allow for future enhancements

Business Value*: Benefits that the system will create for the organization*

- Faster recruitment - requiring less time from Sourcing team
- Speed and efficiency of getting the right consumers
- Increase margins and ROI
- Decrease time and recruiting expenses

Requirements

Here is a copy of the all the requirements that this project has including both the Campaign and sourcing aspects of the project.

Functional Requirements	**Process-oriented**	• Display quoted metrics alongside post metrics • Display the KPIs and image of the most effective asset under the constraints specified by the user • Display and compare the KPIs of various assets under the constraints specified by the user
	Information-oriented	• Enter quoted metrics from vendors • Select which vendors will be used for a given project • Compare KPIs when determining which vendor performed the best • Generate URLs for a recruit • Import KPIs from summary sheets • Import images • Compare KPIs when determining which asset was the most effective
Non-Functional Requirements	**Operational**	• Utilize Communispace network and current VPRM system • Run on Windows 7 • Run Microsoft Excel and Access (and VB?) • Must use a dashboard interface
	Performance	• Performance • Short lag time (important because main benefit of Campaign data in VPRM is that you don't have to wait for the summary sheet to open up) • Multiple users able to view reports • Lock-down summary sheet when editing Campaign data
	Security	• Must not take confidential data off the Communispace network • Editing data can only be done by authorized users
	Cultural/Political Norms	• Must not conflict with existing processes or working norms • Personal information must be protected in compliance to Data Protection Act • Same look and feel of VPRM system
Business Requirements	• Enable better access to recruitment KPIs on both the pre and post recruit levels • Allow side-by-side comparison of pre and post recruit KPIs. • Enable Communispace to generate reports of vendor performance similar to current reports from Excel documents.	

User Requirements	• View and compare the KPIs of a recruit
	  ○ Build dynamic reports of desired recruitment data (on the project and vendor level)
	  ○ Must be able to view the various assets used in a given recruit method.
	  ○ View campaign data across audiences/projects
	  ○ View rolled up audience data
	• Input/Upload quotes from vendors
	• Input/Upload updated recruit data
	• Edit recruit data	

Appendix B – Project Sponsors and Stakeholders

Names	Department	Project Role	Responsibilities
Laura Naylor	SVP – Member Experience and Operations	Project Sponsor	Project Reporting Provide high-level requirements Review status throughout duration
Jack Bergersen	CORE Operations Manager, Business Analysis & Data Automation	Project Sponsor	Project Reporting Review status throughout duration Assist with arranging meetings with project stakeholders Verify Project Requirements Follow-up on secondary project objectives
David Rosenberg	VP, Client and Consumer Services	Project Sponsor	Project reporting Provide high level requirements Review status throughout duration of project
Sean Burke	Business Data Analyst	Project Assistant	Provide information on Communispace SQL Server Architecture and Structure Answer technical questions Forward helpful documentation or resources
Professor Eleanor Loiacono	WPI MQP Team Advisor	Faculty Advisor to project team	Keep track of team progress Provide guidance throughout process Review all deliverables
Michelle Fisher	Senior Projects Consultant	Employee, Member Recruitment Specialty	Provide information on project summary data sheets and member recruitment process
John Keeter	Sourcing Manager, Member Services	Sourcing Employee	Provide information on vendor bid procedures Advocate for additional project goals and objectives Feedback on User Interface
Mark DiGiammarino	CORE Sourcing Coordinator	Sourcing Employee	Provide information on project summary data sheets Feedback on User Interface Provide information on newer recruiting avenues
Patricia Harnan	Directory, Client and Consumer Services	Campaign Employee	Provide information on the business requirements for campaigns. Advocate for ease of usability for comparing and

			viewing campaign assets.
Julie Levey	Director, Client and Consumer Services	Sourcing Employee	Provide information on the process of obtaining and keeping track of quotes for a project. Provide feedback on the functionality for adding, viewing and comparing quotes.
Ashley Wade	Senior Consultant	Sourcing Employee	Provide information on the process of obtaining and keeping track of quotes for a project. Provide feedback on the functionality for adding, viewing and comparing quotes.
Meghan Sayles	Senior Consultant	Sourcing Employee	Provide information on the process of obtaining and keeping track of quotes for a project. Provide feedback on the functionality for adding, viewing and comparing quotes.
Garon Clements	Associate Consultant	Sourcing Employee	Provide information regarding the addition of vendor performance into the VPRM. Provide feedback on UI modifications and improvements made to the adding of vendor performance.
Cory Cedrone	Associate Consultant	Sourcing Employee	Provide information regarding the addition of vendor performance into the VPRM. Provide feedback on UI modifications and improvements made to the adding of vendor performance.
Gregory Karp-Neufeld, Gregory Mannheim, Shun Snoddy, Adam Taylor	WPI MQP Team	Project Managers, Project Team	Documentation of various business processes Create process flow diagrams Build connections between vendor summary data for meta statistics Develop user-friendly tool for helping employees to choose vendors.

Appendix C – Detailed Individual Staffing Information

Gregory Mannheim

Gregory Mannheim is majoring in Management Information Systems and is minoring in Computer Science. One of the courses taken is Systems Analysis and Design, which provides technical skills and an understanding of the system development lifecycle. He also has experience working with SQL, Visual Basic, C programming language and many Microsoft suit software. Greg has worked as an Intern at Liberty Mutual and has done his WPI Interactive Qualifying Project (IQP) in London.

Adam Taylor

Technology and its application in our day-to-day lives has always intrigued Adam. In his youth it led to the destruction and reconstruction of many electronics, all in a quest to have a better understanding how technology works. He has had the pleasure of working for Fidelity Investments as well as General Electric's Power and Water division. With those experiences he has aligned his passion for improving user experience with his strong leadership, communication, and systems development skills. Adam's goal is to eventually work for a company whose focus is to create quality devices and services that make an impact on the world. A company that promotes creative thinking, teamwork, and acknowledges a job well done. Adam is majoring in Management Information Systems and is minoring in Computer Science.

Gregory Karp-Neufeld

Gregory Karp-Neufeld is majoring in Management Information Systems at Worcester Polytechnic Institute. Greg has previously taken courses in Systems Analysis and Design, Visual Basic, and Database Management. This course work combined has given him a broad understanding of how to design, deploy, and manage a new system for a company. Greg has worked as a support technician at Varsity Technology for three years and has done his Interactive Qualifying Project (IQP) with WPI in London.

Shun Snoddy

Shun Snoddy is majoring in Management Information Systems with a minor in Computer Science. Courses completed include Business Data Management, Systems Analysis and Design, Object Oriented Design Concepts for Business Applications, and Human Computer Interaction, which all provide a solid background on the systems development process and computer programming concepts. He has experience programming in SQL, Visual Basic, and Java, as well as working with Microsoft Access and Excel.

Appendix D –Feasibility Analysis

VPRM Major Qualifying Project Executive Summary

Adam Taylor, Shun Snoddy, Gregory Mannheim, and Gregory Karp-Neufeld created the following feasibility analysis for the Extension of the VPRM. The Systems Request is attached in Appendix A, along with the detailed feasibility study in chapter 3. The highlights of the feasibility analysis are as follows:

Technical Feasibility

The Extension of the VPRM system was feasible from a technological standpoint, however there was some risk associated with the desired modifications.

Communispace's risk regarding their familiarity with the VPRM application was low.

- The CORE Group at Communispace uses the VPRM and the programs described in the technology capability on a daily basis.
- Communispace's user support documentation will be updated per the new and modified features of the VPRM.

Communispace's risk regarding their compatibility with the VPRM application was low.

- The extension to the VPRM will be developed using the same software and hardware as the current VPRM system.

Communispace's risk regarding the size of VPRM project was low.

- The Campaign and Sourcing segment of this project was small enough in scope for a two person team.

Economic Feasibility

A cost–benefit analysis was performed; see attached spreadsheet for details (provided in Appendix D). Conservative estimates show that the extension to the VPRM has a good chance of enhancing the Communispace's bottom line.

ROI over 5 years: 1087%
NPV over 5 years: $163,000.00
Break-even occurs after 1.33 years

Intangible Costs and Benefits
Improved Employee Morale due to less data entry and tedious tasks.

Organizational Feasibility

From an organizational perspective, the current VPRM allows employees at Communispace to quickly reference vendor and project performance rather than dig through various Excel spreadsheets to allow them to make better decisions faster. The purpose of this project is to extend the system to be useful to more users, specifically those in the sourcing team. Their current methods are inefficient and disjointed, which has prompted a request from them to be able to have access and functionality within the VPRM.
Ms. Laura Naylor, the project sponsor, is a strong influence at Communispace as the Senior Vice President of Member Experience and Operations. This allows her to carry significant influence over others at Communispace, which has helped adoption of the system thus far. Therefore, implementing the same concept to our Campaign segment will fit in with the organization and users.

Table 6 - WPI MQP Team Cost-Benefit Analysis

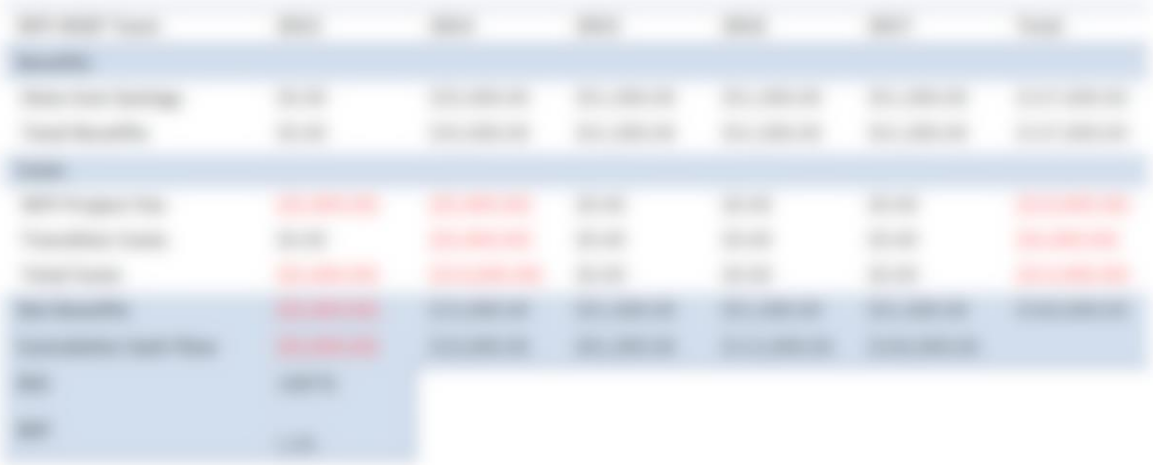


Table 7 - Consultant Cost-Benefit Analysis

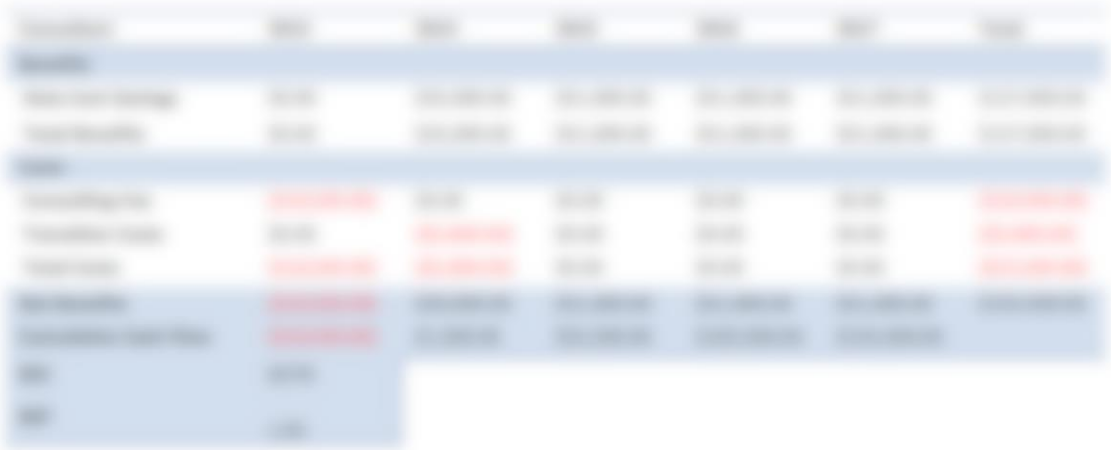
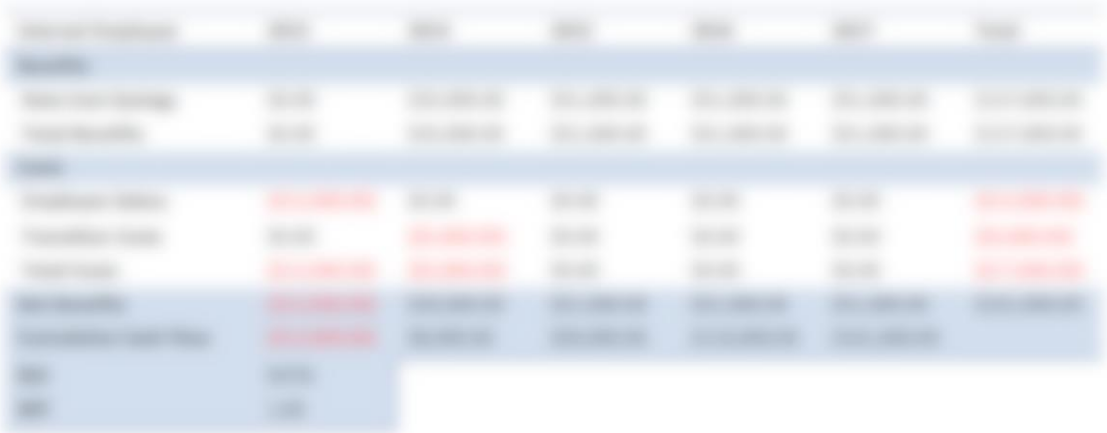


Table 8 - Internal Employee Cost-Benefit Analysis



Appendix E – Use Cases

Process 1 – Compare metrics across assets

Use Case Name: Compare metrics across assets	*ID:* CGN-01	*Priority:* High
Actor: VPRM User		
Description: The VPRM user specifies the project, audience, and method that contain the assets they want to compare to each other. The system pulls key metrics of the assets within the constraints and displays them for comparison.		
Trigger: A VPRM user needs to compare assets within a project *Type:* External		
Preconditions: 1. The user has read documentation on using the VPRM 2. The SQL server is up-to-date and running 3. The data for the assets are in the database 4. The assets that need comparison are within the same project		
Normal Course 1.0 Compare metrics across assets 1. The user specifies the project 2. The user specifies the audience 3. The user specifies the method 4. The user chooses "All countries" 5. The user specifies the "most effective" KPI 6. The user confirms the above four constraints and clicks the "Display Metrics" button 7. The system displays a table of all KPIs (organized by each asset) for the vendor type of the method across all countries (as well as a button to view the specific asset)		*Information for Steps:* Project ID Audience Method Country KPI Left-click KPI table+Button
Alternative Courses: 1.1 Compare metrics across assets within the country (branch at step 4) 1. The user specifies the country 2. The user specifies the "most effective" KPI 3. The user confirms the above four constraints and clicks the "Display Metrics" button 4. The system displays a table of all KPIs (organized by each asset) for the vendor type of the method in the specific country (as well as a button to view the specific asset)		Country KPI Left-click KPI table+Button
Postconditions: Tangible: None Intangible: The user gains an understanding of which assets exceled in certain KPIs compared to other assets within the specified project, audience, and method		
Exceptions: The project does not have a Campaign, therefor it is not listed in the combo-box.		

