Project Risk Management Plan

ERAU Students

Embry-Riddle Aeronautical University

PMGT 613 – Assessing and Managing Project Risk

Abstract

This paper is a team effort that produced a risk management plan based on an assigned case study. The plan utilizes a qualitative approach presented in the PMBOK and is dived into 4 sections: 1) Introduction, 2) Risk Management Procedure, 3) Risk Status Report, 4) Closing a Risk. The "Introduction" presents information applicable to the case study, and outlines the purpose of the risk management plan. Section 2 is the bulk of the risk management plan and subdivided into a six part "Risk Management Procedure" framework. This framework contains six sections: 1) Process, 2) Roles and Responsibilities, 3) Risk Identification, 4) Risk Analysis, 5) Plan Risk Response, 6) Risk Metrics. A risk register is positioned within the "Risk Identification" subsection to illuminate the risk identification results. Risk analysis is confined to the qualitative approach to align with the academic purpose. The "Risk Status Report" provides a snapshot of the approved report. Risk closure completes the effort with guidance on closing identified project risks.

Table of Contents

Risk Management Plan

1.0 The Risk Management Plan

This risk management plan was designed on premises offered in the Project Management Body of Knowledge 4th edition (2008) and the Project Management Institute Practice Standard for Project Risk Management (2009). A multitude of factors were considered to include the project's primary objective of providing solar powered satellite communications for 300 aboriginal tribes in the Australian outback. These communication nodes will be used to facilitate: "911" emergency hot lines, live video based health care, on-line and video teleconference education programs, and a community development network for sharing ideas for economic development. The entire effort is scheduled to be completed within 20 weeks at a cost of no more than $500,000.

1.1 Purpose

According to the Project Management Body of Knowledge, "The objectives of project risk management are to increase the probability and impact of positive events, and decrease the probability and impact of negative events in the project (PMI, 2008, p. 273). This can most effectively be accomplished by utilizing a risk management plan. The risk management plan is a means to minimize uncertainty by proactively identifying events or conditions which could have a negative effect on project objectives and developing a management strategy. In this risk management plan, each risk will be illustrated with a risk statement which identifies the potential risk and the impact which it could have on project objectives. For example: *If the roads are icy, then the car will have less traction.* Each risk will then be subject to a qualitative evaluation and prioritized based on; a. the likelihood of occurrence and b. the impact that it would have on the budget, schedule, or customer requirements.

2.0 Risk Management Procedure

2.1 Process

The project manager, team members, sponsors, and other stakeholders will actively work to manage the impact of all risks associated with this project. Identification and analysis of risks will begin early and continue throughout the entire lifetime of the project. The project manager and team members will all contribute to risk management by responding appropriately to risk events, participating in brainstorming sessions to identify risks, analysis and quantification of all risk events, respond to changes in risk, and develop steps to enhance opportunities and steps to mitigate risks. The project manager, or other designee, will serve as the Risk Manager for this project and will meet with stakeholders to communicate project status or the need to execute any escalation procedures regarding risk. A summary of the risk management procedures are included in the following paragraphs.

The risk identification process will consist of brainstorming sessions conducted and attended by the project manager and team members. All identified risks will be entered into a risk register and sorted by category, a description of the risk, probability of the risk occurring, the impact of the risk, and any plans for accepting, avoiding, transferring, or mitigating the specific risk, risk owner, and the current status of the risk.

Risk analysis will be done throughout the entire project life cycle and will include an in-depth qualitative risk analysis that will discover the probability and impact to project cost, time, scope and quality. Currently, the need for a quantitative risk analysis does not exist.

Risk response planning/controlling will be conducted to develop risk mitigation activities, review risk action plans, and decide how the project manager and team will respond to changes in risk as they occur over the course of the entire project. The project manager and team

will outline specific steps to take in order to enhance project opportunities while defining threat mitigation methods.

Risk event plan implementation is the process of monitoring the risks identified in the project, and if necessary, executing the action plans as defined during the risk response planning sessions. In order for the project team to be able to effectively manage risk there must be someone assigned to monitor each specific identified risk event and communicate warnings or symptoms of possible impending negative impacts to the project. The project manager and team will do further analysis of the warnings and symptoms and try to determine whether the risk event is actually occurring (Dow & Taylor, 2008, p. 414).

Risk tracking and controlling consists of risk event managers keeping the team informed of any changes to risk events, working with the project team to analyze the impacts, execute predetermined risk mitigation plans, and track any risk events to make sure they have little or no impact on the project.

Risk communications is the point at which the project manager and team reports project risks to the project stakeholders on a predetermined schedule through status meetings, lessons learned, and the defined escalation process (Dow & Taylor, 2008, p. 415).

2.2 Roles and Responsibilities

2.2.1 Project Manager

The project manager is responsible for performing the risk management process and providing integrated risk management for the project. Other members of the project team will provide risk response plans and updates to the project risk register as required, however the responsibility for risk response integration is solely that of the project manager. All changes to the project plan as a result of risk response actions must be documented in accordance with the

formal change control plan. This includes changes to the schedule, budget, WBS, and any other project documents affected by the execution of risk response actions.

The project manager is also responsible for training the team on the risk approach for the project. This will be started at the project kick-off meeting where each member of the team will be provided a copy of the risk register template and the initial risk brainstorming will take place. Throughout the life of the project the project manager will facilitate further identification of potential risks due to project changes or unforeseen issues.

