Title: Apollo Hospital Patient Database Upgrade

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Report No.:
Type: Student Project
Note:

Purpose

The purpose of this project to centralize, standardize, unify the Apollo Hospital's patient management database across all locations. This will allow for reduced overhead and conflicts due to patient scheduling, patient records review/requests, and information sharing. This will result in a more efficient, streamlined, and error-free experience for our patients and our staff.

Objectives

The objectives of this project are fairly straight forward, and will revolve around the following key points. The specific objectives of the project will be developed during the first phase (Requirements Specification Document) which will be used for the specifics of the vendor contracts, data points for review, and signoff. The high-level business and customer goals are as follows:

Patient mobility - able to access full records in any hospital
Improved Patient Record Access – through use of web portal / mobile app. Better individual understanding and personalized care
Improved Doctor / patient interaction – scheduling, communication (symptoms, feelings, etc) through mobile app and web portal, reduced visit duration
Improved employee satisfaction – Better track of tasks and patient visit schedule, easier access to all hospital departments
Improved patient satisfaction - Patient interactions are better planned and communicated, less unknowns
Improved revenue through patient retention, more efficient, thorough, and immediate care, new patient attraction through technology and lifestyle integration

Overview

The existing hospital system has a non-integrated patient management database, thus records, schedules, and metadata is difficult to send between hospitals and departments, which results in slower overall patient care and longer average visit durations. Bringing a new centralized software online, merging the existing patient and company data in, will allow the hospital to improve numerous aspects of its business, generating additional revenue through ultimately shorter patient visits, higher levels of care, and less billing mistakes. The project involves several key phases namely requirement specification document, vendor selection, test implementation, test implementation review, live implementation and project termination. The project requires a project manager, business analyst, system admin, training team, quality analyst team, training team, help desk and a vendor. The project manager will report to the IT director (Exhibit A shows the company organizational chart).

The Work Breakdown Structure (Exhibit B) hierarchical planning system was used to divide the project into multiple deliverables and tasks. Tasks were categorized under each deliverable and represented in an organizational chart. Resource responsible and accountable for each task are defined in the RACI matrix (Exhibit C). Bottom estimate (Exhibit D) is compiled based on the

resources and effort required to accomplish each task. Baseline schedule and phases (Exhibit E) created based on the work breakdown structure and effort estimate. Variance and expected time (Exhibit G) to complete each task are calculated based on the optimistic, most likely and pessimistic effort required to accomplish each task. Based on the expected time, Gantt chart (Exhibit H) is created. It shows the tasks in the horizontal bars, duration for each task, schedule based on the successor and predecessor activities. The slack time for each activity and critical path of the project are defined based on the task/activity precedence relationship in the Activity on Node (AON) diagram (Exhibit I). Exhibit J shows our probability of completion based on the critical path.

Schedules

The project begins on 3/1/2016 and is scheduled to complete on 8/23/2016 as per our calculated expected time. These are the expected phase completion dates:

Requirement Specification Document – 3/16/2016
Vendor Selection – 4/14/2016
Test Implementation – 6/3/2016
Test Implementation Review – 6/30/2016
Live Implementation – 8/18/2016
Project Termination – 8/23/2016

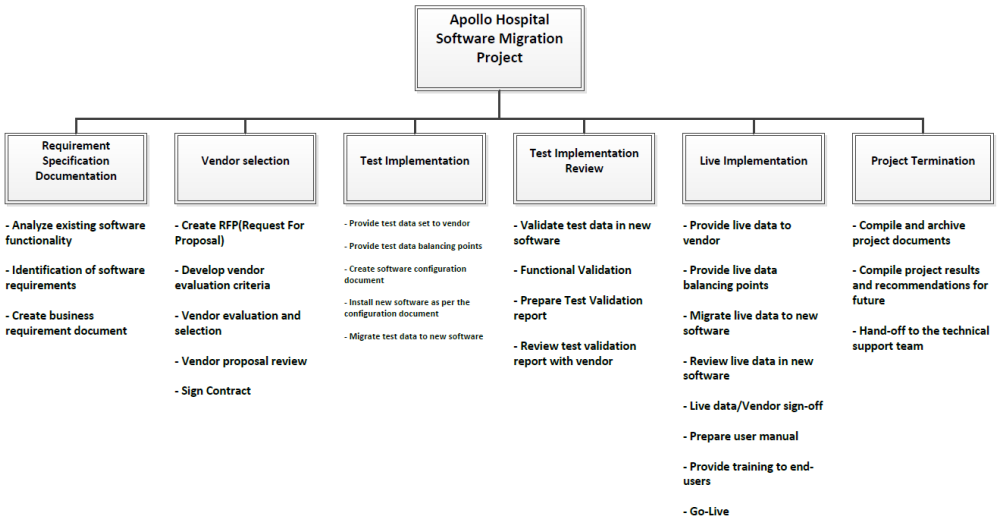


Exhibit B – Work Breakdown Structure

Exhibit J shows our probability of completion diagram based on the critical path. As this project has high variances for multiple tasks, we calculated the likelihood of completion duration and graphed this.

Based on our calculations, we require 173 business days to achieve a 95% probability of on-time completion.

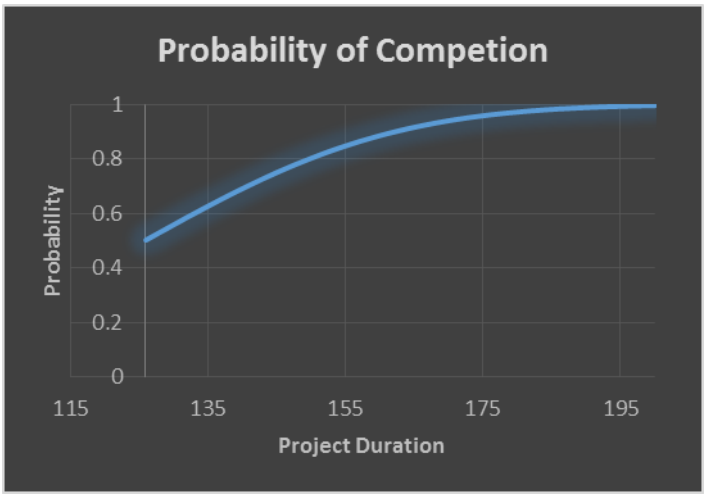


Exhibit J – Probability of Completion

Resources

The total cost of this project is expected to be $170,158. This cost is broken down into the following:

$100,000 paid to vendor for software and migration services.
$59,575 is based on the effort required by the Apollo IT Division team.
$10,583 risk reserve (see Risk section).

The effort (working hours) required is excluding the vendor effort for this project as that is controlled through the capital expenditure. The test migration and live migration activities are outsourced to a vendor at a fixed negotiated cost, with 50% due at signing and 50% due at project completion.

The project will require support from the following teams in the Apollo hospital IT Division:

Project manager
Business analyst
System admin
Quality analyst
Helpdesk
Training

Throughout the project there are various points in time where the resource utilization and schedule will require more than one member for a given team to complete on time. The number of resources and effort required from each team per day is attached in Exhibit K. Project budget calculated based on the effort required for each task is attached (Exhibit D and F). Where more than one member is required from the team, this will not affect the cost as the budget estimation is based on the total number of hours (effort) required to complete the task.

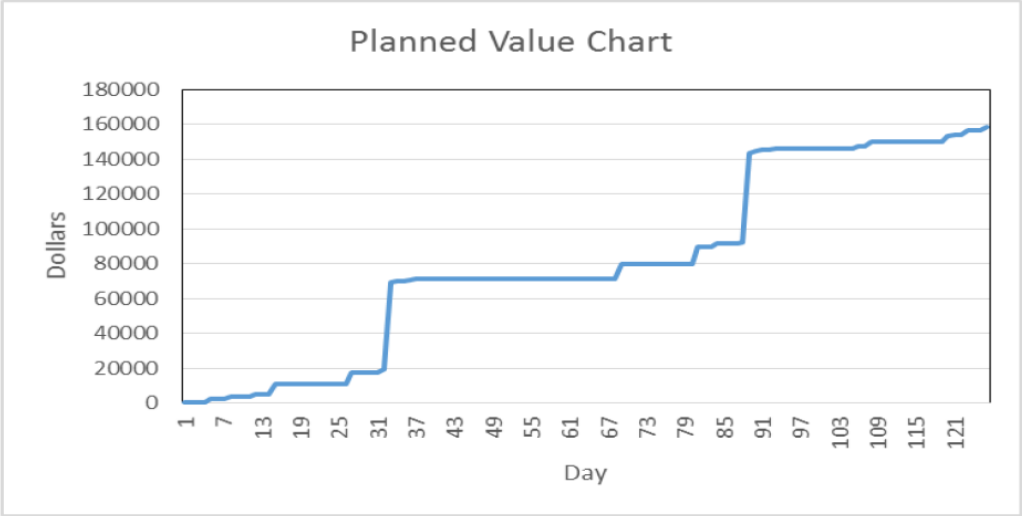


Exhibit L –Planned Value Chart

Personnel

Below is a listing of the personnel involved in our project. Exhibit C shows the responsibility for each team in each task (RACI Chart) and Exhibit A shows the team structure in relation to the organization's structure.

Project Manager: They manage the cost, schedule and risks of the project. They also ensure that project is on-track, scope is attained with the expected quality. They act a liaison between the vendor and hospital management/project team. They share the project progress report with the top management and keep them informed on the risks and budget. They will work along with the vendor in the implementation phase to make sure the end product is as per the requirements detailed in first phase, Requirement Documentation. .

Business Analyst: They gather all the requirements for the project and document the same. They communicate with the project manager and end user to identify all the requirements in the requirement document. A major task of business analyst is the validation of the end product to make sure that all the requirements are implemented as designed and goal is attained.

System Admin: The system admin team will ensure that the software requirements are technically detailed, and ensure that the existing hardware will comply with the software. They will also ensure that the software is installed and configured based on the requirements discovered and documented.