Summary

Inputs	*Source*	*Outputs*	*Destination*
Project ID	User	Image of Asset and KPIs	User
Audience	User		
Method	User		
Country	User		
KPI	User		
Left-Click	User		

Process 2 – Display Metrics Under Constraints

Use Case Name: Display metrics under constraints	*ID:* CGN-02	*Priority:* High
Actor: VPRM User		
Description: The VPRM user specifies the project, and chooses the level to roll data up. The system pulls key metrics of the assets within the constraints and displays them.		
Trigger: A VPRM user needs to compare assets within a project *Type:* External		
Preconditions: 1. The user has read documentation on using the VPRM 2. The SQL server is up-to-date and running 3. The data for the assets are in the database 4. The assets that need comparison are within the same project		
Normal Course 1.0 Compare metrics across assets 1. The user specifies the project ← Project ID 2. The user specifies the audience (or "Across Audiences") ← Audience 3. The user specifies the method (or "Across Methods") ← Method 4. The user chooses "All countries" ← Country 5. The user confirms the above four constraints and clicks the "Display Metrics" button ← Left-click 6. The system displays a table of all KPIs (organized by each asset) → KPI table+Button for the assets that meet the criteria across all countries (as well as a button to view the specific asset)		*Information for Steps:*
Alternative Courses: 1.1 Compare metrics under constraints within the country (branch at step 4) 1. The user specifies the country ← Country 2. The user confirms the above four constraints and clicks the "Display Metrics" button ← Left-click 3. The system displays a table of all KPIs (organized by each asset) → KPI table+Button for the vendor type of the method in the specific country (as well as a button to view the specific asset)		
Postconditions: Tangible: None Intangible: The user can view the KPI tables of each asset side by side in a holistic view.		
Exceptions: The project does not have a Campaign, therefor it is not listed in the combo-box.		

Summary

Inputs	*Source*	*Outputs*	*Destination*
Project ID	User	Image of Asset and KPIs	User
Audience	User		
Method	User		
Country	User		
Left-Click	User		

Process 3 – Add Campaign Data

Use Case Name: Add Campaign Data	*ID:* CGN-03	*Priority:* High
Actor: VPRM User		
Description: Data for a new asset used in a Campaign is entered.		
Trigger: The user wants to input data for a specific asset. *Type:* External		
Preconditions: 1. The user has read documentation on using the VPRM 2. The SQL server is up-to-date and running 3. The data for the assets are in the database		
Normal Course 1.0 User adds an Audience to a Project 1. The user specifies the Project 2. The user specifies the Audience within that Project 3. The user specifies the Method within that Project and Audience 4. The user enters the KPIs for the asset 5. The user clicks the "Input data" button 6. Data is sent to SQL server		*Information for Steps:* Project Audience Method Data entry Left click Asset KPI data
Alternative Courses: 1.1 The Audience within a Project does not have the Method the user is looking for (branch at step 3) 1. The user clicks the "Add New Method" button, which takes them to the built in "Add Method to Audience" function within the VPRM		Left-click
Postconditions: Tangible: None Intangible: The specific asset has a table of KPIs.		
Exceptions: The project does not have a Campaign, therefor it is not listed in the combo-box.		

Summary

Inputs	*Source*	*Outputs*	*Destination*
Project	User	Asset KPI data	SQL server
Audience	User		
Method	User		
Data Entry	User		

Process 4 – Enter Quotes into the VPRM

Use Case Name: Enter Quotes into the VPRM	*ID:* SGN-01	*Priority:* High
Actor: Sourcing team		
Description: One of the main functionality that will be added into the VPRM is adding the quoted metrics for a project when they are gathered by MSC and other Sourcing staff.		
Trigger: A Project is started at Communispace *Type:* External		
Preconditions: 1. The user has read documentation on using the VPRM 2. The SQL server is up-to-date and running 3. The Sourcing team has quoted metrics to enter		

Normal Course		*Information for Steps:*
1.0 Add Project Quotes		Project ID
1. The user specifies the project	←	
2. The user navigates to the quoted metrics		
3. The user clicks add new vendor quoted metrics	←	Left click
4. The user enters in a new vendor quoted metrics	←	Quoted Metrics
5. The user confirms the numbers and clicks add		
6. The system the displays all the quoted metrics inputted for the project	→	Quoted Metrics Table
Alternative Courses:		

Postconditions:
Tangible: None
Intangible: The Project now has a new vendor associated with it

Exceptions:

Summary

Inputs	*Source*	*Outputs*	*Destination*
Project ID	User	Project opens	User
Left Click	User	Add new Quote box opens	User
Quoted Metrics	User	Add Quote information	VPRM
Quoted Metrics Tables	VPRM		User

Process 5 - Select Quotes to be Used and Begin Recruit

Use Case Name: Select Quotes to be Used and Begin Recruit	*ID:* SGN-02	*Priority:* High
Actor: VPRM User		
Description: The user selects any of the vendors that the project will use in recruitment		
Trigger: The project is ready to start into recruitment *Type:* External		
Preconditions: 1. The user has read documentation on using the VPRM 2. The SQL server is up-to-date and running 3. The Project has all the quoted metrics 4. The sourcing team has selected vendors		
Normal Course 1.0 User selects quoted vendors in project and starts recruit 1. The user clicks “View Project vendor Performance” 2. The user specifies the project 3. Select the vendors chosen for project 4. Select the check box to start recruitment 5. Click save	*Information for Steps:* Left-click Project Select rows Left-click Left-click	
Alternative Courses: 1.1 User selects quoted vendors in project and without starting recruit 1. The user clicks “View Project vendor Performance” 2. The user specifies the project 3. Select the vendors chosen for project 4. Click save	 Left-click Project Select rows Left-click	
Postconditions: Tangible: None Intangible: The project recruitment has started and the vendors used have been selected		
Exceptions:		

Summary

Inputs	*Source*	*Outputs*	*Destination*
Left-click button	User	Opens new window	User
Project	User	Opens Project	
Select Rows	User	Rows selected	
Left-click save	User	Saves changes	

Process 6 - Viewing Projects Performance and Comparing

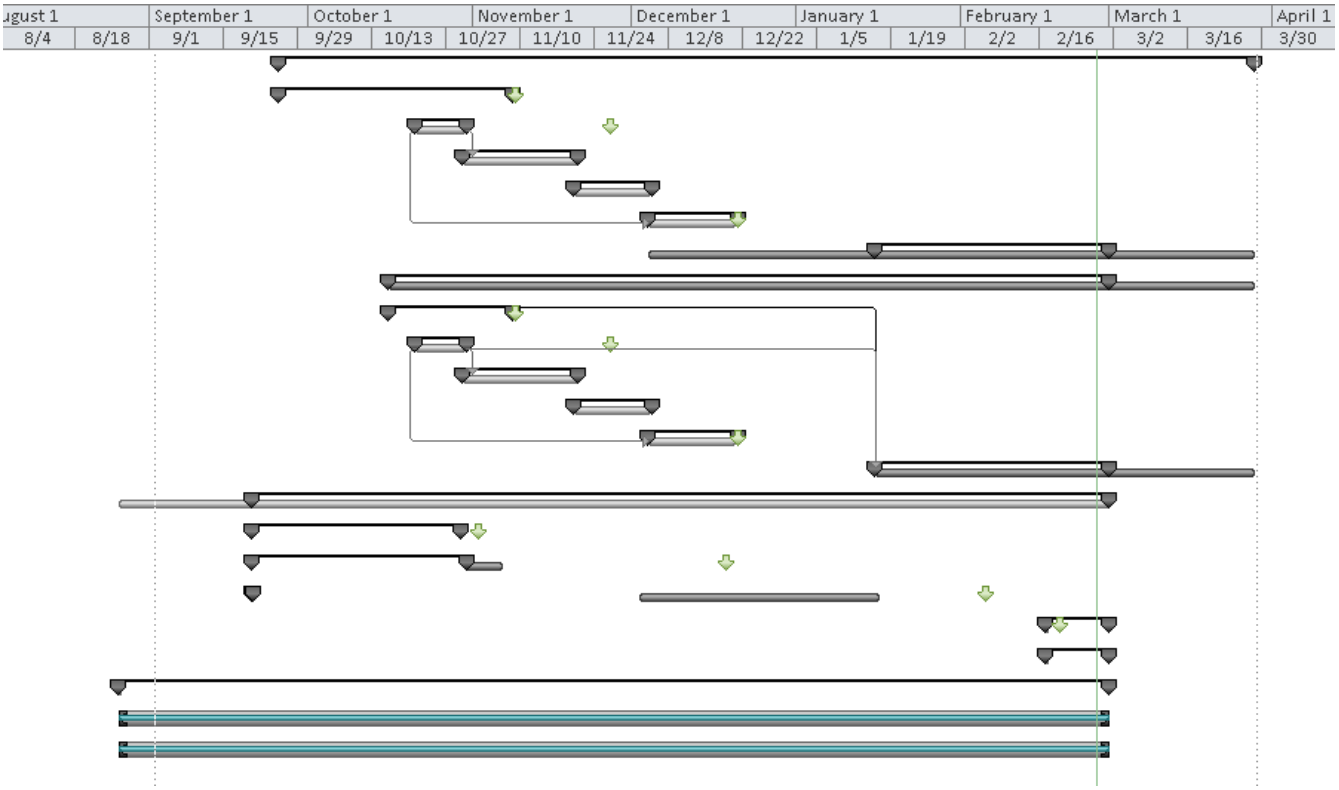
Use Case Name: Viewing Projects Performance and Comparing	*ID:* SGN-03	*Priority:* High
Actor: VPRM User		
Description: The user views the finished projects performance and compares numbers		
Trigger: The project is completed and wished to be viewed *Type:* External		
Preconditions: 1. The user has read documentation on using the VPRM 2. The SQL server is up-to-date and running 3. The Project has all the quoted metrics 4. The project has final metrics 5. The project has been marked completed		
Normal Course User views comparison between quoted and final metrics 1. The user clicks "View Project final vendor Performance" ← Left-click 2. The user specifies the project ← Project 3. The User specifies the vendor ← Vendor 4. Results appear showing quoted and Final metrics and the compares them → Vendor Prefromance	*Information for Steps:*	
Alternative Courses:		
Postconditions: Tangible: None Intangible: The project metrics have been viewed and the sourcing team can use that for future projects		
Exceptions:		

Summary

Inputs	*Source*	*Outputs*	*Destination*
Left-click button	User	Opens new window	User
Project	User	Opens Project	
Vendor	User	Vendor performance	

Appendix F – Gantt Chart

	Task Name	Duration	Start	Finish
1	Campaign	133 days	Wed 9/25/13	Fri 3/28/14
2	Planning	33 days	Wed 9/25/13	Fri 11/8/13
6	Draft - Analysis	9.87 days	Mon 10/21/13	Wed 10/30/13
11	Rapid Prototyping	17.87 days	Wed 10/30/13	Wed 11/20/13
27	Final - Analysis	12.87 days	Wed 11/20/13	Wed 12/4/13
33	Design	14.87 days	Wed 12/4/13	Fri 12/20/13
40	Implementation	33.87 days	Thu 1/16/14	Fri 2/28/14
57	Sourcing	99.87 days	Wed 10/16/13	Fri 2/28/14
58	Planning	18 days	Wed 10/16/13	Fri 11/8/13
62	Draft - Analysis	9.87 days	Mon 10/21/13	Wed 10/30/13
67	Rapid Prototyping	17.87 days	Wed 10/30/13	Wed 11/20/13
83	Final - Analysis	12.87 days	Wed 11/20/13	Wed 12/4/13
89	Design	14.87 days	Wed 12/4/13	Fri 12/20/13
97	Implementation	33.87 days	Thu 1/16/14	Fri 2/28/14
113	Writing	116.87 days	Fri 9/20/13	Fri 2/28/14
114	Writing Planning	28 days?	Fri 9/20/13	Tue 10/29/13
167	Writing Analysis	29.87 days	Fri 9/20/13	Wed 10/30/13
183	Writing Design	1 day	Fri 9/20/13	Fri 9/20/13
193	Writing Implementation	11.87 days	Mon 2/17/14	Fri 2/28/14
201	Writing Recommendations and Conclusions	11.87 days	Mon 2/17/14	Fri 2/28/14
208	Writing Appendices	136.87 days	Mon 8/26/13	Fri 2/28/14
221	Writing Glossary of Terms	136.87 days	Mon 8/26/13	Fri 2/28/14
222	Writing Bibliography	136.87 days	Mon 8/26/13	Fri 2/28/14



Appendix G – End-User Help Documentation and Training Manual

This appendix contains the end-user documentation as well as a training manual to help end users in using the VPRM system extension we have implemented.

End User Support

VPRM Main Menu

The VPRM Main Menu is a dashboard that connects users to the data input, data view, edit, and search screens. The “Add Data” section has buttons for adding new vendors, venues, contacts, vendor tags, vendor types, project performance, quote information, and assets. The “View/Edit” section has buttons that allow users to view quote information, project information, quote comparisons and venue information and view/edit vendor information. The “Search” section allows users to universally search for all performance metrics, in addition to searching for vendors by type and tag and venues by geography and keyword. The “Additional Functionalities” section allows administrators to import up-to-date project data, fix project tags, and check for which projects do not have performance data.

Figure 40 - Main Menu

Add New Vendor

The Add New Vendor form within the VPRM allows users to input a new vendor. The user must enter in the Vendor Name, PCID, and Vendor Type at a minimum, but a secondary warning will ask the user to complete as many fields as possible. When the user is finished, he or she can click the “Add Vendor” button to complete the addition of the vendor to the database. If the user would like to add tags to that vendor then he or she can click the “Add Vendor Tags” button in the top right section of the form. There is also a “Go Back to Menu” button in the top right.

Figure 41 - Add New Vendor

Add New Contact

In the “Add New Contact” form the user has the ability to associate contact information with a vendor of their choosing. First, the user looks up a vendor from the first drop down menu. Once a vendor is selected, the user can input the contact information. To complete the process the user clicks “Add Contact” in the top right of the form after the information has been entered. The required fields are Contact First Name, Contact Last Name, Contact Job Title and Contact Email. There is also a “Go Back to Menu” button in the top right. NOTE: the image below is after the user has selected a vendor from the “Choose a Vendor” drop down menu.

Figure 42 - Add New Contact Information

Add Vendor Tags

In this form the user can add tags (also known as Audiences) to a preexisting vendor. The user selects a vendor from the dropdown menu next to “Select Vendor”. Once the vendor has been selected, any tags that are currently associated with that vendor show up in the Current Tag List box. The “Select a Tag to Add” menu lists all the possible tags to add to that vendor. When the user selects the tag(s) they would like to add to that specific vendor, the user should click “Add Tag(s) to Vendor”. A confirmation prompt will be presented to the user to prevent adding an incorrect tag to a vendor. The newly added tag will then appear in the Current Tag List. There is also a “Go Back to Menu” button in the top right of the form.

Figure 43 - Add Vendor Tags

Add New Type to Existing Vendor

In this form the user can add a new type to preexisting vendor. This will create a new vendor with the same name as the selected vendor, but with a different type. These same vendors that can be multiple types are treated as separate entities for the purposes of the VPRM. Once the user selects the Vendor from the drop down another drop down appears, this one is named “Type:” The user then selects the new type to add and when this is done a “Add Vendor” button becomes live in the top right of the form. There is also an “Add Vendor Tags” button in the top right for the situation where the user would like to tag the new vendor. It is important to note that the user cannot add tags to the vendor until the vendor has been added. When the user is ready to add the new vendor type he or she clicks the “Add Vendor” button in the top right. This will be followed by a confirmation popup. Once this is confirmed the new vendor is added to the database.