The risk owners will provide the project manager with updates each week. The project manager will create an updated integrated risk register for use in weekly briefings to senior management.

2.2.2 Risk Owners

As a result of the small scale of the project, the project manager is the only team member with dedicated risk management responsibilities. Team members are responsible to look for risks generally and up-channel them to the project manager. Each identified risk will be assigned to a risk owner. The risk owner will be responsible for development of the risk statement and completion of the risk register template for the assigned risk. Once the initial risk statement is completed and the template is completed, the risk owner is responsible for any updates to the assigned risk.

2.3 Risk Identification

Risk identification is the process of illuminating events that may impact a project's objectives and documenting their characteristics (PMI, 2008, p. 282). Environmental factors, project scope, schedule, cultural influences and technical requirements will be assessed.

Particular attention will be paid to services required, training and the maintenance of delivered hardware. This effort will include the project manager, team members and relevant stakeholders.

2.3.1 Methods for risk identification

The risk identification method utilized during this process includes the utilization of team brainstorming and stakeholder interviews. Using these methods will ensure that the majority of the weaknesses in the plan will be identified early in the process. The Risk Breakdown Structure (RBS *Figure 1*) is used during these exercises to aid in categorization and documentation. Risk identification will continue as an iterative process throughout the project's lifecycle, and the risk register updated as required.

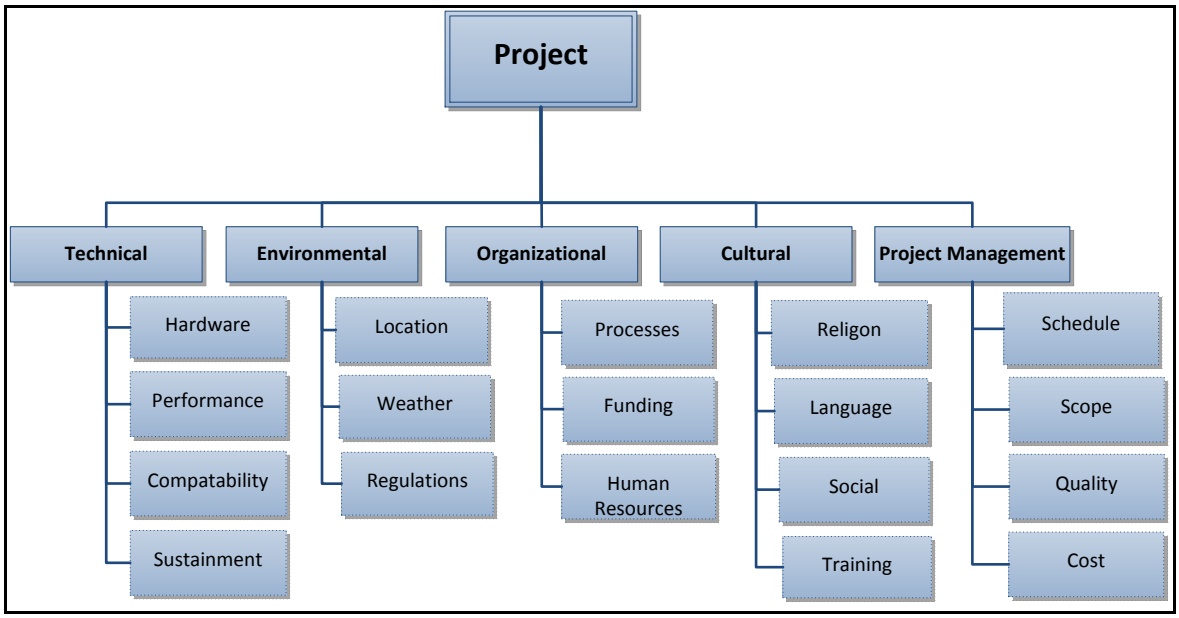


Figure 1 Risk Breakdown Structure

2.3.2 Risk Register

The risk register is the primary output of the identify risks process. A risk register should consist of; a compendious risk description, a nominated risk owner, trigger conditions and their probability of occurrence, the impact the risk could have on project objectives, and a response plan. Items in the risk register should be as detailed as possible while maintaining readability.

That is to say; it is important that the risk register articulates risks in such a way that readers will understand and accept the benefits of the risk management process while being concise enough that the reader is not burdened by its contents. This can be effectively done by organizing risks into categories *(Figure 2)* and attaching a brief but descriptive statement to each one.

ID#	Category	Risk Statement
1	Training	If the aborigines are not familiar the operating system, they will not properly utilize the service.
2	Technological	If the operating systems are not compatible with existing services, then the nodes will not communicated with each other.
3	Sustainment	If the service provider cannot provide reliable connectivity at a high enough bandwidth to remote sites, then the services cannot be adequately utilized.
4	Social	If there is no demand for use of the laptops, then the goal of bringing modern education, healthcare, and community development has not been met.

Figure 2 Risk Categories

This way, pertinent information is readily available to the reader and they are left with the option to further explore risks which are pertinent to their area of responsibility. Additionally, risks can be displayed visually in the form of a Risk Summary *(Figure 3)*. This gives the reader the ability to identify risks based on the likelihood of occurrence of a risk event and the severity

of the impact that it would have on the project. In a risk summary, each risk is displayed by its unique Risk Identification Number (ID#).