Quality Analyst Team: Quality analyst team verifies the quality of the product delivered. They analyze the requirements, create test cases and execute them. They track the defects/bugs in the conversion. The Quality Analyst guide the team members to accomplish the task and track the testing schedule. They share the progress and defect tracking report with the project manager. Therefore, quality analyst team interacts with the business analyst to understand the requirement, development team to share the defect tracking sheet and understand the changes made and project manager to share the defect and progress reports.

Helpdesk: Helpdesk team support the end user in using the application. At project termination the standard support for hospital staff will be routed to the helpdesk team as the new software becomes part of the firm standard.

Training team: This team will have the minimum required technical and business knowledge to understand the application. They will be trained by the core IT team to understand the application. They will transfer the knowledge to the end-users in all locations.

Vendor: The vendor will provide two major aspects to this project: the first is the software itself (a product), and the second is the conversion of existing data into the new software (a service). They will be required to report status and various issues as they arise to the project manager to properly monitor and control the project. These aspects will be outsourced to the vendor under a fixed fee contract to control costs.

Risks and Risk Management Plans

Project risks are dealt with in various ways for this project. The primary factors of project success in all cases are Schedule, Scope, and Budget. The highest risks for this project lie in the validation phase for the test conversion. This is essentially a dry run of the conversion, and is done to address any issues that would have appeared if we went straight to live. This phase could easily double in the time required, and thus has the highest variance. We will also ensure in our contract negotiations that if the issues found during this phase are numerous or critical enough that a second test phase may need to occur. While the actual chance of this happening will depend on the quality and detail of the vendor's conversion, we are controlling this risk by clearly identifying the data points and requirements before the vendor selection, so they can be as prepared as possible. The below table is a listing of expected risks, their likelihood, their impact, and mitigation plans at a high level, followed by a detailed calculation of the two highest risks:

Risk	Likelihood	Impact	Mitigation
Test Conversion Issues	High	Schedule delay	2nd test phase needed, Schedule reserve
Data integrity issues with current data	Medium	Schedule delay, Added costs	Internal resources to clean up, Schedule reserve
Vendor cannot meet contract / Vendor conflicts	Low	Schedule delay, Added costs	Backup vendor, Contract clause
Issues related to Internal Resources (lack of resources, absenteeism)	Low	Schedule delay	Use of additional or different team members
Live Conversion Failure (various)	Very Low	Schedule delay, Added costs, Customer impacts	Test Conversion, 2nd Test conversion if needed
Software does not meet expectations	Low	Schedule delay, Added costs	Trials and demos in Phase 1, Backup vendors identified in Phase 1

Risk: Test Conversion Issues. This could be manifested in various ways, essentially impacting tasks (C5, D1-D5). If one or more issues arise, all tasks must be re-evaluated.
Impact: Additional internal effort required – 644 hours (repeat tasks D1-D5) at an internal cost of $19,180. This will also include an additional conversation by vendor at a duration of 30 days. Total additional duration is 48.5 days.
Mitigation Plan: The vendor contract will be written (Task B4) such that a 2nd test conversion will be done at no additional cost if required. The remaining internal cost is $19,180 and a schedule delay of 48.5 days.

Likelihood high = 50%

(50%) * $19180 = $9,590
(50%) * 48.5 = 24.25 days

Our mitigation plan requires $9,590 (or 24.25 days) for a risk contingency.

Risk: Data integrity issues with current data. This means that there are inconsistencies within our data that the vendor discovers during the conversion.
Impact: Additional internal effort required – 45 hours (Task C1-C2) + 80 hours to fix inconsistencies. $1575 additional internal costs. 5.63 day duration schedule delay.
Mitigation Plan: The mitigation plan for this risk is setting aside funds in a risk reserve (for internal resources) to resolve issues if they arise. This would 80 hours, 40 for sysadmin and 40 for quality assurance

Likelihood medium = 25%

(25%) * (1575 + 40*(25) + 40*(35)) = $993
(25%) * (5.63 + 5) = 2.65 days

Our mitigation plan requires $993 (or 2.65 days) for a risk contingency.

Thus a total risk reserve will be the sum of the values from our two highest risks as follows:

Risk Reserve = $9,590 + $993 = $10,583 to be set aside
Schedule Reserve = 24.25 + 2.65 = 26.9 days in reserve for schedule delays

Evaluation Methods / Monitoring and Control

The primary aspects that can be managed for a project are Scope, Schedule, and Budget (resources), and all three must be controlled and monitored equally. Overall project control will be through 2 different monitoring and control mechanisms: SPI monitoring and GO / NO GO Phase gates.

Exhibit N contains a listing and explanation of the high-variance tasks in each phase that need to be closely monitored. There then would be a copy of Exhibit O for each critical task in Exhibit N. To monitor the schedule variance, we will consider and track the Earned Value (effort x cost) less the Planned Value (cost x duration) by extrapolating out the data from Exhibit K and L (the resource load table and planned value table). To monitor the project continuously, we will use the Schedule Variance and the Schedule Performance Index, with 1 being on schedule, greater than one is ahead of schedule, and less than one is behind:

$$SV = EV - PV \qquad SPI = EV / PV$$

We can then graph the SPI on the chart provided in Exhibit O to monitor when intervention should occur. Exhibit O is sourced from Project Management Fundamentals (Meredith, Mantel, 2012). The critical action values are investigate at 1.2 or higher (20% ahead of schedule, why?), monitor carefully at .8 to .9 (10-20% behind schedule), etc. These values will be used throughout the lifecycle of the project.

Where vendor tasks exist for 1 week or longer durations (such as test and live conversion), we will rely on bi-weekly updates from the vendor to confirm scheduled delivery.

The results of the above values will allow us to track our critical tasks within a phase. To move to the next phase, we must complete all tasks in the current phase, hence the GO / NO GO phase gates. This means that SPI will be used to track and watch from schedule overages within a phase, and then once the tasks are all completed and signed off by the resource (confirmed by the PM) the next phase will begin.

Project Termination

The type of project termination for this project is Termination by Integration as we are integrating and replacing the existing patient management system with a new software, thus distributing the elements of the software to become the new standard. There are many tasks associated with termination are shown in Exhibit P.

