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Project Management Report

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Article I.

Section 1.01   Introduction

In 2005 an idea was introduced to the Surrey police department to develop a bespoke computer networking system which would store criminal records, intelligence on criminals and suspects, and log crimes. The perspective part of the project strategy was initially very strong; there was a clear business objective, business background and strategic concept behind the project. (Patanakul and Shenhar, 2012) This system codenamed 'Project Siren' which stands for 'The Surrey Integrated Reporting Enterprise Network' would be used to map trends of offences across the county. (Telegraph, 2013)

Mapping trends would allow commanders to look for a pattern in crimes, and predictions could then be made in order to deploy officers to patrol high-risk crime areas more frequently. Mapping trends is also a useful tool in order to detect whether the Police department is making progress towards diminishing crimes in their local area. (Police Interceptors, 2015)

In 2007 the project was a go ahead and Surrey police spent hundreds of thousands of pounds on IT consultants in order to outline a vision for the system. They then signed a confidential contract with Memex Technology - before the company was acquired by SAS, in order to develop the software. (Telegraph, 2013) In 2010 when SAS acquired Memex Technology, Surrey police was given the opportunity to abandon the project but declined and unfortunately six years later in 2013 the project was deemed a failure and axed, leaving the Surrey police department a bill of £14.84 million. (Breeze, 2014)

The project failed due to a number of reasons, for example the lack of strategic project management skills, even though there was a project plan in place, a strategy is thought to be of a higher level than a plan and although the perspective part of the strategy was noticeably outlined, the second part known as the position lacked detail and the final part of project strategy which is the plan was very poor. (Patanakul and Shenhar, 2012)

The project definition was specified but there was a lack of functional and technical requirements, the value of the project was noted but it was not necessarily clear why this solution would be more beneficial than an off-the-shelf product and the success and failure criteria for the project, along with the project scope, the statement of work and the work breakdown structure was non-existent. (Patanakul and Shenhar, 2012)

Another problem was the fact that the project was too big for the budget, which caused fury amongst the public due to the waste of public money. Other neighbouring forces liked the initial idea for the system but wisely decided to invest in an 'off-the-shelf' software solution, which not only provided a cost effective resolution but also a successful one. (Telegraph, 2013)

Surrey police did initially take into consideration the budgetby selecting Memex to develop the system as they provided the cheapest price over various competitors, but reports now suggest that the low quote could have impacted on Memex's ability to deliver. Whilst there was no evidence to deem Memex responsible for the failure, it sure played a part with the inability to manage the risk of non-delivery and the optimistic approach to the project's overall success. (Breeze, 2014)

Another contribution to the failure of the project was the fact that the system was incapable of integrating with other forces around the Country, which was to be seen as the next stage of the project after initial development. It is not certain why this was not discovered at the initial consultation and planning stages of the project but if other forces were involved at the beginning of the process a system which would have been fit for purpose could have been generated. (Telegraph, 2013) Surrey police department now see the benefits of an off-the-shelf solution and are now using "a less costly crime information system which is used by 13 other forces." (BBC, 2014)

Section 1.02   Key Issues

After a thorough investigation it was clear that Surrey police department lacked all skills in project management and frankly did not have the knowledge or experience to manage a large scale IT project. They had changed their business objectives numerous times, they did not maintain a record of any costs, they had no idea how far into the development process the software was, the business case found was

essentially very weak and the functional specification was never even formally approved.(Murphy, 2014) This project was deemed to fail from the start.

Memex was chosen to develop the project, not only due to the low cost quotes, but also because of their emphasis towards development using the agile methodology; however a review revealed that no agile practices were ever used. There were over 35 versions of MS project plans, with a number of them titled 'Replan'; yet none of the plans reflected agile methods and techniques, and a number of key milestones were linked to the wrong activity. (Murphy, 2014)

Agile methodology is a popular methodology for software development due to it providing numerous "opportunities to assess the direction of a project throughout the development lifecycle." (Agile Methodology, 2008)This not only helps developers to reduce development costs and development time but it also allows developers to collaborate closely with the client. However the geographical distance between Memex Technology and the Surrey police department is 394 miles, and although frequent communication could have been made online, there are no records to suggest they were in close collaboration at all. (Murphy, 2014)