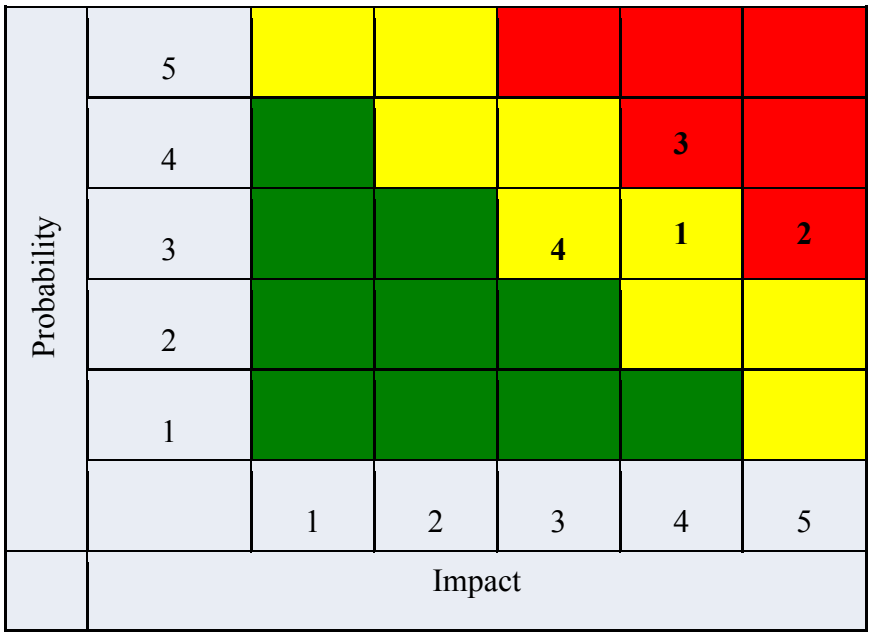
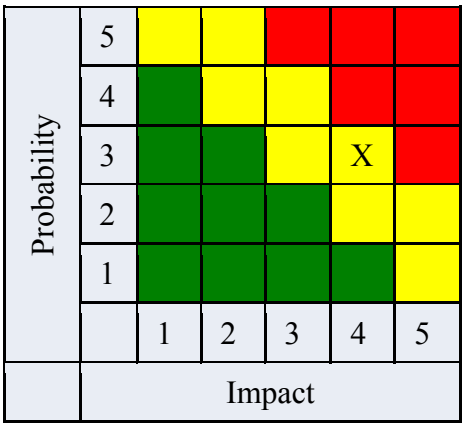


Figure 3 Risk Summary

More detailed information about individual risks is made available on Risk Item Datasheets (Tables 1-4). Information included on a risk item datasheet includes; a risk ownership designation, probability and impact justifications, a response plan and the current status of risk responses.

Table 1 *Risk Item Datasheet ID#1*

Risk ID#	1
Owner	ERAU Student
Submitted	7 Feb 2014
Updated	10 Feb 2014



Risk Statement-Training

If the aborigines are not familiar with the operating system, they will not properly utilize the service.

Probability Justification

Probability rating of 3 which illustrates a 20-40% likelihood of occurrence *(See Fig. 4)*. This is based on a survey of computer literacy amongst aboriginal tribes.

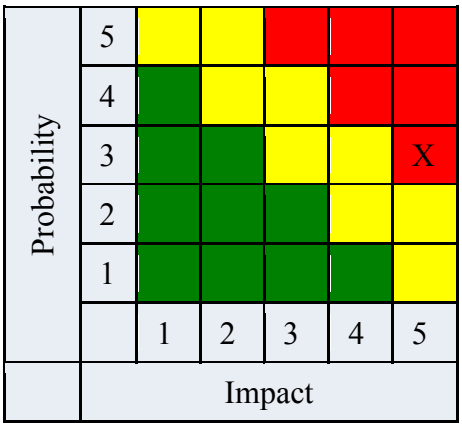
Impact Justification

Impact rating of 4 indicates that underutilization would be unacceptable to the project scope *(See Fig. 4)*.

Risk Response Plans and Status	
Probability Response Plan: The probability Risk ID#1 will be mitigated by providing comprehensive training to users throughout the project's lifecycle.	Status: Awaiting deployment of project material resources.
Impact Response Plan: The impact of Risk ID#1 will be mitigated by an emphasis on making software user friendly and providing technical support when necessary.	Status: Software in development.

Table 2 *Risk Item Datasheet ID#2*

Risk ID#	2
Owner	ERAU Student
Submitted	7 Feb 2014
Updated	10 Feb 2014



Risk Statement- Technological

If the operating systems are not compatible with existing services, then the nodes will not communicate with each other.

Probability Justification

Probability rating of 3 which illustrates a 20-40% likelihood of occurrence *(See Fig 4)*. This is based on an evaluation of operating systems requirements by a third-party information technology firm.

