Semester 2
2016

Automated Self-Service Food Ordering System

2001ICT PROJECT MANAGEMENT WORKBOOK

YASIN CAKAR, LACHLAN HORSEY, CONNOR MCINTYRE, ANNABELLE MURRELL & SAM WREN

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1. Project Charter

Revision History

Date	Ver.	Author	Addition/Alteration
1/8/16	1	Everyone	1.1 company information
5/8/16	2	Everyone	1.2 stakeholder analysis
10/8/16	3	Annabelle Murrell	1.1 company information (business experience, project description)
12/8/16	4	Sam Wren	1.1 company information (business experience)
12/8/16	5	Annabelle Murrell, Lachlan Horsey	1.1 company information (business description)
19/9/16	6	Annabelle Murrell	Fixed up and added to success criteria with suggestions from first submission

1.1 Company Information

Project Title: Automated Self-Service Food Ordering System

Project Manager: Lachlan Horsey

Company Name: Interactive Systems Development Solutions (ISDS)

Head Office: 68 Elizabeth St 7th Floor

Website: http://www.isds.com.au

Team Members: Yasin Cakar, Lachlan Horsey, Connor McIntyre, Annabelle Murrell & Sam Wren

Business Experience: ISDS is an IT firm comprised of undergraduate students. ISDS develops new and innovative ways to help improve customer-business relations. Our headquarters is currently situated in Brisbane's CBD with the focus on creating a difference in our local areas while starting to branch out to international countries.

Other services provided include: Information, Communication and Technology Evaluation of Systems, Unique Staff Training, Resources & Risk Analysis Management and Maintenance of Information Systems.

Project Description: ISDS is developing an automated self-serving food system for Burger Me. Burger Me is one of the café restaurants at the Griffith University's Nathan Campus. Doing so will create a better experience for customers and reduce staff workloads. The idea of this system is to develop a method, which will help make ordering food more time efficient and effective for both the customers and business. The system will allow customers to choose their desired dish by selecting from the wide variety of options such as QLD Barramundi with Chips or any range of burger. Utilizing a set of easy to use kiosks located at the front of the store. This system is designed to make the ordering and waiting time shorter. This will be achieved by a three-touch process *(see figure 1)* for the kiosk and by allowing the staff to prepare the meals rather than serving customers at the front desk. The project is to be completed over the course of half a year starting August 1st 2016 and ending February 13th 2017. Construction work is due to be completed during university holidays starting November 2016 and ending February 2017.

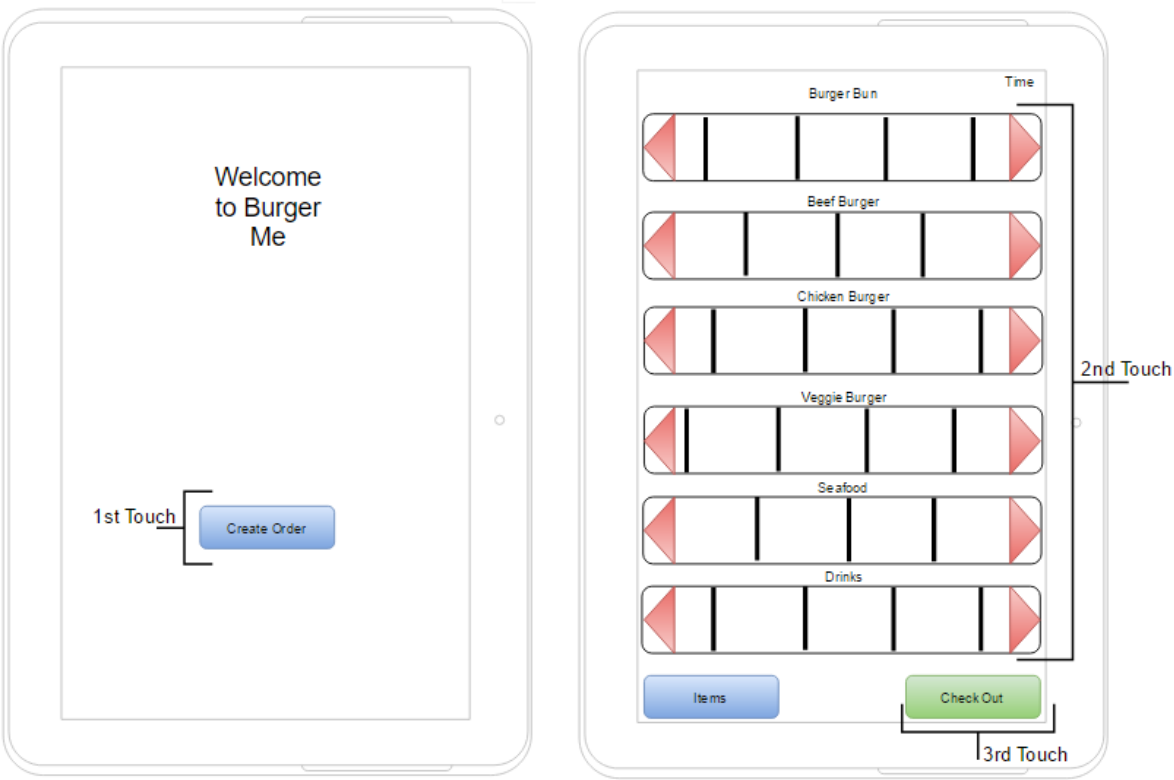


figure 1

Project Objectives and Success Criteria:

For the success of this project, the profit of the business will increase and the waiting time will decrease. Fast company magazine have identified (2004) that fast food companies that adopted the use of the new system were experiencing, that customers were on average spending 30% more money, 20% more likely to upscale their meals when prompted by the kiosk with staff productivity rising by 9.5% on average when compared to the traditional face-to-face method of ordering.

The broad objectives of the project include the following: profits increase and help students, staff and visitors with their schedule. There are two primary types of benefits to our proposed system, one to Burger Me and to the customers. The shop benefits follow as such; increased customer turnover, increased profits, minimise misunderstanding between staff and customers and less chance of mistakes made on orders. Customer benefits include; less wait time for meals, faster service and easier to create their dietary or favourite selects.

How do we measure the success of this system?

The project success criteria are the principles the project must follow and complete for the project to be declared as successful or not. The successful completion of the project depends on multiple variables. Constraints such as the cost, time, resources, risks and scope are the main focus of the project's success. Other aspects required such as the effectiveness of the application and ease of use must also be met. The following must meet the requirements for the project to be completed and successful:

Measure	Success
Cost	The project team has established the maximum budget the project can cost for it to be effective without impacting the project, its goals and maintaining quality standards
	The project follows and stays within or under the budget specified

	The project is cost effective
	The project team are able to track and report on the progress of costs
Time	The project team manages deadlines successfully
	A schedule of all tasks and deadlines are kept on record so the project team can determine if the project is on track or in danger of not reaching its objectives
	The project team is organised and has a layout of the project timeline
Resources	Adequate resources are allocated to tasks to allow successful completion
	Resources are used efficiently to stay on budget
Risks	Risks are effectively accounted for
	Appropriate risk management strategies have been implemented to handle these risks
Scope	Does not suffer from scope creep as the project progresses
	When project tasks are completed, the correct results and deliverables are produced in a high quality manner
	The project meets the requirements and objectives specified in the scope

Effectiveness	Fulfils the project's objectives and purpose
	The project was completed in a time efficient and cost effective manner
Ease of use	The interface created is easy to understand and navigate
	Instructions are clearly labelled

Project Objectives	Success Criteria	Person Approving

Scope:

Customer screen: Develop and implement a customer based interactive display that allows customers to view the current menu, pricing and deals, allow them to make orders and pay via EFTPOS.	Upon completion of the implementation of the features, the graphical user interface (GUI) should be extremely user friendly due to the nature of the venue. Usually described as 'so simple a child could do it' in this case, the system should be that simple.	Sam Wren Connor McIntyre
	If the system is implemented correctly, customer wait times should be reduced heavily as staff are free to prepare more food and do not need to be serving customers at the registers. In addition customers should be happier with the efficiency and productivity of Burger Me due to the decreased wait times.	Connor McIntyre Sam Wren

Staff screen: Implementation of a staff terminal, which allows staff to view current orders and update current order statuses. Another screen to give staff the ability to update menu and pricing of products.	Once the system is implemented correctly, staff will have an easy to use administration screen allowing for problems to be solved quickly in the event that something goes wrong.	Annabelle Murrell Sam Wren
	Successful system implementation will further decrease the wait time between customers as in the event that a customer makes a mistake that requires staff to fix (looking at similar systems elsewhere, this happens frequently) staff are able to fix the issue quickly enough that the customers are not hindered.	Yasin Cakar Connor McIntyre
	Staff will be able to prepare more meals per hour due to not having to serve as many customers at the counter as a result of the system being implemented properly. Instead of having to manually create orders, customers do that part themselves and staff simply prepare the food and supply it to the customers.	Lachlan Horsey Yasin Cakar
Documentation	In the unlikely event of customers not being able to understand how to use the system, staff will be able to use the thorough documentation to teach the	Lachlan Horsey Annabelle Murrell

	customers how the system works.	

Time:

A duration of a year's time commencing from August 2016 and finishing by early February 2017.	The project will be completed at or before the due date, ensuring that construction doesn't get in the way of students studying.	Project Team

Cost:

Completion of the system falls within the specified budget goals	The resulting total project cost meets or falls within the estimated price set out by the budget.	Griffith University Lachlan Horsey

Approach:

The particular software development lifecycle or SDLC, chosen for this project is an Agile/Waterfall Hybrid. This model allows the project team and hardware team to use the waterfall approach to install the devices that are specified and grants the software team the ability to use agile development for faster product delivery. The hybrid SDLC involves constricted interaction between the software and hardware teams, as each part of the system relies upon each other concluding simultaneously. The Waterfall method gives the project team the ability to predict the budget, time and the requirements needed for the

completion of the project. In using the agile method, the software can be easily iterated upon without altering the scope of the project significantly.

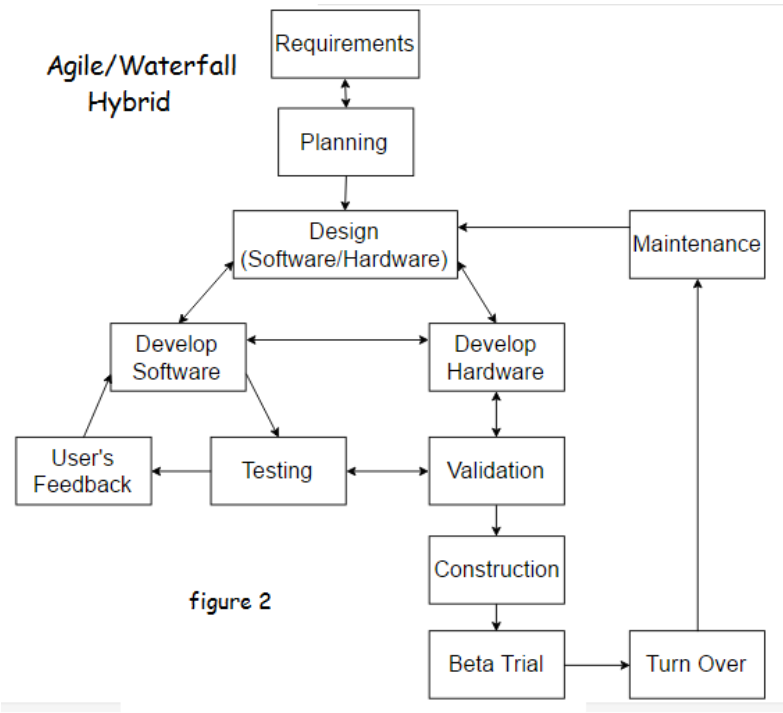


figure 2

Advantages of the Agile/Waterfall Lifecycle

1. The Client knows what to expect such as time & cost.
2. The Waterfall section provides documentation which allows for the system to be improved.
3. Changes can be made after the plan is set in motion if the client wishes to make altercations.
4. Improvements to the system can be added on due to the latest developments.
5. The cycle allows for user feedback for the desired goal to be achieved.
6. Testing warrants that any bugs in the program will be taken care of.
7. Due to the amount of testing and reprogramming, the software can be launched at any time. This can ensure that some form of system is in place close enough to the due date.
8. When the project is turned over, the papers that were recorded will help prevent any back lashes.

Start and Finish:

Start Date: 03/10/2016

Finish Date: 17/02/2017

Latest Finish Date: 25/02/2017

Working Schedule:

- Monday to Friday
- 7am to 5pm

Holiday Schedule:

- 23rd of December to 2nd of January for Christmas and New Year's.
- 26th of January for Australia Day.

These dates are optimal due to the students and staff being vacated from the campus because of semester break (see 3 Work Breakdown Structure).

