ETM
ENGINEERING & TECHNOLOGY MANAGEMENT

PDX Urban Wineries Mobile Application Development

PDX URBAN WINERIES

ETM 545 Project Management
Spring 2015

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Purpose

The purpose of this project is to create a multi-faceted mobile application to meet the needs of our client, PDX Urban Wineries. This client has 2 articulated needs, namely increased market exposure and improved engagement with their customers. The creation of this app will meet both of these needs and in return provide our firm with increased market exposure and allow our firm to test the capacity and the viability for adding app development as a regular component of our marketing services. These benefits are strategically aligned with our firm's goals and vision to provide the best customer solutions leveraging market research and analysis. Moreover, we can expect to see a 10% rate of return on this project in addition to revenue sharing for 2 years vis-a-vis advertising within the application. The total project cost is estimated to be $92,531.

Objectives

PDX Urban Wineries is a group of 13 wineries operating in the city of Portland. These wineries are generally smaller in terms of production than typical Willamette Valley wineries; however, they are passionate and quite proud to be making wine in the city environment. They have seen the success of the urban brewery and craft beer scene in Portland and in turn envision the possibility of such growth and success for their own industry.

We will develop and launch an application for PDX Urban Wineries Association. The app will meet the needs of both the client and the consumer by improving the visibility of the urban wineries and the products within the local market. The app will provide news and updates to subscribers and increase consumer engagement with local urban wineries. Another aim is to improve accessibility to the wineries by providing directions and map features to increase foot traffic between the wineries, ultimately increasing the volume of on premise sales.

The app will be developed on a flexible mobile platform, which in turn could be expanded to other geographies and markets. The technical aspects of the project will be outsourced to ensure product quality as it is not part of our company's core competency.

The project will be completed with consideration for the most strategically beneficial release date for the client, specifically October 24, 2015. This date provides our client an opportunity to take full advantage of the app in the lead up to their busiest and highest grossing sales window of the year, that being the Thanksgiving holiday.

As our firm's management has indicated, we are considering the addition of an internal technical department for future software based marketing projects. The final report and project audit will be handed to the Executive Team for use as input in their evaluation of this separate proposal.

Our plan is to successfully complete the project according to the guidelines established with the Core Team and ultimately terminate it by extinction. At the end of the project, ownership of the application will be transferred from our firm to PDX Urban Wineries for any future development or updates.

The project will be deemed a success if completed on time or ahead of schedule and within a 4% variance of the projected budget.

Overview

Managerial Approach

The project team will be organized as a weak matrix within our overall company. This type of structure is the most advantageous when considering our firm's functional organization (Appendix C). The project will take advantage of our firm's internal expertise in the functional departments that are appropriate for the execution of the project, discussed later in the Resources section. The Project Management Office will supply the Project Manager. The Project Manager will manage the project while the individual resources being utilized for the project will be managed by their respective functional department heads. The functional managers are accountable to complete the tasks assigned to them, but are free to vary their team utilization as long as they are meeting the milestone dates assigned. For those tasks which our firm cannot accomplish internally (Appendix A) we will use third party suppliers.

Technical Approach

As mentioned earlier, there are large components of the project, particularly in the later stages of the project life cycle, where the technical skill requirements extend beyond the capabilities of our firm. These tasks revolve around the actual code writing and software development and testing. Please see the Work Breakdown Structure for a detailed listing. For these tasks we will outsource to third party contractors who have successfully bid on our proposals in the early stages of the project. All other aspects of the project follow standard company procedures with respect to project execution.

Schedules

The project is scheduled to begin June 8th, 2015 and the target completion date is October 24, 2015. Based upon our calculations we have a 93.4% confidence factor of bringing this project in on time (see Appendices D, F, and I for reference).

The project has five milestone dates, all of which are detailed in the baseline schedule (Appendix D). Of important note is that the first activity consulting with the wineries (1.1) is the predecessor to three other activities and must be started immediately. Awarding the business contract (2.8), the beta release of the application software (4.04) and finalizing the software and application release (4.7) are all milestones that lie on the critical path and have no associated slack time.

We will conduct internal gate reviews 2-3 weeks prior to each milestone to ensure the tasks are on time and on budget. We will allow for a two week schedule variance on each milestone; however, if the variance is exceeded then an executive review will be ordered. At this point the executive team will convene to decide on the Go-No Go control, that is, will the project continue or not.

Resources

Budget

The total cost for the project will be $92,531. This budget number is split nearly in half between internal costs and outsourcing costs. A graph of our time-phased budget (Appendix L) shows that our projected spending is consistent for the project lifecycle, being fairly linear and absent of major spikes in spending. The budget is based upon our firm's standard burden rate of $75 per hour and spend is assumed to be consistent during the duration of tasks. There are no significant non-labor costs for the project for tooling or physical assets. Again, this budget is based upon the burden rate and the duration estimates provided by our functional managers using historical data from previous projects.