Exhibit A - Organizational Structure

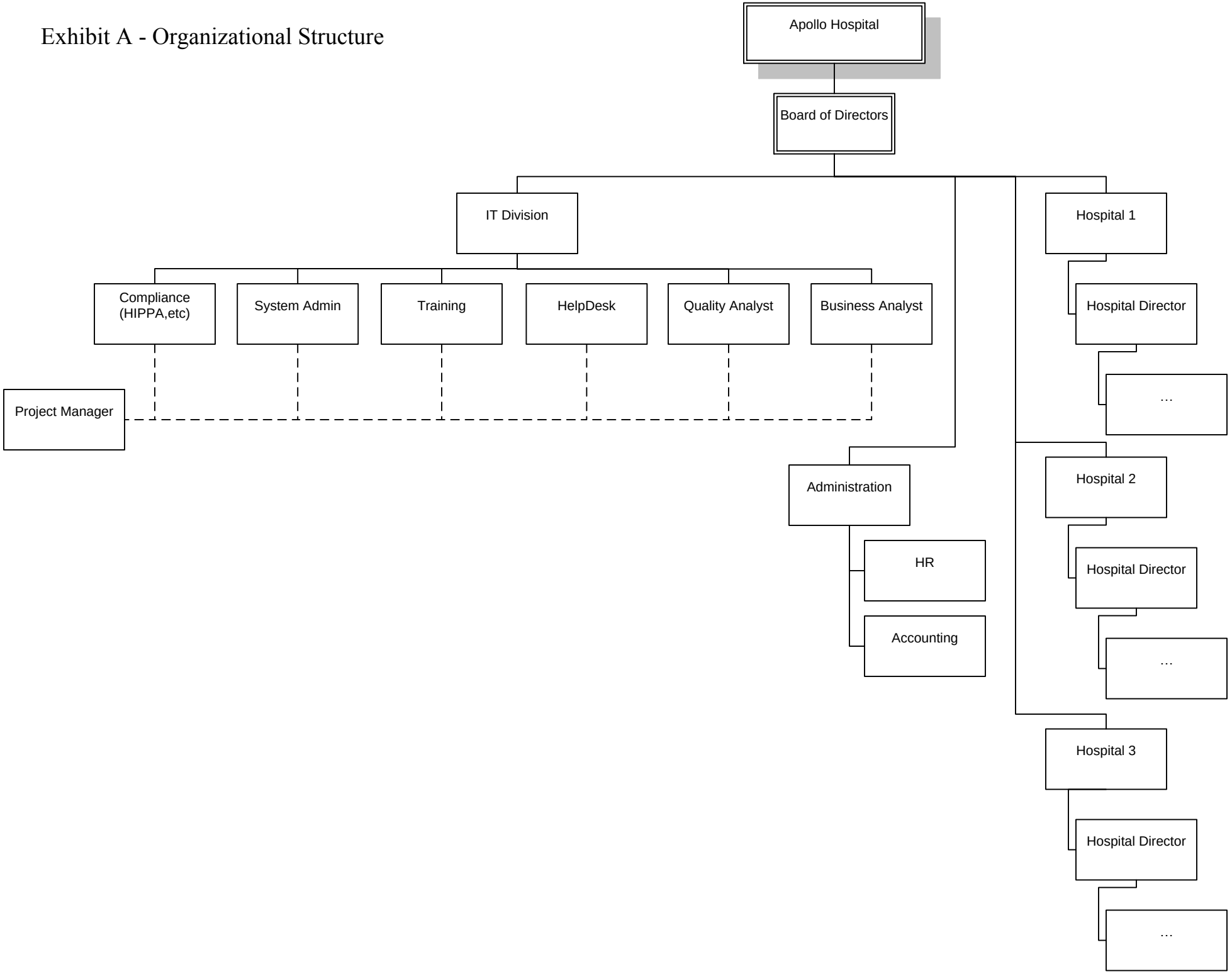


Exhibit B - WBS

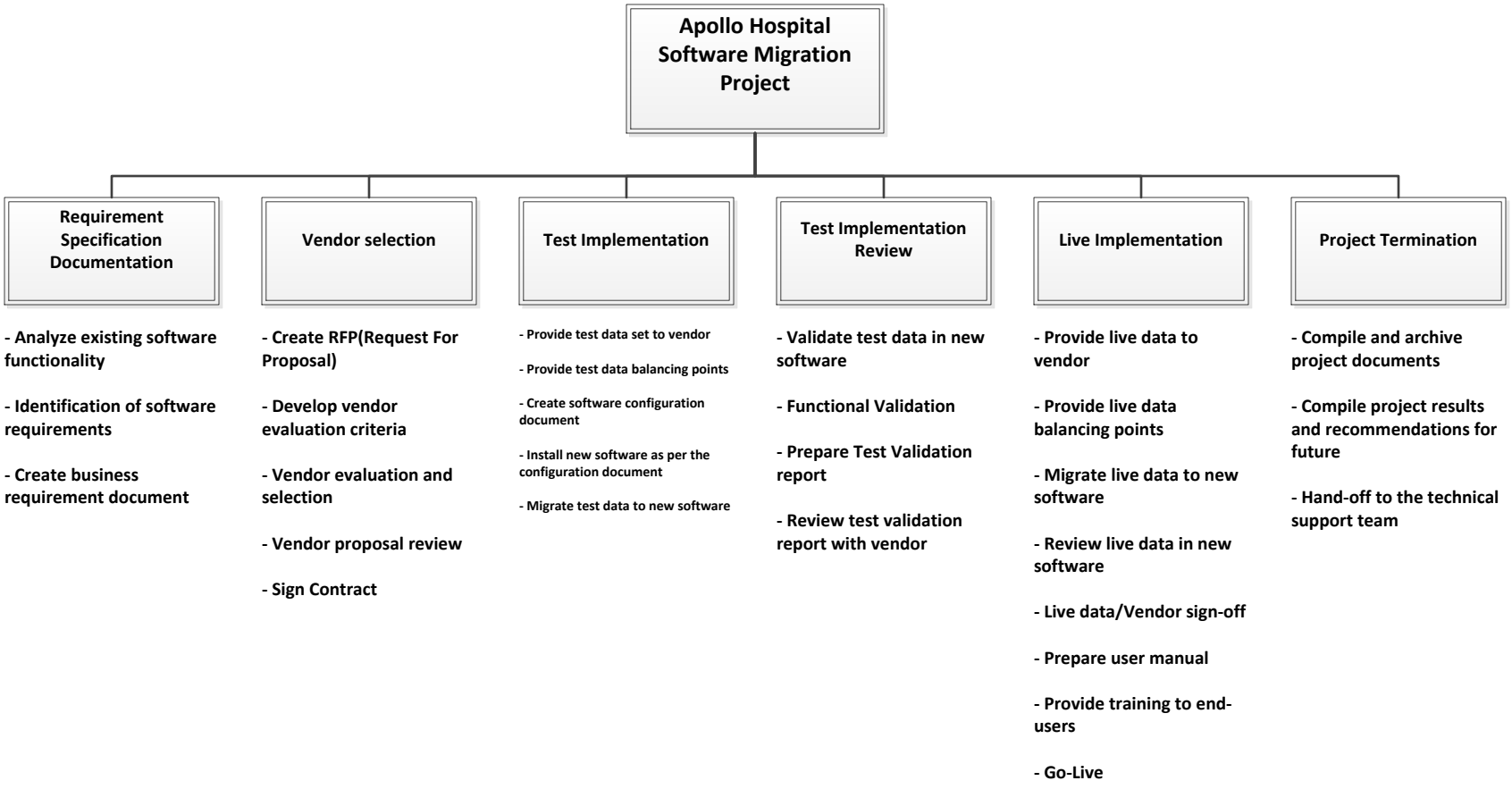


Exhibit C - RACI

Deliverable	Task	Project Manager	Business Analyst	System Admin	Quality Analyst	Training	Vendor	Helpdesk
Requirement Specification Documentation	Analyze existing software functionality		A	R				
	Identification of software requirements		A	R				
	Create business requirement document		A					
Vendor selection	Create RFP(Request For Proposal)		A					
	Develop vendor evaluation criteria	A	R					
	Vendor evaluation and selection	A	R	R				
	Vendor proposal review	A	R	R				
	Sign Contract	A						
Test Implementation	Provide test data set to vendor			A				
	Provide test data balancing points			A				
	Create software configuration document			R			A	
	Install new software as per the configuration document			R			A	
	Migrate test data to new software						A	
Test Implementation Review	Validate test data in new software			A	R			
	Functional Validation		R		A			
	Technical Validation			A	R			
	Prepare Test Validation report			R	A			
	Review test validation report with vendor				A			
Live Implementation	Provide live data to vendor			A				
	Provide live data balancing points			A				
	Migrate live data to new software						A	
	Review live data in new software			A	R			
	Live data/Vendor sign-off	A		R				
	Prepare user manual		A	R		R		
	Provide training to end-users					A		
	Go-Live			A				
Project Termination	Compile and archive project documents		A	R				
	Compile project results and recommendations for future	A	R	R				
	Hand-off to the technical support team			A				R

Exhibit D - Effort Estimation

Deliverable / Phase	Task		Project Manager	Business Analyst	System Admin	Quality Analyst	Training	Helpdesk	Capital Cost (Vendor)	Activity Total
Requirement Specification Documentation	Analyze existing software functionality	A1		10	34					44
	Identification of software requirements	A2		29	16					45
	Create business requirement document	A3		26						26
Vendor selection	Create RFP(Request For Proposal)	B1		18						18
	Develop vendor evaluation criteria	B2	8	30						38
	Vendor evaluation and selection	B3	77	90	84					251
	Vendor proposal review	B4	40	19	16					75
	Sign Contract	B5	15						$50,000.00	15
Test Implementation	Provide test data set to vendor	C1			26					26
	Provide test data balancing points	C2			19					19
	Create software configuration document	C3			12					12
	Install new software as per the configuration document	C4			12					12
	Migrate test data to new software	C5								0
Test Implementation Review	Validate test data in new software	D1			94	94				188
	Functional Validation	D2		94		94				188
	Technical Validation	D3			94	94				188
	Prepare Test Validation report	D4			26	27				53
	Review test validation report with vendor	D5				27				27
Live Implementation	Provide live data to vendor	E1			26					26
	Provide live data balancing points	E2			19					19
	Migrate live data to new software	E3								0
	Review live data in new software	E4			94	87				181
	Live data/Vendor sign-off	E5	10		10					20
	Prepare user manual	E6		19	19		42		$50,000.00	80
	Provide training to end-users	E7					134			134
	Go-Live	E8			14					14
Project Termination	Compile and archive project documents	F1		16	10					26
	Compile project results and recommendations for future	F2	25	16	16					57
	Hand-off to the technical support team	F3			26			27		53
Resource Total			175	367	667	423	176	27		1835

Exhibit E - Sumary Schedule

Deliverable / Phase	Task		Start Date	End Date	Duration
Requirement Specification Documentation	Analyze existing software functionality	A1	Tue 3/1/16	Mon 3/7/16	4.25 days
	Identification of software requirements	A2	Mon 3/7/16	Thu 3/10/16	3.63 days
	Create business requirement document	A3	Thu 3/10/16	Wed 3/16/16	3.25 days
Vendor selection	Create RFP(Request For Proposal)	B1	Wed 3/16/16	Fri 3/18/16	2.25 days
	Develop vendor evaluation criteria	B2	Wed 3/16/16	Mon 3/21/16	3.75 days
	Vendor evaluation and selection	B3	Mon 3/21/16	Wed 4/6/16	11.25 days
	Vendor proposal review	B4	Wed 4/6/16	Wed 4/13/16	5 days
	Sign Contract	B5	Wed 4/13/16	Thu 4/14/16	1.88 days
Test Implementation	Provide test data set to vendor	C1	Fri 4/15/16	Wed 4/20/16	3.25 days
	Provide test data balancing points	C2	Wed 4/20/16	Fri 4/22/16	2.38 days
	Create software configuration document	C3	Fri 4/15/16	Mon 4/18/16	1.5 days
	Install new software as per the configuration document	C4	Mon 4/18/16	Tue 4/19/16	1.5 days
	Migrate test data to new software	C5	Fri 4/22/16	Fri 6/3/16	30 days
Test Implementation Review	Validate test data in new software	D1	Fri 6/3/16	Tue 6/21/16	11.75 days
	Functional Validation	D2	Fri 6/3/16	Tue 6/21/16	11.75 days
	Technical Validation	D3	Fri 6/3/16	Tue 6/21/16	11.75 days
	Prepare Test Validation report	D4	Tue 6/21/16	Fri 6/24/16	3.38 days
	Review test validation report with vendor	D5	Fri 6/24/16	Thu 6/30/16	3.38 days
Live Implementation	Provide live data to vendor	E1	Thu 6/30/16	Tue 7/5/16	3.25 days
	Provide live data balancing points	E2	Tue 7/5/16	Thu 7/7/16	2.38 days
	Migrate live data to new software	E3	Thu 7/7/16	Thu 7/28/16	15 days
	Review live data in new software	E4	Thu 7/28/16	Mon 8/15/16	11.75 days
	Live data/Vendor sign-off	E5	Mon 8/15/16	Tue 8/16/16	1.25 days
	Prepare user manual	E6	Fri 6/24/16	Fri 7/1/16	5.25 days
	Provide training to end-users	E7	Mon 7/4/16	Tue 7/26/16	16.75 days
	Go-Live	E8	Tue 8/16/16	Thu 8/18/16	1.75 days
Project Termination	Compile and archive project documents	F1	Thu 8/18/16	Tue 8/23/16	3.13 days
	Compile project results and recommendations for future	F2	Thu 8/18/16	Tue 8/23/16	3 days
	Hand-off to the technical support team	F3	Thu 8/18/16	Tue 8/23/16	3.38 days