Budget:

Self Service Kiosk	**Cost**	**Per**	**Quantity**	
42" touch screen display	$3,500	/Kiosk	2	
Kiosk Stands	$150	/Kiosk	2	
kiosk Structure	$500	/Kiosk	2	
Electronic Wires	$6.80	/Meter	100	
EFTPOS Machines	$75	/Kiosk	2	
Cash Dispensers	$125	/Kiosk	2	
Note/Coin Acceptors	$300	/Kiosk	2	
Sub-total	$9,830			
Labour	**Cost**	**Per**	**Quantity**	**Time (hours)**
Civil Construction	$38	/Hour	5	100
R&D	$32	One time	2	150
Staff Training	$19	/Staff Member	4	2
Sub-total	$23,874			
Kiosk Installation				
Physical Installation	$38	/Kiosk	4	20
Electrical	$38	One time	3	45
Health and Safety Auditing	$42	One time	1	8
Sub-total	$8,506			
Company's Pay	**Cost**	**Per**	**Quantity**	
Project Management	$25,000	One time	1	
Sub-total	$25,000			
TOTAL	$67,210			
Minimum Cost	$70,000			
Maximum Cost	$75,000			

1.2 Stakeholder Analysis

Name of Client Liaison: Burger Me

Stakeholders Analysis Key			
Code	***Reference***	***Code***	***Reference***
IN	Internal	**St**	Supporting
EX	External	**H**	High
Py	Primary	**M**	Medium
Sy	Secondary	**L**	Low
Ld	Leading		

Stakeholders Analysis									
No	Name	IN / EX	Project role	Contact info	Contact method	Type	Role	Priority	Expectations/ requirement
1	Lachlan Horsey	IN	Project Manager	lachlan.horsey@griffith.edu.au	Email, meetings	Py	Ld	H	Completion to project, within budget, on time
2	Project team	IN	Project Team	annabelle.murrell@griffith.edu.au sam.wren@griffith.edu.au yasin.cakar@griffith.edu.au connor.mcintyre@griffith.edu.au	Email, meetings	Sy	St	H	Completion of project, within budget, on time
3	Burger Me	IN	Patron	food@griffith.edu.a	Email, phone number	Py	Ld	H	Fully function system that benefits them

				07 3735 3780					
4	Campus Life	IN	Users	N/A	Posters, Griffith website, social media	Sy	St	L	Effective and efficient ordering systems
5	Griffith CEO Professor Ian O'Connor	IN	Sponsor, approvals	ian.oconnor@griffith.edu.au	Email, meetings	Py	Ld	H	Within budget, on time
6	Griffith CTO Professor David Grant	IN	Sponsor	David.grant@griffith.edu.au	Email, meetings	Py	Ld	M	Budget
7	208 Software Pty Ltd	EX	Developer Programmers	office@208softwareptyltd.com.au	Email, meetings	Sy	St	H	Project completes required functions
8	Ashley Deuble	IN	Manager of IT Security	ashley.deuble@griffith.edu.au	Email	Sy	St	M	Secure the cyber safety of the system
9	Head of Office	EX	Sponsor	tony.sheil@griffith.edu.au	Email	Sy	St	L	Within budget and on time
10	Facilities Management	EX	Maintenance	IThelp@griffith.edu.au	Email, meetings	Py	St	L	Faults and updates
11	Public Relations	IN	PR	pr@griffith.edu.au	Email	Sy	St	L	Notified of critical changes
12	Civil Contractors	EX	Performing Organisation	headoffice@civilcontractors.com.au	Email, meetings	Py	Ld	M	Understanding system requirements
13	Peter Huynh	IN	Business Analyst	peter.huynh@griffith.edu.au	Email, meetings	Sy	St	M	Assist with business decisions, monitor business progress

1.3 Communication Strategy

Certain Stakeholders hold a higher value of interest and greater stake within the project; as illustrated in *figure 3.* The top most slice represents the most significant interaction between stakeholders and the lowest slice expresses the least.

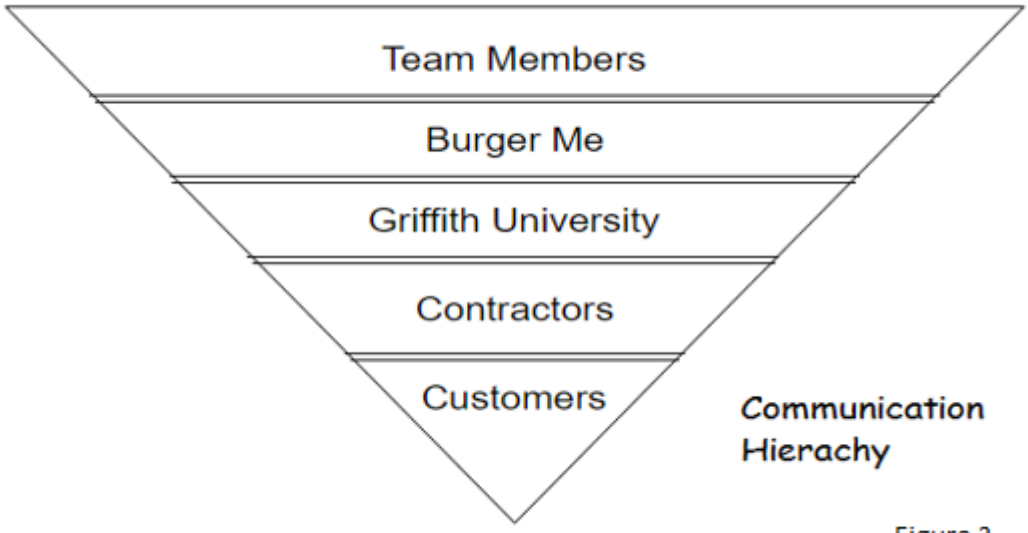


Figure 3

1.3.1 Team Members

Team members will have the highest level of communication within the project. They will be in constant contact with each other through whichever means of communication is needed. Communication will range from formal too informal, depending upon the circumstances of contact. All documentation regarding the project will be made available to team members at all times with formal team meetings taking place weekly, to keep everyone up to date.

1.3.2 Burger Me

As Burger Me are the clientele of the project they will require frequent updates regarding relevant progress of the project and any changes to be made that will impact them. Communication with the business will be conducted through the use of formal meetings and email exchanges.

1.3.3 Griffith University

Griffith University also requires a high level of communication with the project team as they are the sponsor of the project and are directly affected. Communication will be held through the use of emails and formal meetings when required. They will be updated about any changes that occur.

1.3.4 Contractors

As contractors are an outside entity they do not require as much information about the project. However, they will need to be kept up to date with information regarding the system that is being developed. In order to allow them to make changes as needed; this information will be given and received through the use of emails.

1.3.5 Customers

Customers have the least stake within the project process and thus do not require constant updating of project details. As the beneficiary of the new system they will need to be made aware of the proposed end product. This information will be provided informally via posters, social media and official university outlets.

2 Project Scope Statement

Revision History

Date	Ver.	Author	Addition/Alteration
12/8/16	1	Annabelle Murrell, Lachlan Horsey	2.1 Product scope description
21/8/16	2	Yasin Cakar	2.2 Product deliverables
17/8/16	3	Annabelle Murrell	2.1 Product Scope Description
19/8/16	4	Sam Wren	2.1 Product Scope Description
22/8/16	5	Sam Wren	2.2 Product Scope Description
23/8/16	6	Annabelle Murrell	2.2 Product Scope Description
22/9/16	7	Connor McIntyre	2.1 Product Scope Description

2.1 Product Scope Description

The project being delivered by ISDS, will involve designing and developing an automated self-serving food system for the on-campus fast food outlet, *Burger Me* at the Nathan campus. The kiosk system must allow customers to browse the menu, order their meals themselves as well as view the summary of their order. The customer must also be able to pay by either cash or EFTPOS and receive an order number with the receipt. This will in turn create a more efficient and effective order of operations around the business. The maximum budget that has been allowed is $80,000. All aspects, features and development must stay within or under the given budget. The project commencement will begin August 1st 2016 and conclude on February 13th 2017 to give the developing team time to create and assemble the system and kiosks into *Burger Me* during university holidays.

The system would require the following:

Hardware Requirements			
Code	**Requirement**	**Priority**	**Reasoning**
HR.1	Two kiosks must be provided to the Café *Burger Me*	Mandatory	Considering the size of the shop and with the average number of customers in mind, two kiosks will be implemented into the outlet to help customer flow and reduce queue times.
HR.2	Cabling should be discrete and not an impairment to the look of the venue	Mandatory	If the cabling that has been run for the kiosks impairs the store visually, customers will be less inclined to buy food from Burger Me and would be more likely to use a different store. Meaning that cables required by the kiosks need to be neat, tidy and hidden away.
HR.3	The Database of food must be kept up to date ensuring that customers can buy all the food offered by the store	Mandatory	In the event that the database wasn't updated enough, customers would be unable to buy food and Burger Me would be losing out on profit in most situations. The menu at Burger Me is constant enough that the Database would not require updating very often.

Software Requirements			
Code	**Requirement**	**Priority**	**Rationale**
SR.1	The interface created must be self-explanatory, easy to navigate and understand with a three touch system being implemented to order.	Mandatory	It's important for the customer to be able to order their meal as easily as possible with minimum touches necessary so they get the best experience.
			The easier and more enjoyable the experience is, the more likely the customer will return.
SR.2	The customer must be able to pay with either cash or EFTPOS.	Mandatory	Some users prefer one option of paying, while others prefer another so it's essential to have both so all customer needs are met.
SR.3	A confirmation of order must be given to the customer as well as an order number once they have chosen their desired meal.	Mandatory	It's important for the customer to have a record of what they have ordered in case a mistake.
			It is mandatory for the customer to receive an order number so they can collect their food as easily as possible and to reduce the risk of misplaced orders.
SR.4	Orders must have the ability to be modified.	Mandatory	Orders must be able to be modified in case the customer changes their mind or forgets to order something.

SR.5	The software must be installed on all of the kiosks located at Burger Me.	Mandatory	The software must be installed on the kiosks so the self-serving food system will work.
SR.6	The software must be up to date with the industry standards.	Mandatory	Software must be up to date so it can perform all of the required tasks.

Documentation Requirements			
Code	**Requirement**	**Priority**	**Reasoning**
DR.1	All documentation that covers the system will be provided to staff for reference.	Mandatory	It is important for the staff to have a reference for the system in case there is a technical problem.
DR.2	Documentation will be provided in both electronic and hard copy formats.	Desirable	It is desirable for the documentation to be in both formats so the staff have multiple copies.
DR.3	Documentation must include: • User manual • System manual • Software support numbers (if the system malfunctions and you are unable to fix it) • Software manual • Hardware manual	Mandatory	It's mandatory to have all of this in the documentation so the staff knows how to operate the system and what to do if there is a problem.
DR.4	Documentation must include installation process of the software	Mandatory	It is important to include the installation process in the documentation so technical staff can easily start the system up.

Training Requirements			
Code	**Requirement**	**Priority**	**Reasoning**
TR.1	Training for staff member will be available online as well as hands on.	Mandatory	Two training options are available to staff to help them learn and understand the system appropriately. People also have different learning methods, so it's important to provide more than one method to satisfy everyone.
TR.2	An automated self-serving food ordering system manual must be provided to staff.	Mandatory	The staff must have access to the user manual for the system so they can have a guide on how to operate it.

Hardware Acceptance Criteria	
Code	**Acceptance Criteria**
HAC.1	Hardware is installed at Burger Me restaurant on the Griffith University Nathan Campus
	Two kiosks are available for customers to use.
HAC.2	The installed kiosks are not visually impairing to the overall look of the establishment, either in the design of the kiosks themselves or the cabling that has been run to power and access them.
HAC.3	A database of Burger Me's current menu is to be kept up to date allowing for the kiosks to provide customers with the ability to order all of the food available at the store.

Software Acceptance Criteria	
Code	**Acceptance Criteria**
SAC.1	Software installed has an easy to use interface
	Three touch ordering system is implemented
SAC.2	Customer can pay via cash and or EFTPOS
SAC.3	An order and reference number is printed out once the order has been placed
SAC.4	Orders are able to be modified
SAC.5	Software is installed on all of the hardware kiosks at Burger Me
SAC.2	Software is up to date with the industry standards

Documentation Acceptance Criteria	
Code	**Acceptance Criteria**
DAC.1	All documentation is provided for the staff members at Burger Me
DAC.2	Documentation is provided in both electronic and hard copy
DAC.3	Documentation includes user manual
	Documentation includes system manual
	Documentation contains software support numbers
	Documentation contains both software and hardware manuals
AC.4	Documentation includes installation process of the software

Training Acceptance Criteria	
Code	**Acceptance Criteria**
TAC.1	Staff have access to online training as well as hands on training
TAC.2	Training manuals are provided to staff at Burger Me

User Stories:

No	Customer	No	Staff
1.	"I want to be able to easily navigate the system and be able to order food without difficulty."	6.	"I want to be able to view the status of the order."
2.	"I want to be able to be able to pay using EFTPOS and/or cash at the kiosk."	7.	"I want to be able to update the status of the order when needed."
3.	"I want confirmation of my order through the means of a receipt with an order number."	8.	"I want to be able to view customer orders and their order number so I can hand out orders easily."
4.	"I want to be able to correct my order if I make a mistake."	9.	"I want to have access to update the menu options and product pricing when required to."
5.	"I want there to be more than one kiosk so I can order my food as fast and efficiently as possible."	10.	"I want there to be multiple kiosks so the customer flow is continuous and faster."

2.2 Product Deliverables

Product deliverables are objects that will be provided come completion of the system. These can be either tangible; physical objects or intangible; non-physical objects. The tangible products delivered by this system include the hardware and software elements of the system as well as the physical user manuals provided to staff. Non-tangible products consist of the training that will be made available to employees and the support and maintenance provided for the system.

To ensure the deliverables are met to the clients' satisfaction, a clear understanding of each stakeholder's expectations and requirements to deliver a suitable product are necessary. For the success of the product deliverables, the project team will need to be in charge of providing quality to the system that is defined within the scope, the agreed schedule and the budget.