Contractual items

This project will require the use of contracted third party software developers. In fact, the second major deliverable listed in the WBS (Appendix A) is the award of the business contract to the chosen supplier. This supplier will develop the software per the defined feature set and will be accountable for the testing of the software. As we note in our Risk Management Plan, the need to outsource our development is a mitigation strategy for our firm's lack of technical knowledge in software writing. At the same time, it poses a risk of its own in that we have limited means to manage the contracted labor. Therefore we will include in our contract penalties for this supplier with regard to late

completion of work or missed deliverables. We have estimated the outsourced labor using the same $75 an hour burden rate we use internally.

Cost monitoring and control
This project has a very slim margin and the risk of an overrun in the budget could be significant. For this reason we have included a cybernetic cost variance (CV) control to monitor any deviation in the projected budget. This is included in the Appendices. Variances within the green target level do not require intervention, while if they reach the yellow level will trigger a meeting with the core project team to determine what can be done to get the project budget under control. If the variance enters into the red zone then a meeting with the executive team (see Personnel section and Appendix C) will be required to assign containment and countermeasures for the Core Team to execute.

Personnel

The role of project manager will be assigned to Rodrigo. Other members of the core team include, Jane from Legal, Phillip from Purchasing, Walter from Product Design, and Octavia from marketing.

Extended team members will include Ruby from Purchasing, Gwen and Jasper from Product Design, as well as Sal and Laverne from Marketing. The eventual software supplier will be added to the extended team once the contract has been awarded. We have included this on the project organizational chart. For purposes of this project, they are listed under Product Design, as they are, in a sense, technical designers.

In our Risk Management plan we have outlined the possible need for an Executive Team to be used in the event of a slippage in schedule or large variances on spending. This team will include the heads of all of the associated functional departments.

Risk Management Plans

We have identified 4 major risks that could potentially and negatively affect the project. These are labor resource estimation, project deprioritization, technical competency and finally outsourcing.

Labor Resource Estimation
Historically our firm has underestimated the labor requirements in the planning stages of projects. This project as with those in the past uses the estimates of our functional managers. Based upon this historical data we can add in a 5% contingency for this risk.

Additionally we will have the ability to crash certain tasks if necessary, pulling additional resources from the functional departments. Due to the risk of budget overrun from labor resources affecting our project profit and margin, we have implemented a Cybernetic Cost Control as seen in Appendix N.

Project Deprioritization
Our firm has many projects operating at any given time. This business strategy comes with the risk that this project simply loses its priority. In other words, project resources may not be available when expected. We accept this risk with the mitigation of including four weeks of float time in the schedule at the initiation of the project.

Technical Competency for Software Development
As this proposal has pointed out already we do not have the technical skills needed to write the actual software. Our mitigation strategy is to outsource this portion of the project to a contracted third party.

Outsourcing
Of course, outsourcing the work brings its own risks. We plan to receive frequent status updates and we have included a penalty clause in the contract for late delivery of work to ensure they is accountability on our supplier's side as well.

Evaluation Methods

After the project termination a final report will be submitted to the Executive Management. We will evaluate the project based upon the efficiency of meeting both the project budget and schedule and whether or not the project was able to execute to the planned scope and feature set. At the completion of the project the Project Manager will conduct the final audit following the established project audit protocol within the PMO.

We will also gather feedback from the customer to determine the level of their satisfaction with the application when it is completed. We will evaluate how they viewed the project overall and how well the application meets their needs as well as how well the project team worked with their company. Since creating outputs of projects for outside customers are our bread and butter, we will use the standard survey from our PMO used at the conclusion of every project.

There is a more difficult component of the project evaluation that our firm does not often encounter. This has to do with the future potential for adding a software development department. Overall lessons learned will be collected; however, we will pay particular