It also emerged that staff managing the IT project had a severe lack of understanding of the agile methodology, whilst this could be due to the turnover in staff, as throughout the process there has been 5 different program managers and 5 senior responsible officers. (Murphy, 2014) The requirement volatility specifically scope creep is the addition of functional requirements throughout execution, (Thakurta, 2013) and "the agile development process did not have all the necessary checks and balances to control a growth in scope as the products progressed." (Murphy, 2014)

Another key issue which resulted in the failure of the project was due to hardware issues; firstly Memex did not provide a specification of the necessary hardware required in order to execute the software they were developing, and with no prior knowledge of the police's operating system and development already underway, a bespoke delivery platform had to be outsourced via a third party which only resulted in further delays and costs. (Murphy, 2014)

A second hardware issue which arose was the fact that the database developed was text-based and therefore was deemed useless in order to meet the police department's goals and objectives. The obvious choice would have been to develop the database in Oracle or SQL as they provide a user friendly interface and are highly available. (Murphy, 2014)

The last hardware issue which still remains unresolved is the fact that the product suffered a memory leak, which took the required memory figure from 64mb to between 500mb and 600mb. (Murphy, 2014)

Section 1.03   Problem Analysis

Because of the scale of the project and the possible impact of scope creep it would have been a useful tool to look at the project from a system dynamics approach and prepare a casual loop diagram which would outline the problem hypothesis through linking relationships via a sequence of chains and loops as seen below in figure 1 and in figure 2 each cause can be clearly seen on a causes tree. (Thakurta, 2013)
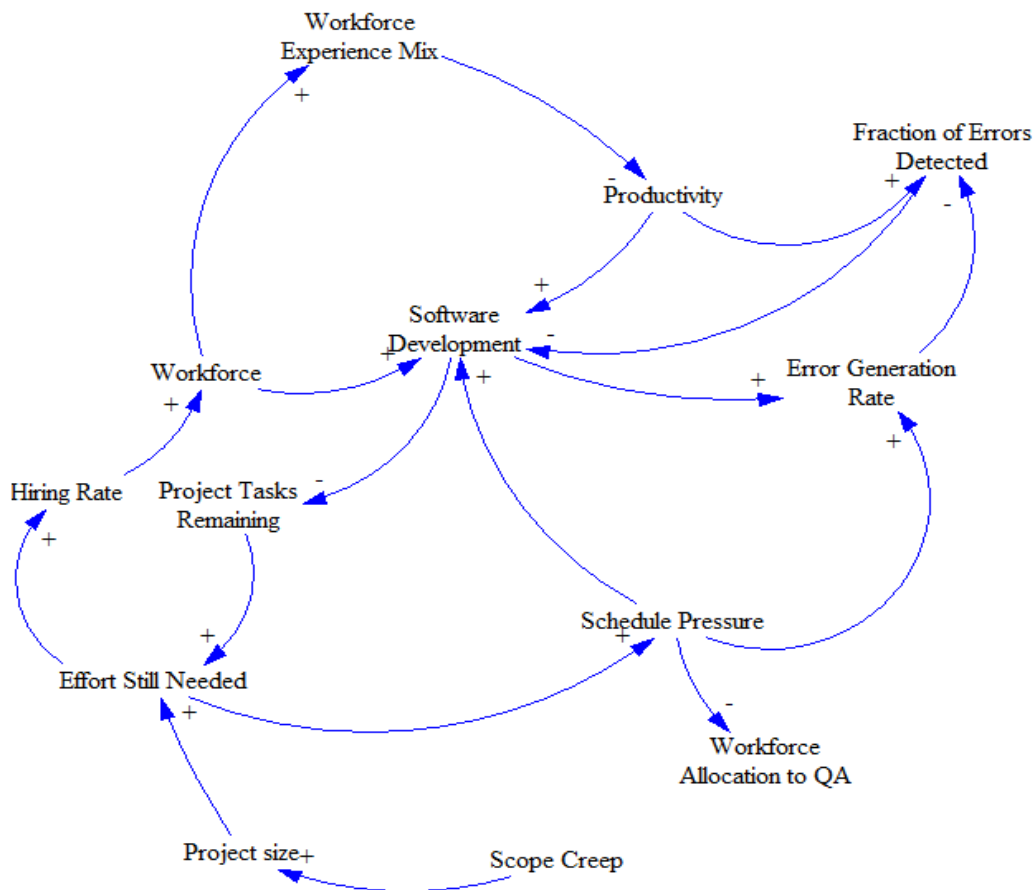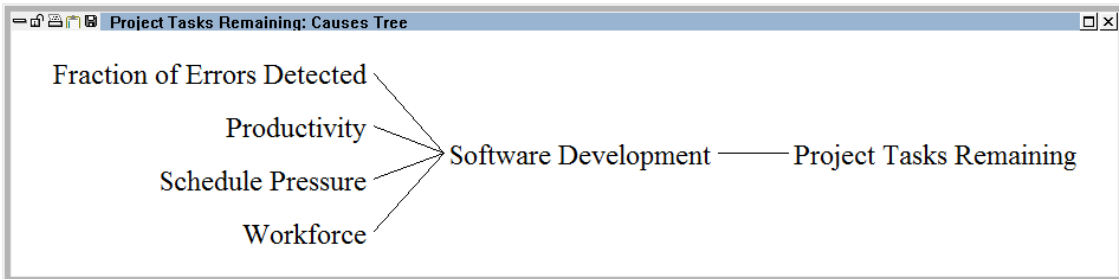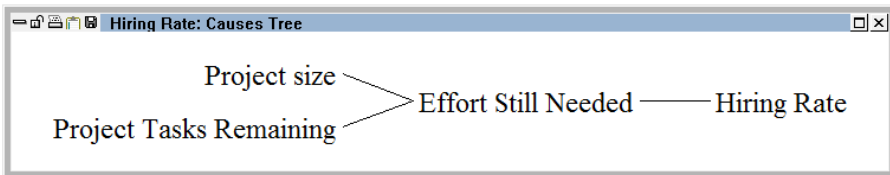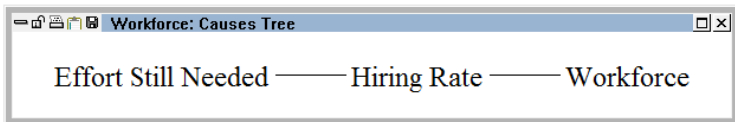