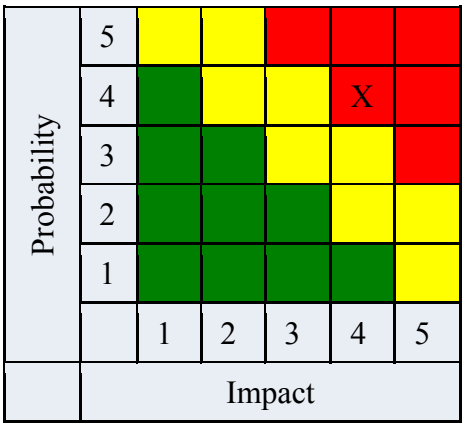
Impact Justification

Impact rating of 5 signifies that incompatibility of operating systems would be devastating to the project objectives *(See Fig.4)*.

Risk Response Plans and Status	
Probability Response Plan: The Probability of Risk ID#2 will be mitigated by performing in-depth beta testing between the nodes of existing services and new equipment.	Status: Awaiting hardware deployment.
Impact Response Plan: The Impact of Risk ID#2 will be mitigated by providing contingency forms of services.	Status: In negotiations.

Table 3 *Risk Item Datasheet ID#3*

Risk ID#	3
Owner	ERAU Student
Submitted	7 Feb 2014
Updated	9 Feb 2014



Risk Statement-Sustainment

If the service provider cannot provide reliable connectivity at a high enough bandwidth to remote sites, then the services cannot be adequately utilized.

Probability Justification

Probability rating of 4 which illustrates a 20-40% likelihood of occurrence *(See Fig. 4)*. This is based on a survey of expected bandwidth needed to provide reliable services.

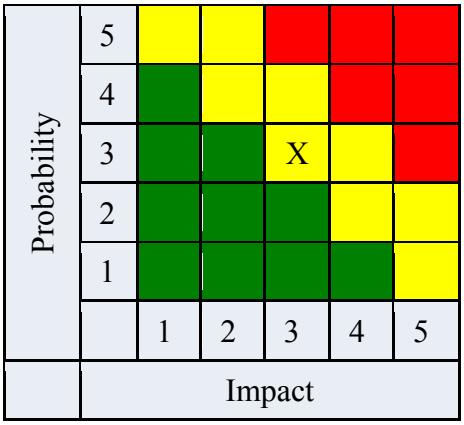
Impact Justification

Impact rating of 4 indicates that unreliable connectivity would be unacceptable to the project scope. *(See Fig. 4)*.

Risk Response Plans and Status	
Probability Response Plan: Purchase extra satellite bandwidth at expected high traffic times instead of purchasing static amount of bandwidth.	Status: Complete.
Impact Response Plan: Purchase and install a dedicated line for use at all times, high traffic or low traffic.	Status: Approved by customer, available when needed.

Table 4 *Risk Item Datasheet ID#4*

Risk ID#	4
Owner	ERAU Student
Submitted	7 Feb 14
Updated	9 Feb 14



Risk Statement-Social

If there is no demand for use of the laptops, then the goal of bringing modern education, healthcare, and community development to Australian outback has not been met.

Probability Justification

Probability rating of 3, which illustrates a 20-40% likelihood of occurrence *(See Fig 4).* This is based on a survey of computer savvy amongst aboriginal tribes.

Impact Justification

Impact rating of 3 indicates a major impact to the project scope *(See Fig. 4).*

Risk Response Plans and Status	
Probability Response Plan: Provide technical training to key tribal facilitators who will then provide technical/training support to users on location.	Status: Training team developing training implementation plan.
Impact Response Plan: Conduct technical training within timeframe that ensures key tribal facilitators are prepared.	Status: Project training schedule being developed with input from on-site training team regarding timeframe.

2.4 Risk Analysis

Risk analysis offers the ability to individually address each risk event and comparatively prioritize all events. Individual events will be evaluated, and prioritized in accordance to their level of impact. Response plans will be developed and risk owners identified. Qualitative analysis will be utilized in this assessment.

2.4.1 Qualitative Risk Analysis

The project manager and the project team will conduct an iterative Qualitative Risk Analysis approach that takes into consideration the urgency, manageability, and impact to the entire enterprise. The Qualitative Risk Analysis will assist the team in discovering the probability and impact to project cost, time, scope and quality *(Figure 4).* The project team and project manager will develop a set of agreed-upon definitions of risk terms that will be used throughout the entire project. The defined terms will be used to allow risk managers to deliver realistic assessments of project risk and facilitate the communication of the results to management and other stakeholders (PMI, 2009, p. 32).

In order to conduct a viable risk analysis, the project team will only use data that is of the highest quality. This data will be gathered through interviewing members of the Australia project, brainstorming within the project team, and by using their own expert judgment. This data will then be evaluated and prioritized according to the probability of the risk occurring and the overall impact of the risk on the project.

Risks will also be categorized and entered into risk data sheets and worked into a risk breakdown structure in order to discover and assign each risk a weighted priority. The highest priority risks will be monitored frequently while low priority risks will be placed on a watch list and monitored less frequently (PMI, 2009, p. 35).