Exhibit F - Project Budget

Task	Estimate	March	April	May	June	July	Aug
Analyze existing software functionality	1540	1540					
Identification of software requirements	1575	1575					
Create business requirement document	910	910					
Create RFP(Request For Proposal)	630	630					
Develop vendor evaluation criteria	1450	1450					
Vendor evaluation and selection	9940	8640	1300				
Vendor proposal review	3225		3225				
Review and sign contract with vendor	50750		50750				
Provide test data set to vendor	910		910				
Provide test data balancing points	665		665				
Create software configuration document	420		420				
Install new software as per the configuration document	420		420				
Migrate test data to new software	0						
Validate test data in new software	5640				5640		
Functional Validation	5640				5640		
Technical Validation	5640				5640		
Prepare Test Validation report	1585				1585		
Review test validation report with vendor	675				675		
Provide live data to vendor	910				280	630	
Provide live data balancing points	665					665	
Migrate live data to new software	0						
Review live data in new software	5465					880	4585
Live data/Vendor sign-off	850						850
Prepare user manual	52170				2130	50040	
Provide training to end-users	2680					2680	
Go-Live	490						490
Compile and archive project documents	910						910
Compile project results and recommendations for future	2370						2370
Hand-off to the technical support team	1450						1450
Total	**159575**	**14745**	**57690**	**0**	**21590**	**54895**	**10655**

Exhibit G_Detailed Task Estimations

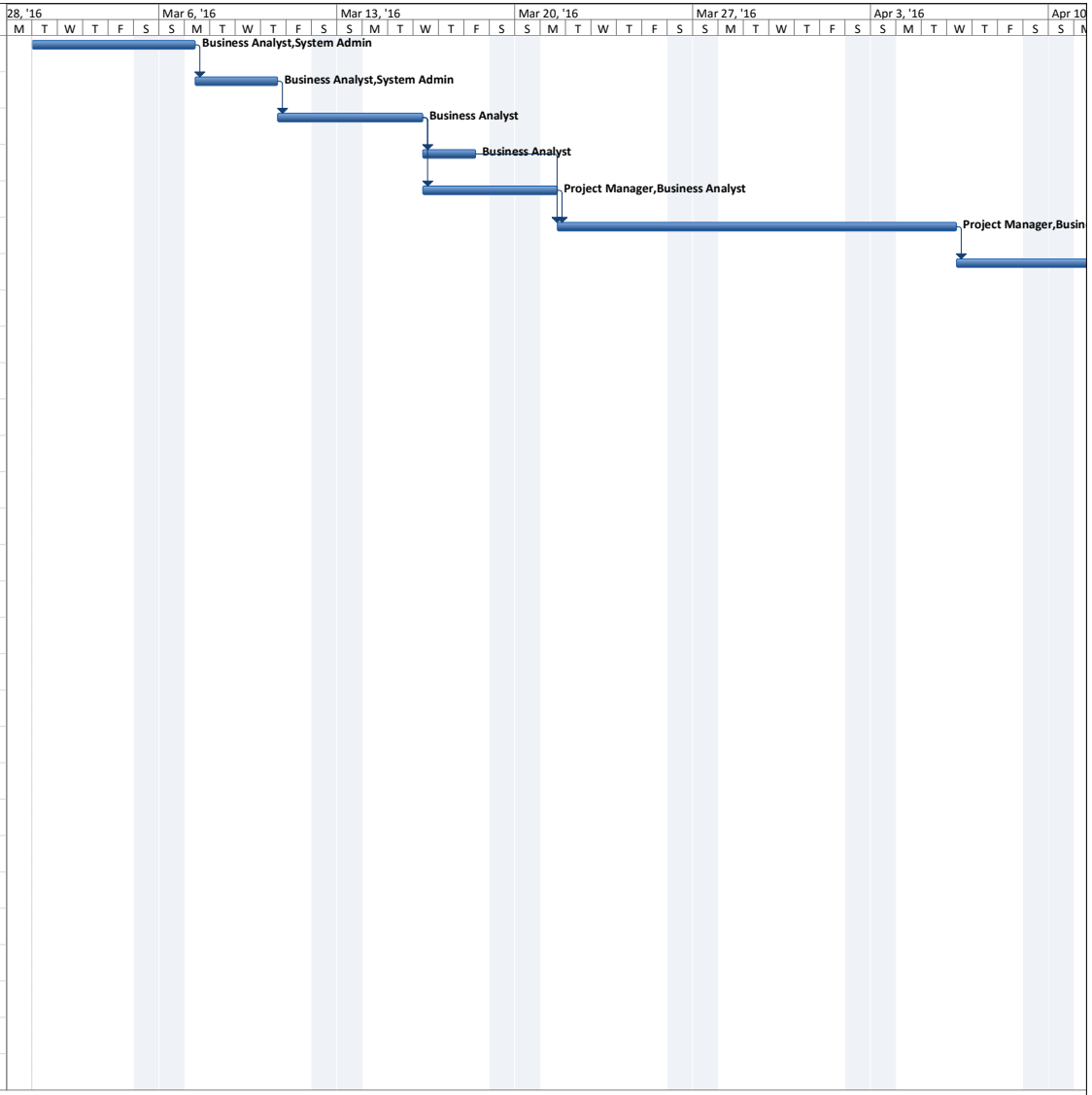
			Project Manager							Bu		
Deliverable / Phase	**Task**		Optimistic Time	Most Likely Time	Pessemistic Time	Expected Time	**ET (Rounded)**	Variance	Standard Deviation	Optimistic Time	Most Likely Time	Pessemistic Time
Requirement Specifica	Analyze existing software functionality	A1								8.00	8.00	16.00
	Identification of software requirements	A2								24.00	24.00	50.00
	Create business requirement document	A3								24.00	24.00	32.00
Vendor selection	Create RFP(Request For Proposal)	B1								8.00	16.00	32.00
	Develop vendor evaluation criteria	B2	8.00	8.00	8.00	8.00	**8.00**	0.00	0.00	16.00	32.00	32.00
	Vendor evaluation and selection	B3	40.00	80.00	100.00	76.67	**77.00**	100.00	10.00	60.00	80.00	160.00
	Vendor proposal review	B4	20.00	40.00	60.00	40.00	**40.00**	44.44	6.67	16.00	16.00	32.00
	Sign Contract	B5	8.00	16.00	16.00	14.67	**15.00**	1.78	1.33			
Test Implementation	Provide test data set to vendor	C1										
	Provide test data balancing points	C2										
	Create software configuration document	C3										
	Install new software as per the configuration document	C4										
	Migrate test data to new software	C5										
Test Implementation F	Validate test data in new software	D1										
	Functional Validation	D2								80.00	80.00	160.00
	Technical Validation	D3										
	Prepare Test Validation report	D4										
	Review test validation report with vendor	D5										
Live Implementation	Provide live data to vendor	E1										
	Provide live data balancing points	E2										
	Migrate live data to new software	E3										
	Review live data in new software	E4										
	Live data/Vendor sign-off	E5	8.00	8.00	16.00	9.33	**10.00**	1.78	1.33			
	Prepare user manual	E6								16.00	16.00	32.00
	Provide training to end-users	E7										
	Go-Live	E8										
Project Termination	Compile and archive project documents	F1								16.00	16.00	16.00
	Compile project results and recommendations for future	F2	16.00	24.00	40.00	25.33	**25.00**	16.00	4.00	16.00	16.00	16.00
	Hand-off to the technical support team	F3										
Resource Total							**175.00**					

usiness Analyst				System Admin							Quality Analyst						
Expected Time	**ET (Rounded)**	Variance	Standard Deviation	Optimistic Time	Most Likely Time	Pessemistic Time	Expected Time	**ET (Rounded)**	Variance	Standard Deviation	Optimistic Time	Most Likely Time	Pessemistic Time	Expected Time	**ET (Rounded)**	Variance	Standard Deviation
9.33	**10.00**	1.78	1.33	32.00	32.00	40.00	33.33	**34.00**	1.78	1.33							
28.33	**29.00**	18.78	4.33	16.00	16.00	16.00	16.00	**16.00**	0.00	0.00							
25.33	**26.00**	1.78	1.33														
17.33	**18.00**	16.00	4.00														
29.33	**30.00**	7.11	2.67														
90.00	**90.00**	277.78	16.67	80.00	80.00	100.00	83.33	**84.00**	11.11	3.33							
18.67	**19.00**	7.11	2.67	16.00	16.00	16.00	16.00	**16.00**	0.00	0.00							
				16.00	24.00	40.00	25.33	**26.00**	16.00	4.00							
				16.00	16.00	32.00	18.67	**19.00**	7.11	2.67							
				8.00	8.00	32.00	12.00	**12.00**	16.00	4.00							
				8.00	8.00	32.00	12.00	**12.00**	16.00	4.00							
				80.00	80.00	160.00	93.33	**94.00**	177.78	13.33	80.00	80.00	160.00	93.33	**94.00**	177.78	13.33
93.33	**94.00**	177.78	13.33								80.00	80.00	160.00	93.33	**94.00**	177.78	13.33
				80.00	80.00	160.00	93.33	**94.00**	177.78	13.33	80.00	80.00	160.00	93.33	**94.00**	177.78	13.33
				16.00	24.00	40.00	25.33	**26.00**	16.00	4.00	24.00	24.00	40.00	26.67	**27.00**	7.11	2.67
											24.00	24.00	40.00	26.67	**27.00**	7.11	2.67
				16.00	24.00	40.00	25.33	**26.00**	16.00	4.00							
				16.00	16.00	32.00	18.67	**19.00**	7.11	2.67							
				80.00	80.00	160.00	93.33	**94.00**	177.78	13.33	80.00	80.00	120.00	86.67	**87.00**	44.44	6.67
				8.00	8.00	16.00	9.33	**10.00**	1.78	1.33							
18.67	**19.00**	7.11	2.67	16.00	16.00	32.00	18.67	**19.00**	7.11	2.67							
				8.00	8.00	40.00	13.33	**14.00**	28.44	5.33							
16.00	**16.00**	0.00	0.00	8.00	8.00	16.00	9.33	**10.00**	1.78	1.33							
16.00	**16.00**	0.00	0.00	16.00	16.00	16.00	16.00	**16.00**	0.00	0.00							
				16.00	24.00	40.00	25.33	**26.00**	16.00	4.00							
	367.00							**667.00**							**423.00**		