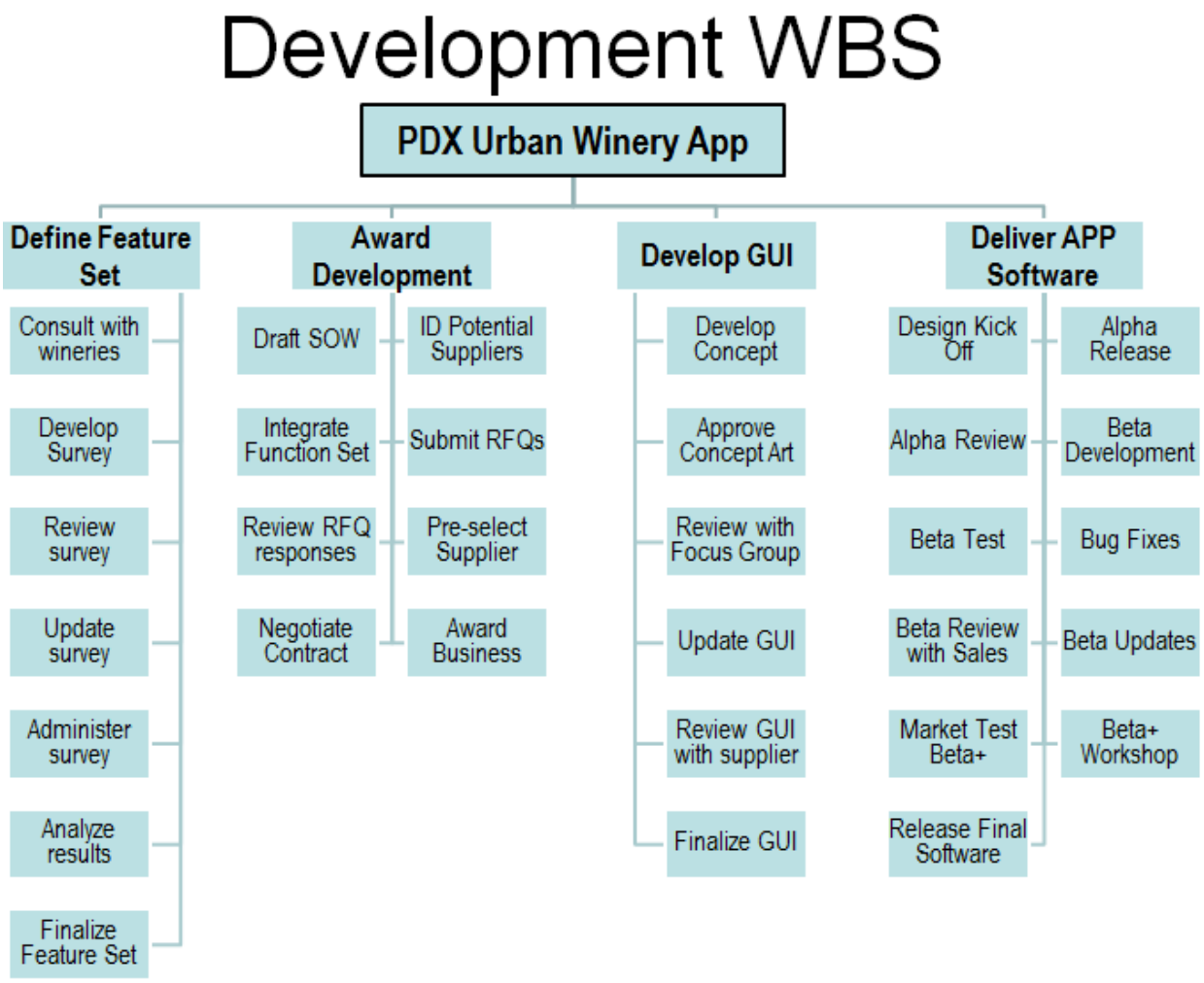
attention to insights relating to the actual software development portion of this project. We will use this final evaluation to inform a recommendation to the executive team on whether or not to add the new software development team to our portfolio.

Conclusion

In summary, the PDX Urban Wineries Mobile Application Development Project meets the needs of our client and is strategically aligned with our firm's internal goals. If started on June 8, 2015 we have a 94% confidence factor of completing the project by the October 24, 2015 deadline. This project will give us a 10% return and in addition, it will open up new markets for our marketing firm, provide data for assessing the possibility of adding a technical department to our firm, and provide additional revenue with application related advertising share for 2 years after the application's release.