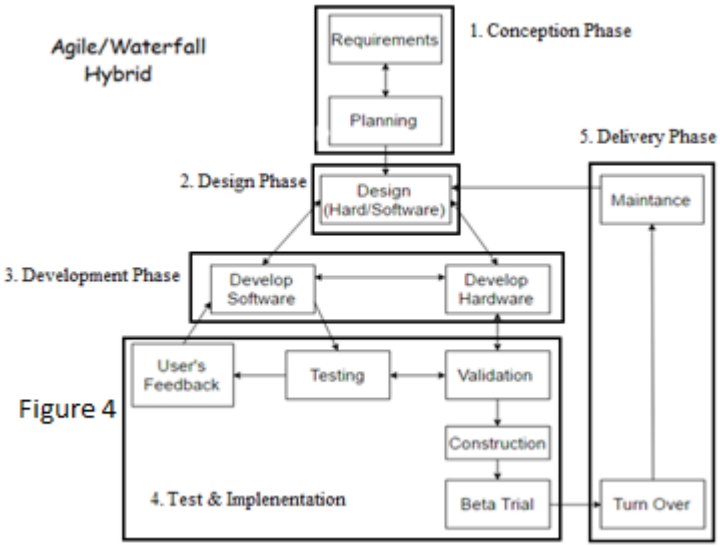


Figure 4

Interactive Systems Development Solution (ISDS) will offer this service through a five phase project plan. The phases are: 1. Conception, 2. Design, 3. Development, 4. Testing & Verification and 5. Delivery, as seen in *figure 4*.

ISDS has a unique approach to provide solutions to the IT industry. By implementing a rigid waterfall structure to ensure optimum quality while capitalising on the adaptable nature of software with an agile approach to make incremental developments based upon the customer feedback during the Development as well as the Testing and Implementation phase to provide the client with the most ideal and desired results whilst still providing a concise time frame for completion.

In the final Delivery Phase of the completed product, the clientele will receive introductory training sessions on the automated ordering system, a learner handbook for employees, user manuals as well as product warranty.

Below is a structured view of the deliverables required by the project, the hardware and component categories, the standards that are required to be fulfilled and their respective governing bodies. The categories are the different stages of development, from physical unit installation through to staff training, the standards are the set of rules that the product must legally adhere to, and the standard body is the governing body that's defines the standard.

Product Deliverables					
Code	Deliverable	Components	Description	Standard	Standard Body
PD.1	Hardware	PD.1.1 Installation	Hardware is installed in compliance with Australian and International Standards	-Electrical Safety Regulation 2013, Section 6	Queensland Government
				-AS/NZS 3000:2007 Electrical installations (the Wiring Rules) -AS/NZS 3012:2010 Electrical Installations – Construction and demolition sites -AS/NZS 3017:2007 Electrical installations – Verification guidelines -AS/NZS 3760:2010 In-service safety inspection and testing of electrical equipment -AS/NZS 4836:2011 Safe working on low-voltage electrical installations and equipment	Standards Australia
		PD.1.2 Hardware Certification	Electrical Appliance Safety Verification	AS/NZS 60335.2.82 Amusement machines and personal service machines	Standards Australia

		PD.1.3 Approval and Test specification	Ensure Electronic Hardware meets general requirements	AS/NZS 3100:2009	Standards Australia
		PD.1.4 Regulatory compliance mark for electrical and electronic equipment	Specific requirements for particular regulatory applications	AS/NZS 4417.2:2012	Standards Australia
		PD.1.5 Hardware Testing/ Verification	Hardware Design Specification Document Hardware Inspection Report Beta Trial Assessment	Internal Company Standards ISO Standards – ICS 19.080 Electrical and electronic testing	ISDS International Standards Organisation
		PD.1.6 Equipment Quality Verification	Hardware Quality Compliance with international standards	ISO – ISO Standards – ICS 43.040.10: Electrical and electronic equipment	International Standards Organisation
		PD.1.7 Functional Safety	Ensure safe operability of electronic hardware	IEC 61508 Functional Safety of Electrical/Electronic/Programmable Electronic Safety-related Systems (E/E/PE, or E/E/PES).	International Electro technical Commission

Code	Deliverable	Components	Description	Standard	Standard Body
PD.2	Software	PD.2.1 Functioning System	System and software is designed based on an internationally recognised framework and process	ISO/IEC/IEEE 15288:2015	International Standards Organisation International Electro technical Commission Institute of Electrical and Electronics Engineers
		PD.2.2 Appropriate Software life cycle adopted.	Design technique for the software application selected specifically based on the nature of the software application	ISO/IEC 12207:2008	International Standards Organisation International Electro technical Commission
		PD.2.3 Software Requirements Specifications	Software Requirements Specifications drafted and Implemented by well renowned standards	IEEE 830 - Software Requirements Specification	Institute of Electrical and Electronics Engineers
		PD.2.4 Software Design Description Implementation	Software design based on a 6 step (section) process	IEEE 1016 – Recommended Practice for Software design Description	Institute of Electrical and Electronics Engineers
PD.3	Training	Training Plan	In-depth guide outlining the activities to be covered in the delivery phase.	ISDS-ITM0 – Induction Training, Module 0	ISDS
		Automated Self-Service Food Ordering System User Manual	User Manual serving as operational guide to use the Ordering System.	ISDS-ASSFOS-AU – User Manual	ISDS
		Automated Self-Service Food Ordering System	Instructors manual to train recruited staff to	ISDS-ITM1 – Induction	ISDS

		User Instructor's Manual	operate the staff terminal to process customer orders.	Training, Module 1	

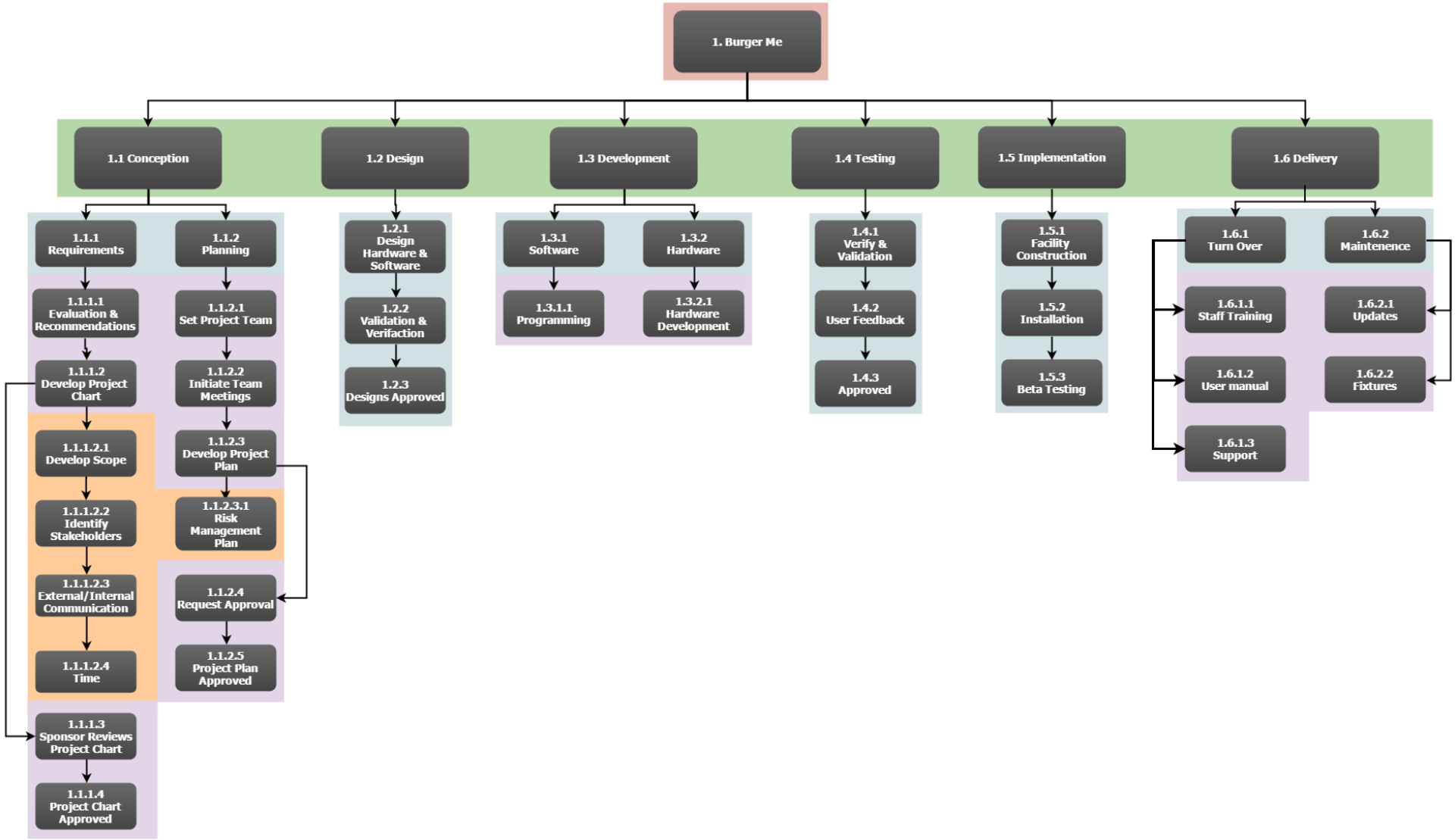
To see references to standards documentation, see Section **9.4.2 Standards**

3 Work Breakdown Structure

Revision History

Date	Ver.	Author	Addition/Alteration
23/8/16	1	Sam Wren	Initial WBS tree structure
24/8/16	1.1	Sam Wren	Phases 1-3 drafted
25/8/16	1.2	Sam Wren	Phases 4-6 drafted
26/8/16	2	Sam Wren, Lachlan Horsey	Finalisation of tree
26/8/16	2.1	Sam Wren	WBS table
13/9/16	3	Sam Wren	WBS

3.1 WBS Tree


1. Burger Me
1.1 Conception
1.2 Design
1.3 Development
1.4 Testing
1.5 Implementation
1.6 Delivery
1.1.1 Requirements
1.1.2 Planning
1.1.1.1 Evaluation & Recommendations
1.1.1.2 Develop Project Chart
1.1.1.2.1 Develop Scope
1.1.1.2.2 Identify Stakeholders
1.1.1.2.3 External/Internal Communication
1.1.1.2.4 Time
1.1.1.3 Sponsor Reviews Project Chart
1.1.1.4 Project Chart Approved
1.1.2.1 Set Project Team
1.1.2.2 Initiate Team Meetings
1.1.2.3 Develop Project Plan
1.1.2.3.1 Risk Management Plan
1.1.2.4 Request Approval
1.1.2.5 Project Plan Approved
1.2.1 Design Hardware & Software
1.2.2 Validation & Verifaction
1.2.3 Designs Approved
1.3.1 Software
1.3.2 Hardware
1.3.1.1 Programming
1.3.2.1 Hardware Development
1.4.1 Verify & Validation
1.4.2 User Feedback
1.4.3 Approved
1.5.1 Facility Construction
1.5.2 Installation
1.5.3 Beta Testing
1.6.1 Turn Over
1.6.2 Maintenence
1.6.1.1 Staff Training
1.6.1.2 User manual
1.6.1.3 Support
1.6.2.1 Updates
1.6.2.2 Fixtures

3.2 WBS Table

ID	Task Name	Duration (Days)	Predecessors
1	Burger Me		
1.1	**Conception**		
1.1.1	**Requirements**		
1.1.1.1	Evaluation & Recommendation	2	
1.1.1.2	Develop Project Chart		1.1.1.1
1.1.1.2.1	Develop Scope	3	1.1.1.2
1.1.1.2.2	Identify Stakeholders	2	1.1.1.2.1
1.1.1.2.3	External/Internal Communication	2	1.1.1.2.2
1.1.1.2.4	Time	1	1.1.1.2.3
1.1.1.3	Sponsor Review Project Chart	2	1.1.1.2
1.1.1.4	Project Chart Approved	1	1.1.1.3
1.1.2	**Planning**		
1.1.2.1	Set Project Plan	3	1.1.1
1.1.2.2	Initiate Project Team Meetings	1	1.1.2.1
1.1.2.3	Develop Project Plan	2	1.1.2.2
1.1.2.3.1	Risk Management Plan	3	1.1.2.3
1.1.2.4	Request Plan Approval	1	1.1.2.3.1
1.1.2.5	Plan Approved	1	1.1.2.4
1.2	**Design**		
1.2.1	Design Hardware & Software	3	1.1
1.2.2	Validation & Verification	1	1.2.1
1.2.3	Design Approved	1	1.2.2

1.3	**Development**		
1.3.1	**Software**		
1.3.1.1	Programming	10	1.2
1.3.2	**Hardware**		
1.3.2.1	Hardware Development	5	1.2
1.4	**Testing**		
1.4.1	Verify & Valuation	4	1.3
1.4.2	User's Feedback	1	1.4.1
1.4.3	Approved	1	1.4.2
1.5	**Implementation**		
1.5.1	Facility Construction	18	1.4
1.5.2	Installation	10	1.5.1
1.5.3	Beta Testing	5	1.5.2
1.6	**Delivery**		
1.6.1	**Turn Over**		
1.6.1.1	Staff Training	1	1.5
1.6.1.2	User Manual	14	1.5
1.6.1.3	Support	1	1.5
1.6.2	**Maintenance**		
1.6.2.1	Updates	0	1.6.1
1.6.2.2	Fixtures	0	1.6.1

4 Estimation

Revision History

Date	Ver.	Author	Addition/Alteration
15/09/16	1	Sam Wren	4.1, 4.2, 4.3
16/09/16	2	Annabelle Murrell	4.1, 4.2
23/09/16	3	Connor McIntyre	4.1 Expansion, 4.2 fixed grammar
17/09/16	4	Sam Wren	Add three-point method into estimation

4.1 Choice of Technique

For estimation to be calculated to an acceptable level the listed techniques will be put into use:

- Interactive Systems Development Solutions
    - This estimates the time, effort, risk and resources.
- Three Point Estimation
    - This estimates the Budget, Staff Training, the Schedule Timing and Hardware Procurement

4.2 Justification

Interactive Systems Development Solutions

The Agile Estimation was chosen as it was found to be the most suitable technique for the Agile/Waterfall Hybrid approach. The Agile Estimation enables the project team to implement new User Stories towards the project. But why is this estimation technique best suited?