Training							Helpdesk								
Optimistic Time	Most Likely Time	Pessemistic Time	Expected Time	**ET (Rounded)**	Variance	Standard Deviation	Optimistic Time	Most Likely Time	Pessemistic Time	Expected Time	**ET (Rounded)**	Variance	Standard Deviation	**Capital Cost (Vendor)**	**Activity Total**
															44.00
															45.00
															26.00
															18.00
															38.00
															251.00
															75.00
														$50,000.00	15.00
															26.00
															19.00
															12.00
															12.00
															0.00
															188.00
															188.00
															188.00
															53.00
															27.00
															26.00
															19.00
															0.00
															181.00
															20.00
32.00	40.00	60.00	42.00	**42.00**	21.78	4.67								$50,000.00	80.00
120.00	120.00	200.00	133.33	**134.00**	177.78	13.33									134.00
															14.00
															26.00
															57.00
							24.00	24.00	40.00	26.67	**27.00**	7.11	2.67		53.00
				176.00							**27.00**			$100,000.00	1835.00

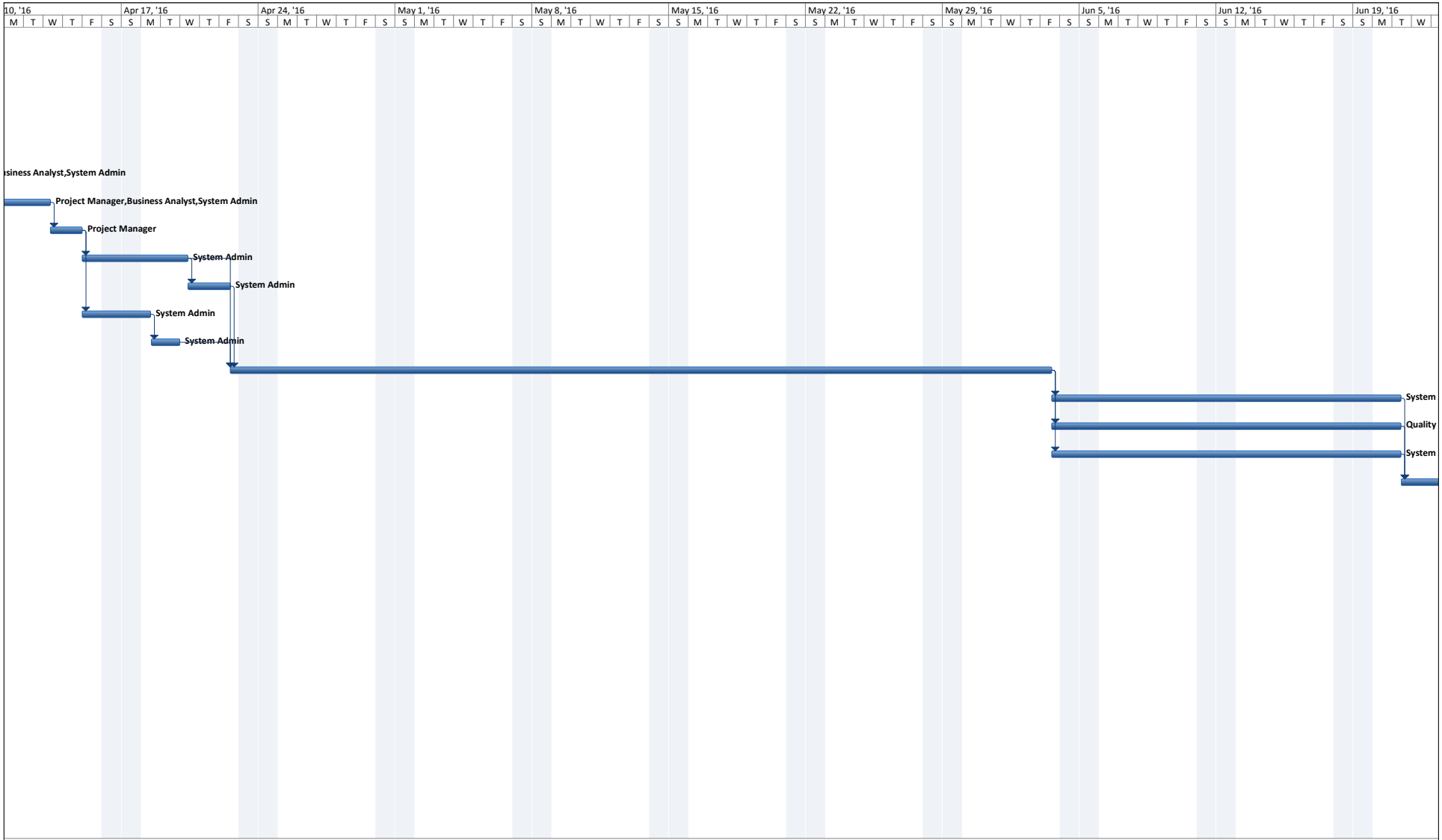
Exhibit H - Gantt Chart

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors
1		Analyze existing software functionality	4.25 days	Tue 3/1/16	Mon 3/7/16	
2		Identification of software requirements	3.63 days	Mon 3/7/16	Thu 3/10/16	1
3		Create business requirement document	3.25 days	Thu 3/10/16	Wed 3/16/16	2
4		Create RFP(Request For Proposal)	2.25 days	Wed 3/16/16	Fri 3/18/16	3
5		Develop vendor evaluation criteria	3.75 days	Wed 3/16/16	Mon 3/21/16	3
6		Vendor evaluation and selection	11.25 days	Mon 3/21/16	Wed 4/6/16	4,5
7		Vendor proposal review	5 days	Wed 4/6/16	Wed 4/13/16	6
8		Review and Sign Contract with Vendor	1.88 days	Wed 4/13/16	Thu 4/14/16	7
9		Provide test data set to vendor	3.25 days	Fri 4/15/16	Wed 4/20/16	8
10		Provide test data balancing points	2.38 days	Wed 4/20/16	Fri 4/22/16	9
11		Create software configuration document	1.5 days	Fri 4/15/16	Mon 4/18/16	8
12		Install new software as per the configuration document	1.5 days	Mon 4/18/16	Tue 4/19/16	11
13		Migrate test data to new software	30 days	Fri 4/22/16	Fri 6/3/16	12,9,10
14		Validate test data in new software	11.75 days	Fri 6/3/16	Tue 6/21/16	13
15		Functional Validation	11.75 days	Fri 6/3/16	Tue 6/21/16	13
16		Technical Validation	11.75 days	Fri 6/3/16	Tue 6/21/16	13
17		Prepare Test Validation report	3.38 days	Tue 6/21/16	Fri 6/24/16	15,16,14
18		Review test validation report with vendor	3.38 days	Fri 6/24/16	Thu 6/30/16	17
19		Provide live data to vendor	3.25 days	Thu 6/30/16	Tue 7/5/16	18
20		Provide live data balancing points	2.38 days	Tue 7/5/16	Thu 7/7/16	19
21		Migrate live data to new software	15 days	Thu 7/7/16	Thu 7/28/16	20,19
22		Review live data in new software	11.75 days	Thu 7/28/16	Mon 8/15/16	21
23		Live data/Vendor sign-off	1.25 days	Mon 8/15/16	Tue 8/16/16	22
24		Prepare user manual	5.25 days	Fri 6/24/16	Fri 7/1/16	17
25		Provide training to end-users	16.75 days	Mon 7/4/16	Tue 7/26/16	24
26		Go-Live	1.75 days	Tue 8/16/16	Thu 8/18/16	25,23
27		Compile and archive project documents	2 days	Thu 8/18/16	Mon 8/22/16	26
28		Compile project results and recommendations for future	3.13 days	Thu 8/18/16	Tue 8/23/16	26
29		Hand-off to the technical support team	3.38 days	Thu 8/18/16	Tue 8/23/16	26