Appendices

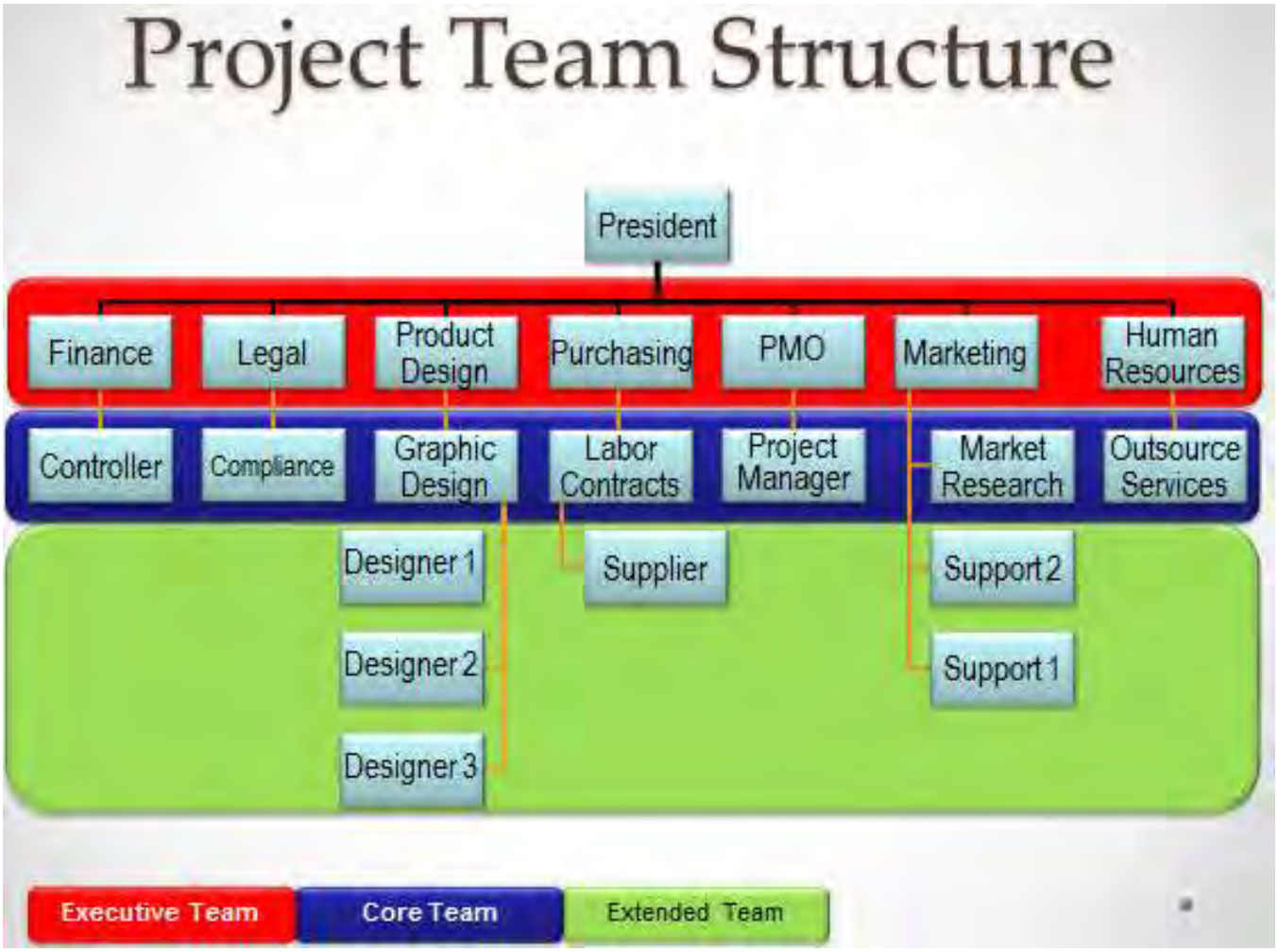
A. Work Breakdown Structure



B. RACI Chart

		PMO	Legal	Purchasing	Purchasing	Product Design	Product Design	Product Design	Marketing	Marketing	Marketing	Supplier
	Subtasks	Rodrigo	Jane	Phillip	Ruby	Walter	Jasper	Gwen	Octavia	Sal	Laverne	
1.1	Consult with PDX urban wineries on needs / wants	A	C			C			R	R		
1.2	Develop survey for feature and function set for market	A	C						R	R		
1.3	Review survey questions with Legal/Compliance Dept	A/R	R	R		R			R	R		
1.4	Update survey to include internal feedback	A							R	R		
1.5	Administer Survey to local consumers on wishlist of functions	A							R	R	R	
1.6	Anaylze results and generate recommendations from consumers	A	I	I		I			R	R		
1.7	Finalize features set for scope of work	A							R			
2.1	Draft Scope of work for application development	A		R	R							
2.2	identify potential contract suppliers for development work	A		R								
2.3	Integrate function set list from consumer surveys	A				R	R		C			
2.4	Submit RFQs and proposal to suppliers	A		R								C
2.5	Review returned RFPs internally	A	I	R	R	I			I			
2.6	Pre-select development supplier and confirm with team	A	C	R	R	C			C			
2.7	Negotiate final contract terms and resolve any discrepancies	A		R								C
2.8	Award business contract	A	I	R		I			I			C
3.1	Develop concept art for user interface	A				R	R	R	C			
3.2	Approve Concept Art internally	A/R	R	R	R	R	R	R	R	R	R	
3.3	Review concept user interface with focus groups	A				R			R	R	R	
3.4	Integrate feedback from focus group and finalize initial design of GUI	A				R	R		C			
3.5	Send GUI design to development team for review	A		R		I			I			C
3.6	Finalize GUI based on development team feedback	A		I		R			I			I
4.01	Design kick off with development supplier	A/R	R	R		R	R	R	R	R	R	R
4.02	Alpha release software development	A		I								R
4.03	Alpha review with project team	A/R	R	R		R	R	R	R	R	R	R
4.04	Beta release software development	A		I								R
4.1	Beta testing with Professional Services team	A		I								R
4.2	Bug fixes recommended to Core team	A	C	C		C			C			R
4.3	Betad Review with marketing / sales team	A/R		I					R	R	R	R
4.4	Beta Updates recommened to supplier development team	A		I		I			R	R	R	R
4.5	Market test Beta+ version of application with customers	A		I		I			R	R		I
4.6	Beta+ workshop with consumers and development team for final update	A/R		R		R	R	R	R	R	R	
4.7	Release Final application software	A	I	I		I			I			R