Figure 1: Model Casual Loop Diagram

Workforce Experience Mix: Causes Tree

Hiring Rate —— Workforce —— Workforce Experience Mix

Productivity: Causes Tree

Workforce —— Workforce Experience Mix —— Productivity

Fraction of Errors Detected: Causes Tree

Schedule Pressure
Software Development —— Error Generation Rate —— Fraction of Errors Detected
Workforce Experience Mix —— Productivity

Error Generation Rate: Causes Tree

Effort Still Needed —— Schedule Pressure
Fraction of Errors Detected
Productivity
(Schedule Pressure) —— Software Development —— Error Generation Rate
Workforce

Software Development: Causes Tree

Error Generation Rate
(Productivity) —— Fraction of Errors Detected
Workforce Experience Mix —— Productivity —— Software Development
Effort Still Needed —— Schedule Pressure
Hiring Rate —— Workforce

Workforce: Causes Tree

Effort Still Needed —— Hiring Rate —— Workforce

Hiring Rate: Causes Tree

Project size
Project Tasks Remaining —— Effort Still Needed —— Hiring Rate

Project Tasks Remaining: Causes Tree

Fraction of Errors Detected
Productivity
Schedule Pressure —— Software Development —— Project Tasks Remaining
Workforce

5

Figure 2: Causes Tree

In terms of project management a bottleneck is referred to as a point of congestion in a network or system when the workload is too excessive to handle, resulting in a delayed or failed project. (Investopedia, 2015)
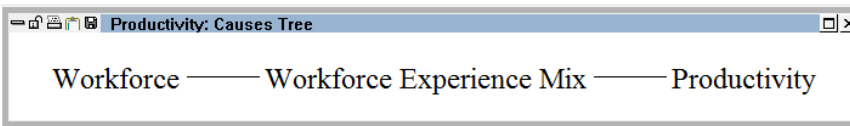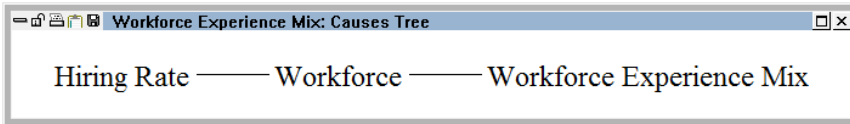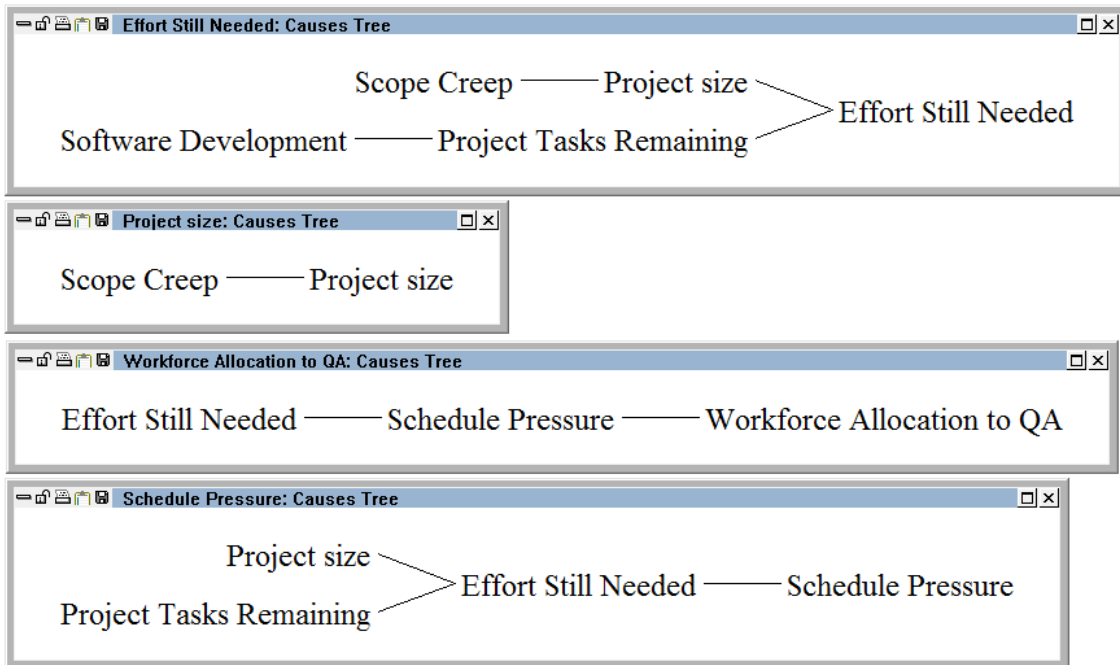
The three main bottlenecks that occurred in the Siren project are humans, budget and processes. Humans are well known for being the main bottleneck in most projects, it has already been established that team members were incompetent of managing the Siren project, there was no clear delineation, there was much confusion over the priority of tasks, and there was very little communication to ensure everything was on schedule. (Stoltz, 2015)

The second bottleneck of the Siren project as discussed above was the budget due to the lack of planning and research, and the final bottleneck was processes, due to the wait for approval of the budget increase numerous times, and the lack of planning for contingencies. (Stoltz, 2015)

When planning a project it is important to take a statistical analysis approach in order to reliably predict the project duration and project budget, there was no evidence that this was done for project Siren, however if this was done the independent estimate at completion could be worked out by using the budget at completion divided by the

cost performance index and the independent estimate at completion in terms of time could be worked out by using the planned duration divided by the schedule performance index. (Lipke, 2007)