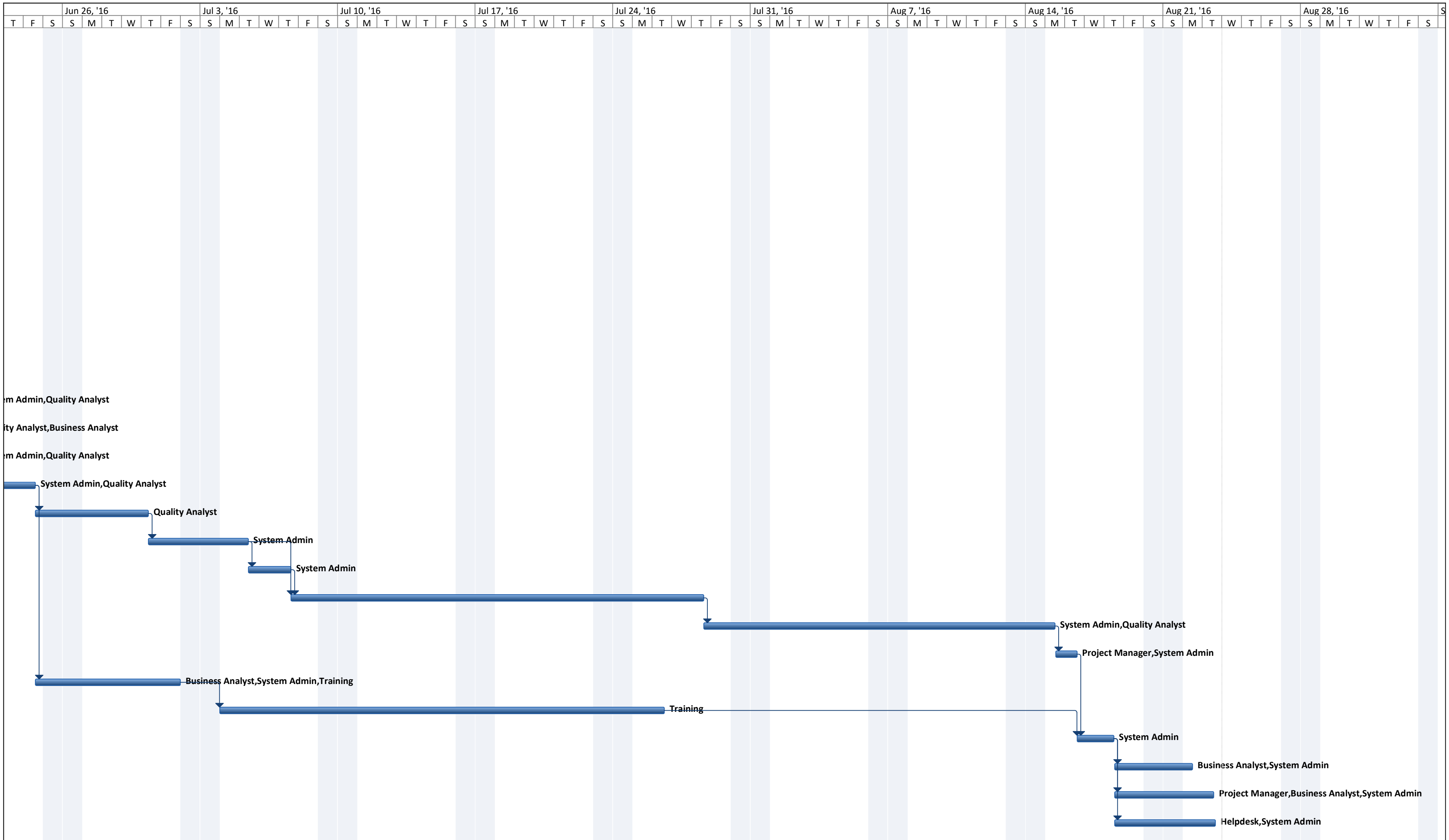
Project: msproj11
Date: Sun 11/29/15

Task	Summary	External Milestone	Inactive Summary	Manual Summary Rollup	Finish-only
Split	Project Summary	Inactive Task	Manual Task	Manual Summary	Deadline
Milestone	External Tasks	Inactive Milestone	Duration-only	Start-only	Progress



Project: msproj11
Date: Sun 11/29/15

Task	Summary	External Milestone	Inactive Summary	Manual Summary Rollup	Finish-only
Split	Project Summary	Inactive Task	Manual Task	Manual Summary	Deadline
Milestone	External Tasks	Inactive Milestone	Duration-only	Start-only	Progress



Project: msproj11
Date: Sun 11/29/15

Task	Summary	External Milestone	Inactive Summary	Manual Summary Rollup	Finish-only
Split	Project Summary	Inactive Task	Manual Task	Manual Summary	Deadline
Milestone	External Tasks	Inactive Milestone	Duration-only	Start-only	Progress

Exhibit I - AON Diagram

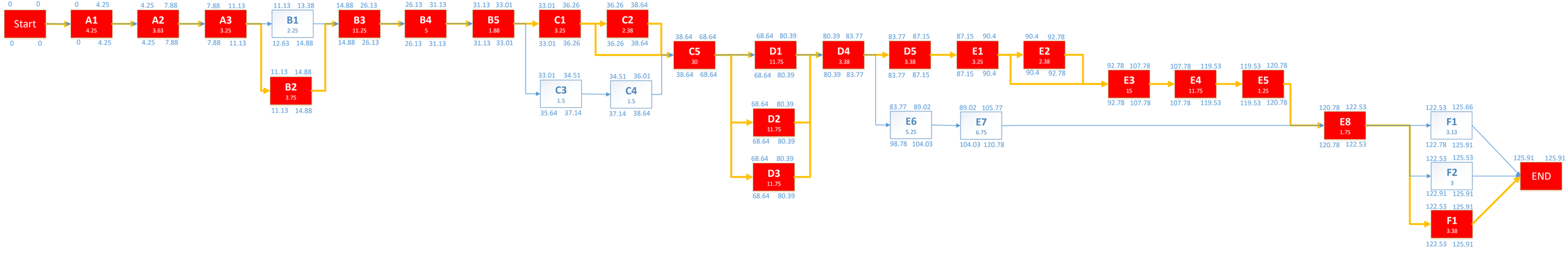


Exhibit J

X axis represents various duration examples

Y axis represents calculated completion probability for that given project duration.

The values will approach 1 (meaning 100% chance of project completion for that duration).

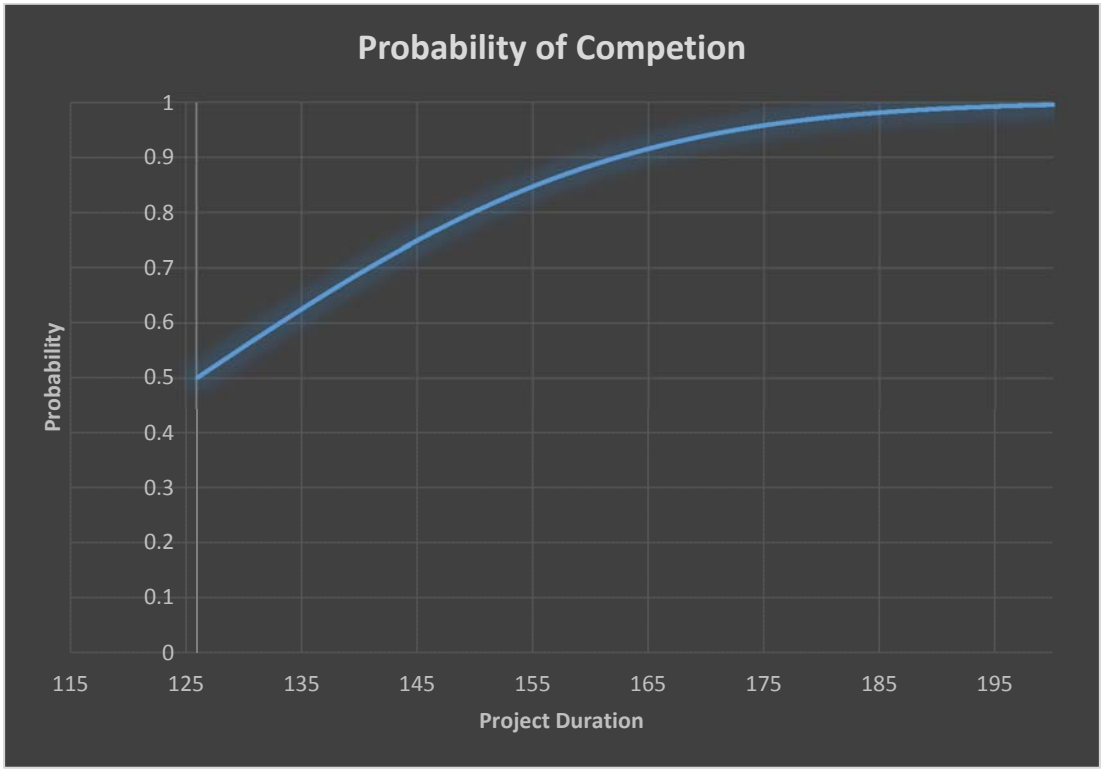
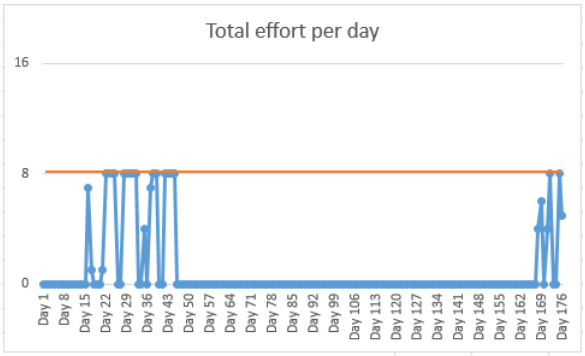
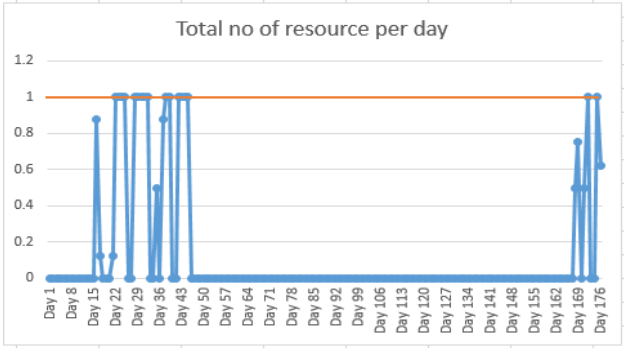


Exhibit K

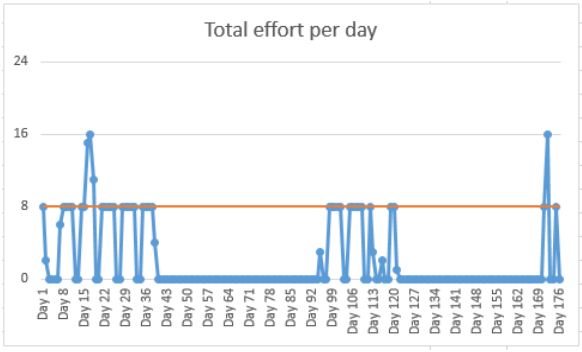
Note: There are only 126 working days in this period. Remaining days are weekends and effort is not considered during the weekends. When effort required from each team is more than 8 hours per day, more than one resource is required from that corresponding team to accomplish the task.