C. Organizational Structure

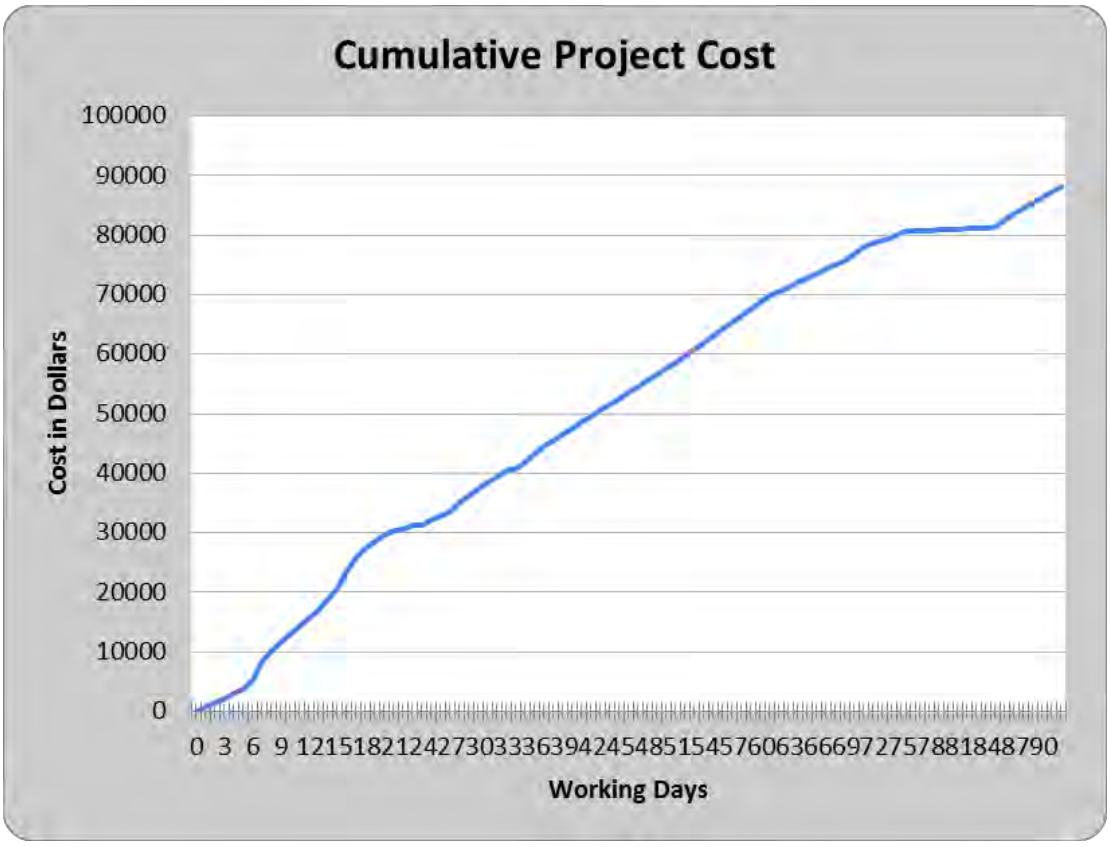


D. Aggregate Schedule with Milestones

Milestone Tracking		Defined Feature Set	Award Contract	Finalize GUI	Beta Release	Final Release
Project Start	6/8/2015					
	Original Plan	6/23/2015	7/9/2015	7/9/2015	8/17/2015	10/24/2015
	Gate Review	NA	6/23/2015	6/23/2015	8/1/2015	9/23/2015
	Confirmed Date					
	Actual					
Comments on Revised Dates:						