Figure 44 - Add New Type to Existing Vendor

View Project Information

This form allows the user to view basic information about a project. The user first searches for a project using the text box. After clicking the button with the search glass, the Projects drop down menu appears. After selecting a project, the information for that project will then be displayed as you can see in Figure 45. The Project Tags for that project will also be displayed. You can also see the "Go Back to Menu" button on the top right of the form.

Figure 45 - VPRM View Project Information

Search Vendors by Type

This form allows the user to select a type on the first drop down. From this selected type the second drop down will show all the vendors that have been assigned that type and count of the projects they have worked on. When the user selects the vendor the basic information, contact cards, and vendor tags will populate. There will also be a button on the top of the form that allows the user to search this vendor's performance fright from this screen. There is also a "Reset Form" button and a "Go Back to Menu" button on the top of the form.

Figure 46 - VPRM Search Vendors by Type

Search Vendors by Tag

This form allows the user to search for a vendor by tags. The user selects a tag and then another drop down menu will appear that will allow the user to select a vendor based on the tag selected before. There is also another drop down to select a second tag, this is optional. Figure 47 shows the screen after a vendor has been selected. You have basic information on left, contact information in the middle and vendor tags and project count on right. At the top of the form you have the buttons “Search Performance by Vendor”, “Reset Form”, and “Go Back to Menu.”

Figure 47 - VPRM Search Vendors by Tag

View Vendor and Contact Information

In this form the user can select a vendor and see the tags and contacts associated with that vendor. After the user selects the vendor the information will auto-populate. The basic information of the vendor will be displayed on the left, the Contact Cards for the Vendor in the middle, and the Vendor Tags on the right. It is important to note the Total Project field in the bottom right of the form. Also the Project Count Field on the tags, this shows how many times each tag has been used for that vendor. You will also see the “Go Back to Menu” button on the top of the form.

Figure 48 - VPRM View Vendor and Contact Information

Input Project Performance Data

The “Input Project Performance Data” form allows users to drill down to a certain project, audience, country, and asset* (*if they’re using a non-panel vendor) to add project performance information. The user first searches for a project using the text box. After clicking the button with the search glass, the Projects list box is populated with the search results. Once the user selects a vendor, they can select an audience, country, vendor, and/or asset to associate with the project. When all of those options are selected, all of the performance data input fields are ready for data entry. When the user is ready to submit the data he or she will click the “Add Performance” button in the right bottom section of the form. This will once again bring up a confirmation prompt. Once confirmed, the data will be entered into the database.

Figure 49 - Input Performance Data

Search Performance

Depending on what is selected, the “Search Performance” page provides aggregate metrics that dynamically change based on inputs. There is an area where users can view information about a selected project and/or vendor based on inputs as well. There are also two buttons that take users to a page to view asset information for a project or to a page for comparing quoted versus final metrics.

Figure 50 - Search Performance

Add/Edit Quote Information

The “Add/Edit Quote Information” form allows users to add vendor quotes into the VPRM. When the user first navigates to the Add Project Performance Quoted Data form, they will start by searching for and selecting a project. Once a project is selected, they can begin to fill out either project details or sourcing quotes. Member composition information can be added by pasting the information into the window that opens when “Add Member Composition” is clicked. To add quotes, users must first select a source name and target audience and then click “Add Quote” which will add a row to the table below. The user can then proceed to fill in all of this data for that quote. If the user would like to add another quote, they can choose another source and target audience and click “Add Quote”. This will add another entry below the first one that will contain the second quote. This can be done an unlimited number of times for a project. If a user accidentally adds a quote, they are given the option to delete the record. All of this data is written to the database in real time, so there is no need for a save button. If the user would like to enter quotes for another project, all they have to do is click on the “Reset Form” button at the top of the screen.

Figure 51 – Add/Edit Quote Information

Add Asset

The new “Add Asset” form is used to upload assets from Campaigns into the VPRM. In this form, users are presented with three input boxes: Name, Notes, and File. Here users are able to enter the name of the asset something relating to the project. In the next field users can enter notes about the asset to provide more information about how the asset was used. Finally, when users click on the File field, it will prompt users to select a file to upload as their asset. Finally, once users have these fields filled out, users click on the “Add Asset” button, which will upload the file path to the VPRM.

Figure 52 - Add Asset

View Quote Information

The “View Quote Information” form allows users to view and select the quotes that are going to be used on a project. This view is nearly identical in functionality to the Adding/Editing Vendor Quotes form except that none of the fields are editable except for being able to select a vendor for a project. When a vendor is selected for a project, it adds the date to the row so that users can see when a vendor is selected for a project.

Figure 53 - View Quote Information form

Compare Quote and Final

The “Compare Quote and Final” form allows users to view the pre-bid quote information against the final KPIs used for the selected project. It compares the quoted logins versus the final logins along with the estimated IR and the final IR. When the user first navigates to the “Compare Quote and Final” form, they will start by searching for and selecting a project. Once a project is selected, they can begin to filter by either the source name and/or audience.

Figure 54 - Compare Quote and Final form

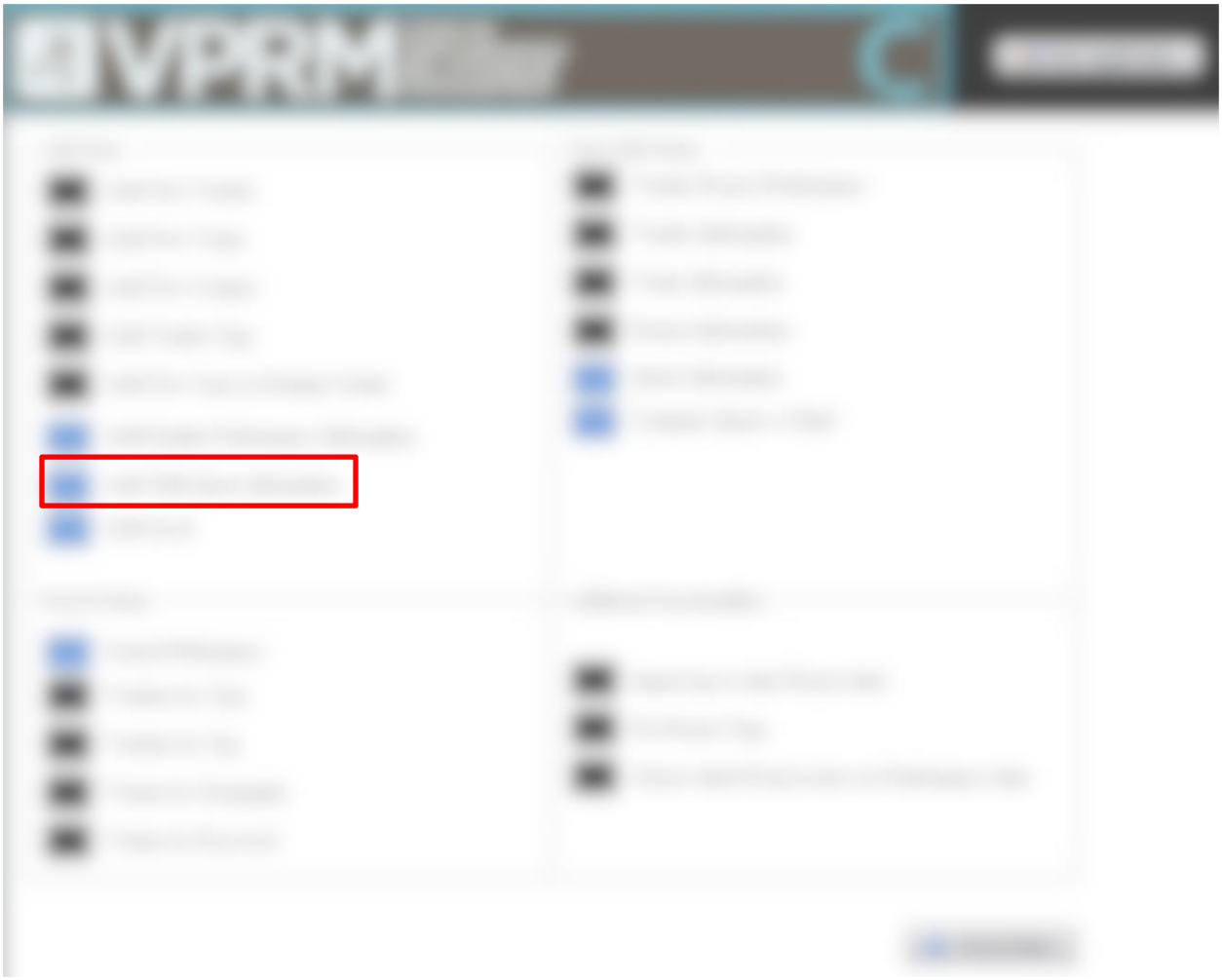
Training Manual

Brief Description

In this training manual we exclusively review the forms created during the extension of the VPRM. Please note that these forms were created within our development environment and may change when implemented into the official VPRM system. We hope that this document will help you understand the VPRM's new features.

Adding Quote Information

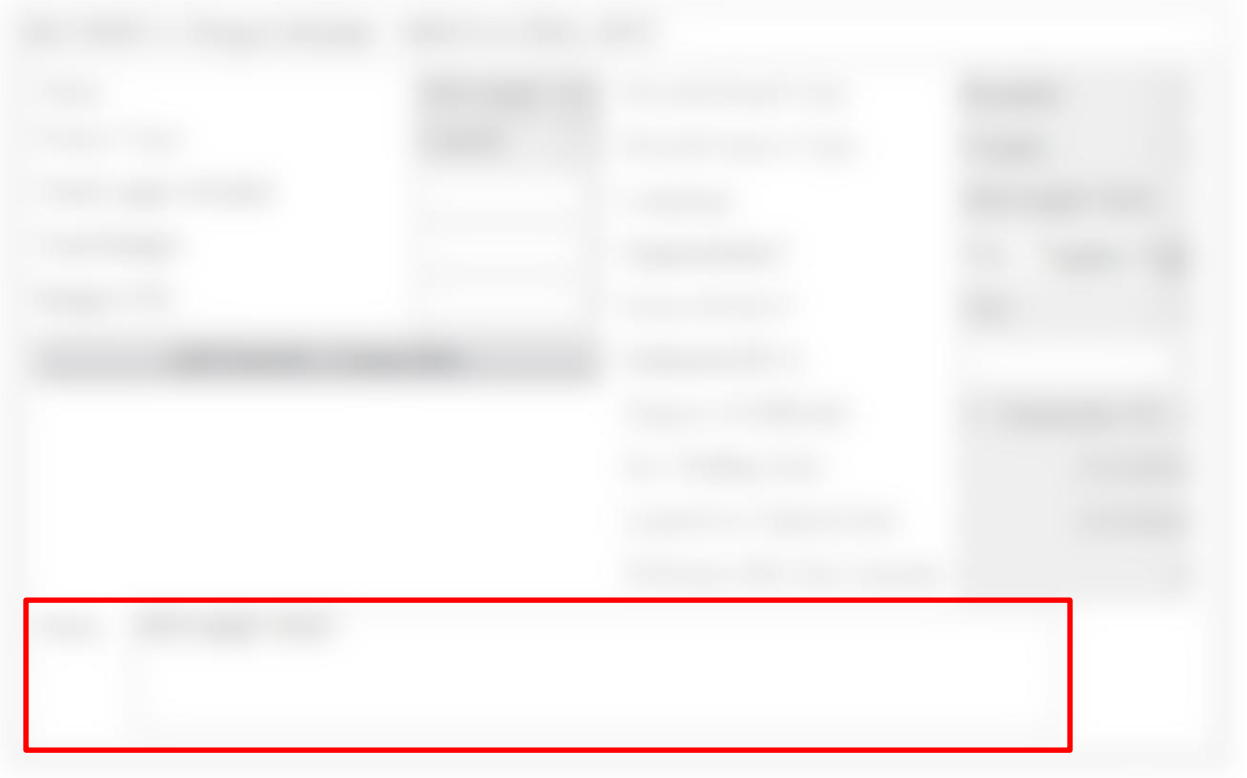
1. Click the Add/Edit Quote Information



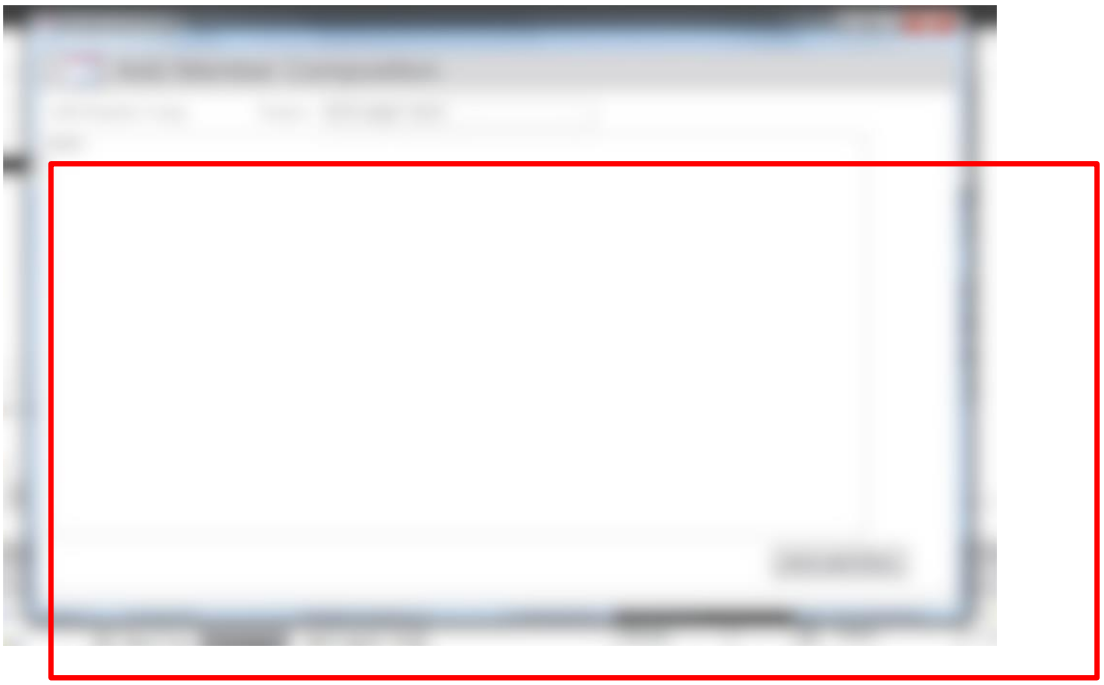
2. From this point you can search for a project and then select the project from the listed results.

3. After you have selected the project the screen will update with all quotes that might have already been added to that project and all project details for that project.

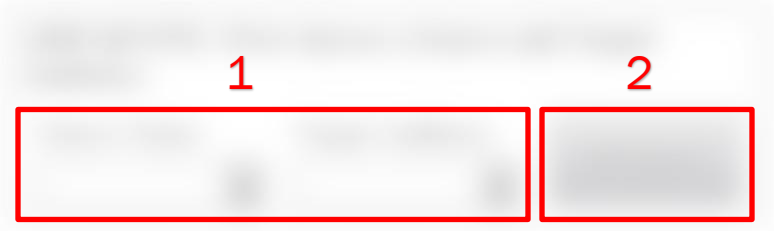
4. In the Project Details section of this page the user can view information on the project they are adding quotes to and add any additional project level notes if they need to.