1) It rules out any need for re-evaluation. As the software team is using an Agile SDLC, it allows them to adapt and learn what is required for a perfect system.

2) The points are based upon the teams work ability. The points delegated to each section are constructed from the team's previous work performance. Giving the team a clear understanding on which story has a higher level of importance.

3) Directs the clients to ask more appropriate questions. As the SDLC allows for user feedback, meaning additional user stories will be inserted. This is because in developing the software, the best method is trial and error. By giving the testers a chance to evaluate, the team can improve and adjust any requests or recommendations.

Story points make up the structure of the table (*see 4.3 Estimation*) and specify the effort required to implement the user story. These are critical to the project outline as they give the project team an outline of how long tasks will take in order and the amount of effort, risk and resources that should be put into that specific task.

4.3 Estimation

Interactive Systems Development Solutions						
ID	User Story	Time	Effort	Risk	Resources	Total
U1	"I want to be able to easily navigate the system and be able to order food without difficulty."	2	1	1	1	5
U2	"I want to be able to pay using EFTPOS and/or cash at the kiosk."	1	1	1	1	4
U3	"I want confirmation of my order through the means of a receipt with an order number."	1	1	1	1	4
U4	"I want to be able to correct my order if I make a mistake."	2	1	1	1	5
U5	"I want there to be more than one kiosk so I can order my food as fast and efficiently as possible."	1	1	1	2	5
U6	"I want to be able to view the status of the order."	1	1	1	1	4
U7	"I want to be able to update the status of the order when needed."	1	1	1	1	4
U8	"I want to be able to view customer orders and their order number so I can hand out orders easily."	1	1	1	1	4
U9	"I want to have access to update the menu options and product pricing when required to."	2	1	1	1	5
U10	"I want there to be multiple kiosks so the customer flow is continuous and faster."	1	1	2	2	6
Total						46

Time (h)	Effort	Risk	Resources
1 = < 12	1 = 1 – 2	1 = Low	1 = Low
2 = 12 – 24	2 = 2 - 3	2 = Medium	2 = Medium
3 = 24 – 36	3 = 3 – 4	3 = High	3 = High
4 = 36 – 48	4 = > 4		
5 = > 48			

Three Point Estimation

By using this method, the below deliverables' costs can be accurately calculated.

The three points in this estimation are:

- Optimistic
- Most Likely
- Pessimistic

These three variables are used to calculate the 'Expected'. This is done through the use of the formula: $Expected = \frac{(Optimistic+4(Most\ Likely)+Pessimistic)}{6}$.

Total Budget

- Optimistic: $75,000
- Most Likely: $67,210
- Pessimistic: $75,000
- $Expected = \frac{(Optimistic+4(Most\ Likely)+Pessimistic)}{6}$

$$\left(\frac{75{,}000 + 4(67{,}210) + 75{,}000}{6}\right) = \$69,806.67$$

Staff Training

Schedule for Training

- Optimistic: 0.5 Day
- Most Likely: 1 Days
- Pessimistic: 2 Days
- $Expected = \frac{(Optimistic+4(Most\ Likely)+Pessimistic)}{6}$

$$\left(\frac{0.5\ + 4(1) + 2}{6}\right) = 1.08\ Days$$

Budget for Training

- Optimistic: $900
- Most Likely: $1,000
- Pessimistic: $1,200
- $Expected = \frac{(Optimistic+4(Most\ Likely)+Pessimistic)}{6}$

$$\left(\frac{900\ + 4(1000) + 1200}{6}\right) = \$1{,}016.67$$

Schedule Timing

- Optimistic: 86 Day
- Most Likely: 92 Days
- Pessimistic: 99 Days
- $Expected = \frac{(Optimistic+4(Most\ Likely)+Pessimistic)}{6}$

$$\left(\frac{86\ +4(92)+99}{6}\right) = 93\ Days$$

Hardware Procurement

- Optimistic: $9,500
- Most Likely: $9, 830
- Pessimistic: $10,000
- $Expected = \frac{(Optimistic+4(Most\ Likely)+Pessimistic)}{6}$

$$\left(\frac{9{,}500\ +4(9{,}830)+10{,}000}{6}\right) = \$9{,}803.34$$

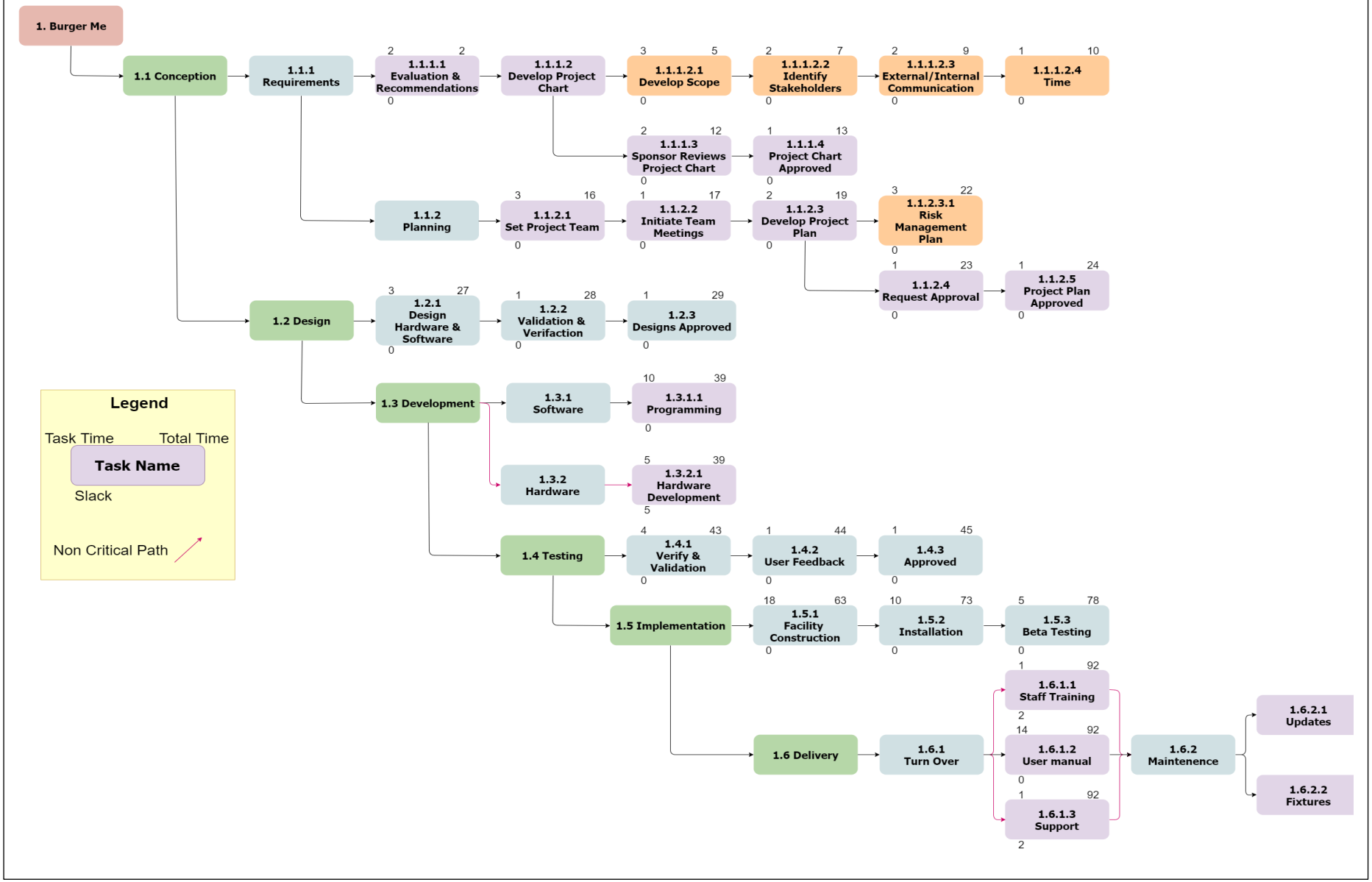
5 Schedule

Revision History

Date	Ver.	Author	Addition/Alteration
11/9/16	1	Annabelle Murrell	Created draft of schedule
24/09/16	2	Sam Wren	Final Version

Below is the Schedule Structure Tree which displays the Tasks, Task Time, Total Time, Slack and Critical Path. The critical path illustrated has been chosen as it minimises slack time and wait time and ensures the project is completed on time and in the most efficient manner possible. As to the dates see attached document, Schedule.xlsx.

Schedule Structure Tree



The Critical Path is defined as the minimum time allowed for a task to be completed. In the image above the critical path lines are black and the non-critical path is in purple. This path is chosen due to each task alone the black lines having zero slack time (time allowed before a task must start), meaning that if a task is delayed, it pushes all the other tasks to a later date.

6 Change Control Plan

Revision History

Date	Ver.	Author	Addition/Alteration
19/9/16	1	Sam Wren	6.1.1 & 6.1.2 Draft
19/9/16	2	Annabelle Murrell	6.1.3 Audits and Review
19/9/16	3	Annabelle Murrell	6.2.1 Configuration Items
22/9/16	4	Annabelle Murrell and Lachlan Horsey	6.1.3 Audits and Review 6.2 Configuration Management
24/9/16	5	Sam Wren	6.1.1 & 6.1.2 Final
25/9/16	6	Sam Wren	6.1 & 6.2

6.1 Change Control

6.1.1 Change control approach

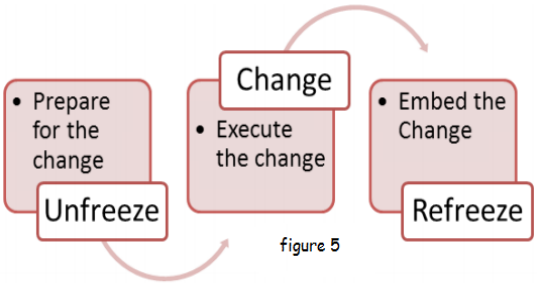


figure 5

In order to change the control of the project a particular process will be undertaken, to appraise every suggested change. This particular process is called the Unfreeze, Change, Refreeze or more commonly known as Lewin's Control Change Model (*figure 5*). Lewin's model states that for something to change like an ice cube, it first requires the cube to begin to unfreeze (the preparation for change). This stage will be completed by using the Control Change Hierarchy (*figure 6*). The hierarchy in which correlates to the level of control with the project manager

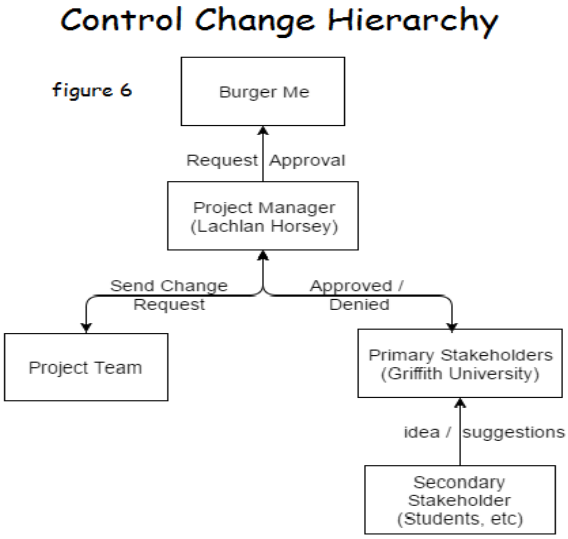


figure 6

requesting approval of all changes, that have been assessed by the project team, from the head stakeholder, Burger Me. After Burger Me has addressed the change, the project manager alerts the stakeholder of the desired change status; whether it be denied or approved. If the change has the approval of Burger Me, the project team will now have to discourse a management plan towards any remaining issues towards the change; such as, cost, time or otherwise.

Once the preparation stage is over the change can commence. At this point in the change this is where the project team hears any uncertainties that the stakeholders have regarding the modification. The change section can take a while and that is why communication is key at this phase in the process, by explaining the benefits and how it will affect the stakeholder. After the project team has descripted the key points, the stakeholders may have questions concerning the alteration. Any questions that require action involving the change must be immediately resolved, included any issues that maybe unclear. Once any and all questions have been answered, the implantation of the change can begin (Refreeze).

In the case that time constraints are of utmost importance, Kotter's 8 Step Change would be the alternate choice to Lewin's change model as it does not require the project to halt whilst the change is implemented. The below figure illustrates the 8 steps of Kotter's change model. The biggest difference between Lewin's model and this model is that Kotter's model breaks the change down into smaller changes allowing the project to continue progressing whilst a change is implemented.