Probability	Very Low (0.05%)	Low (0.10%)	Moderate (0.20%)	High (0.40%)	Very High (0.80%)
Cost	Negligible cost increase	< 10% increase	10-20% increase	20-40% increase	> 40% increase
Schedule	Negligible time increase	< 5% increase	5-10% increase	10-20% increase	> 20% increase
Scope	Negligible scope decrease	Minor area of scope affected	Major area of scope affected	Scope reduction unacceptable	Project end item useless
Quality	Negligible quality degradation	Only very demanding applications affected	Quality reduction requires approval	Quality reduction unacceptable	Project end item useless

Figure 4 Probability and Impact Scale

2.4.2 Quantitative Analysis of Schedule and Budget

The team used Microsoft Excel QM Software to develop a critical path graph by using the Predecessor List (AON) feature. This tool is helpful in identifying the critical activities based off of both a one-time and three-time estimate. A one-time estimate utilizes only a most likely time estimate while a three-time estimate also includes optimistic and pessimistic estimates for activity durations.

Table 5 *Activities and Durations*

Activity	Time (Weeks)	Pred 1	Pred 2	Pred 3
A: Contract Negotiations	4			
B: Plan Procurements	6			
C: FSR Deployment	7	a	b	
D: Develop Statement of Work	8	b		
E: Local Equipment Deployment	5	b		
F: Site Preperation	5	c		
G: Field Engineers for Diagnostics	7	d		
H: Equipment Emplacement	8	d	e	
I: Equipment Interconnectivity Testing	4	f	g	h

Based on the inputs on Table 1 (above), Microsoft Excel QM developed the following Critical Path (Gannt) chat:

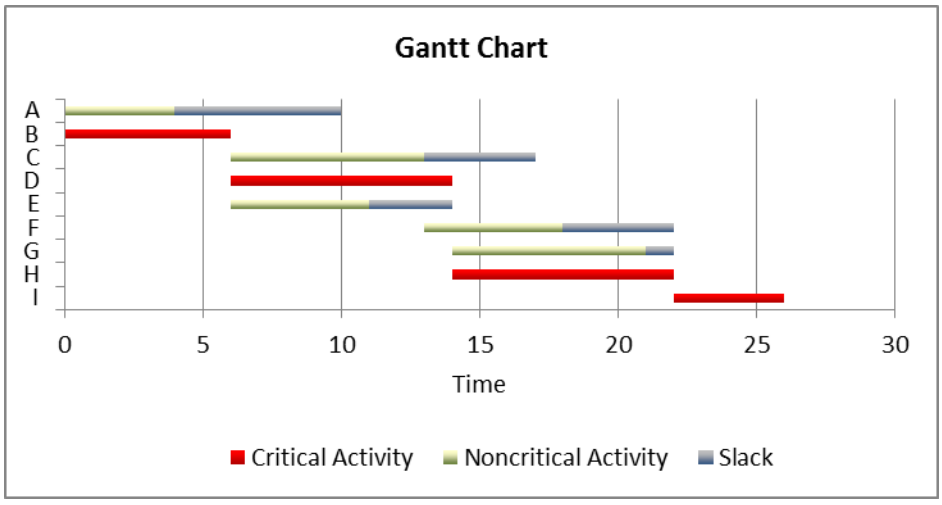


Figure 5 Critical Path

Based on the Gannt chart in figure 5, it can be determined that the critical activities for this process are milestones B, D, H, and I. In addition to the development of a Gannt chart, Microsoft Excel QM will create a chart detailing the earliest and latest starting and finishing times as well as the slack and the project length. Table 6 states that the project will most likely finish in 26 weeks based on a one time estimate.

Table 6 *One Time Estimate Results*

Activity	Early Start	Early Finish	Late Start	Late Finish	Slack
A	0	4	6	10	6
B	0	6	0	6	**0**
C	6	13	10	17	4
D	6	14	6	14	**0**
E	6	11	9	14	3
F	13	18	17	22	4
G	14	21	15	22	1
H	14	22	14	22	**0**
I	22	26	22	26	**0**
	Project	**26**			

By performing a Monte Carlo analysis based on a three time estimate, Team 4 determined that this particular project has a 45% probability of finishing in 26 weeks. But the probability increases to 89% just 10 days later (*Figure 6*). This is based on the 3 time estimate illustrated in Table 7.

Table 7 *Three Time Estimate*

Activity	Optimistic	Likely	Pessimistic
A	3	4	5
B	5	6	7
C	6	7	8
D	7	8	10
E	4	5	6
F	4	5	6
G	6	7	9
H	6	8	10
I	3	4	5