5. If you click on the button in the project details for Member Composition, a pop-up will appear and allow the user to input as much text as they wish about the Member Composition.

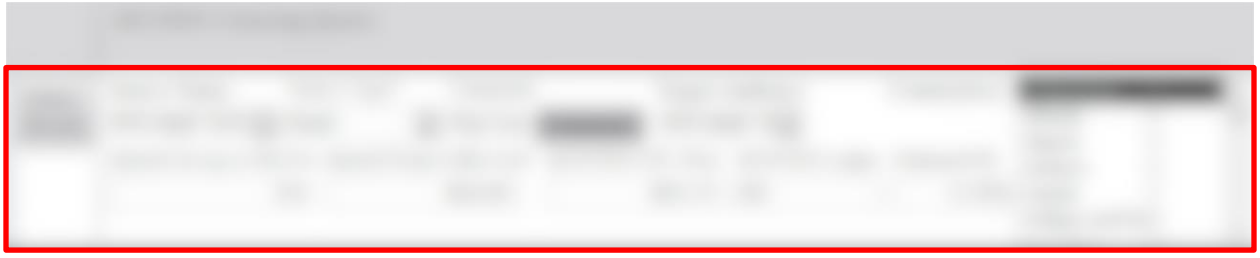


6. If the user wishes to add a quote they will need to first select a Source/Vendor Name and a Target Audience. After doing this they can click the Add Quote button which will take those fields and add a quote to the list of quotes below.

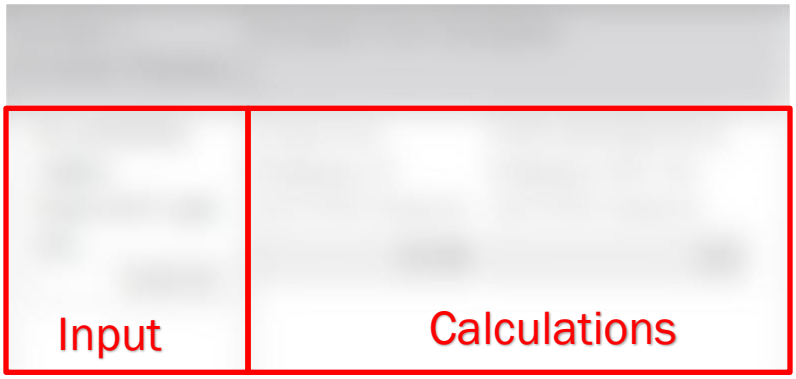


This is a picture of quotes using sample data that we created.

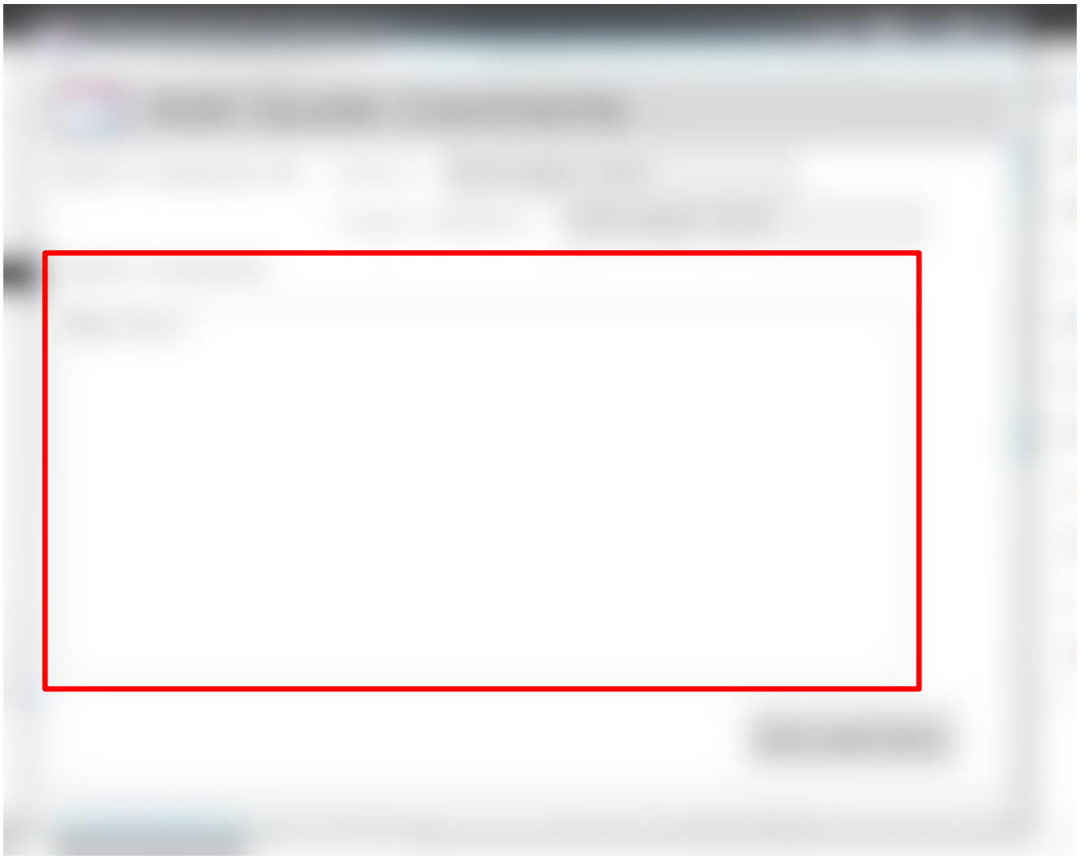
7. For each quote there are several input fields, a delete button, and a comment button. These allow the user to input all information for the quote and if they wish to delete it they can use the button.



8. They can also input the Adjusted Expected Login Quantity and see any Scenario Cost Calculations for the quote.

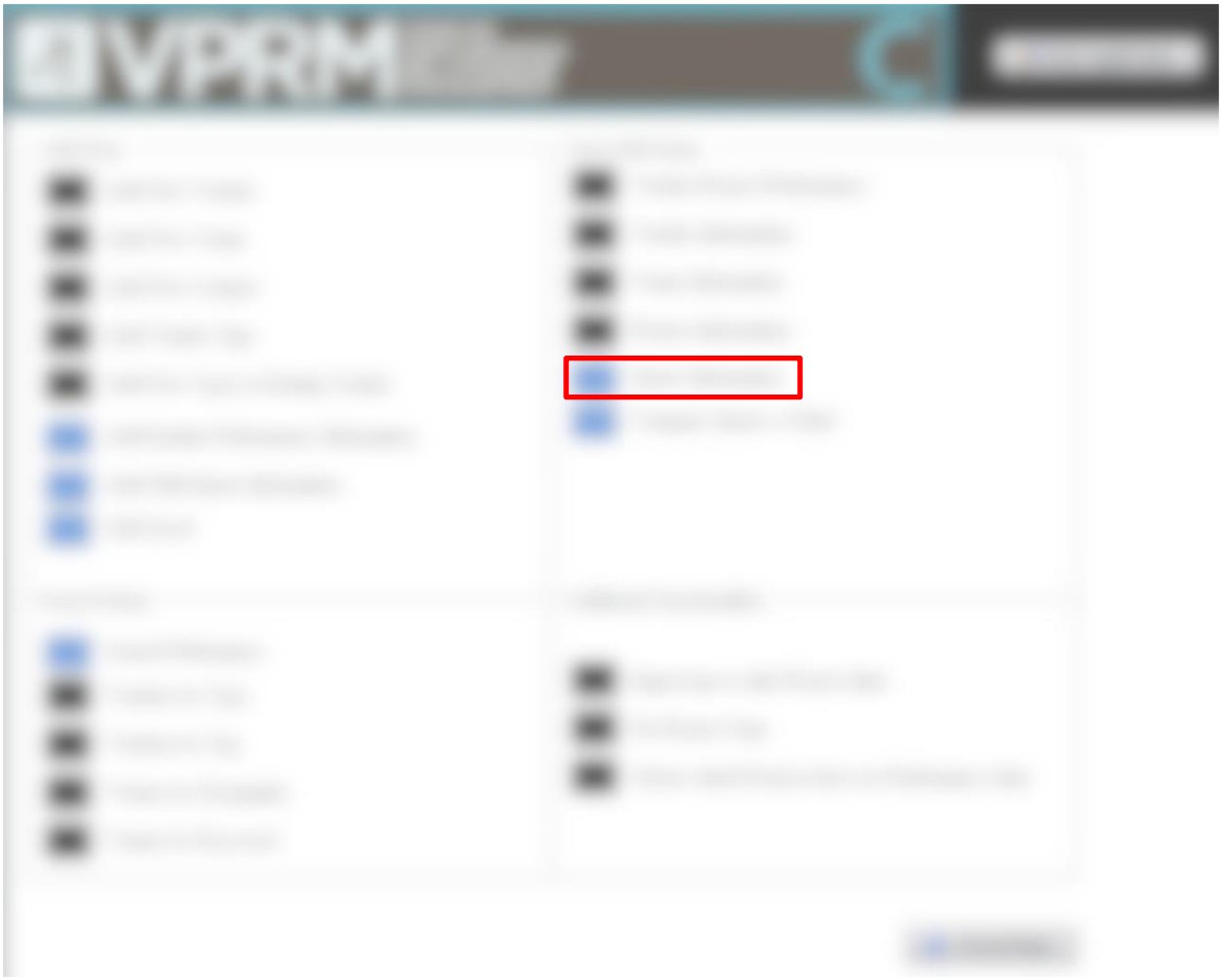


9. For each quote there is a comment field and when it is clicked it will open up this pop-up that allows users to input any length of comments.

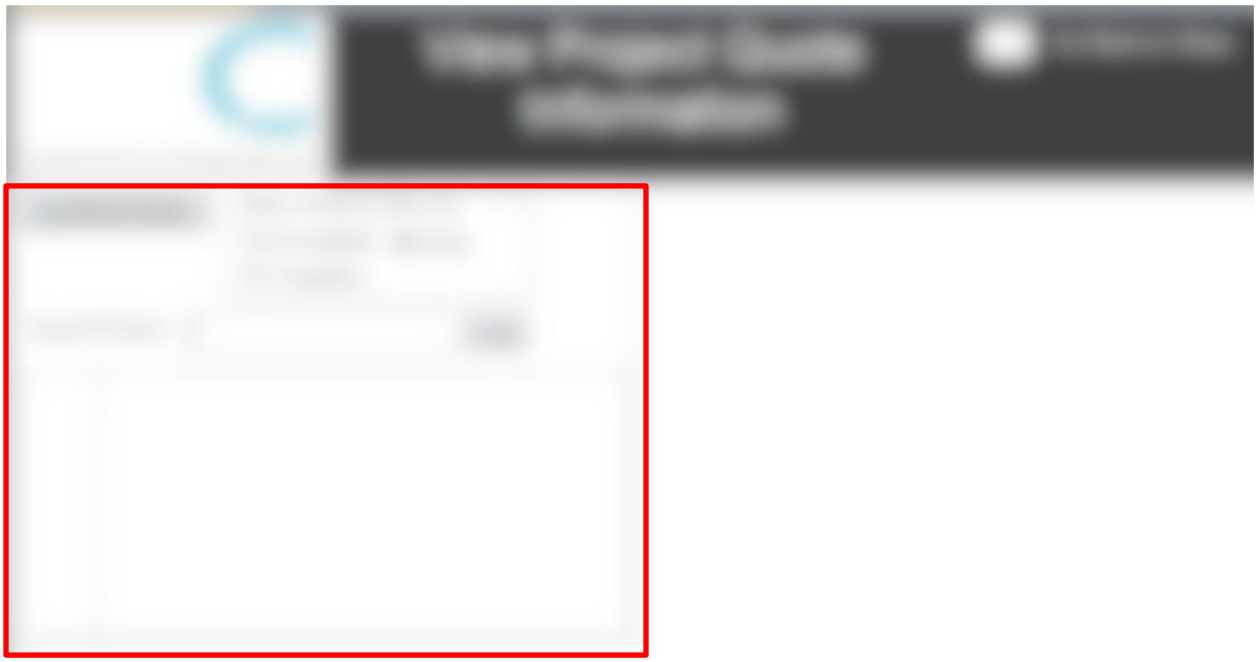


View Quote Page

1. Click the Quote Information button



2. This will allow the user to specify which projects they want to see whether they.



3. Once they select a project the filter, sorts, and quotes will be displayed.

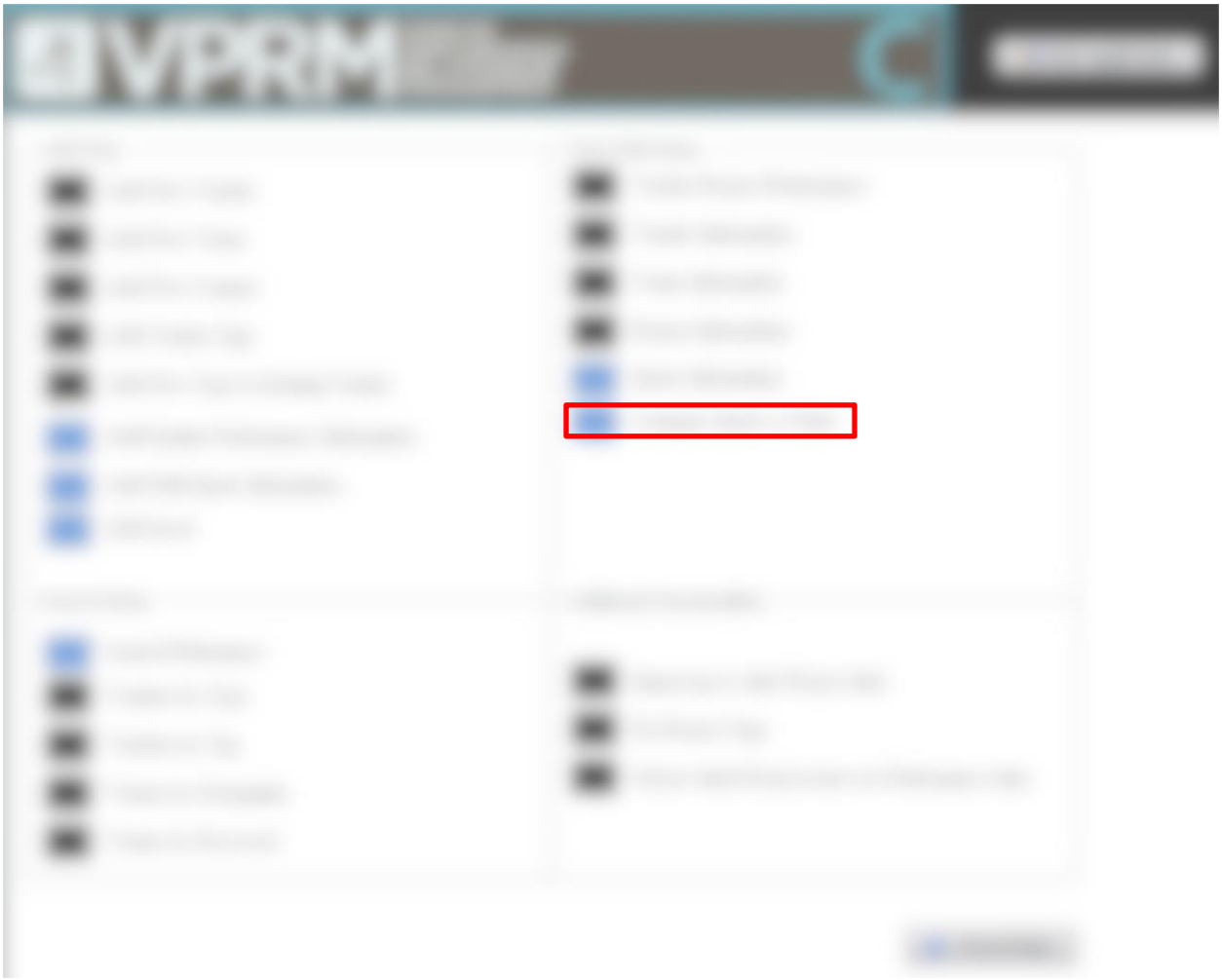
4. On this page there are several filters and sorts that the user can use to better narrow down and order the quotes they want to view and eventually select to go forward with in the project.