E. Bottom Up, Time Phased Budget

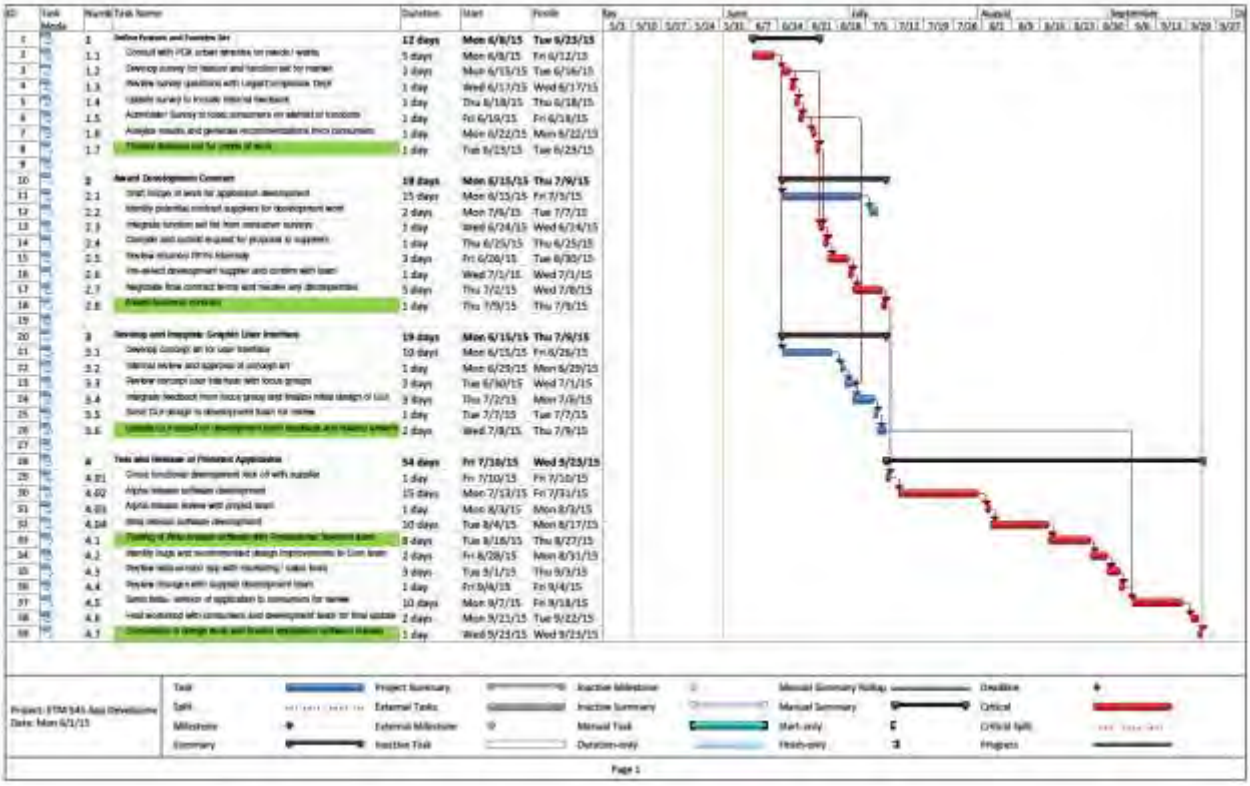
		Total Budget		Burden Rate	$75
	Subtasks	Effort (hours)	MP $$	Prof Services	
1.1	Consult with PDX urban wineries on needs / wants	50	$ 3,750		
1.2	Develop survey for feature and function set for market	20	$ 1,500		
1.3	Review survey questions with Legal/Compliance Dept	20	$ 1,500		
1.4	Update survey to include internal feedback	10	$ 750		
1.5	Administer Survey to local consumers on wishlist of functions	30	$ 2,250		
1.6	Anaylze results and generate recommendations from consume	40	$ 3,000		
1.7	Finalize features set for scope of work	10	$ 750		
2.1	Draft Scope of work for application development	150	$ 11,250		
2.2	identify potential contract suppliers for development work	8	$ 600		
2.3	Integrate function set list from consumer surveys	8	$ 600		
2.4	Submit RFQs and proposal to suppliers	2	$ 150		
2.5	Review returned RFPs internally	30	$ 2,250		
2.6	Pre-select development supplier and confirm with team	20	$ 1,500		
2.7	Negotiate final contract terms and resolve any discrepancies	20	$ 1,500	$ 4,000	
2.8	Award business contract	3	$ 225		
3.1	Develop concept art for user interface	20	$ 1,500		
3.2	Approve Concept Art internally	15	$ 1,125		
3.3	Review concept user interface with focus groups	20	$ 1,500		
3.4	Integrate feedback from focus group and finalize initial design	15	$ 1,125		
3.5	Send GUI design to development team for review	2	$ 150		
3.6	Finalize GUI based on development team feedback	8	$ 600		
4.01	Design kick off with development supplier	30		$ 1,000	
4.02	Alpha release software development	200		$ 15,000	
4.03	Alpha review with project team	30		$ 1,000	
4.04	Beta release software development	150		$ 11,250	
4.1	Beta testing with Professional Services team	80		$ 6,000	
4.2	Bug fixes recommended to Core team	15	$ 1,125	$ 1,125	
4.3	Betad Review with marketing / sales team	20	$ 1,500		
4.4	Beta Updates recommened to supplier development team	10	$ 750	$ 225	
4.5	Market test Beta+ version of application with customers	10	$ 750		
4.6	Beta+ workshop with consumers and development team for fir	25	$ 1,875	$ 450	
4.7	Release Final application software	60		$ 4,500	
		Totals	$ 43,575	$ 44,550	


Cumulative Project Cost
100000
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
Cost in Dollars
0 3 6 9 12151821242730333639424548515457606366697275788184879 0
Working Days