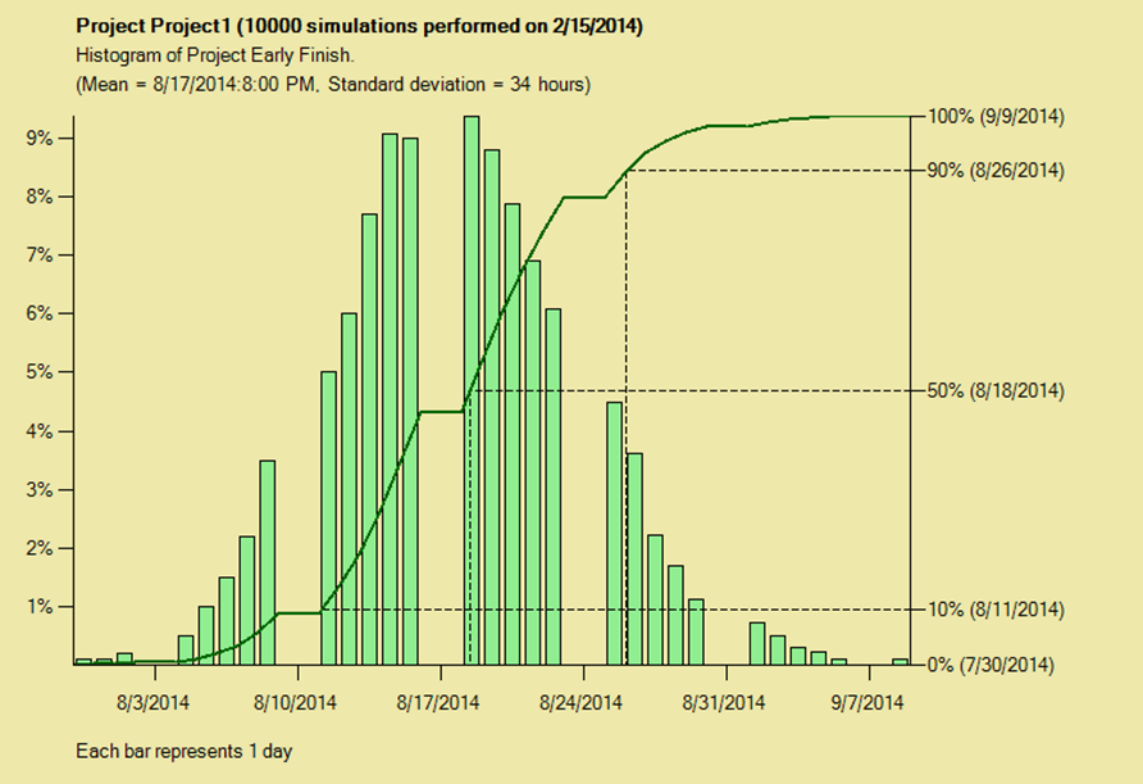


Figure 6 Project Schedule Histogram

The tornado analysis report is used to detail activities that are particularly sensitive to schedule. In this case, the tornado analysis identified activities H, D, I, B, and, G as having the highest sensitivity attributable variance (Figure 3). As you can see in Figure 1, this closely reflects the Gannt chart's critical tasks.

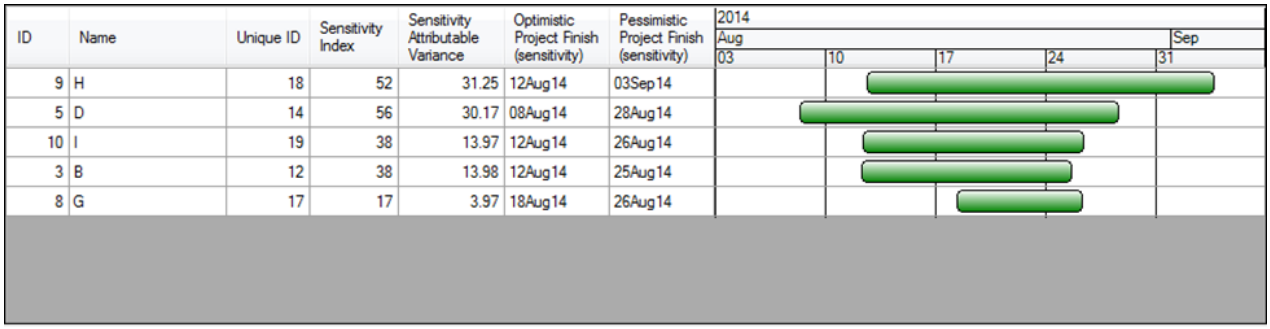


Figure 7 Tornado Report (Schedule)

The team used Microsoft Excel QM software to perform a crash cost analysis to the above project. As detailed in Table 4 *(below)*, the project can be crashed down to a minimum of 12 weeks. In order to bring the project to its goal of 14 weeks, it would cost an additional $25,966.67.

Table 8 *Crashing Schedule Cost*

Activity	Normal Time (weeks)	Crash Time (weeks)	Normal Cost	Total Cost with Crashing	Predecessor(s)	**Pred 2**	**Pred 3**	**Crash days**	**Crash cost/day**	**Crash limit**
A	4	1	$8,000	$9,500				**2**	500	3
B	6	2	$12,000	$15,000				**4**	750	4
C	7	3	$14,000	$20,000	a	b		**0**	1500	4
D	8	4	$19,000	$31,000	b			**4**	3000	4
E	5	2	$13,000	$15,000	b			**1**	666.6667	3
F	5	3	$9,000	$10,500	c			**2**	750	2
G	7	2	$16,500	$20,500	d			**1**	800	5
H	8	4	$ 22,000	$ 34,000	d	e		**2**	3000	4
I	4	2	$ 5,500	$ 6,500	f	h	g	**2**	500	2

Project goal	14	
Normal time	**26**	
Minimum time	**12**	
Minimum crash cost to meet project goal	**$**	**25,966.67**
Project time		**14**

2.5 Plan Risk Response

The purpose of the plan risk responses process is to develop a strategy that increases the opportunities or strengths of a project and reduces threats to project goals. Further, it provides a chance to spell out proposed risk mitigation approaches for consideration by stakeholders. As stated in the Project Management Body of Knowledge, "Planned Risk Responses must be appropriate to the significance of the risk, cost effective in meeting the challenge, realistic within the project context, agreed upon by all parties involved, and owned by a responsible person" (PMI, 2008, p.301). Planned risk responses to each of the specific risks identified by the team are identified in the Risk Item Datasheets *(Tables 1-4)* and their predicted consequences are detailed in the Risk Status Reports *(Tables 12-15)*. Changes to planned risk responses will be tracked using change management guidelines detailed in the Change Management Risk Metric Data Sheet *(Table 11)*.