5. This part of the page will show all the quotes related to the project and filter that you have selected.

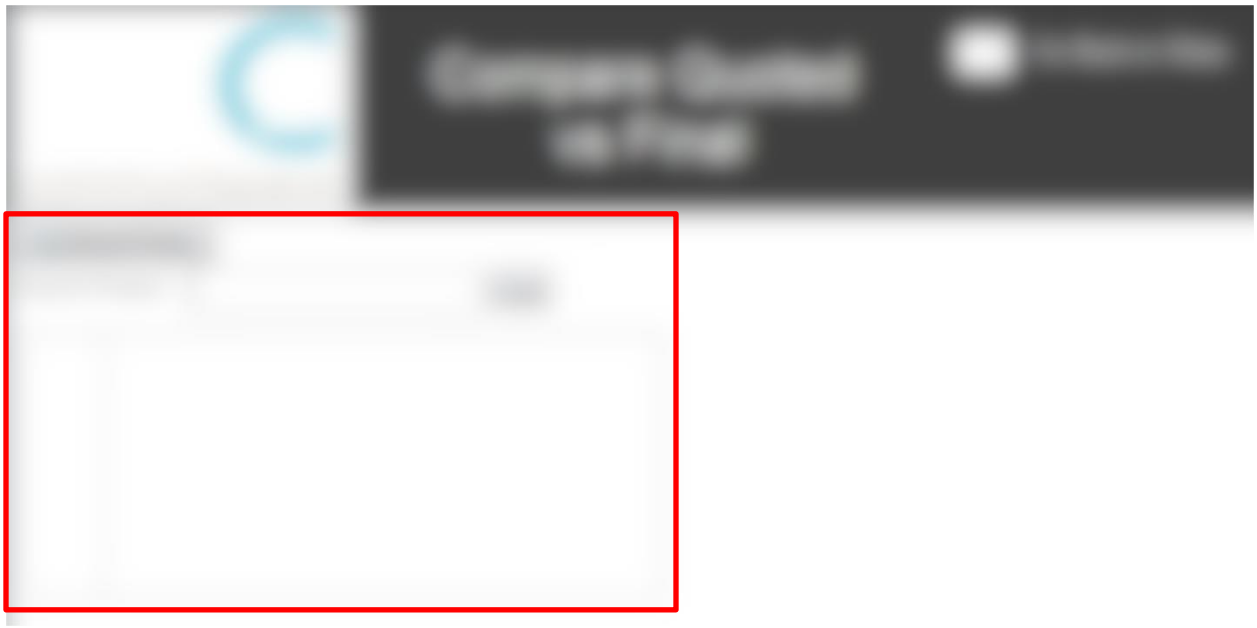
6. For each of these quotes the user can only view the information that was added into the database previously to viewing.

7. The user will also be able to choose any of the quotes being viewed and select which ever ones they wish to use in recruitment.

1. Click Compare Quote vs Final



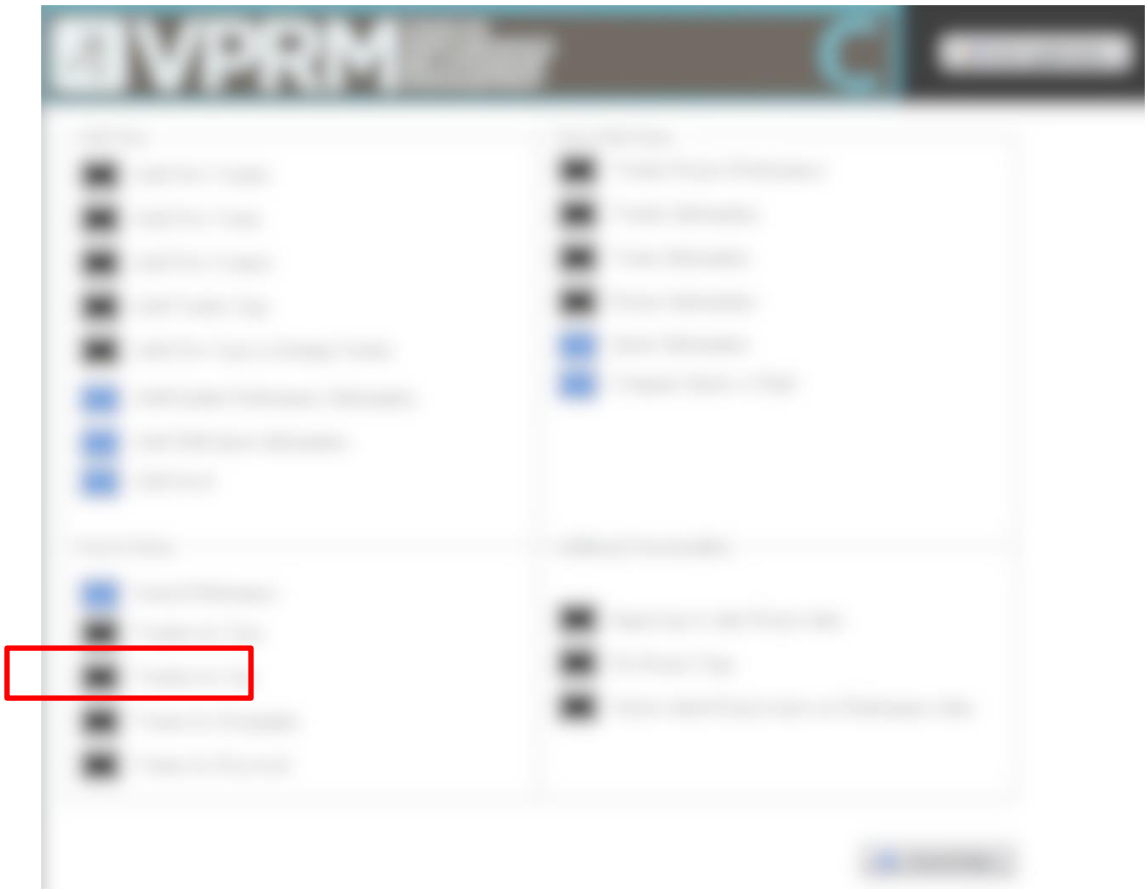
2. When first opened it will bring you to this screen where you can search and select a project.



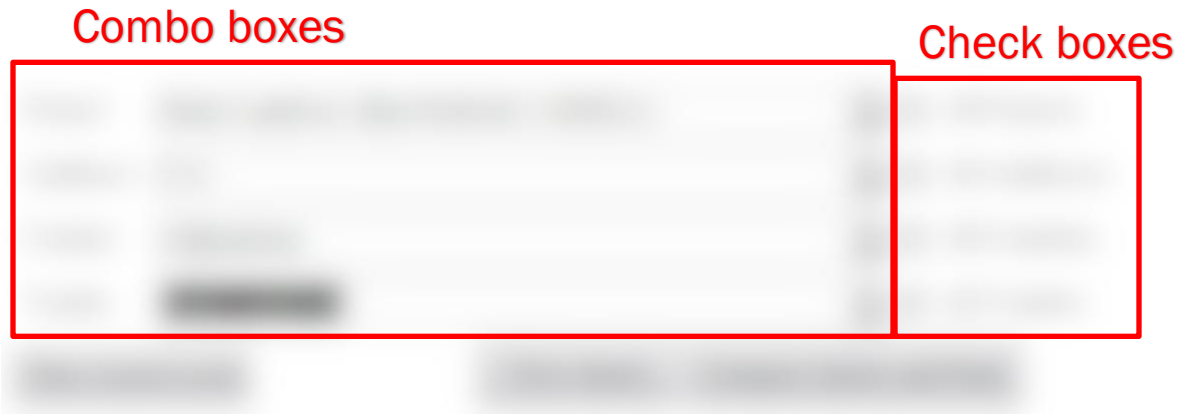
3. Once the user has selected a project then this will be the screen that displays that shows the quotes and filters for Source/Vendor name and Audience.

View Performance Form

1. Click Search Performance



2. Choose a project, audience, country, and/or vendor. The level of aggregation is dependent on which fields are chosen and which check boxes are checked. When the combo boxes are left empty, they produce the same results as if the respective check box is checked. The 3 buttons below the combo boxes bring the user to another form.

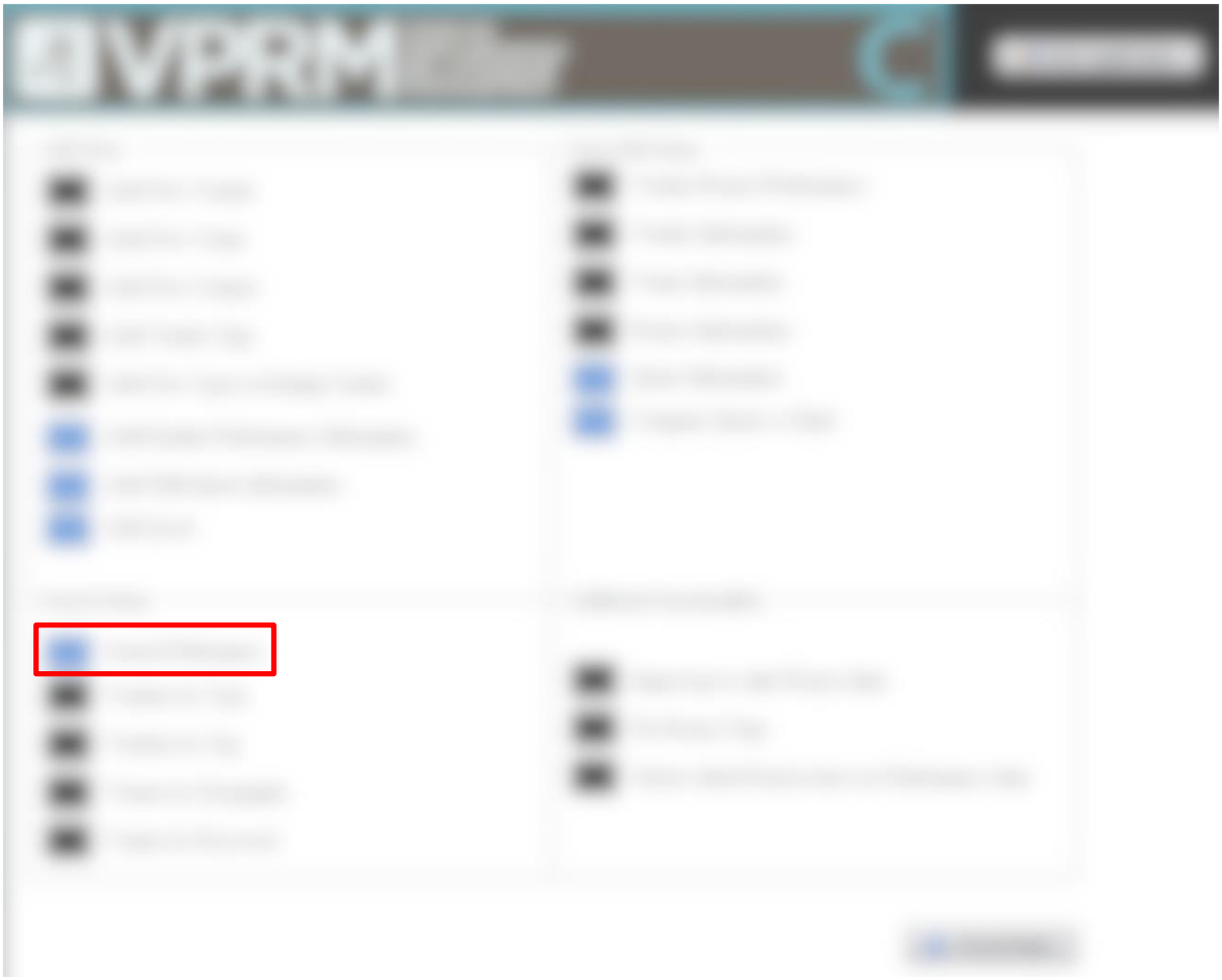


3. Displays aggregated KPI data. Aggregation level depends on constraints chosen in the combo boxes explained above.

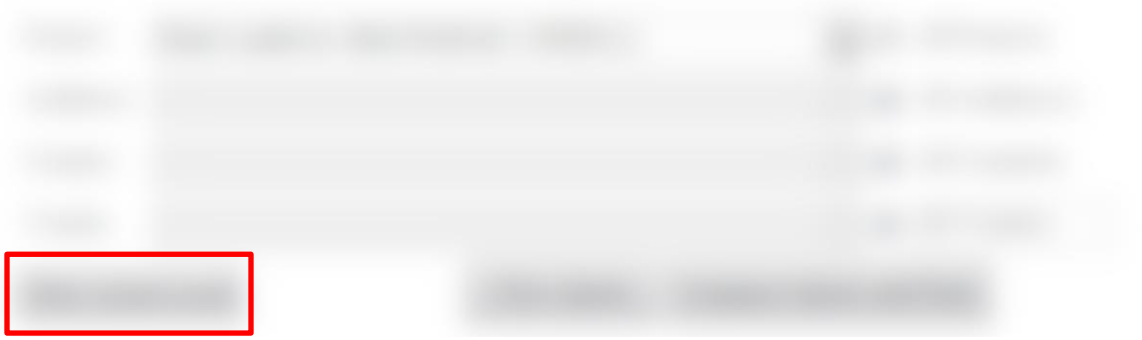
4. Displays general information on the selected project and vendor in tabular format.

View Asset level Form

1. Click Search Performance.



2. Choose the initial constraints that encompass the target assets, and click “View Asset Level”. In this example, only a project is selected, so assets associated with the project will be displayed.