[5] Kotter, John P. and Cohen, Dan S. The Heart of Change. Boston: Harvard Business School Press

But how does the project team assess the change?

1. Identify the category of the change.
2. List all the benefits.
3. How does the change affect the project in terms of cost and time?
4. Does the change have a low, medium or high risk?

6.1.2 Change control procedure

<table>
<tr><td>Change Request Submittal</td><td>These changes will be implemented by the use of a Request Change Form (view Change Request Disposition), which will be discussed at the weekly project team meetings. The team will determine if the change is essential or nonessential. If any control changes are critical, than the team member must schedule a meeting with the project manager instantly so the manager can organise for the request to be assessed as soon as possible. However, the secondary stakeholders cannot use a Request Change Form but are able to send any ideas through to a primary stakeholder with a link in the Griffith Black Board Page, which will be provided.</td></tr>
<tr><td>Change Request Tracking</td><td>As there maybe multiple requests, the Project Manager will need to have an up to date status of all change requests. This system can be applied by the use of a record that catalogues; the stakeholder who sent the form, the category, approval or rejection, the date received and date notified (table below).

Record kept.

<table><tr><th>ID</th><th>Name</th><th>Category</th><th>Approved / Denied</th><th>Date Received</th><th>Date Notified</th><th>Importance</th></tr><tr><td>R1</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>R2</td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table></td></tr>
<tr><td>Change Request Review</td><td>To help save time between meetings of Burger Me and the project manager, any changes associated with the project scope can be accepted by the project team.</td></tr>
</table>

Change Request Disposition

Project Name:
Date Request Submitted:
Title of Change Request
Change Order Number:
Submitted by: (name and contact information)
Change Category:

- ☐ **Budget**
- ☐ **Acceptance Criteria**
- ☐ **Project Requirements**
- ☐ **Project Stakeholders**
- ☐ **Work Breakdown Structure**
- ☐ **Deliverables**
- ☐ **User Requirements**
- ☐ **Project Timeline**
- ☐ **Project Scope**

Description of change requested:

Events that made this change necessary or desirable:

Justification for the change/why it is needed/desired to continue/complete the project:

Impact of the proposed change on:

Budget:

Acceptance Criteria:

Project Requirements:

Project Stakeholders:

Work Breakdown Structure:

Deliverables:

User Requirements:

Project Timeline:

Project Scope:

Suggested implementation if the change request is approved:

Name/Title	Signature

6.1.3 Audits and review

It is mandatory for the project manager and project team to hold regular meetings to discuss the progress of the project. It is essential that the project team stays up to date with progress, so they can inform the project manager on the requirements, goals, project scope and time constraints are being met and notify them of any changes that must occur. Upon a change being suggested an entry into the Change Request Record will be made. This Record will document current and past change requests made to the Project Manager, allowing any variances to be easily identified.

In the case that a variance is found from the project scope, the project manager will conduct an audit through the use of a team meeting with the required team members. In the weekly meetings the project manager will discuss with the team the irregularities that have occurred, how they transpired and how to ensure the project runs smoothly in the future, maintaining and following the project scope correctly.

6.2 Configuration Management

6.2.1 Configuration items

This project includes the following configuration items that the changes could affect:

- Budget
- Acceptance Criteria
- Project Requirements
- Project Stakeholders
- Work Breakdown Structure
- Deliverables
- User Requirements
- Project Timeline
- Project Scope

These items will be baselined against the following procedure:

ID	Configuration Item	Baseline
CI1	Acceptance Criteria	• ANSI/EIA 649-1998 • MIL-STD-973 • The change will be approved by the Project Team alongside Burger Me and Griffith CEO. • Baseline: - 1.1 Company Information, Project Objectives and Success Criteria
CI2	Budget	• ANSI/EIA 649-1998 • The budget will involve revaluation. • Baseline: - 1.1 Company Information, Budget
CI3	Deliverables	• ANSI/EIA 649-1998 • MIL-STD-973 • Revaluation of the deliverables. • Baseline: - 2.2 Product Deliverables
CI4	Project Requirements	• ANSI/EIA 649-1998 • The change will result in the Project Team redefining scope, budget and duration.
CI5	Project Scope	• ANSI/EIA 649-1998 • Any change to the scope may affect the current state and cause for a revaluation of the scope. • Baseline: - 2.1 Product Scope Description

CI6	Project Stakeholders	• ANSI/EIA 649-1998 • Any change to the Stakeholders need to be revaluated. • Baseline: - 1.1 Company Information, Stakeholder Analysis
CI7	Project Timeline	• ANSI/EIA 649-1998 • Results in the re-estimation. • Baseline: - 1.1 Company Information, Start & Finish. 3 Work Breakdown Structure
CI8	User Requirements	• ANSI/EIA 649-1998 • Any change will be re-evaluated.
CI9	Work Breakdown Structure	• ANSI/EIA 649-1998 • If any task in the breakdown structure is affected by any change, will result in the WBS outline being revaluated. • Baseline: - 3 Work Breakdown Structure.

To see documentation for ANSI/EIA 649-1998 and MIL-STD-973 visit: http://www.minerva-plm.com/media/41966/WHITE-PAPER-Consistancy%20Through%20Configuration.pdf.

6.2.2 Configuration Management System

Management of configuration items will be handled by the Control Board which contains the Project Manager, spokesperson from Burger Me, Griffith CEO and CTO, Peter Huynh and Tony Shell. This board will be in charge of the oversite of all configuration changes, and will give the final say and making adjustments that are necessary for a successful product.

Responsibilities within the Board

Project Manager:

- Recording all configuration items being changed,
- Organise the meetings,
- Giving the configured items a new baseline standard if approved.

Burger Me:

- The final say on approval.

Griffith CEO & CTO, Peter Huynh and Tony Shell:

- Approval of funding and duration.

As the members of the board will be busy with other duties, if the change has a low effect to the systems, the Project Team can give an approval providing all requirements are kept within the boundaries. After a change has been made, the baseline that it was compared to, has to be edited and incrementally versioned.

7 Risk Management Plan

Revision History

Date	Ver.	Author	Addition/Alteration
1/10/16	1	Sam Wren	7.1 Risk Management Strategy,
6/10/16	2	Team	7.3 Risk Register
9/10/16	3	Annabelle Murrell	7.3 Risk Register
12/10/16	4	Annabelle Murrell	7.1 Risk Management Strategy
13/10/16	5	Sam Wren & Annabelle Murrell	7.1 Risk Management Strategy, 7.3 Risk Register
14/10/16	6	Lachlan Horsey	7.3 Risk Register table

7.1 Risk Management Strategy

Range of Benefits from Risk Management

- Less Surprises.
- Utilization of Opportunity.
- Better-quality of Planning, Performance & Effectiveness.
- Economy & Efficiency.
- Enhanced Stakeholder Relations.
- Improved Data for Decision Making.
- Greater Reputation.
- Accountability, Assurance & Governance.
- Personal Wellbeing.

Steps to Manage Risk

According to PMBOK (Project Management Body of Knowledge – 5th Edition) there are 5 steps for managing risks:

1. Risk Management Planning
2. Risk Identification
3. Qualitative & Quantitative Risk Analysis
4. Risk Response Planning
5. Risk Control

Risk Management Planning

Risk planning is the guidelines to which a risk will be handled against. In order for a successful implementation of a risk management plan certain questions have to be addressed which cover a wide range of content:

- Why is it important to postpone or have immediate action taken against a risk?
  The content:
    - Risk Probability & Impact
    - Risk Documentation
- What is the specific risk & what mitigation activities must be taken?
    - Risk Categories
    - Methodology
    - Risk Documentation
- Who will implement the risk mitigation?
    - Roles & Responsibilities
- When will mitigation milestones occur?
    - Budget & Schedule
- What necessary requirements are needed?
    - Risk Documentation
    - Contingency Plans
    - Fall back Plans

Risk Identification

Identifying the risks within the project involves determining which problem might cause an issue to the project and have those risk characterises documented into a risk register. These issues can affect the schedule, budget, resources and/or technical risks. Over the years there have been three identified areas of criteria relating to risks within the projects software; Business Risks (Client & Target Environment), Project Risks (Team Environment) and Technical Risks (System Complexity, New Technologies & Environment). The recorded keep of the documented characterises will contain the following:

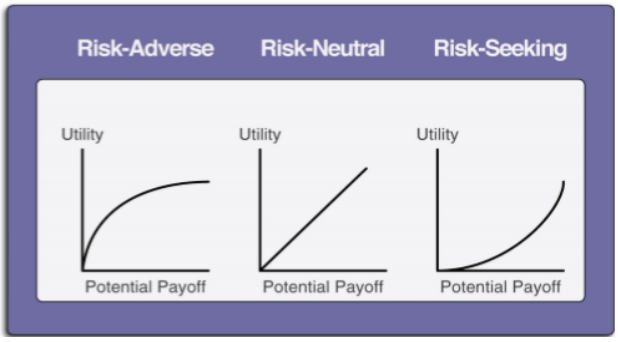
- A Key ID
- Event or Risk
- Probability
- Impact
- Preventative Steps
- Response

Now it's time for the team to begin recognizing any risks that may occur, which can be done through the use of tools and techniques, which follow:

- Information Gathering Technique
    - The best way to gather information is by brainstorming. A meeting with key stakeholders, led by the project manager in the early weeks of the conception phase. In this meeting the members will have an opportunity to give any thoughts they may have. A team member will take note all suggestions.
    - If a risk is thought of after the meeting, a document will be available for ideas to be suggested to the project manager.
- SWOT Analysis
    - Strength, Weakness, Opportunities & Threats.
    - This part has to be done by someone who has expert judgement and can be someone within the team or outsourced by a third party. For each of the suggested risks that were taken in the brainstorm meeting, the SWOT analysis technique can devise which risk is more significant.

- Assumptions Analysis
    - After the risks have been ranked, the project team are now able to generate scenarios and look at the effect that they have on inaccuracy, instability, inconsistency and/or incompleteness.
- Documentation Review
    - As the project will get documents throughout the life of the project. The project manager needs to revise as minor risks could slip through unchecked.
- Risk Utility
    - Risk Utility is how a person reacts to a risk. It is measured by satisfaction of the projects possible improvement from the solution towards a risk (potential payoff). There are three kinds of risk utility, those who seek risks, adverse and neutral (*see Risk Utility Diagram to the side*).
    - Risk Seeking – Satisfaction increases when payoff is at higher risk,
    - Risk Adverse – Satisfaction decreases when payoff is at higher risk,
    - Risk Neutral – Satisfaction is balanced.

Risk Utility Diagram



Qualitative & Quantitative Risk Analysis

Qualitative risk analysis evaluates the probability of a risk occurring as well as the impact the risk will have. The risks are prioritised in order of most threatening and allows the project manager to manage the documented risks. This process is completed during the project life cycle multiple times in accordance to the risk management plan.

- Risk probability and impact assessment
    - Determines the likelihood of a risk occurring and the impact it will have on the project. It specifies the occurrence probability as well as the impact, time frame, causes and the interrelationships of the risks. This allows the project team to order risks by priority and employ resources to lessen the change of risks occuring.
- Probability and impact matrix
        - Allows project team to analyse and document the risk occurrence as well as the consequence level.

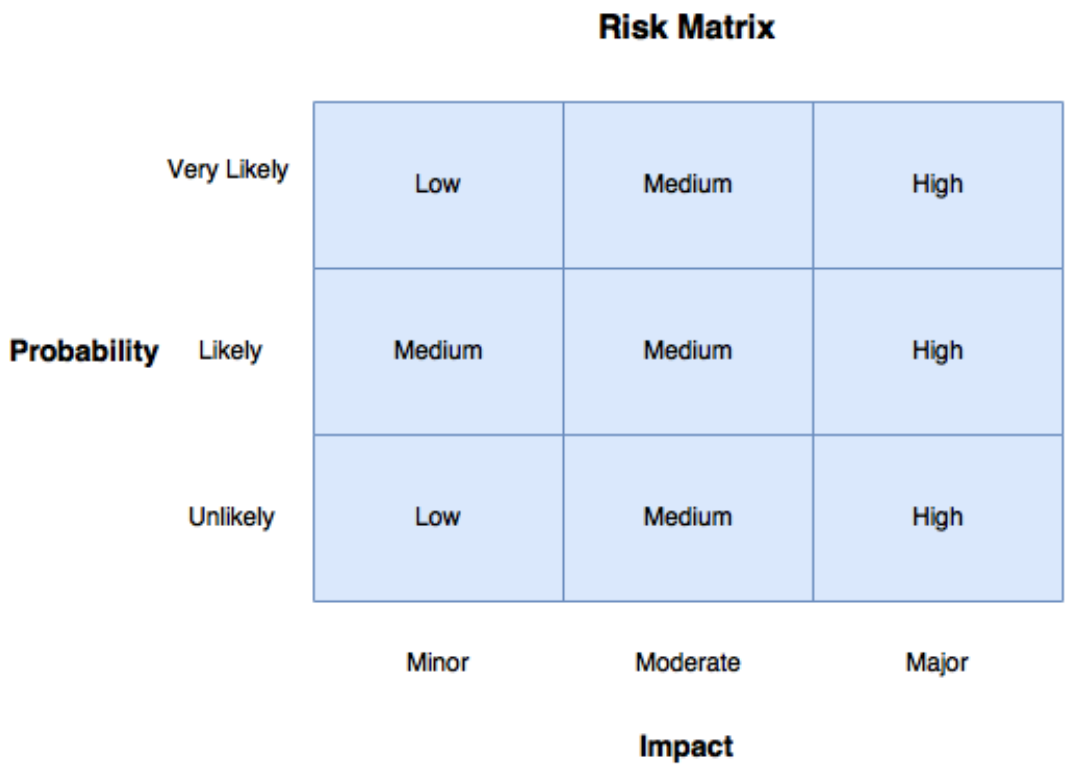


Figure 7: Specifies how severe the risk is using the probability of it occurring and the impact it will cause.