F. Tasks and Time Variances

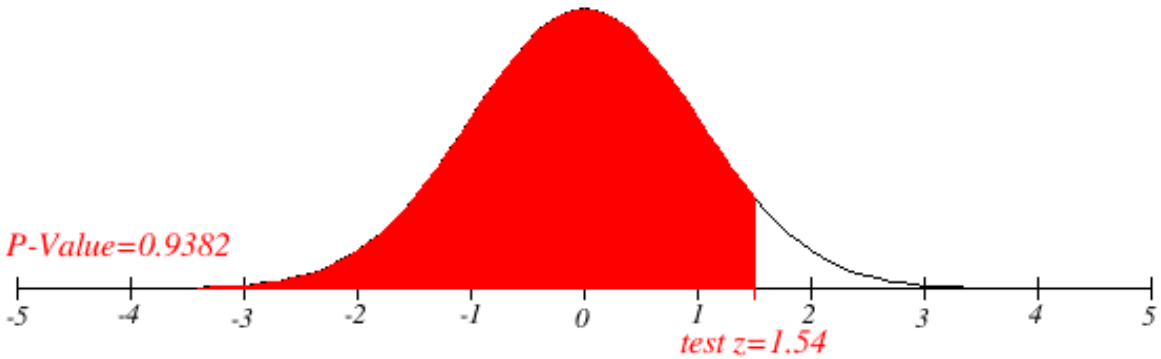
Deliverables		Subtasks	Optimistic	Most Likely	Pessimistic	TE	Variance	Std Dev
Define Feature and Functic	1.1	Consult with PDX urban wineries on needs / wants	37.00	42.00	47.00	42.00	2.778	1.67
	1.2	Develop survey for feature and function set for market	13.00	15.00	16.00	14.83	0.250	0.50
	1.3	Review survey questions with Legal/Compliance Dept	8.00	9.00	10.00	9.00	0.111	0.33
	1.4	Update survey to include internal feedback	6.00	9.00	11.00	8.83	0.694	0.83
	1.5	Administer Survey to local consumers on wishlist of functio	33.00	40.00	45.00	39.67	4.000	2.00
	1.6	Anaylze results and generate recommendations from consu	24.00	27.00	31.00	27.17	1.361	1.17
	1.7	Finalize features set for scope of work	12.00	13.00	16.00	13.33	0.444	0.67
Award Development Contr	2.1	Draft Scope of work for application development	108.00	125.00	153.00	126.83	56.250	7.50
	2.2	identify potential contract suppliers for development work	10.00	16.00	20.00	15.67	2.778	1.67
	2.3	Integrate function set list from consumer surveys	6.00	8.00	10.00	8.00	0.444	0.67
	2.4	Submit RFQs and proposal to suppliers	3.00	3.00	4.00	3.17	0.028	0.17
	2.5	Review returned RFPs internally	18.00	20.00	25.00	20.50	1.361	1.17
	2.6	Pre-select development supplier and confirm with team	8.00	13.00	14.00	12.33	1.000	1.00
	2.7	Negotiate final contract terms and resolve any discrepancie	36.00	40.00	49.00	40.83	4.694	2.17
	2.8	Award business contract	4.00	4.00	5.00	4.17	0.028	0.17
Develop Graphic User Inter	3.1	Develop concept art for user interface	48.00	67.00	79.00	65.83	26.694	5.17
	3.2	Approve Concept Art internally	5.00	8.00	10.00	7.83	0.694	0.83
	3.3	Review concept user interface with focus groups	15.00	17.00	21.00	17.33	1.000	1.00
	3.4	Integrate feedback from focus group and finalize initial desi	12.00	19.00	23.00	18.50	3.361	1.83
	3.5	Send GUI design to development team for review	3.00	3.00	4.00	3.17	0.028	0.17
	3.6	Finalize GUI based on development team feedback	10.00	13.00	16.00	13.00	1.000	1.00
	4	Design kick off with development supplier	9.00	10.00	13.00	10.33	0.444	0.67
	4	Alpha release software development	97.00	125.00	149.00	124.33	75.111	8.67
	4	Alpha review with project team	8.00	9.00	11.00	9.17	0.250	0.50
	4	Beta release software development	69.00	89.00	106.00	88.50	38.028	6.17
Deliver APP Software	4.1	Beta testing with Professional Services team	53.00	60.00	73.00	61.00	11.111	3.33
	4.2	Bug fixes recommended to Core team	12.00	15.00	19.00	15.17	1.361	1.17
	4.3	Betad Review with marketing / sales team	18.00	20.00	25.00	20.50	1.361	1.17
	4.4	Beta Updates recommened to supplier development team	4.00	4.00	5.00	4.17	0.028	0.17
	4.5	Market test Beta+ version of application with customers	90.00	100.00	110.00	100.00	11.111	3.33
	4.6	Beta+ workshop with consumers and development team fo	14.00	16.00	16.00	15.67	0.111	0.33
	4.7	Release Final application software	21.00	38.00	46.00	36.50	17.361	4.17
				Sum of Hours Critical Path TEs		758.83	225.64	Hours sum o
					Sum of Days	94.85	28.20	Days of varia
				Project Start		6/8/2015		
				Desired Complete		10/24/2015		
					Z=	1.51	93.4%	