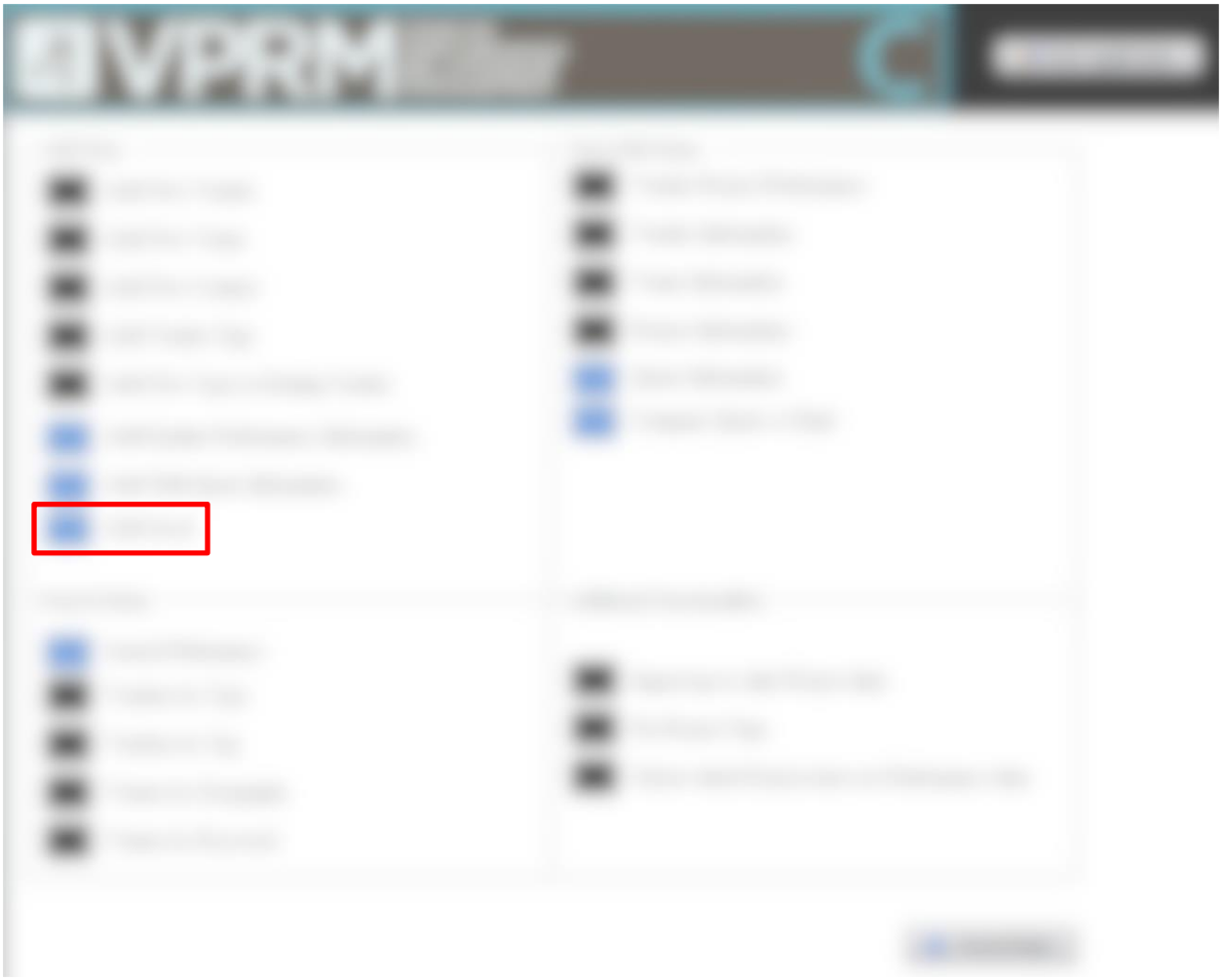


3. The continuous subform will display KPIs at the asset level for every asset that fits the constraints specified in the previous form.

4. The user may also order the data descending by a specific KPI or alphabetically by project, vendor, vendor type, audience, or country. By default, assets are ordered by “Total Records”.

Add Asset Form

1. Click Add Asset.

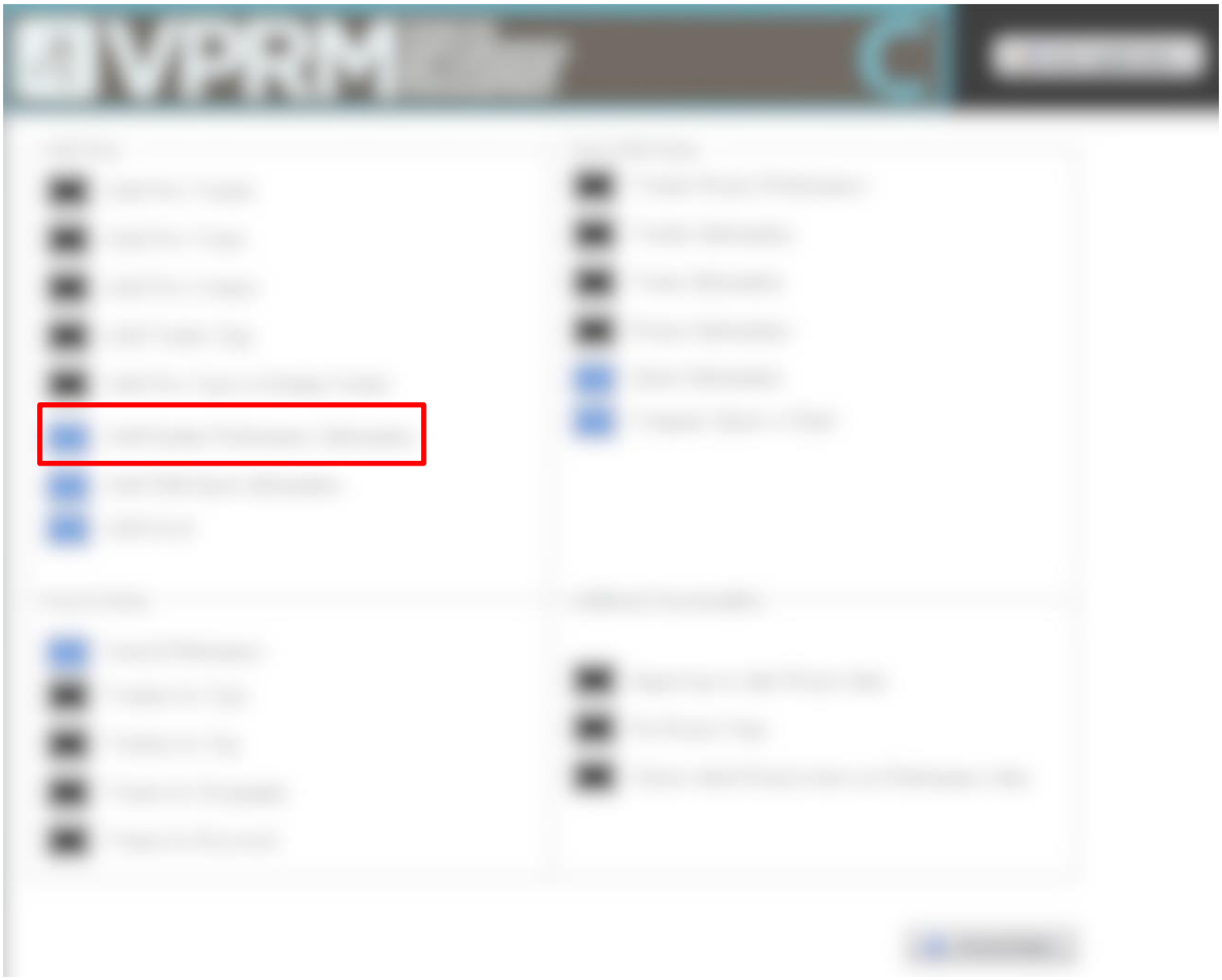


2. Search for a project and select one of the projects from the list box. This is a required field.

3. Input an asset name (required), any notes, and the asset file to upload to the folder on the network drive. Then click “Add Asset” to insert the data and upload the file.

Input/Edit Performance Form

1. Click Add/Update Performance Information



2. Search for a project and select one of the projects from the list box

3. Choose an audience, country, vendor, and asset from the combo boxes. If the vendor is a panel vendor and does not have an asset, choose “No Asset (Panel)”. The audience and asset combo boxes are only populated with those that are associated with the chosen project.

4. Input the KPIs and notes. All fields will restrict the user to only input numeric values. Some fields have specific requirements and if one of these requirements is broken, the system will prompt the user to fix the specific fields. Once the textboxes are filled, click “Add Performance” and insert the 3 letter currency code. Confirm the submission to insert the data in to the database.

*If the specific project, audience, country, vendor, and asset already have data in tblVendorPerformance, the system will automatically switch to “Update Mode”, in which the existing KPIs will be displayed so the user can edit the data and update tblVendorPerformance.

Appendix H – Technical Form Documentation

The technical documentation is for the people that will be managing the VPRM and making sure that everything we implement runs smoothly. The documentation specifies the forms that we have add or modified so in case something goes wrong or they want to expand on the system, they can use this documentation to understand the intention of the form.

Form 1: frmAggregation

Description: Displays aggregated KPIs at user specified levels

References: Three Subforms:

- frmAverageSubform – This subform displays the KPIs at aggregated levels, which are dependent on the user.
- frmProjectInfoSubform – This subform displays general information on the Project.
- frmVendorInfoSubform – This subform displays general information on the Vendor.

Key Form Controls & Variables:

- cboProject/ cboAudience/ cboCountry/ cboVendor – Populated with projects, audience, countries, and vendors that exist in the tblVendorPerformance. Filters depending on other combo boxes/check boxes that are selected.
- btnAsset – Goes to frmViewCampaignPerformance.
- btnViewQuote – This button will lead to the view quote form, frmVendorQuote, and it will take the project that you selected on Aggregation page.
- btnCompare – This button will lead to the compare quote vs. final metrics form, frmCompare, and it will take the project that you selected on Aggregation page.

Suggested Improvements:

- btnAsset is enabled even when there are no assets for the specified constraints (i.e. every asset is the default panel vendor asset). Code is partially implemented.

Form 2: frmViewCampaignPerformance

Description: Displays KPIs at the asset level for each asset that meets the constraints determined by the user (does not display panel vendors).

References: one subform:

- frmViewCampaignPerformanceSubform – Continuous form that is displays KPIs for each individual asset. Also has an option to open the asset (any format).

Key Form Controls & Variables:

- All radio buttons – Allows the user to order the subform in descending order of a specified KPI. They can also order it alphabetically by project, audience, country, vendor, or vendor type.

Suggested Improvements:

- Order by does not work on first click.

Form 3: frmInputPerformance

Description: Allows the user to input performance for a specific asset (asset does not have to be specified for panel vendors). Also allows for editing performance data if it already exists in the tblVendorPerformance.

Key Form Controls & Variables:

- btnSearchProjects – Executes search for projects that contain search term.
- lstSelectProject – Displays all projects that fit the search criteria.
- cboAudience – Populated with audiences associated with the chosen project because the association is pulled from AtTask and cannot be changed by a user.
- cboCountry – Populated with all countries in tblCountries.
- cboVendor – Populated with all vendors in tblVendors.
- cboAsset – Populated with assets associated with chose project because a user specifies a project when adding an asset.
- btnSubmit – Inserts or updates KPI data.
- KPI text boxes – Text boxes to input KPI data.

Suggested Improvements:

None

Form 4: frmAddAsset

Description: Allows the user to upload an asset, input information for the asset, and associate it to a project.

Key Form Controls & Variables:

- txtName – The name of the specific asset.
- txtNotes – Any notes for the asset.
- txtFile – The file path of the asset. Double clicking the text box opens a file selection window, where the user can choose which file to upload to the asset file folder in the network drive.
- btnAddAsset – Adds the asset information to tblAssets and uploads the asset file.

Suggested Improvements:

- As more information about assets is captured, more inputs can be added to frmAddAsset.

Form 5: frmVendorQuote

Description: Adds or edits quotes in the tblQuote that are linked to a project

References: Two subforms:

- frmProjectDetailSubform – This subfrom allows the users to see more detail about the project for the quotes they are adding/editing on this page
- frmVendorQuoteSubform – This subform allows them to add, edit, and/or remove quotes the selected project.

Key Form Controls & Variables:

- btnSearchProjects – When clicked it will display projects with the given text in the lstSelectProject list box.
- lstSelectProject - When a project is selected it will update the two subforms row source and will make everything on the subform visible
- btnResetFrmInputVendorPerformance – This button will reset everything on the form so that the user can select a different project to input quotes into
- cboVendor /cboAudience – both these fields have to be selected before the btnAddQuote will be enabled. This makes sure that every Quote added has at least these two feilds
- btnAddQuote – will take the cboVendor and cboAudience and add a new row into the quote tael with those fields and the selected project.
- frmProjectDetailSubform
    - All text input – This information will be pulled from AtTask to show the user who is imputing the data for the quote what the overall project is like. The project Detail will be updated on a weekly basis.
- btnMemberComp/frmMemberComp – This button links to another form, frmMemberComp, which allows the user to input a large amount of text about the member composition.
- frmVendorQuoteSubform
    - btnDelete – This button will delete the one quote from the quote table

- cboVendor – This box allows them to reselect a vendor if it change or was wrongly selected earlier.
- btnComments / txtComment / frmVendorQuoteComments – Both of btnComments/ txtComment when clicked will lead to a pop-up form, frmVendorQuoteComments, that will allow the user to input any comments they wish to add.
- lstCountry – This box allows the user to select as many Countries as they want. They can de-select any by clicking them again.
- TotalCostActiveSources - This is a calculated field that is updated whenever a change is made to the quote.
- EstCPLActiveSources - This is a calculated field that is updated whenever a change is made to the quote.

Suggested Improvements:

- Add a search feature when looking for Countries
- Could make a default Country be United States
- Member composition should eventually be a file that the user can upload and attach to a project

Form 6: frmVendorQuoteView

Description: View quotes in the tblQuote that are linked to a project

References: One subforms:

- frmVendorQuoteViewSubform – This Subform shows the quotes for the selected project and any filters or sorts you do on the quotes.

Key Form Controls & Variables:

- btnSearchProjects – this button will look in the Projects table and find any common projects with the entered text.
- lstSelectProject – this button will update the cboVendor, cboAudience, and the frmVendorQuoteViewSubform with relavant information for each of them.
- btnResetFrmInputVendorPerformance - This will set the form to the state that it was when first opened. It will still keep all the quotes added to the page.
- Radio buttons for Project - These radio buttons incomplete, complete, and both will help in narrowing down what projects will appear in the search project list box, lstSelectProject
- cboVendor/ cboAudience/ chkSelected/ cboCountry - All these buttons will narrow down the list of quotes being displayed in the subform
- All Sort by Listboxes – these boxes allow the viewer to sort the list of quotes by many of the elements that make up a quote. This helps them see which quotes are better than others.
- frmVendorQuoteViewSubform
    - btnComments / txtComment / frmVendorQuoteComments – Both of btnComments/ txtComment when clicked will lead to a pop-up form, frmVendorQuoteComments, that will allow the user to input any comments they wish to add.

- chkSelect / txtSelectedDate – on the view page we allow users to choos which quote sthey think will be the most useful to them for the project.

Suggested Improvements:

- cboCountry isn't fully implemented and should narrow down the list of countries based on what project, vendor, and/or only selected projects the users has inputted.

Form 7 frmCompare

Description: Compare quotes to the final vendor performance metrics.

References: One subforms:

- frmCompareSubform – This compare subform will show all the quotes and compare them with respective form.

Key Form Controls & Variables:

- btnSearchProjects – this button will look in the Projects table and find any common projects with the entered text.
- lstSelectProject – this button will update the cboVendor, cboAudience, and the frmCompareSubform with relevant information for each of them.
- btnResetFrmInputVendorPerformance - This will set the form to the state that it was when first opened. It will still keep all the quotes added to the page.
- cboVendor/ cboAudience - All these buttons will narrow down the list of quotes being displayed in the subform

Suggested Improvements:

- The Compare subform will need to also compare the Countries from the Quote table and the VendorPerformance. The VendorPerformance Country wil only have one country whil a quote could have multiple. Their for when making this compare the quote might be compared to several VendorPerformances

Appendix I – MQP Meeting Minutes – w/ Jack and Sean

Once we started going to Communispace on a weekly basis we decided to create a formal meeting in the morning where we inform Jack and Sean on what we have done and what we will be doing for that day and throughout the week.