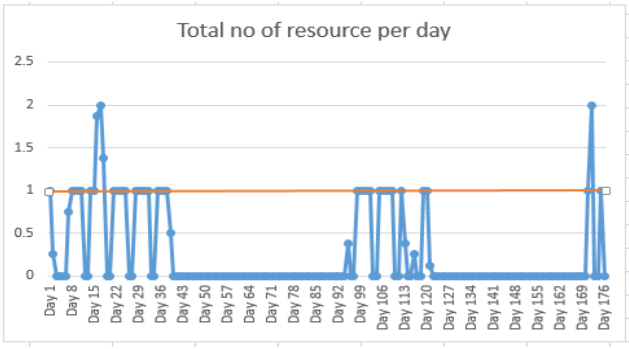
Project Manager



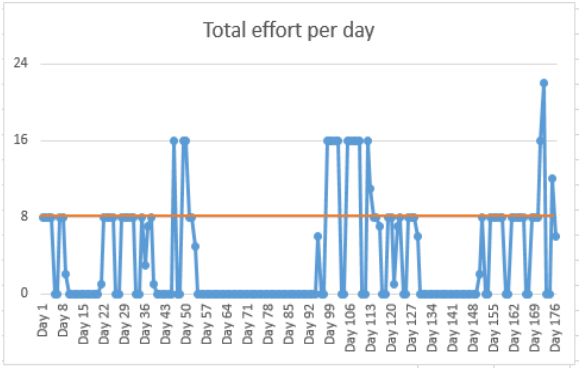


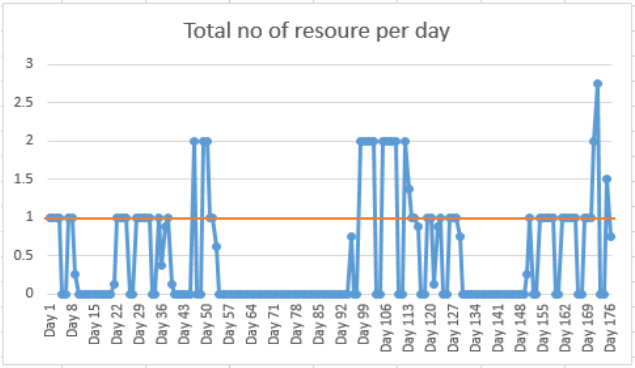
Business Analyst



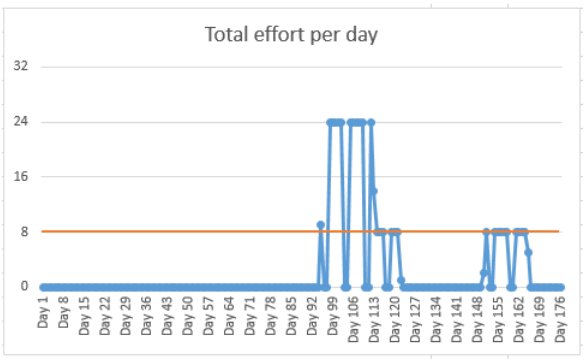


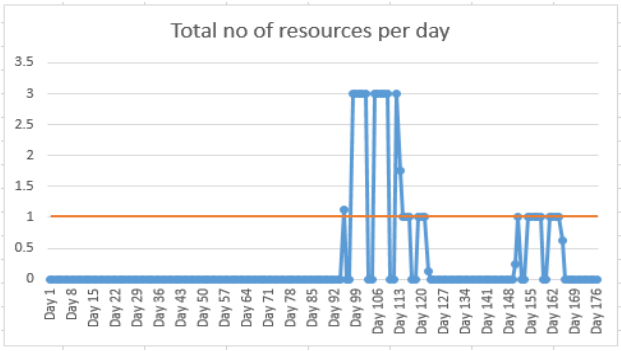
System Admin



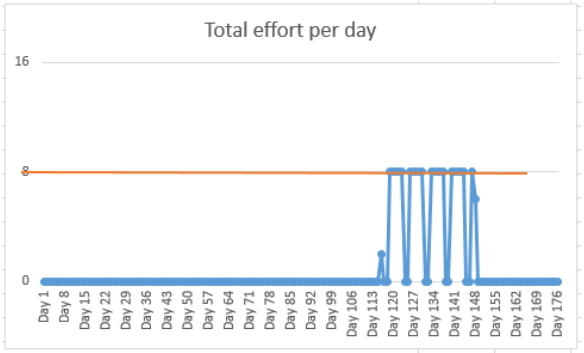


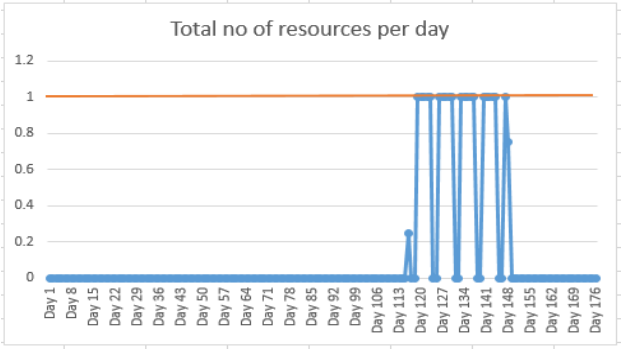
Quality Analyst



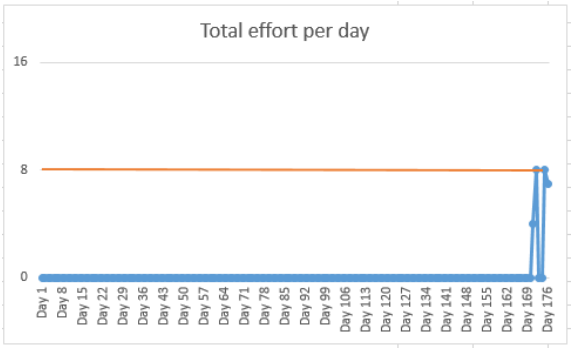


Training





Helpdesk



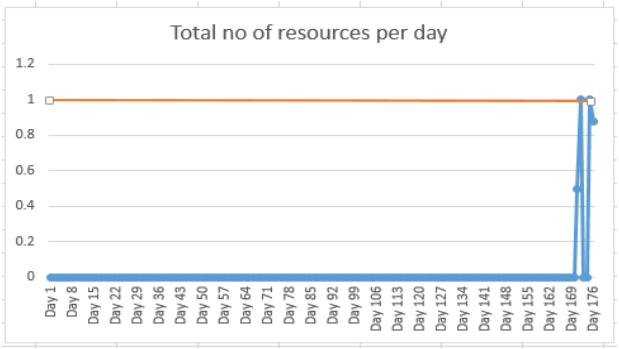


Exhibit L - Planned Value

Day	1	2	3	4	5	6	7	8	9	10	11	12	13
Task	**3/1/2016**	**3/2/2016**	**3/3/2016**	**3/4/2016**	**3/7/2016**	**3/8/2016**	**3/9/2016**	**3/10/2016**	**3/11/2016**	**3/14/2016**	**3/15/2016**	**3/16/2016**	**3/17/2016**
Analyze existing software functionality	770				770								
Identification of software requirements					787.5			787.5					
Create business requirement document								455				455	
Create RFP(Request For Proposal)												315	
Develop vendor evaluation criteria												725	
Vendor evaluation and selection													
Vendor proposal review													
Sign Contract													
Provide test data set to vendor													
Provide test data balancing points													
Create software configuration document													
Install new software as per the configuration document													
Migrate test data to new software													
Validate test data in new software													
Functional Validation													
Technical Validation													
Prepare Test Validation report													
Review test validation report with vendor													
Provide live data to vendor													
Provide live data balancing points													
Migrate live data to new software													
Review live data in new software													
Live data/Vendor sign-off													
Prepare user manual													
Provide training to end-users													
Go-Live													
Compile and archive project documents													
Compile project results and recommendations for future													
Hand-off to the technical support team													
Total	**770**	**0**	**0**	**0**	**1557.5**	**0**	**0**	**1242.5**	**0**	**0**	**0**	**1495**	**0**
Cumulative Total	**770**	**770**	**770**	**770**	**2327.5**	**2327.5**	**2327.5**	**3570**	**3570**	**3570**	**3570**	**5065**	**5065**

14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
3/18/2016	3/21/2016	3/22/2016	3/23/2016	3/24/2016	3/25/2016	3/28/2016	3/29/2016	3/30/2016	3/31/2016	4/1/2016	4/4/2016	4/5/2016	4/6/2016	4/7/2016	4/8/2016	4/11/2016
315																
	725															
	4970												4970			
													1612.5			
315	5695	0	0	0	0	0	0	0	0	0	0	0	6582.5	0	0	0
5380	11075	11075	11075	11075	11075	11075	11075	11075	11075	11075	11075	11075	17657.5	17657.5	17657.5	17657.5

31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
4/12/2016	4/13/2016	4/14/2016	4/15/2016	4/18/2016	4/19/2016	4/20/2016	4/21/2016	4/22/2016	4/25/2016	4/26/2016	4/27/2016	4/28/2016	4/29/2016	5/2/2016	5/3/2016	5/4/2016
	1612.5															
		50000														
			455			455										
						332.5		332.5								
			210	210												
				210	210											
0	1612.5	50000	665	420	210	787.5	0	332.5	0	0	0	0	0	0	0	0
17657.5	19270	69270	69935	70355	70565	71352.5	71352.5	71685	71685	71685	71685	71685	71685	71685	71685	71685

48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
5/5/2016	5/6/2016	5/9/2016	5/10/2016	5/11/2016	5/12/2016	5/13/2016	5/16/2016	5/17/2016	5/18/2016	5/19/2016	5/20/2016	5/23/2016	5/24/2016	5/25/2016	5/26/2016	5/27/2016
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71685	71685	71685	71685	71685	71685	71685	71685	71685	71685	71685	71685	71685	71685	71685	71685	71685

65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81
5/30/2016	5/31/2016	6/1/2016	6/2/2016	6/3/2016	6/6/2016	6/7/2016	6/8/2016	6/9/2016	6/10/2016	6/13/2016	6/14/2016	6/15/2016	6/16/2016	6/17/2016	6/20/2016	6/21/2016
				2820												2820
				2820												2820
				2820												2820
																792.5
0	0	0	0	8460	0	0	0	0	0	0	0	0	0	0	0	9252.5
71685	71685	71685	71685	80145	80145	80145	80145	80145	80145	80145	80145	80145	80145	80145	80145	89397.5