- Risk data quality assessment
    - Defines the quality of information in accordance to the specified risk. It is essential that the information is of the highest quality so a consistent risk management plan may be presented.
- Risk categorization
    - Assigns the specified risks into categories (risk source, root cause, project phase, project area affected). This allows the project team to identify what contributes to the risk response with ease.
- Risk urgency assessment
    - Identifies the risks that are the most threatening and urgent.
- Expert judgement
    - Defined in the risk analysis and assessment of the project. It can be sourced from the project team or an external source.

Quantitative risk analysis takes place after qualitative risk analysis if it is necessary for extra processes. It involves numerical analysis of the risks in occurrence and produces decision-making information.

Risk Response Planning

The method for determining and developing any actions and options, in order to improve the unlikelihood of any threats. In developing a risk plan for certain events, it requires each risk to have a defined suitable strategy.

- Strategies for Negative Risks or Threats
    - ‘Avoidance’ of a risk entitles changing of the project plans estimation of risks,
    - ‘Transference’ is shifting the responsibility and consequences to a third party,
    - ‘Mitigation’ reduces the probability of a risk,
    - ‘Acceptance’ is coming up with a contingency plan.
- Strategies for Positive Risks or Opportunities
    - ‘Exploit’ is the Project Team getting a positive advantage from a risk,
    - ‘Share’, allows the Project Team to bring the risk to a third party to safeguard that the risk will provide an advantage to the organisation,
    - ‘Enhance’ is capitalising on the likelihood of risks to ensure a positive outcome.
- Contingent Response Planning
    - Plans put forth for selected events or risks,
    - Risks are closely monitored.
- Expert Judgement

Risk Control

Risk control contains the development and process of tracking the specified risks, monitoring the outstanding risks and identifying new risks. Risk control also ensures the implementation of risk plans and the evaluation of the success in reducing the identified risk.

- Risk Reassessment
    - This method allows for the group to recognize when a risk has been completed and when a new issues arises.
- Risk Audits
    - The project manager studies the success of the risk responses in order to manage the risk and their causes.
- Technical Performance Measurement
    - The technical performance is measured in the defects of the risk to determine an adequate judgement of the projects success.
- Reserve Analysis
    - By comparing the level of risk to the schedule and budget of the project, giving the project manager the ability to create an acceptable project plan.
- Meetings
    - Providing a weekly update of the project and getting the rest of the team members on the same page of up and coming events.

7.2 Risk Monitoring Strategy

The purpose of Risk Monitoring and Control is to manage, maintain and prevent further risks within the project, this is done by tracking identified risks as well as to identifying possible potential risks throughout the implementation of the project.

Risks are inherent in all projects and can affect any aspect of the project, risks have implications on the scope, time, cost, quality, stakeholder requirements and the effort put into the project. Effective risk management is essential for project management and control. Therefore, Risk Monitoring is important in ensuring effective risk management.

The purpose of the Risk Management Process is to "*identify, analyse, treat and monitor the risks continuously*." (ISO/IEC 15504-5:2012, 2012). It also notes that the process is continuous and is designed to address the risks throughout the entirety of the system/product/service. Thus the Risk Management Process has the ability of being "*applied to risks related to the acquisition, development, maintenance or operation of a system*." (ISO/IEC 15504-5:2012, 2012).

Risk monitoring occurs after risks have been identified and analysed, these risks can be found in the Risk Register. Monitoring risks ensures the effectiveness of Project Risk Management plans are carried out, in brief this includes:

- Correct execution of plans,
- Review of plans,
- Update, and
- Derive lessons

These steps are necessarily for the primary objectives of the monitoring process which is to track identified risks, monitor residual risks, identify new risks, ensure that risk response plans are executed at the appropriate time, and evaluate their effectiveness throughout the project life cycle.

The Risk Monitoring strategy is as follows, see figure 8.

1. Keep the planning current and the project manager should ensure that periodic risk reassessment, including risk identification, analysis, and response planning, is repeated at reasonable intervals, or in response to project events-without generating excessive administrative overhead.
2. Check whether all of the approved unconditional response actions are included and defined in the Risk Response Plan in the current project management plan. If this is not the case, then then the appropriate action is to be taken such as invoking the change management plan. Response specification for each such risk should include a description of any corresponding trigger conditions.
3. Risks and the project environment is being continually monitored for any change of probability or potential of risks, risk triggers to be updated in the event of any change.
4. Risk owners and risk action owners should be briefed on any changes that may affect their responsibilities.
5. Identified mitigation changes to be updated in the Risk Response Planning.
6. The impact of change to budget, time, effort and stakeholders is updated.

In addition to regular status reviews, periodic audits should be performed to determine strengths and weaknesses in handling risks within the project. This should entail identifying any barriers to effectiveness or keys to success in risk management, recognition of which could lead to improvements in risk management of the current or future projects.

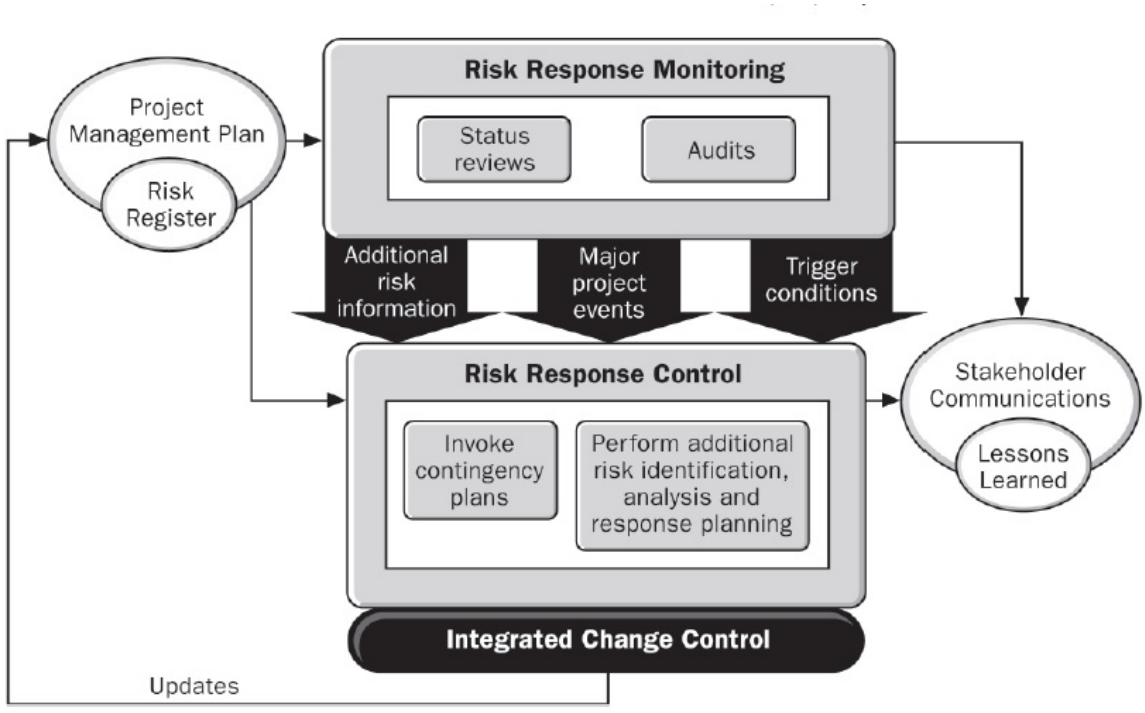


Figure 8: Schematic Representation of the Monitor and Control Risk Process

At the end of the project, an integrated analysis of the risk management process should be carried out with a focus on long-term process improvements.

At project closure, the project manager should ensure a description has been given of the closure of every risk in the risk register, for example (a) did not occur, (b) occurred and contingency plan invoked; or (c) occurred and impact to the project scope (i.e., time, cost, and quality).

Following the Risk Monitoring Strategy is crucial throughout the project, particularly throughout the iterative phases of the project to minimise consequences of negative risks and optimise benefits of positive risks.

In addition to tracking and managing the risk response actions; risk monitoring and controlling assists in providing improvements to the management of the current project as well as provides lessons for use in future projects.

7.3 Risk Register

Key	
B	Business Risk
P	Project Risk
T	Technical Risk

ID	Event or Risk	Probability	Impact	Preventative steps	Response
B1	Burger Me liquidates	Low	High	N/A	Take the project to another client
B2	Sponsor drops out of the project	Low	High	Receive necessary funding before project commences	Look for more funding and re-evaluate the budget
B3	Essential stakeholders drop out	Low	High	Sign contract before the project commences as well as necessary funding	Look for more funding and stakeholder support
B4	Business Plan Failure	Low	High	Ensure Burger Me agrees with the goals of the system	Provide necessary documentation which details on a contingency plan. Redesign the appropriate components of the system that fail to meet expectations
B5	Late delivery of materials	Medium	Medium	Use a reliable supplier to ensure the best chance of materials	Contact supplier and query location of items Cancel the order and find a different supplier

				arriving on time	
B6	Lost / misdirected shipments of your product	Low	High	N/A	Replace order and find a different carrier
B7	Delayed construction	Low	High	Ensure Burger Me facility is prepared for construction to start and necessary pre-construction checks are completed	Facilitate required preparation to proceed with construction as quick as possible
B8	Equipment/ tool breakdown	Medium	Medium	Ensure the best quality of tools and equipment is being used	Replace the tools with more suitable ones
B9	Material costs increase	Low	Medium	Have a contract with the supplier to have a fixed price	Find a more cost efficient supplier to purchase the material
B10	Poor employee morale	Low	High	Communicate with the employee to ensure that they are satisfied	Provide decent down time for the employee/s
B11	Project goes over budget	Medium	Medium	Have a detailed list for the	Re-evaluate the budget and implement the backup budget if needed

				estimated budget as well as a backup budget	
P1	Team member quits	Low	Medium	Contracts T&C until project completion	Hire another employee
P2	Project Manager steps down	Low	High	Contracts T&C until project completion	Allocated team member steps up as new project manager
				Provide a team member with inner project workings	
P3	Project Schedule is disrupted	Medium	Medium	Create a timeline with the earliest possible task completion dates as well as a backup timeline for the latest possible completion dates	Initiate the backup timeline
P4	Low quality materials	Low	High	Purchase the best quality	Purchase better material
P5	Increased utility rates	Low	Medium	Ensure budget facilitates an increase in utility rates	Reallocate resources in budget

P6	Design lacks flexibility	Low	Low	Ensure design is not one dimensional and can expand in the future as required	Redesign system as necessary to facilitate changes
P7	Design fails peer review	Medium	Medium	Have multiple testing to have the best satisfaction	Re-evaluate the design to meet the standards of the users
P8	Burger Me staff cannot attend training	Medium	High	Organise with staff to select a suitable time and date for everyone	Re-organise another staff training seminar
P9	Team members have negative attitudes towards the project	Low	Medium	Identify any issues that a team member has towards the project	Work with team member to improve their moral
P10	Lack of commitment from functional managers	Low	High	Identify any issues that each manager may have as the project is moving forward	Hold a meeting between affected parties and discuss how to improve their commitment to the project
T1	System Crash	Low	Medium	Conduct adequate user testing	Contact technical support and follow directions provided

				before the system is implemented	
T2	Software is behind schedule	Low	Medium	Ensure programming team is qualified for task	Re-evaluate the schedule
T3	Hardware is behind schedule	Low	High	Ensure hardware developer understands the requirements of the system	Re-evaluate the schedule and make changes to software as required
T4	Technology components aren't compliant with standards	Low	High	Ensure components are from reputable suppliers	Organise with suppliers an exchange for goods that are compliant with standards
T5	Technology components lack stability	Low	High	Research items prior to commitment of purchase	Redesign system to use higher quality components
T6	Components or products aren't maintainable	Low	High	Research items prior to commitment of purchase	Weigh up cost vs benefit of whether maintainability is worth redesigning system around new components
T7	The software interface doesn’t work with	Low	High	Ensure cooperate development between software and	Discuss between both teams to fix issues

	the hardware			hardware teams	
T8	The user is unsure on how the system works	Medium	Medium	Ensure adequate information is advertised to customers	Provide further information to customers and ensure staff can answer any queries they may have

7.4 Project Quality Management

Ensuring that the project satisfies the user, is the purpose of project quality management. The projects budget, scope and time all play a part as each area needs to be managed on equal grounds as they all go hand to hand.