Kick-off Meeting 10/09/2013

Time: 10am – 10:30am

Attendees

Greg Mannheim
Greg Karp-Neufeld
Shun Snoddy
Adam Taylor
Jack Bergersen
Sean Burke

Old Business

- Restructure Visio based on **[REDACTED]** document

New Business

- Visio document was reorganized to reflect what Jack and Sean envision it
- Going to talk with Michelle and Patricia later that day about the Campaign Visio document

Action Items

- Send Campaign Visio document to Jack
- Verify with Michelle about the One to many relationship with Projects and Recruit

Kick-off Meeting 10/16/2013

Time: 10:00 – 10:30am

Attendees:

Greg Mannheim
Greg Karp-Neufeld
Shun Snoddy
Adam Taylor
Jack Bergersen
Sean Burke

Old Business:

- Finished the Visio document with Campaign stakeholders

New Business:

- Switching to Parallel development
- Started gathering information on sourcing side

Action Items:

- Setup interviews separately with the Sourcing users

Kick-off Meeting 10/30/2013

Time: 9:00 – 9:30am

Attendees:

Greg Mannheim
Greg Karp-Neufeld
Shun Snoddy
Adam Taylor
Jack Bergersen
Sean Burke

Old Business:

- Switching development plan
- Talked to several sourcing stakeholders
- Started the analysis of Campaign segment with use cases

New Business:

- Reviewing the Sourcing sheet and what is being moved to the VPRM
- Jack talked with several sourcing stakeholders to help in understanding the changes that will be made

Action Items:

- Setup proposal meeting for November 20th
- Contact Sourcing consultants about the VPRM extension for Sourcing

Kick-off Meeting 11/13/2013

Time: 9:00 – 9:30

Attendees:

Greg Mannheim
Greg Karp-Neufeld
Shun Snoddy
Adam Taylor
Jack Bergersen
Sean Burke
Laura Naylor

Old Business:

- Talked to Sourcing Consultant and other Sourcing stakeholders and clarified what the Sourcing Segment
- Campaign finished majority of their Analysis material (ERD's, DFD, and Use Cases)

New Business:

- Laura came to the kick-off meeting to figure out where the group is and if we had any questions
- Reviewed where the overlap of the two segments is currently and that we will both move into the design phase soon.

Action Items:

- Figure out who will use the quoted metrics for Campaign segment

Kick-off Meeting 12/4/2013

Time: 9:00 – 9:30

Attendees:

Greg Mannheim
Greg Karp-Neufeld
Shun Snoddy
Adam Taylor
Jack Bergersen
Sean Burke

Old Business:

- The Proposal Presentation

New Business:

- Sourcing team is finishing up Analysis and moving into design

Action Items:

- Campaign talk to Patricia and Ashley about use cases
- Sourcing talk to John and Mark about use cases

Kick-off Meeting: 12/11/2013

Time: 10:00 – 10:30

Attendees:

Greg Mannheim
Greg Karp-Neufeld
Shun Snoddy
Adam Taylor
Jack Bergersen
Sean Burke

Old Business

- Economic Feasibility
- Implementation

New Business

- Updating ERD
- Countries fit better in Audience

Action Items

- Getting local copies of the tables. So we can work on them. Right click and convert to local option.
- Figure out if there should be a country field that is separate from Audiences. How to allow for two "Audiences"
- Make sure if we are working over break to notify everyone and make notes about changes we make.

Kick-off Meeting: 12/18/2013

Time: 10:00 – 10:30

Attendees:

Greg Mannheim
Greg Karp-Neufeld
Shun Snoddy
Adam Taylor
Jack Bergersen
Sean Burke

Old Business

- Updating ERD
- Countries fit better in Audience

New Business

- Starting Programing and testing
- Hierarchical Tagging is on our list

Action Items

- Email the sign off to Communispace
- Finish mockups before we leave - Sourcing
- First day we are back the backend should be ready for us (Sean and Jack to sort out)

Kick-off Meeting: 1/29/2014

Time: 10:00 – 10:30

Attendees:

Greg Mannheim
Greg Karp-Neufeld
Shun Snoddy
Adam Taylor
Jack Bergersen
Sean Burke

Old Business

- Starting Programing and testing
- Hierarchical Tagging is on our list

New Business

- Review Code
- What happened over break

Action Items

- Contact Patricia about what KPIs to show
- Reformat current data to fit into the campaign data
- Run an update script to change all of the fields to a default value

Kick-off Meeting: 2/5/2014

10:00 – 10:30

Attendees:

Greg Mannheim
Greg Karp-Neufeld
Shun Snoddy
Adam Taylor
Jack Bergersen
Sean Burke

Old Business

- Review Code
- What happened over break

New Business

- The ERD
- Begin showing Access mockups
- Show the Form for Adding Quoted Metrics

Action Items

- Milestone Plan
- Next Week pick up sign off Paper

Kick-off Meeting: 2/12/2014

10:00 – 10:30

Attendees:

Greg Mannheim
Greg Karp-Neufeld
Shun Snoddy
Adam Taylor
Jack Bergersen
Sean Burke

Old Business

- Review Code
- What happened over break

New Business

- Sourcing Demo Meetings today
- Campaign Demo Meetings today
- Campaign add functionality to add Assets before next week
- Setup meeting with David and Laura next week

Action Items

- Ask Michelle about the NotSentToVerification. Is this field getting removed?
- Ask Sourcing Stakeholders about how they want to capture Audience and Regions

Kick-off Meeting: 2/19/2014

10:00 – 10:30

Attendees:

Greg Mannheim
Greg Karp-Neufeld
Shun Snoddy
Adam Taylor
Jack Bergersen
Sean Burke

Old Business

- Sourcing Demo Meetings today
- Campaign Demo Meetings today
- Campaign add functionality to add Assets before next week
- Setup meeting with David and Laura next week

New Business

- Review final changes
- Talk about Country in new VPRM

Action Items

- Make the asset name appear first when comparing assets
- Future Release: Country Filtering

Kick-off Meeting: 2/26/2014

10:00 – 10:30

Attendees:

Greg Mannheim
Greg Karp-Neufeld
Shun Snoddy
Adam Taylor
Jack Bergersen
Sean Burke

Old Business

- Review final changes
- Talk about Country in new VPRM

New Business

- Talk about final presentation
- Final demos to stakeholders

Action Items

- Returning computers
- Send Sean help documentation

Appendix J – MQP Meeting Minutes – w/ Professor Loiacono

MQP Agenda: 8/30/2013

Attendees
Greg Mannheim
Greg Karp-Neufeld
Shun Snoddy
Adam Taylor

New Business
- Agenda for meeting with Communispace on 9/4
- Received non-redacted version of prior MQP

Action Items
- Come up with questions to ask Communispace

MQP Agenda: 9/6/2013

*Communispace meeting rescheduled for 9/11/2013

Attendees
Greg Mannheim
Greg Karp-Neufeld
Shun Snoddy
Adam Taylor

Old Business
- Questions for Communispace
- Comments on prior MQP and vendor procedure at Communispace

New Business
- Organize questions
- What we can get started on

Action Items
- Literature review

MQP Agenda: 9/13/2013

Attendees
Greg Mannheim
Greg Karp-Neufeld
Shun Snoddy
Adam Taylor

Old Business
- Overview of Communispace meeting on 9/11
- What parts we started on for Lit review
- Meetings we have set up with Communispace employees

New Business
- Prepare for interviews with various stakeholders
- Agenda for meetings
- Plan backwards
- Draft of Project objective and scope
- Outline of entire MQP paper

Action Items
- Project Objective
- Project Scope
- Create outline of paper
- Agenda/Gantt Chart

MQP Agenda: 9/20/2013

Attendees
Greg Mannheim
Greg Karp-Neufeld
Shun Snoddy
Adam Taylor

Old Business
- Reviewed questions for interviews
- Reviewed outline and Gantt chart
- Determined proposal should be done by mid B-term
- Proposal draft must be finished 2 weeks before

New Business
- Organize questions
- Meeting with
    - Michelle Fisher
    - John Keeter + Mark DiGiammarino
    - Patricia Harnan
    - Anna Ciesielski
- Start/include methodology options and HCI topics
- Prioritize scope (needs vs wish list)
- Proposal date?

Action Items
- Methodology options
- HCI topics
- Organize scope

MQP Agenda: 9/27/2013

Attendees
Greg Mannheim
Greg Karp-Neufeld
Shun Snoddy
Adam Taylor

Old Business
- Overview on Communispace meetings 9/25
- Update on progress of MQP paper, working on
    - Literature review
    - Project objectives
    - Project scope
- Revised Gantt chart

New Business
- Meeting with Jack, Sean, Patricia, Michelle (Campaign coordinators)
- Look at as-is VPRM system diagrams
- Key questions for campaign segment
- Revise project objective Wednesday after meeting with Communispace
- Start on Introduction section?

Action Items
- Continue on MQP draft of
    - Lit review
    - Methodology
    - Introduction
- Revise Gantt chart accordingly

MQP Agenda: 10/4/2013

Attendees
Greg Mannheim
Greg Karp-Neufeld
Shun Snoddy
Adam Taylor

Old Business
- Overview on Communispace meeting 9/27
- Update on MQP paper
    - Project objectives
    - Project scope
- Explained Campaigns + pre/live recruitment data (Sourcing)
- Describe HCI techniques, but focus on consistency

New Business
- Must prioritize wish list
- Need timeline for Campaign (can't wait too long for information)
- Meet again with Campaign team
- Get something in writing by A~B term break
    - Introduction, Lit review, Methodology drafts

Action Items
- Continue with MQP draft
- Key questions for Campaign team
- Organize wish list

MQP Agenda: 10/11/2013

Attendees
Greg Mannheim
Greg Karp-Neufeld
Shun Snoddy
Adam Taylor

Old Business
- Overview on Communispace meeting 10/9
    - Settled on what a Campaign is through diagrams
    - Info for System Request (Laura Naylor)
- Explained Campaign Structure
- Update on MQP paper
    - Lit review
    - Project Objectives
    - Project Scope

New Business
- Campaign and Sourcing possible scope? → need timeline
- Meet with Communispace to go over scope
- Next meeting = hard or electronic copy of timeline
- Enhancing system in two different ways = different use cases, ERDs, DFDs, etc

Action Items
- Continue on MQP paper
- Timeline that takes into account of scope of both projects

MQP Agenda: 10/29/2013

Attendees
Greg Mannheim
Greg Karp-Neufeld
Shun Snoddy
Adam Taylor

Old Business
- Overview on Communispace meeting 10/16
- Update on MQP paper (sent draft over break)
- Went over new Methodology
    - Divide team into pairs, parallel development of Campaign and Sourcing

New Business
- Need an actual proposal (11/20?)
- Confirm with Communispace about proposal date
- Summary of what we've done each week
- Need proposal draft by next week for feedback

Action Items
- Proposal draft
- Combine and structure individual writing sections into one document

MQP Agenda: 11/5/2013

Attendees
Greg Mannheim
Greg Karp-Neufeld
Shun Snoddy
Adam Taylor

Old Business
- Overview on Communispace meeting 10/30
- Update on MQP paper and proposal
- Need to include pictures we took of whiteboard/flipboard (diagrams, prototypes)
- Went over what needs to be in proposal (planning and initial analysis)

New Business
- Work on proposal presentation
- After proposal on 12/20, meet in room with Professor
- No meeting on 11/26, Skype 12/3 and 12/10, no meeting 12/17

Action Items
- Proposal presentation draft by 11/18

MQP Agenda: 11/12/2013

Attendees
Greg Mannheim
Greg Karp-Neufeld
Shun Snoddy
Adam Taylor

Old Business
- Overview on Communispace meeting 11/6
- Update on MQP paper and proposal
- Discussed Sourcing section scope creep
- Make MQP report flow like a story
- Obtained prior MQP group presentation
- Use WPI themed powerpoint (include Communispace logo somewhere)

New Business
- Work on proposal presentation, keep in mind we need to give Communispace paper as well
- Send presentation draft over weekend, review on 11/19

Action Items
- Proposal presentation draft by 11/18
- Work on paper portion that will go to Communispace

MQP Agenda: 11/19/2013

Attendees
Greg Mannheim
Greg Karp-Neufeld
Shun Snoddy
Adam Taylor

Old Business
- Overview on Communispace meeting 11/13
- Update mainly on proposal presentation (powerpoint)
- Need to show Professor the paper before we send it to Communispace
- Include everything we've done to this point

New Business
- Practice presentation to make it perfect for tomorrow
- Think of time table for Communispace (deadlines for information that we need)

Action Items
- Practice presentation for tomorrow
- Work on proposal report section
-

MQP Agenda: 12/3/2013

Attendees
Greg Mannheim
Greg Karp-Neufeld
Shun Snoddy
Adam Taylor

Old Business
- Update on MQP report and what we changed
- Must give Communispace our presentation as well

New Business
- Fill in what we will do up to chapter 7
- User requirements need to be less bullets
- Need a signoff page – use prior groups
- Make sure black/white print works with colored text
- Make corrections by next week

Action Items
- Write up to chapter 7 in future tense
- Rewrite user requirements, some descriptions
- Create signoff page
- Make corrections

MQP Agenda: 12/10/2013

Attendees
Greg Mannheim
Greg Karp-Neufeld
Shun Snoddy
Adam Taylor

Old Business
- Overview on Communispace meeting 12/4
- Status report of MQP document

New Business
- Must give stakeholders the document by 12/18

Action Items
- Polish document so we can present it to Communispace by 12/18

MQP Agenda: 1/24/2014

Attendees
Greg Mannheim
Greg Karp-Neufeld
Shun Snoddy
Adam Taylor

Old Business
- Overview on 1/22 Communispace conference call meeting (snow storm)
- Went over C-Term schedule
- Went over whether presentation after 3/7 would count as overload

New Business
- Write down anything we do right away
- Include everything in the documentation

Action Items
- Work out meeting times
- Organize project plan

MQP Agenda: 1/31/2014

Attendees

Greg Mannheim
Greg Karp-Neufeld
Shun Snoddy
Adam Taylor

Old Business

- Overview on 1/29 Communispace meeting
- Went over general ideas for access forms
- Update on documentation progress

New Business

- Paper due in 2~3 weeks
- Documentation and tool tips for our sections or system only
- On 2/17 review and edit final paper
- Communispace will tell us what to redact
- Post must be finished with paper by the end of C-Term

Action Items

- Start programming functionality in to access forms
- Start finishing up the paper
- Think of ideas for poster and presentation

MQP Agenda: 2/7/2014

Attendees

Greg Mannheim
Greg Karp-Neufeld
Shun Snoddy
Adam Taylor

Old Business

- Overview on 2/5 Communispace conference call meeting (snow storm)
- Update on progress of paper and programming
- Describe universal search functionality

New Business

- Must include how much time we save them with new features
- Presentation on 3/5 (last week of C-Term)

Action Items

- Calculate/research how much time we will save Communispace
- Keep working on paper and programming

MQP Agenda: 2/14/2014

Attendees
Greg Mannheim
Greg Karp-Neufeld
Shun Snoddy
Adam Taylor

Old Business
- Overview of 2/12 Communispace meeting
- Went over scope creep, how we could have prevented it

New Business
- Must talk with stakeholders to work out scope creep

Action Items
- Talk to stakeholders on country issue
- Once scope is solidified again, start programming
- Include lessons learned in paper