Confidence limits can also be estimated by calculating the mean from the sample plus the value related to the prescribed area within the normal distribution multiplied by the estimate of the standard deviation divided by the square root of the number of observations in the sample, as seen in figure 2 below. (Lipke, 2007)
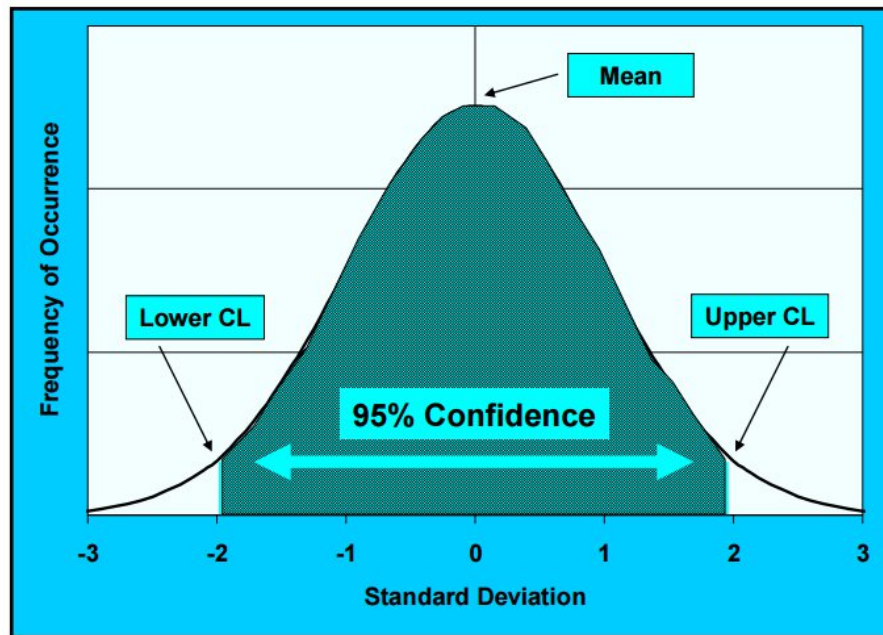
Figure 3: Confidence Limits Diagram (Lipke, 2007)

A flowchart can be a useful tool to help aid project management by displaying the actions required in each stage of the project life cycle in order to reach milestones and delegate tasks, see figure 3 below. (Bright Hub Project Management, 2012)

Figure 4: Project Lifecycle Flowchart (Bright Hub Project Management, 2012)

A decision tree flow chart could have also been a good addition to the project documentation for the Siren project in order to consider the risks and benefits of decisions and find positive solutions to possible problems, see figure 4 below. (Bright Hub Project Management, 2012)

Figure 5: Decision Tree Flow Chart (Bright Hub Project Management, 2012)