There are there stages of quality management (view *Project Quality Management Process Diagram* below):

- Quality Planning
    - Identifies the level of standards of the projects quality and compare it against how satisfied the user will be.
- Quality Assurance
    - To ensure the user is satisfied, the project needs to be evaluated against the performance to the standards of quality defined in Quality Planning
- Quality Control
    - This phase monitors the results of the project
    - Making sure that the standards are met
    - Finds ways to improve the quality
        - If improvements towards quality are found, then the process restarts

Project Quality Management Process Diagram

In quality management there are dire factors in which take place:

- Customer Satisfaction
    - For this section to be met, the team needs to understand the customer's needs and ensure these needs are managed
- Prevention Over Inspection
    - Normally the cost of avoiding an error is less than having it fixed.
- Management Responsibility
    - Management is responsible for providing the necessary resources to give the project its best chance of success
    - All acting board members need to accept the requirements in order for the greatest success possible
- Processes Within Phase
    - Plan – Do – Check – Act

Plan Quality Management

The first stage contains the identification of the quality standards which are relevant to the project and determining how to satisfy the users. Listed below are a few techniques that the team will use:

- Cost – Benefit Analysis
    - Compares the implementation cost to the implementation quality cost as a representation as to how the project will benefit
- Cost of Quality
    - There are five categories to cost quality:
        1. Prevention Cost
            - The execution of the project is error-free or well within an acceptable error range
        2. Appraisal Cost
            - The output of the process is to standard quality
        3. Internal failure Cost
            - The cost to correct the error before the user obtains the product
        4. External Failure Cost
            - The cost to correct the error after the user obtains the product
        5. Measurement & Test Equipment Cost
            - The equipment cost to deliver the best level of quality to the user without or with minimal errors
- Seven Basic Quality Tools
    1. Cause & Effect Diagrams
        - This process is also known as a Fishbone Diagram or an Ishikawa diagram
        - By using a problem statement, the diagram can identify the cause of the problem and why they are occurring
    2. Flowcharts
        - A Process Map
        - This demonstrates how a problem occurs, in the step which it happens
    3. Check Sheets
        - These are ideal for when the project team is gathering information and/or organising facts

4. Pareto Diagrams
    - Also known as the 80-20 rule
    - This rule stages that 80% of all problems are regularly due to 20% of causes
    - A diagram that shows all the results in the order of which they frequently occur
    - Identifying them within their category
5. Histogram
    - More commonly known as a bar chart
    - Describes the tendencies, dispersions and statistical distribution shape
6. Control Charts
    - Displays the results over time
7. Scatter Diagrams
    - Correlation Charts
    - Explains the changes through the use of plotting dots along a X and Y axis

❖ These seven techniques are used in quality planning by using the outcomes of these charts for comparison

- Benchmarking
    - Looks at similar projects and compares their activities to the ones that the project team is using
    - This helps to determine areas of enhancement, performance measures and practices to avoid
- Design of Experiments
    - This looks at how the quality management plan effects the cost of the project through tests which identifies factors that can 'influence' the project
- Statistical Sampling
    - Has a handful of people used to examine the quality of the project
    - If the best technique is used than the cost of the project can be reduced
    - A formula of how big the sample size should be is:
        - $Sample\ Size = 0.25\ \times (\frac{Certainty\ Factor}{Acceptable\ Error})$

Perform Quality Assurance

After the planning has been finalized and set in motion, it's time to ensure that the standards are met. Below are some techniques that can be used:

- Quality Management & Planning Tool
    - Tools and Techniques used for the previous stages can also be used here
- Quality Audit
    - Is to improve the projects performance from past lessons
    - Audits may be done by a third party or by a member of the project team
    - These audits can take place at either a random time or at scheduled intervals
- Process Analysis
    - Identifies areas of the project that requires improvements

Quality Control

The third phase puts the plans into practice. By monitoring the results of the plans, can help determine whether the standards are satisfactory but if the standards are unsatisfactory then the quality gets re-evaluated (starts the whole Project Quality Management Process over).

Tools and Techniques, defined by PMBOK:

- Seven Basic Quality Tools
    - Listed in the planning stage
- Statistical Sampling
    - Listed in the planning stage
- Inception
    - A review of the process, by either external or an internal source, to ensure that the defined standards are met
- Approved Change Request Review
    - Is an important part of quality control
    - Makes sure that the change is correctly implemented

8.0 Project Review

Revision History

Date	Ver.	Author	Addition/Alteration
13/8/16	1	Annabelle Murrell	8.1 Success Criteria
12/10/16	2	Annabelle Murrell	8.5 Lessons Learnt
17/10/16	3	Lachlan Horsey, Annabelle Murrell	8.3 Schedule Reporting

8.1 Success criteria

The success and completion of the project relies on the overall success of the team as a whole. The most important aspect of any project is communication within its team. Communication within the group allows all members to understand and hear each other's ideas and opinions and help individuals view the project in different manners. Determining the goals of the project straight up is key to the project's success and also depends on the team's communication. It is essential to outline roles and responsibilities for individuals and the group as a whole. For the team to reach their goal, roles should be allocated depending on individual's strengths and weaknesses. Time management is a crucial part of any project and being able to complete tasks by deadlines. Being able to work both as a team and individually is also a vital part of a project. Being able to contribute ideas as well as give constructive feedback helps the team reach their full potential.

- Communication
    - Frequent meetings
    - Use of multiple communication methods, email, phone calls etc.
    - Discussion during workshops
    - Give each other feedback
    - Help other team members when needed
- Define Roles and Responsibilities
    - Review each team member's strengths and weaknesses and allocate roles accordingly
    - Ensure team members know their roles and responsibilities
- Establish goals of the project
    - Collaborate ideas and initiate common goals
- Time Management
    - Create a timetable that has when each task must be completed
    - Remain organised
    - Complete tasks before the deadlines

- Work ethic
    - Working as a team
    - Taking the initiative and working individually
    - Maintaining a positive outlook
    - Providing morale to team

8.2 Project Achievements

Projects Achievements	Success Criteria	Details
Workbook develops through successive sections	Workbook sections are allocated amongst the Project Team	• Each team member produces allocated workbook sections • Project Team integrates sections together
Satisfies the markers expectations	The Workbook's sections are completed to an acceptable standard of assessment objectives	• Section requirements are understood by the team member • Made use of provided examples & workshops
The revised version/s of the Workbook are satisfactory	Feedback/s from previous submissions & drafts are integrated	• Understand feedback requirements • Make the necessary changes to suit the requirements
Effective Communication	Team Members are able to effectively communication during development of Workbook	• Understanding of topic ideas and terminology • Convey project ideas by using: frequent meets, email, team member feedbacks
Team Meetings are productive	Defined individual task requirements to support the general objective	• All Team Members understand individual team member tasks & overall object
Effective Time Management	Team has completed Workbook sections before deadline, the late finish date.	• Create a timetable that has the due date of each task • Complete tasks before deadlines
Final Workbook delivery satisfies all requirements of Marking Criteria	Analysed and understood all Marking Criteria requirements	• Marking Criteria requirements have been implemented

8.3 Schedule reporting

Deliverable	Planned Deadline	Actual Deadline	Planned Size Estimate (words)	Actual Size Estimate (words)
1.1 Company Information	Aug 19	Aug 26	1500	1661
1.2 Stakeholder Analysis	Aug 19	Aug 26	250	280
1.3 Communication Strategy	Aug 19	Aug 26	300	322
2.1 Product Scope Description	Aug 22	Aug 26	1300	1286
2.2 Product Deliverables	Aug 22	Aug 26	750	756
3.1 WBS Tree	Aug 23, Sep 13	Aug 26, Sep 23	0	0
3.2 WBS Table	Aug 23, Sep 13	Aug 26, Sep 23	200	190
4.1 Choice of Technique	Sep 18	Sep 23	50	16
4.2 Justification	Sep 18	Sep 23	200	229
4.3 Estimation	Sep 19	Sep 23	250	290
5 Schedule	Sep 19	Sep 23	100	129
6.1.1 Change Control Approach	Sep 20	Sep 23	350	366
6.1.2 Change Control Procedure	Sep 20	Sep 23	200	213
6.1.3 Audits & Review	Sep 20	Sep 23	150	167
6.2.1 Configuration Management	Sep 20	Sep 23	250	243

7.1 Risk Management	Oct 12	Oct 17	150	164
7.2 Risk Monitoring Strategy	Oct 12	Oct 17	1250	1207
7.3 Risk Register	Oct 12	Oct 17	500	528
7.4 Quality Management	Oct 12	Oct 17	700	920
8.1 Success Criteria	Oct 15	Oct 17	300	267
8.2 Project Achievements	Oct 15	Oct 17	200	205
8.3 Schedule Reporting	Oct 15	Oct 17	N/A	391
8.4 Review of Techniques	Oct 15	Oct 17	300	250
8.5 Lessons Learned	Oct 14	Oct 17	500	519
9.1 Status Summary	Oct 15	Aug 26, Sep 23, Oct 17	1000	921
9.2 Task List	Oct 16	Aug 26, Sep 23, Oct 17	250	260
9.3 Time Sheet	Oct 16	Aug 26, Sep 23, Oct 17	N/A	1014

Overall, we met most of the planned deadlines and all of the actual deadlines. We set the planned deadlines a couple days before so we could have some time to read over the work and make alterations if needed. Failure to meet these estimated deadlines was a result of conflicting schedules between team members which at times caused a halt in work as we were waiting on work before we could continue working on the project. The word count of each deliverable at time of completion was close to the predicted size that was estimated at project start. By setting these estimates as a rough guide, the project was kept concise.

8.4 Review of Techniques

Estimation

Estimation was used during the course of the project. This allowed for the development of a more detailed project plan without needing to provide an accurate workbook for Burger Me. It allowed for the group to create additional user stories during the course of the project which improved the viability of the proposed system to be used in the store. Without estimating the needs of a self-service machine, the system would not be able to achieve many of the functions required by customers.

Three-Point Estimation

Three-point estimation was used while estimating the breakdown of work, the budget allocated, and various other parts of the Workbook. It allowed the team to assess the longest and shortest possible times for each event, as well as the best and worst case scenario for the budget of the systems implementation.

Time Management

During the completion of the Workbook, the group carefully managed the time taken to complete the various sections as it allowed the group to ensure that all deadlines were met. This ensured that in the event that a mistake was made, there was adequate time to fix these issues before submission.

Version Control

When completing the Workbook, the group decided that version control would be used. This ensured that no work was erased when merging content from different versions of the project document. While this measure was taken, the team in general needed to make a greater commitment to it as there were several instances where versions needed to be updated due to duplications.

8.5 Lessons Learned

What Worked

- The ability to work as a team and individually
- Communication
- Helping each other when needed
- Listening to other team member's ideas
- Organisation
- Able to give constructive feedback to each other
- Distributing tasks
- Getting work done by deadlines
- Taking initiative and doing extra work if needed

What Didn't Work

- Scheduling team meetings where everyone could be present
    - Differing schedules
    - Not enough meetings planned
- Team conflict
    - Agreeing on the same aspect
- Time management
- Versioning of project document

Lessons Learnt

One of the most important lessons learnt whilst completing the workbook is to have the assessed sections finished at an earlier date. During the process of developing the Workbook, the team had agreed to have each section accomplished with time to spare; however, leading to the due date certain parts of the document was still uncomplete. Although the team submitted, it created stress and uncertainty regarding its completion. If the assignment was to be completed again, a timetable would be best advised as it gives the team a structure which gives a greater assurance of timely completion, team morale and efficiency. Time management is very important when completing any project and for this one, it would also allow us extra time to revise, edit and add to the section thoroughly.

Another valuable lesson learnt is the importance of version control when working as a collaborative team. The approach throughout this assignment was to incrementally increase the version of the document by changing the file name. This process worked rather slightly but with multiple team members working on different tasks which led to confusion as to who had the most recent file version. Assembling the separate tasks into one document, proved to be difficult. In the future it would be more time effective to use a common platform such as Google drive which would allow all members to work on the same document at the same time.

A lack of coordination defined by the directors and the overall project team, as there were fewer meetings than actually needed as the group partakes in other activities, making it hard to find a suitable time and length, in order for the minimum process of collaboration to proceed. This led to sections of the Workbook being left or forgotten and segments going against what has previously been stated. This was due to team members hesitating to suggest their range of availability.

One of the final noteworthy lessons learnt by the team during the process of completing the assignment was that the team needed to find more time to meet up and work on the assignment together (*As stated before*). The times we did manage to get together to work on the assignment were the times that most work got done. The worked ended up being done individually rather than as a group, increasing the amount of time needed for proofreading and the like. It would be more beneficial for the team to meet up and work on the assignment together as the work done during that time was of a higher quality as the team could collaborate on it together easier.

9.0 Project Management

9.1 Status Summary

Status Summaries Audit 1

Status Summary 1

Date: 5/8/16

Are we on track: Yes

We have currently finished most of section 1.1, 1.2 and have started on 1.3, but must add more detail in depth. Our group meets up weekly to work on the workbook as a group. Progress is going well, but more time must be spent doing work outside of university if we want to finish on time. Our group is working well together and are helping each other accordingly when needed.

Status Summary 2

Date: 17/8/16

Are we on track: Yes

We are currently over half way through section 1 of the workbook and are on task to finish on time. We have filled out most of the sections required, but must add more information and refine it so it covers all the aspects it must in detail. We are still having weekly meetings where we meet up and work on the workbook as a team. As we meet up on Fridays, we must schedule another day next week so we can finalise it as a group before it is submitted. Progress is being made smoothly and the group is working well together.

Status Summary 3

Date: 24/8/16

Are we on track: Yes

We are up to date with the assessment and just need to add a couple extra details in some parts before we submit the first section on Friday. We will finish up everything on Thursday after the workshop and edit minor details Friday morning to assure everything is in order for submission later that day. We have continued to meet up Friday mornings to work as a group, help each other when needed and discuss our ideas.