2.6 Risk Metrics

Collection and analysis of risk metrics provides predictive, diagnostic and retrospective capabilities in the management of risk. Predictive metrics offer an early warning of possible schedule and budgetary issues. These metrics also illuminate the need for possible revisions of future response plans and adjustments to contingency reserves. Diagnostic metrics are used to access the current condition of the project. Response plan triggers and impacts of recent changes are identified and addressed accordingly. Retrospective metrics look back to learn from both past successes and failures. Utilized as lessons learned, these metrics can aid in root- cause identification and access risk management processes (Kendrick, 2005).

Risk metrics requirements are as unique as the individual requirements. Metrics collected and analyzed for this project will answer the following questions:

1. How effectively are we managing the project budget and contingency funds?
2. Have there been any new increases/ decreases in accepted change controls and resource utilization?
3. Are material and human resources in place or scheduled for upcoming tasking's and milestones?
4. What is the number of risks being carried and what is their severity?
5. Have there been schedule slippage or missed milestones.

Risk metrics will be collected using the following data sheets (Tables 9 thru 11):

Table 9 *Resource Metrics*

Risk Metric Data Sheet: Resources	
Objective:	Provide resource status
Type:	Predictive
Normal range:	Assignment of adequate resources to project tasks
Data:	Resource availability, milestone completions, and task completions
Collection Method	Data collected from project schedule and resource plan
Reported by:	Project manager
Frequency:	Weekly
Tools used:	MS Project (collection and storage)

Table 10 *Risk Index Metrics*

Risk Metric Data Sheet: Risk Index	
Objective:	Provide risk closure index and number of current active risks
Type:	Diagnostic
Normal range:	Risk index should be ≥ 1
Calculation:	Ratio of risks closed divided by number of risks expected to be closed
Data:	Risk register inputs
Collection Method	Data collected from project risk register
Reported by:	Project manager
Frequency:	Biweekly
Tools used:	MS Excel

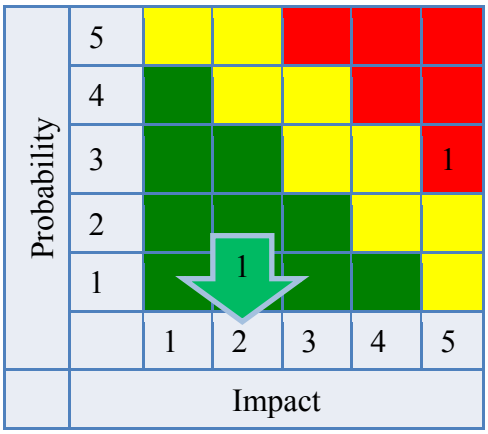
Table 11 *Change Management Metrics*

Risk Metric Data Sheet: Change Management	
Objective:	Provide change management status
Type:	Retrospective
Data:	Number of approved changes
Collection Method	Data collected from project change management processes
Reported by:	Project manager
Frequency:	Monthly
Tools used:	Company change management database

3.0 Risk Status Reporting

Table 12 *Risk Status Report ID#1*

Risk ID#	1
Owner	ERAU Student
Submitted	5 March 2014
Updated	5 March 2014



Risk Statement-Training

If the aborigines are not familiar with the operating system, then they will not properly utilize the service.

Revised Probability Justification

The probability risk rating of 3 can be mitigated to a 1 by providing comprehensive training to users throughout the project's lifecycle.

Revised Impact Justification

Impact rating of 5 can be mitigated to a 2 by developing user friendly software and providing technical support when necessary.

Risk Metrics and Closure

Key Questions:	Measurement Tools:
Are training resources allocated?	Resource plan review
Is training on schedule?	Project schedule
Is software development on schedule?	

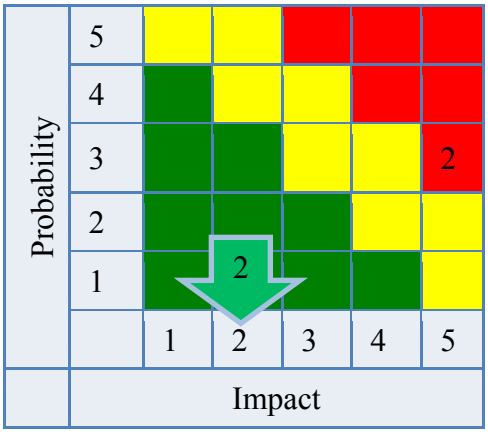
Closure:

Software developed and successfully beta tested.

Technical support and training network is in place.

Table 13 *Risk Status Report ID#2*

Risk ID#	2
Owner	ERAU Student
Submitted	7 March 2014
Updated	7 March 2014



Risk Statement- Technological

If the operating systems are not compatible with existing services, then the nodes will not communicate with each other.

Revised Probability Justification

The Probability of Risk ID#2 can be mitigated from a 3 to a 1 by performing in-depth beta testing between the nodes of existing services and new equipment.