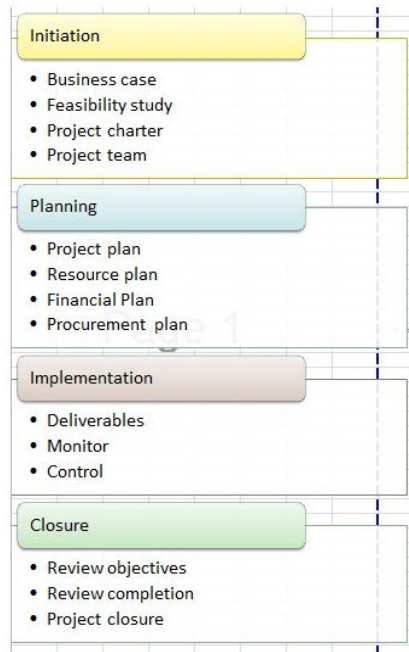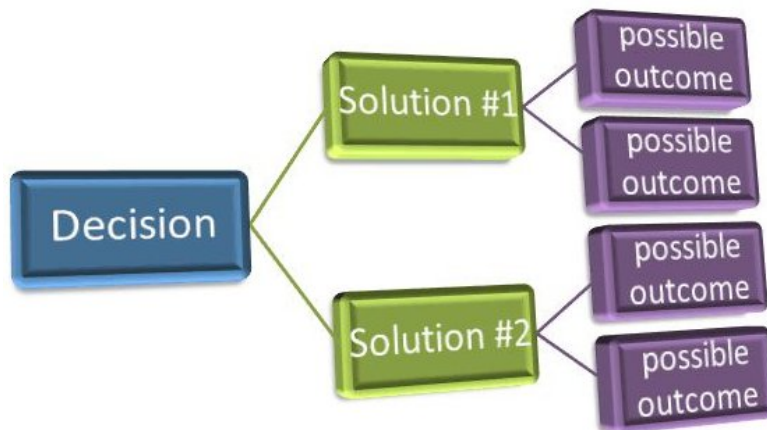A DFD is a graphical modelling technique used to display the movement of information in a system through processes and requirements. DFD's are often used in design and analysis methods and can be a great way to provide a clear representation of business functions, see figure 5 below. (Edraw, 2015)
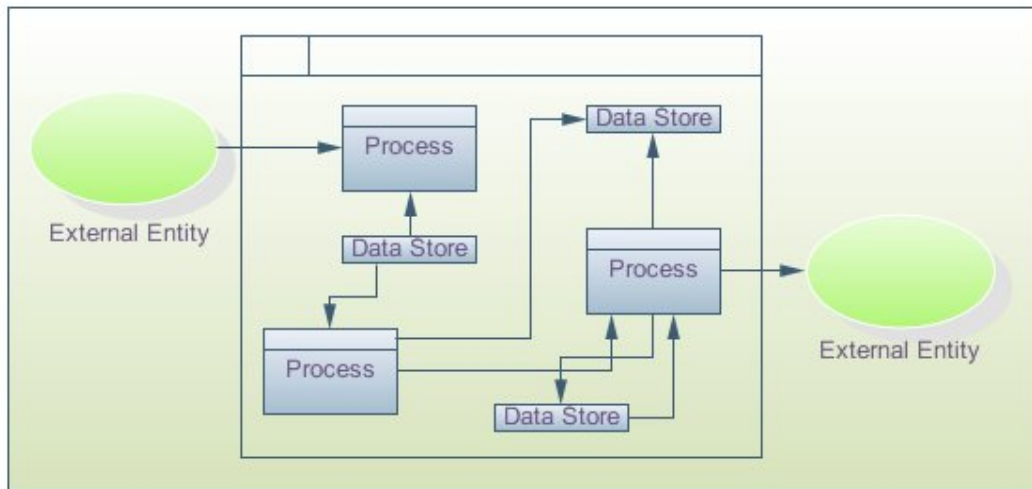
Figure 6: Data Flow Diagram (Edraw, 2015)

Section 1.04   Findings and Recommendations

The main problem with this project was the lack of project management, the current position lacked detail, there was a lack of functional and technical requirements, it was not specified why a bespoke software would be better than an off-the-shelf solution, there was no work breakdown structure, the budget was poorly planned, there was no risk assessment, no cost analysis, no communication plans, no hardware specification, no contingency plans, no duration analysis, the business objectives kept changing, there were numerous project plans, the milestones were linked to the wrong activities, the database was not built in Oracle or SQL and there was no involvement of any other forces making this not only very expensive but also unable to be integrated.

Taking this project forward to the next stage a structured strategy needs to be produced with emphasis on the planning documentation that needs to be completed in order to successfully manage a project of this scale.

Article II.

Section 2.01   Introduction

A project strategy is more than just a plan, a decision or an action, every project has these, but a strategy is what drives the plan in order to find a direction which will bring value to the organisation with the use of actions and tactical decision making. (Patanakul and Shenhar, 2012)

The agile approach was specifically chosen for the SIREN project, probably due to the rapid development this approach takes and the fact that it can be cost effective and very popular for software projects, due to it following an iterative and incremental process; however the main aspect of agile development is user activity so this approach only works well when users, designers and developers are co-located as communication is vital. (Hass, 2007) Unfortunately this was not the case with the Surrey Police Department and the company they chose to develop their software, as they were geographically located 394 miles away from one another. (Murphy, 2014)

Because of the distance and the lack of technical experience and project management knowledge in the Surrey Police Department, the best approach to take for this project would be the traditional waterfall method.