G. Gantt Chart



H. Activity On Node Diagram
See attached drawn AON

I. Probability Diagram
From PERT analysis in Appendix F



J. Resource Load Table
See attached Resource Load Table

K. Planned Value Table
See Attached Planned Value Table

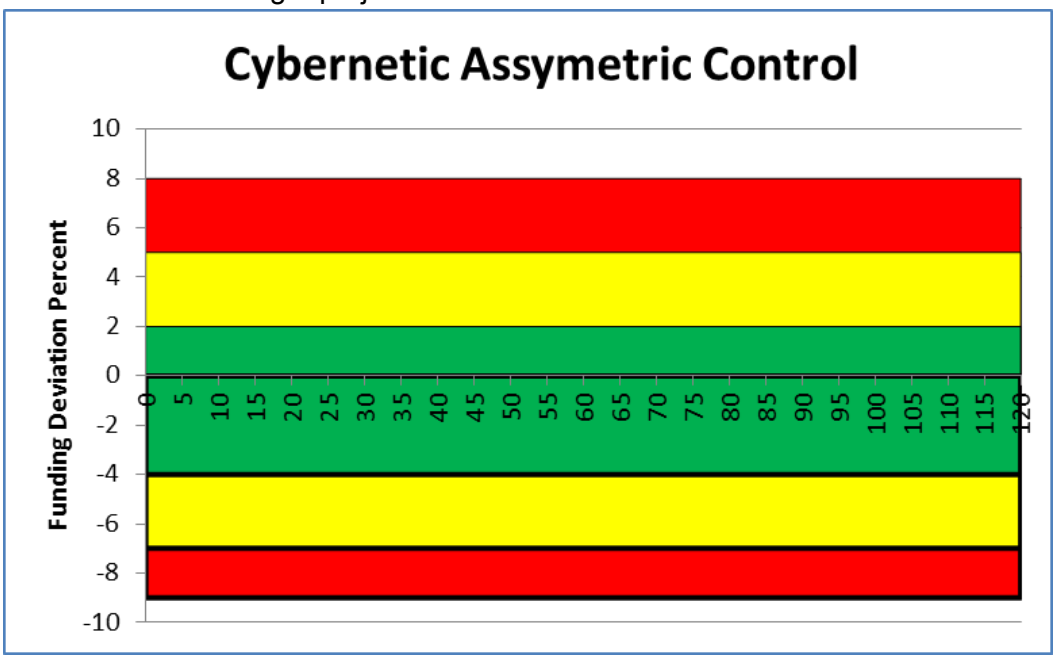
L. Planned Value Chart

M. Control Measures
We will be utilizing a cybernetic control plan for costs which utilizes multiple trigger levels for review by the Core Team and Executive Team. We chose the cybernetic control due to the high risk of cost overrun on this project as a new business model for our company.

For Schedule, we have implemented Quality Gate reviews 2-3 weeks ahead of each milestone to ensure the tasks are on track, or to allow enough time to react prior to reaching critical dates in the schedule.

N. Control Charts

Cost control variance chart – We chose to utilize a consistent project control for the duration of the project where variance of -4%/+2% was acceptable and did not require intervention. We chose to use +2% overrun as the target as 50% of our 4% variance target for a 'successful' project. We are more lenient on underrun since we expect it is likely a lag in costs being charged to the project. Once variance increases outside these bounds, the Core Team will be required to meet to understand what is causing the variances and take corrective actions. If the team cannot resolve the issue and it goes beyond -7%/+5% the Executive Team will be required to step in and define countermeasures to get project back on cost.



For schedule, we will utilize the defined Quality Gate review schedule to track progress of projects and update dates as needed to track actual performance to plan.

Milestone Tracking		Defined Feature Set	Award Contract	Finalize GUI	Beta Release	Final Release
Project Start	6/8/2015					
	Original Plan	6/23/2015	7/9/2015	7/9/2015	8/17/2015	10/24/2015
	Gate Review	NA	6/23/2015	6/23/2015	8/1/2015	9/23/2015
	Confirmed Date					
	Actual					
Comments on Revised Dates:						

O. Project Termination Requirements

Project Closing Tasks	Owner	Complete Date
Hand off ownership of application	Purchasing	
Close out development Pos	Purchasing	
Final supplier correspondance and assessment	Purchasing	
Final audit of project costs	Finance	
Final calculation of project profit	Finance	
Document baseline schedule and budget for reference	Project Manager	
Compile project report and submit to Executive Team	Project Manager	
Facilitate Lessons Learned	Project Manager	
Release Core Team members to other projects	Functional Managers	
Compliance assessment (when relevant)	Legal	