82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98
6/22/2016	6/23/2016	6/24/2016	6/27/2016	6/28/2016	6/29/2016	6/30/2016	7/1/2016	7/4/2016	7/5/2016	7/6/2016	7/7/2016	7/8/2016	7/11/2016	7/12/2016	7/13/2016	7/14/2016
		792.5														
		337.5				337.5										
						445			445							
									332.5		332.5					
		1085					51085									
								1340								
0	0	2215	0	0	0	782.5	51085	1340	777.5	0	332.5	0	0	0	0	0
89397.5	89397.5	91612.5	91612.5	91612.5	91612.5	92395	143480	144820	145597.5	145597.5	145930	145930	145930	145930	145930	145930

99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115
7/15/2016	7/18/2016	7/19/2016	7/20/2016	7/21/2016	7/22/2016	7/25/2016	7/26/2016	7/27/2016	7/28/2016	7/29/2016	8/1/2016	8/2/2016	8/3/2016	8/4/2016	8/5/2016	8/8/2016
									2732.5							
							1340									
0	0	0	0	0	0	0	1340	0	2732.5	0	0	0	0	0	0	0
145930	145930	145930	145930	145930	145930	145930	147270	147270	150002.5	150002.5	150002.5	150002.5	150002.5	150002.5	150002.5	150002.5

116	117	118	119	120	121	122	123	124	125	126
8/9/2016	8/10/2016	8/11/2016	8/12/2016	8/15/2016	8/16/2016	8/17/2016	8/18/2016	8/19/2016	8/22/2016	8/23/2016
				2732.5						
				425	425					
					245		245			
							455			455
							1185			1185
							725			725
0	**0**	**0**	**0**	**3157.5**	**670**	**0**	**2610**	**0**	**0**	**2365**
150002.5	**150002.5**	**150002.5**	**150002.5**	**153160**	**153830**	**153830**	**156440**	**156440**	**156440**	**158805**

Exhibit M: Baseline planned value chart based on Exhibit L

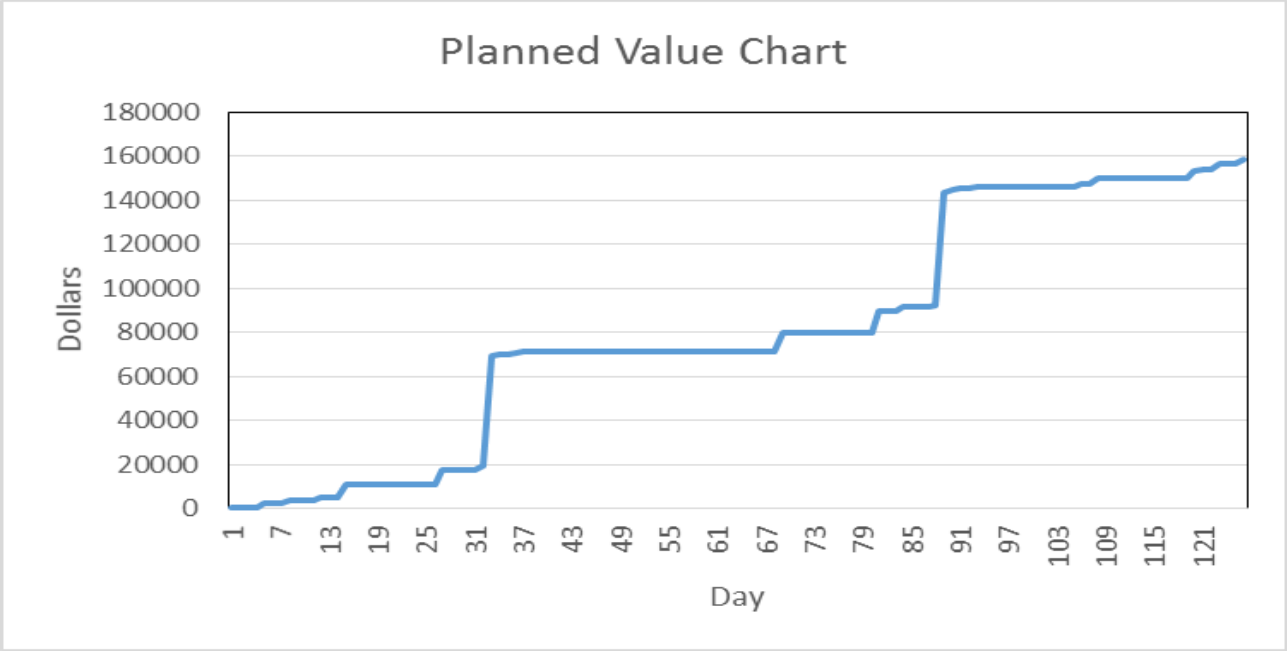


Exhibit N

The GO / NO GO Phase gates will be used to determine if the project has met the requirements of the previous phase before moving into the next phase. This will occur by the Project Manager reviewing the tasks and completion status of all tasks in a phase. Below is a listing of the high risk / high variance tasks in each phase that will need the most focus monitoring:

Requirement Specification Documentation:
Identification of Software Requirements

Vendor selection:
Vendor Evaluation
Vendor Proposal Review

Test Implementation:
Migrate Test Data (Vendor)

Test Implementation Review:
Validate Test Data
Functional Review
Technical Validation
Test Validation Report

Live Implementation:
Review live data in new software
Live Data Signoff

Exhibit 0

Graph to be used to track / monitor SPI (Schedule Performance Index)

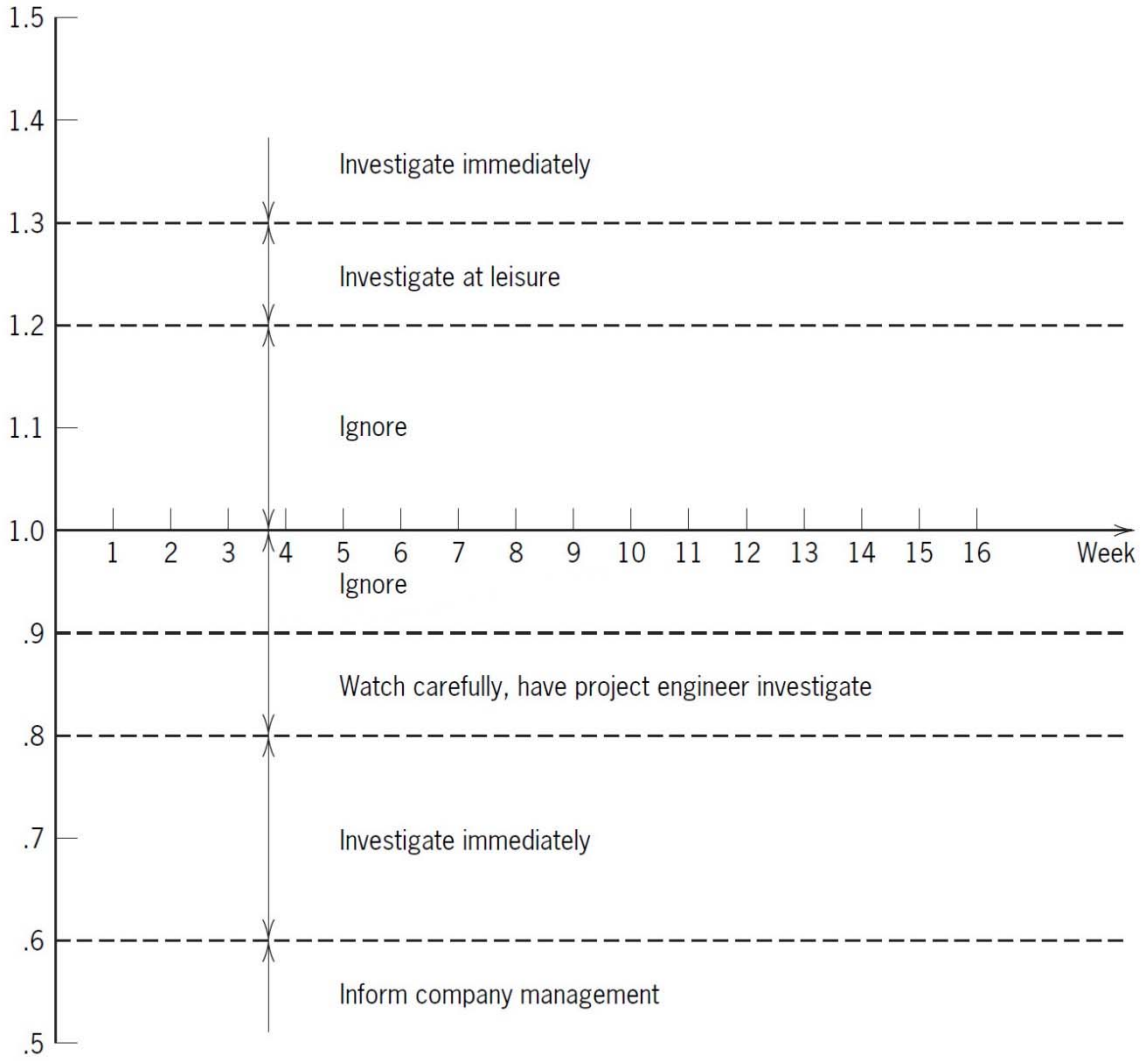


Exhibit P - Termination Tasks

Item	Task Description	Required		Required Date	Assigned
		Yes	No		
A	**Project Documentation and Team**				
1	Update and finalize project technical documentation	x		9/30/2015	Project Manager
2	Update Project plan to include actual costs and times	x		9/30/2015	Project Manager
3	Create final project status report and summary	x		9/30/2015	Project Manager
B	**Project Team**				
1	Conduct Project Termination Meeting	x		9/9/2015	Project Manager
2	Prepare Performance Evaluations	x		9/12/2015	Project Manager
3	Transition project support team to helpdesk support team	x		9/1/2015	Project Manager / System Admin
C	**Financial**				
1	Complete vendor project contract payments	x		9/15/2016	Accounting / Project Manager
2	Transition to vendor maintenance payments	x		9/15/2016	Accounting / Project Manager