Section	Estimated Time Spent	Actual Time Spent
1.1 Company Information	1 hour	1.5 hours
1.2 Stakeholder Analysis	2 hours	2 hours
1.3 Communication Strategy	1 hour	1.5 hours
2.1 Product Scope Description	1.5 hours	1.5 hours
2.2 Product Deliverables	2 hours	2 hours
3.1 WBS Tree draft	1 hour	2 hours
3.2 WBS Table draft	1 hour	2 hours
9.1 Status Summary	10 mins	20 mins

9.2 Task List	5 mins	5 mins
9.3 Time Sheet	5 mins	5 mins

Status Summaries Audit 2

Status Summary 4

Date: 5/9/16

Are we on track: Yes

We are currently half way through the second audit and well on our way to completing it on time. We have met up after a couple of the Thursday workshops as Friday mornings were starting to interfere with some of the member's timetables. We need to continue to meet up so we can work together and help each other when needed. There has been an issue with agreeing on some of the ideas, but we are working through it as a group and discussing our reasons.

Status Summary 5

Date: 24/9/16

Are we on track: Yes

The team is up to date with the assignment, we just need to add a few alterations in particular parts of the assignment before the submission date in a couple days. The team has met up on some Thursdays after the workshop to work on the assignment together, but should probably try to meet up more often for the next assignment. We have worked as a group on some parts as well as doing individual work and have helped each other when needed.

Section	Estimated Time Spent	Actual Time Spent
3.1 WBS Tree	1.5 hours	2 hours
3.2 WBS Table	1.5 hours	1 hour
4.1 Choice of Technique	30 mins	45 mins
4.2 Justification	1 hour	1 hours
4.3 Estimation	1 hour	40 mins
5 Schedule	2 hours	1.5 hours
6.1.1 Change Control Approach	2 hours	1.5 hours
6.1.2 Change Control Procedure	2 hours	1.5 hours
6.1.3 Audits & Review	1 hour	1 hour
6.2.1 Configuration Management	1.5 hours	1.5 hours
9.1 Status Summary	10 mins	20 mins
9.2 Task List	5 mins	5 mins
9.3 Time Sheet	5 mins	5 mins

Status Summaries Audit 3

Status Summary 6

Date: 4/10/16

Are we on track: Yes

Some team members have worked on the third audit during mid-semester break, so we are currently on track. We have started section 7.1, 7.2 and have already done some of part 8 from other audits. We have a team meeting held for after the workshop on Thursday to work on the project as a team and designate sections. We will also be meeting next Thursday and Friday as well to ensure we get the project finished on time.

Status Summary 7

Date: 14/10/16

Are we on track: Yes

The team has finished most of the third audit and are just finishing up on the required sections and fixing mistakes from the second audit. We held a team meeting after the Thursday workshop and on Friday morning, but not every member was able to attend due to conflicting timetables. We have already completed some of section 8 from the last audits so we just have to finish up on that and finish off section 7.2 and 7.3. Communication and agreeing on ideas have improved since the last audit, which has made a big change. We are currently on schedule to finish and hand in the last audit on the due date next week.

Section	Estimated Time Spent	Actual Time Spent
7.1 Risk Management	2 hours	1.5 hours
7.2 Risk Monitoring Strategy	1.5 hours	1 hours
7.3 Risk Register	2 hours	40 mins
8.1 Success Criteria	1 hour	1 hour
8.2 Project Achievements	1 hour	1.5 hours
8.3 Schedule Reporting	1 hour	1.6 hours
8.4 Review of Techniques	1 hour	2 hours
8.5 Lessons Learned	1 hour	1 hour
9.1 Status Summary	10 mins	20 mins
9.2 Task List	5 mins	5 mins
9.3 Time Sheet	5 mins	5 mins

9.2 Task List

Task	Allocated to	Due Date	Status
1.1 Company Information	As a Team	Aug 26	Complete
1.2 Stakeholder Analysis	As a Team	Aug 26	Complete
1.3 Communication Strategy	As a Team	Aug 26	Complete
2.1 Product Scope Description	Lachlan Horsey & Annabelle Murrell	Aug 26	Complete
2.2 Product Deliverables	Yasin Cakar	Aug 26	Complete
3.1 WBS Tree	Sam Wren	Aug 26, Sep 23	Complete
3.2 WBS Table	Sam Wren	Aug 26, Sep 23	Complete
4.1 Choice of Technique	Sam Wren	Sep 23	Complete
4.2 Justification	Sam Wren & Annabelle Murrell	Sep 23	Complete
4.3 Estimation	Sam Wren	Sep 23	Complete
5 Schedule	Annabelle Murrell & Sam Wren	Sep 23	Complete
6.1.1 Change Control Approach	Sam Wren	Sep 23	Complete

6.1.2 Change Control Procedure	Sam Wren	Sep 23	Complete
6.1.3 Audits & Review	Annabelle Murrell	Sep 23	Complete
6.2.1 Configuration Management	Annabelle Murrell & Lachlan Horsey	Sep 23	Complete
7.1 Risk Management	Sam Wren & Annabelle Murrell	Oct 17	Complete
7.2 Risk Monitoring Strategy	Yasin Cakar	Oct 17	Complete
7.3 Risk Register	Sam Wren & Annabelle Murrell	Oct 17	Complete
7.4 Quality Management	Sam Wren	Oct 17	Complete
8.1 Success Criteria	Annabelle Murrell	Oct 17	Complete
8.2 Project Achievements		Oct 17	Complete
8.3 Schedule Reporting	Annabelle Murrell & Lachlan Horsey	Oct 17	Complete
8.4 Review of Techniques		Oct 17	Complete
8.5 Lessons Learned	Everyone	Oct 17	Complete

9.1 Status Summary	Annabelle Murrell	Aug 26, Sep 23, Oct 17	Complete
9.2 Task List	Sam Wren	Aug 26, Sep 23, Oct 17	Complete
9.3 Time Sheet	Individually	Aug 26, Sep 23, Oct 17	Complete

9.3 Time Sheets

9.3.1 Annabelle Murrell

Date	Time spent	Task	Comments
5/8/16	1.5 hours	1.1 Business experience, business description	Brainstormed ideas about business and wrote about experience and description
	10 mins	9.1 Status Summary	A summary of what the group has completed so far and how the project is going
11/8/16	2 hours	1.2 Stakeholder Analysis	Created table of stakeholder analysis and started to work on it
	1 hour	8.1 Success Criteria	Started writing success criteria
12/8/16	1.5 hours	2.1 Project Scope Description	Started to write scope description
13/8/16	1 hour	8.1 Success Criteria	Continued to add to success criteria
17/8/16	1.5 hours	2.1 Project Scope Description	Continued to write scope description
	10 mins	9.1 Status Summary	A summary of what the group has completed so far and how the project is going
23/8/16	1 hour	2.1 Project Scope Description	Continued to add to scope and create the requirements and acceptance criteria

24/8/16	10 mins	9.1 Status Summary	A summary of what the group has completed so far and how the project is going
11/9/16	30 mins	5 Schedule	Created a draft of schedule
19/9/16	30 mins	1.1 Success Criteria	Fixed up some points and added more information with suggestions from first submission
	1 hour	6.1.3 Audits and Review	Started writing audits and review
	30 mins	6.2.1 Configuration Items	Created table and started to write configuration items and their baselines
23/9/16	1.5 hours	4.2 Justification	Made alterations and additions to the estimation justification
	1 hour	6.1.1 Change Control Approach	Made additions
6/10/16	30 mins	7.3 Risk Register	Brainstormed risks that may occur and created table with necessary information about each of them
9/10/16	1 hour	7.1 Risk Management Strategy	Added information and diagram to section
11/10/16	10 mins	8.5 Lessons Learnt	Wrote a lesson about time management
13/10/16	1 hour	7.1 Risk Management Strategy, 7.3 Risk Register	Put more detail into the risk management strategy and added more risks and relative information

15/10/16	10 mins	9.1 Status Summary	Added in a final status summary
17/10/16	30 mins	8.3 Schedule Reporting	Created a table and added content into the schedule
17/10/16	0.5 hour	Editing and formatting	

9.3.2 Yasin Cakar

Date	Time spent	Task	Comments
05/08/2016	0.5 hour	1.1 Company Information	Discussion, Perusal and editing
05/08/2016	1 hour	1.2 Stakeholder Analysis	Brainstormed ideas, cooperated during initial drafting.
12/08/2016	1 hour	1.3 Communication Strategy	Developed Communication hierarchy, wrote about communication strategies.
15/08/2016	2 hours	2.2 Product Deliverables	Research, write up and tabulation of findings.
18/08/2016	0.5	3.2 WBS Table	Suggestions and Editing
25/08/2016	0.75 (45min)	2.2 Product Deliverables	Added references
15/10/2016	3.5 hours	7.2 Risk Monitoring Strategy	Topic Research Write-up
17/10/2016	3 hours	8.5 Lessons Learned	Editing and Elaborating with Sam Wren
17/10/2016	1.5 hours	7.2 Risk Monitoring Strategy	Editing and adding further detail.

9.3.3 Sam Wren

Date	Time spent	Task	Comments
5/8/16	1.5 hours	1.1 Business experience, business description	Brainstormed ideas about business and wrote about experience and description
11/8/16	1 hour	1.2 Stakeholder Analysis	Made additions to stakeholder analysis table
12/8/16	2 Hours	1.1 Business experience, business description	Editing & adding
13/8/16	1 hour	2.1 Project Scope Description	Expanded upon project scope
14/8/16	0.5 hours	2.1 User Stories	Created user stories
17/8/16	1 hour	1 Budget	Created template for budget
25/8/16	2 hours	3.1 WBS Tree 3.2 WBS Table	Working on the draft
26/8/16	2 hours	3.1 WBS Tree 3.2 WBS Table	Finish Draft
1/9/16	4 hours	Part 1	Editing
15/9/16	2 hours	4.0 Estimation	Drafting
15/9/16	5 hours	4.0 Estimation 5.0 Schedule 6.1 Change Control	Starting a draft
17/9/16	2 hours	6.1 & 5.0	Editing
24/9/16	4 hours	4.0 Estimation 5.0 Schedule 6.1 Change Control	Finalizing drafts
25/9/16	3 hours	6.2 Configuration Management	Finalizing

1/10/16	6 hours	7.1 Risk Management Strategy	Starting
6/10/16	2 hours	7.3 Risk Register	Started
13/10/16	8 hours	4. Estimation 5. Schedule 7.1 Risk Management Strategy 7.3 Risk Register	4 & 5 – Fixing up from last submitting 7.1 & 7.3 – Continuing
15/10/16	6 hours	7.4 Project Quality Management	Started
16/10/16	8 hours	7.4 Project Quality Management	Finished
17/10/16	8 hours	8.2 Project Achievements 8.5 Lessons Learnt	8.2 – Completed 8.5 – edited & completed

9.3.4 Lachlan Horsey

Date	Time spent	Task	Comments
5/8/16	1.5 hours	1.1 Business experience, business description	Brainstormed ideas about business and wrote about experience and description
11/8/16	1 hour	1.2 Stakeholder Analysis	Made additions to stakeholder analysis table
13/8/16	1 hour	2.1 Project Scope Description	Expanded upon project scope
14/8/16	0.5 hours	2.1 User Stories	Created user stories
17/8/16	1 hour	1 Budget	Created template for budget
19/8/16	1.5 hours	1.3 Communication Strategy	Developed a pyramid diagram and wrote descriptions for each slices
26/8/16	0.2 hour	3.0 WBS Tree	Made changes to wbs tree
10/9/16	1 hour	Document Formatting	Added cover page, table of contents, general formatting
22/9/16	1 hour	6.2	6.2.1,6.2.2
23/9/16	1.5 hours	Document formatting, proof reading	General formatting and revision changes
25/9/16	0.7 hours	Formatting, proof reading	Getting document ready for submission
17/10/16	1 hour	6.1.2 Change control procedure	Added second change model
17/10/16	0.3 hours	8.3 Schedule Reporting	Word estimations for table

17/10/16	0.5 hour	Editing and formatting	
17/10/16	2.5 hours	Review and editing	Revision in preparation for final submission

9.3.5 Connor McIntyre

Date	Time spent	Task	Comments
17/08/16	3 Hours	1 Budget	Filled out part of budget
6/08/16	1 Hour	1.1 Company Information	Fixed and filled out company information
13/08/16	0.75 Hours	1.3 Communication Strategy	Fixed spelling/formatting errors
20/08/16	2 Hours	2.2 Product Deliverables	Fixed mistakes and formatting issues
26/8/16	0.2 hour	3.0 WBS Tree	Made changes to WBS tree
25/08/16	2 Hours	Entire Document Proofreading	Proofread and formatted entire doc
31/08/16	1.5 Hours	More Proofreading	Proofread doc again
11/09/16	2 Hours	Entire Document Proofreading	Proofread and formatted entire doc
22/09/16	1.5 Hours	1.1 Company Information – Success Criteria	Fixed and added to success criteria
22/09/16	1 Hour	2.1 Product Scope Description – Hardware Requirements	Expanded on Product Scope Description and Hardware Requirements.
23/09/16	1 Hour	4.1 Choice of Technique	Expanded on 4.1
23/09/16	0.05 Hours	4.2 Justification	Fixed grammar
23/09/16	0.05 Hours	6 Change Control Plan	Fixed formatting
15/10/16	0.5 Hours	8.5 Lessons Learned	Added a lesson

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9.4.1 General

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9.4.2 Standards

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