The traditional waterfall method involves phases being completed in sequence so for example implementation will not begin until the planning stage is complete. This does mean that additional requirements for example cannot be added mid-project, but if thorough planning has being done in the initial stage this should not cause any major issues. (Hass, 2007)

SIREN's main issues were all due to a lack of planning and documentation which is probably the most important stage of a project to get right, so the waterfall method would prove to be very beneficial to this project.

Section 2.02   Current Position

The current position looks at the organisations industry to determine if it is stable, growing or contracting, as well as what stage of the lifecycle the organisation is in and what achievements have been made so far. (Info Entrepreneurs, 2015) Because SIREN is a project for the government it is not interested in gaining

competitive advantage or increasing revenue, however it is looking to reduce outgoing costs and provide a system to aid in the reduction of crime.

The current software that is used is an off –the-shelf crime, intelligence and custody suite named CIS however the software is outdated, there is an increased risk of failure, it is becoming no longer fit for purpose and the supplier has now discontinued the software. (Surrey PCC, 2014)

A new system would provide the termination of maintenance of older systems which in the long run would reduce outgoing costs and the initial development, although expensive, will be shared due to collaboration with other policing organizations.

A new system would also improve user satisfaction and it would provide significant additional functionality that off-the-shelf programs currently don't have.

Section 2.03   Business Objectives
The end goal of project SIREN is to lower the crime rate in local areas through a piece of software that stores and manages intelligence on suspects and criminals.

There is a number of business objectives stated below that the project aims to achieve in order to meet its overall aim, a copy of the business case including a financial analysis can be found in Appendix A, a copy of the project charter can be found in Appendix B and a copy of the team contract can be found in Appendix C.

- Produce relevant planning documentation and carefully plan each stage of the project with the use of a gantt chart and a work breakdown structure in order to ensure sufficient time is allocated to each task.
- Produce relevant design documentation such as a DFD for the database to represent how the data will flow.
- Begin implementation of the software with the continual use of planning and design documentation.
- Thoroughly test the software product against the test plan and the initial functions and requirements, and ensure everything is working correctly and has been validated. Documentation of testing should be produced at this stage.
- Request a sign-off on the project documentation after project completion.

- Produce a project evaluation document to analyze how the project went discussing any changes that were made from the initial planning stage.
- Verify terms of the contract have been met and request a final invoice.

Section 2.04   Deliverables

A deliverable is a physical or non-physical item that is produced as part of a project, and once determined, they can then be broken down to produce specific tasks to delegate to team members. It is also important at this stage to determine the time required for each deliverable and task as well as the production of a flow chart to review dependencies. (Study, 2015)

Deliverables	Estimate Timescale
Plan functional and technical requirements specifications	04/01/16 – 08/02/16
Systems design documents (DFD, ERD, UML etc.)	09/02/16 – 15/03/16
Implement a crime management function to log and identify crimes, (NICHE RMS, 2015) and test.	16/03/16 – 04/05/16
Implement an intelligence management function to add information about individuals on matters such as road stop checks and field observations, (NICHE RMS, 2015) and test.	05/05/16 – 23/06/16
Implement a general incident management function to add information about incidents such as road traffic accidents, missing persons and general licensing, (NICHE RMS, 2015) and test.	24/06/16 – 12/08/16
Implement a property management function to store information on possessions that may be lost, found, stolen, damaged, seized or taken in as evidence, (NICHE RMS, 2015) and test.	15/08/16 – 03/10/16

Implement a custody/prisoner management booking function to store digital images and fingerprints, (NICHE RMS, 2015) and test.	04/10/16 – 22/11/16
Implement a court case preparation management function including a warrant management function and a witness and victim management function, (NICHE RMS, 2015) and test.	23/11/16 – 11/01/17
Final testing of implementation and testing document production.	12/01/17 – 16/02/17
Production of user manual and final report.	17/02/17 – 17/03/17
Installation and set-up of software on PC's and disk.	20/03/17 – 31/03/17

Section 2.05   Milestone Planning

A milestone symbolises a point in time in a project and inside each milestone is a number of tasks which need to be completed. The SIREN project uses the waterfall methodology making the milestones for this project very easy to define. The first milestone is the planning phase, the second is the design phase, the third is the implementation phase, the fourth is the testing phase and the final milestone is the deployment phase.