Revised Impact Justification

The Impact of Risk ID#2 can be mitigated from a 5 to a 2 by providing contingency forms of services.

Risk Metrics and Closure

Key Questions:

Is beta testing on schedule?

Have contingency services been acquired and vetted?

Measurement Tools:

Project schedule

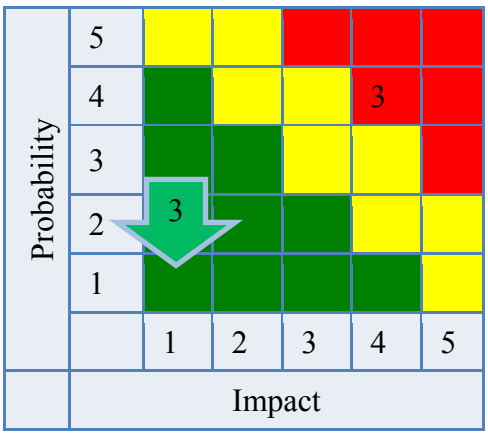
Project Status Reports

Closure:

Contingency forms of services are appropriated.

Table 14 *Risk Status Report ID#3*

Risk ID#	3
Owner	ERAU Student
Submitted	7 March 2014
Updated	7 March 2014



Risk Statement-Sustainment

If the service provider cannot provide reliable connectivity at a high enough bandwidth to remote sites, then the services cannot be adequately utilized.

Revised Probability Justification

Probability rating of 4 can be mitigated to a 2 by purchase extra satellite bandwidth for expected high traffic times.

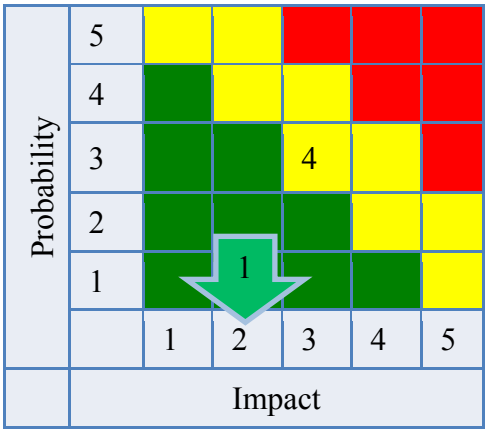
Revised Impact Justification

Impact rating of 4 can be mitigated to a 1 by purchasing and installing a dedicated line for use at all times, high traffic or low traffic.

Risk Metrics and Closure	
Key Questions: What is the completion percentage of purchasing extra satellite band width? What is the completion percentage of installing dedicated lines?	Measurement Tools: Project status reports
Closure: Infrastructure for dedicated line is in place and operational.	

Table 15 *Risk Status Report ID#4*

Risk ID#	4
Owner	ERAU Student
Submitted	7 March 2014
Updated	7 March 2014



Risk Statement – Social

If there is no demand for using laptops, then the goal of the project has not been met.

Revised Probability Justification

Probability rating of 3 can be mitigated to a 1 by marketing the ease of use of laptops and the importance of connectivity in the 21st century.

Revised Impact Justification

Impact rating of 3 can be mitigated to a 2 by establishing commitments from local vendors and service providers to encourage or require connectivity.

Risk Metrics and Closure

Key Questions:	Measurement Tools:
Has the marketing of laptop computers been successful? What is the progress of obtaining local vendor and service provider commitments?	Market surveys Project status reports

Closure:

Successful marketing campaign.

Local vendor's accounts established and are operational.

4.0 Risk Closure

A project risk will be considered closed when it meets the risk closure criteria. The risk may meet one or more of the following criteria to be closed. The criteria are: the risk is no longer valid, the risk has occurred, the risk has been accepted, or the risk is closed by the project manager. The project manager has final say in any risk close-out.

The project team will formally close-out risks in the risk review meeting with the sponsor and the risk owners. The risk description and its response plan will be studied; the closure criteria will be reviewed to verify the risk meets established requirements. The risk datasheets in the master risk management plan will be updated to represent the most current status.

Appendix A: Risk Management Plan Approval

The undersigned acknowledge that they have reviewed the Project Risk Management Plan and agree with the information presented within this document. Changes to this Risk Management Plan will be coordinated with, and approved by, the undersigned, or their designated representatives.

Signature: _____ Date: _____
Print Name: _____
Title: _____
Role: _____

Signature: _____ Date: _____
Print Name: _____
Title: _____
Role: _____

Signature: _____ Date: _____
Print Name: _____
Title: _____
Role: _____

Signature: _____ Date: _____
Print Name: _____
Title: _____
Role: _____

References

Dow, W., & Taylor, B. (2008). *Project management communications bible.* Indianapolis, IN: Wiley Publishing Inc.

Kendrick, T. (2005, May). *Defining and implementing metrics for project risk reduction.* Retrieved March 3, 2014, from Failure-Proof Projects: http://www.failureproofprojects.com/metrics2005.pdf

Larson, E. W., & Gray, C. F. (2011). *Project management: The managerial process* (5th ed.). New York: McGraw-Hill/Irwin.

State of Minnesota. (2011). *Glossary of Common Procurement Terms.* Retrieved Nov 12, 2013, from Admin Minnesota: Materials management division: http://www.mmd.admin.state.mn.us/mn06008.htm