MQP Agenda: 2/21/2014

Attendees
Greg Mannheim
Greg Karp-Neufeld
Shun Snoddy

Old Business
- Overview of 2/19 Communispace meeting
- Scope is back on track
- Still programming new features and working on paper
- Talked to Jack/Sean about redactions
- Asked Laura for letter from sponsor

New Business
- Schedule paper due dates/revision dates
- Finish up paper by next week
- Prepare for presentation and poster

Action Items
- Finish up programming
- Ask stakeholders for any recommendations, if any, include in paper
- Finish up paper once we get revisions, send again by 2/28
- Plan to print by Tuesday

Appendix K – Contact Information

Gregory Karp-Neufeld

[REDACTED]

Gregory Mannheim

[REDACTED]

Shun Snoddy

[REDACTED]

Adam Taylor

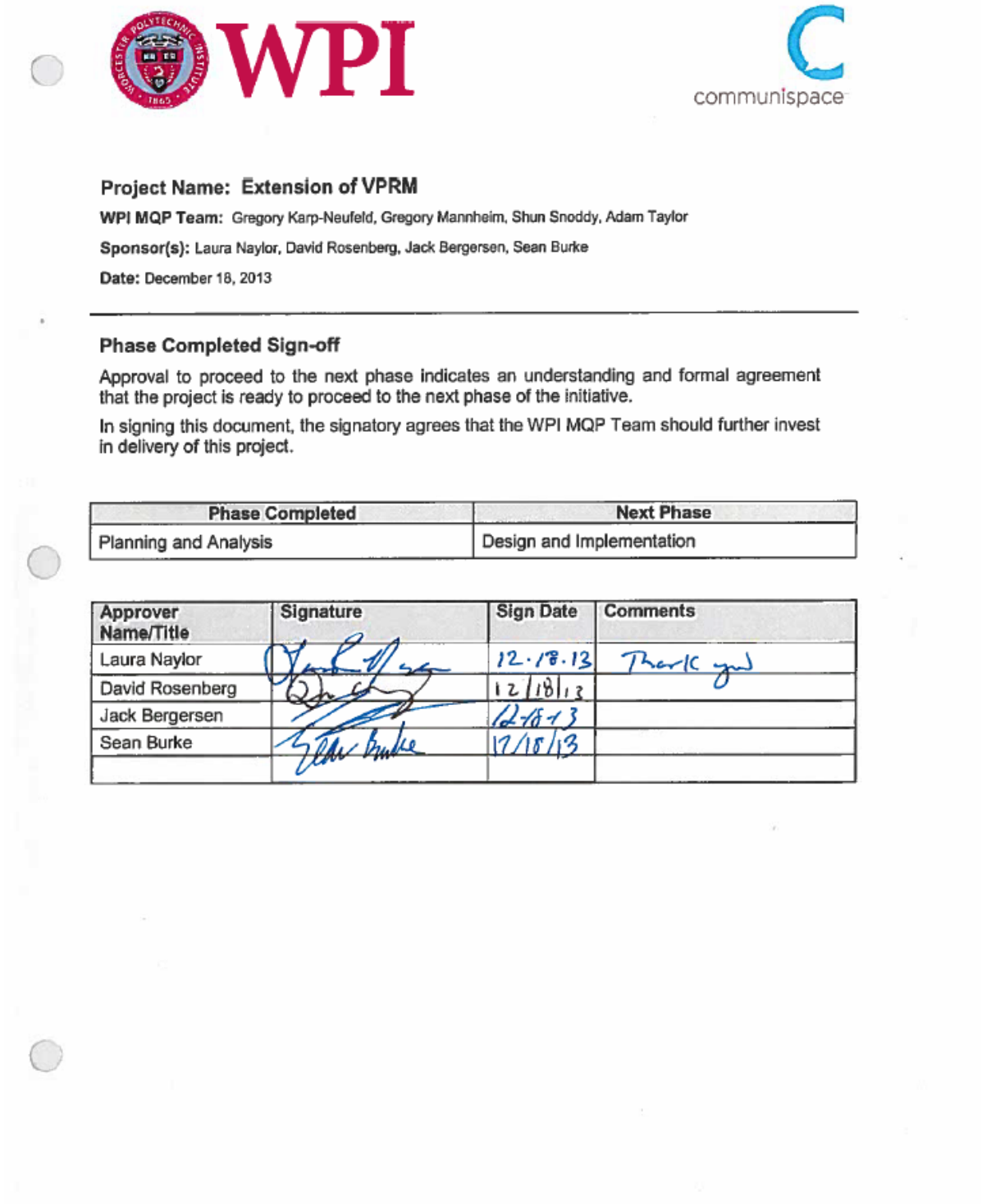
[REDACTED]

Appendix L – Interface Structure Diagram

Figure 55 - Current VPRM Interface Structure Diagram

Figure 56 - Planned VPRM Interface Structure Diagram

Appendix M – Project Sign Off



Project Name: Extension of VPRM

WPI MQP Team: Gregory Karp-Neufeld, Gregory Mannheim, Shun Snoddy, Adam Taylor

Sponsor(s): Laura Naylor, David Rosenberg, Jack Bergersen, Sean Burke

Date: December 18, 2013

Phase Completed Sign-off

Approval to proceed to the next phase indicates an understanding and formal agreement that the project is ready to proceed to the next phase of the initiative.

In signing this document, the signatory agrees that the WPI MQP Team should further invest in delivery of this project.

Phase Completed	Next Phase
Planning and Analysis	Design and Implementation

Approver Name/Title	Signature	Sign Date	Comments
Laura Naylor		12.18.13	Thank you
David Rosenberg		12/18/13	
Jack Bergersen		12-18-13	
Sean Burke		12/18/13	

Figure 57 - Project Sign Off From Completion of Analysis Phase

Appendix N - Letter from Sponsor

February 27, 2014

Dr. Eleanor T. Loiacono
Associate Professor of MIS
School of Business
Worcester Polytechnic Institute
100 Institute Road
Worcester, MA 01609-2280
Dear Professor Loiacono,

The purpose of this letter is to summarize my evaluation of the Major Qualifying Project (MQP) conducted by Gregory Karp-Neufeld, Shun Snoddy, Gregory Mannheim and Adam Taylor during their work with my group at Communispace Corporation. The basic goal of the project was to enhance an application that allows us to centrally capture and report on information about various projects and the associated vendors we utilized to conduct the work. More specifically, we wanted to be able to capture, track and manage the planning elements of anticipated use as compared to actual performance from vendor options as well as a more detailed view of individual execution with media options. Until this point we have been capturing that information in a detailed manner via individual Excel files, in different network folders for each project, making it difficult to view performance across projects.

Our entire group was very pleased with this team and the work they did. They worked together as a team, were very respectful, diligent and thoughtful in their questions and approach. They were regularly here at Communispace every Wednesday working on this project and were quintessential professionals, conducting interviews, planning time effectively with others who were involved and finishing application development.

The first part of their project involved interviews with different employees across the group as well as exploration of the current application. We were very impressed with how quickly they grasped many of the business issues and understood the next phase of data requirements for the current application. They worked out detailed recommended approaches for handling more detailed views of the data and were incredibly patient and effective at getting our organization to make decisions on scope and approaches to evolving things.

In summary, we were very pleased with this team and the work they accomplished. We would never have been able to accomplish this work during this time frame without their assistance and were all impressed with their level of commitment and professionalism.

I believe that what we accomplished with this project will help Communispace to be more efficient, reduce risk associated with employee turnover, and allow us to scale and collaborate globally with our member recruitment efforts. If you have any questions, please feel free to contact me. I look forward to working with you on future MQP projects. It was an absolute delight.

Sincerely,

Laura Naylor
Senior VP, Member Experience and Operations, Client Services
Communispace Corporation

Glossary of Terms

AtTask – Project management software utilized by employees at Communispace for task/project management, issue tracking, document management, time management and progress tracking. Stores information regarding all projects to provide an interface that can be utilized by Communispace employees.

Break-even point – Account term that describes the point in which there is a balance between profits and losses in an investment.

Catalyst – Interface utilized by Communispace to gather market research statistics and information. Community's members are able to log on this this interface and provide individual input and opinion to guide market development.

Campaign - Is a new method of recruitment that focuses on marketing tactics or methods that are used to target a specific audience or market segment.

Communispace – Market Research Solutions Firm located in Boston. Firm provides market information to organizations to improve branding strategies.

Community – A term coined by Communispace to describe the market segment and demographic mix needed by various customers. Communities are given access to Catalyst to provide marketing input.

CORE- Acronym for Community Operations & Recruitment Excellence. Department is responsible for providing efficiency in sourcing for various types of communities. Sourcing department is a sub-division of CORE.

Data land space- Refers to how data is scaled, viewed and maintained. At Communispace, the land space was scaled to efficiently store approximately 20 communities. There are now currently over 200 on a rotating basis.

Gantt Chart – Developed by Henry Gantt, Gantt charts physically display project scheduling and clearly display start and end dates for milestones.

JAD Session – Acronym for Joint Application Design Session. Session in which project sponsors, stakeholders and the project team meet to determine project objective and limitations. Also outlined is the feasibility of a project and the deadlines for project deliverables. JAD sessions commonly include the clarification of the ERD diagram, data flow diagram and workflows. Also, in our case, walkthroughs of current processes are included to help bridge the bridge the gap of knowledge between the project team and Communispace.

Key Metrics – Communispace tracks vendor performance with summary sheets that have key metrics. These key metrics include click-through rate, incidence rate, success rate and cost per log in. These metrics are key in the VPRM system.

Market Segmentation- Refers to the differences in consumer preference given factor such as geographical areas, demographics, psychographics, behaviors and occasions.

Member Appreciation- Community members are given incentives, such as gift cards, to provide accurate and thoughtful market information.

Methodology- Refers to the various project methodologies associated with the systems development life cycle. They include waterfall, Prototyping, iterative, parallel, v-model and agile methods.

MQP- Acronym for major qualifying project. This project serves at the senior capstone project in the WPI curriculum.

Quoted metrics - When Communispace starts a project they need to gather information form the vendors on what they potentially can offer them in terms of cost and number of users. These metrics are called quotes.

Refresh – Term coined by Communispace to name a reboot of an existing project.

ROI- Acronym for return on investment. Accounting term that measures the efficiency of an investment. Calculated as (return of investment)/ (cost of investment)

SDLC- Acronym for systems development life cycle. Phased systems analysis approach to the development of a value added system. Occurs in 4 phases, planning, analysis, design and implementation.

Sourcing- Sub-division of CORE team. Responsible for construction of communities using various vectors, such as vendors, list vendor and online resources.

Summary Sheet- Excel sheet this is created for each project to capture key metrics and performance. These sheets provide details on a project basis but lack the ability to display vendor performance based on several projects.

Use Case- Provides a view into a case of use of a system by outlining actions by the user and the reactions of the system.

Vendor – Provider of individuals of various market segments.

VPRM- Acronym for Vendor Performance and Relation Management System. This system provides users with the ability consolidate vendor performance metrics to determine suitable vendors for a project.

Total Records – Total Universe: Mailed/Impressions/Contacted

Delivered – Portion of the universe that reached the respondent

Opens – Count of unique respondents that open (email)

Clicks – Count of unique clicks (respondents)

Total Responses – Count of screened, completes, and drop outs (akin to visitors)

Total Drop Outs – Count of drop outs from screener (overall)

Pure Qualified – Status of complete in ConfirmIt

Not Qualified – Status of screened in ConfirmIt

Community Duplicates – Count of completes that were marked as duplicates

Suspicious – Count of completes that failed quality checks

Other Back End Screenouts – Count of completes with back end hold

Total Qualified – Net count of completes that meet all back end scrubbing/checks

Invited – Count of respondents uploaded and invited to the community

Logins – count of respondents logged into the community

Total Project Cost – Total cost of the project

Cost per Login Quoted – Variable CPL cost (quoted)

Fixed project cost – Project fees, flat rate

Unsubscribes – Count of unsubscribes from email sent

Quoted Setup or Flat Fee – guaranteed one time charge or flat rate cost

Quoted Project Min Cost – if cost is variable CPL, guaranteed minimum that is required to be paid if logins obtained are not met

Quoted CPL price – For variable CPL cost structure only

Quoted logins – Estimated logins quoted from source based on IR

Planning: Adjust Expected Login Quantity – Projected logins for planning purposes

Calculated Fields

Field	Calculation
Unsubscribe Rate	Unsubscribes/TotalRecords
Unsubscribe to Click Rate	Unsubscribes/Clicks
DeliveryRate	Delivered/TotalRecords
FailedBounced	TotalRecords-Delivered
FailRate	(TotalRecords-Delivered)/TotalRecords
OpenRate	Opens/TotalRecords
ClickRate	Clicks/Opens
Click Rate (NEW)	Clicks/TotalRecords
NoResponse	Delivered - Clicks
NoResponseRate	(Delivered - Clicks)/TotalRecords
DropOutRate	TotalDropOuts/(TotalDropOuts+TotalResponses)
PureIncidenceRate	PureQualified/TotalResponses
PureTerminateRate	NotQualified/TotalResponses
CommunityDuplicateRate	CommunityDuplicates/PureQualified
SuspiciousRate	Suspicious/PureQualified
OtherBackEndScreenoutRate	OtherBackEndScreenouts/PureQualified
FinalIncidenceRate	TotalQualified/TotalResponses
NotInvitedButQualified	TotalQualified-Invited
ConversionRate	Logins/Invited
CostPerLogin	TotalProjectCost/Logins
CostPerResponse	TotalProjectCost/TotalResponses
CostPerInvited	TotalProjectCost/Invited
TargetingPerformanceCostPerMember	TotalProjectCost/PureQualified
AdditionalCostPerMember	(TotalProjectCost/Logins)- (TotalProjectCost/PureQualified)
Cost per qualifed respondent	Total Qualified/TotalProjectCost
Cost per screener respondent	Total Screener Responses/TotalProjectCost
Response Rate	Total Screener Responses/TotalRecords

Bibliography

"Communispace, The Leader in Online Consumer Insights Communities." Communispace, The Leader in Online Consumer Insights Communities. N.p., n.d. Web. 1 Sep. 2013.

Dennis, Alan, Barbara Wixom, and Roberta Roth. Systems Analysis and Design. Hoboken: John Wiley & Sons, 2012. Print.

Ferrell, O. C., and Michael D. Hartline. Marketing Strategy. Mason, OH: South-Western Cengage Learning, 2011. Print.

Kimmel, Paul D., Jerry J. Weygandt, and Donald E. Kieso. *Accounting: Tools for Business Decision Making*. Hoboken, NJ: Wiley, 2011. Print.

Stone, Deborah L., Caroline Jarrett, Mark Woodroffe, and Shailey Minocha. *User Interface Design and Evaluation*. Amsterdam: Elsevier, 2005. Print.

Adamski, Joseph J., and Kathleen T. Finnegan. *Microsoft Access 2010*. N.p.: Course Technology, 2011. Print.

Watson, Richard Thomas. *Data Management: Databases and Organizations*. New York, NY: J. Wiley, 2004. Print.

Ullman, Jeffrey D., and Jennifer Widom. *A First Course in Database Systems*. Upper Saddle River, NJ: Prentice Hall, 1997. Print.

Garcia-Molina, Hector, Jeffrey D. Ullman, and Jennifer Widom. *Database Systems The Complete Book*. 2nd ed. N.p.: Pearson, 2009. Print.

Petroutsos, Evangelos, and Mark Ridgeway. *Mastering Microsoft Visual Basic 2008*. Indianapolis, IN: Wiley/Sybex Pub., 2008. Print.