A gantt chart is a useful tool to mark the milestones in the project along with the project tasks in order to keep the project running on time, this will also be useful to extend the initial time given for tasks in case any contingencies occur, the Gantt chart for this project can be found in Appendix D.

Section 2.06   Assumptions, Dependencies and Risks

Project Assumptions are beliefs and expectations that you have in mind, based on knowledge and experience, or sometimes based on a wild guess.

Assumptions for the SIREN project are as follows:

- All technical requirements will be met
- All functional requirements will be met
- Software will be tailored and far better than off-the-shelf solution
- Software will have the ability to be integrated into other police organizations
- Will provide long-term cost benefits
- Will provide value to company and meet objectives
- Will help to drop crime numbers in local areas

Project Dependencies are relationships between tasks that determine the order of sequence in which they need to be completed for example the SIREN project needs the test plan to be produced before the testing can occur.

The use of the Gantt chart which can be found in Appendix D and the work breakdown structure which can be found in Appendix E will help to determine which tasks need to be completed first.

Project risks are risks that may occur throughout the project; by identifying potential risks early and planning how to manage these risks it minimizes project failure.

A risk analysis document can be found in Appendix F along with a probability/impact matrix.

Section 2.07   Management Approach

The SIREN project would benefit greatly from a traditional management approach due to the project functions and requirements being clearly defined from the offset, as well as the features for the project and the understanding of the project being very clear, this therefore makes this method a lower risk than that of agile methods, however it does mean things are not as easy to change. (Fernandez and Fernandez, 2008)

The traditional approach focuses on the budget, schedule and scope of the project and the assumption is that these will remain constant; however there is a vast amount of documentation to prepare for risks and contingencies. (Fernandez and Fernandez, 2008)

Section 2.08   Organisation

Organisational project management "opens the way for project management to become a sphere within the fields of management and organisation theory." (Aubry et al, 2007) OPM makes the implementation of project tasks easier by defining people's level of authority with the use of an organisational chart, as well as considering the organisational environment and the project characterises. OMP combines project, portfolio and program management to reduce overall uncertainly. (PM4DEV, 2007)

Section 2.09   Key Responsibilities

There are a number of key responsibilities a project manager has for the succession of a project such as project portfolio management which involves the creation of the project planning documents in order to ensure projects stay on track. Resource portfolio management is another responsibility which includes ensuring the correct resources are at hand, and the correct people are picked for the job. Project management mentoring includes collaborating with different, often more senior project managers to gather tips and techniques, and meetings with clients to discuss progress. Project management tool assessment is another key responsibility which involves evaluating the tools and techniques for project management used by the organisation, ensuring they are fit for purpose. (Duggan, 2015)

Section 2.10   Project Reporting and Communication

Progress reporting is a key area of project management which happens numerous times throughout a project, it looks at the work that has been completed, work that should be completed before the next report, what is going well and what isn't, any issues or suggestions and any project changes that may have been made. A progress report sheet can be found in Appendix G.

Communication is one of the most important aspects of project management; a study for a successful project shows that 90% of project management time is spent on some form of communication. The study also states that around 74% of projects are unsuccessful and the main reason contributing to their failure is the lack of communication. (Mehta, 2015)

A communication plan, if used correctly is a useful tool guide the project through to the finish line, a communication plan for SIREN can be found in Appendix H, it would

also be a valuable idea to document what was discussed during the meetings via a meeting record sheet which can be found in Appendix I and document any issues that occur via an issue log which can be found in Appendix J.

Section 2.11   Change Management

Change management is quite simply the management of a change which has been introduced to the project, if it is a technical change, the aim would be to certify the change is developed successfully, and if it is a people side change, the aim is to ensure employees adopt the change. (Prosci, 2015)

Integrating change management and project management induces a unified approach to implementing changes on the technical and people side, as well as creating value for the project by enabling shared objectives, proactive steps, sequencing and alignment and an exchange of information. (Prosci, 2015)

Section 2.12   Project Evaluation Report and Sign-off

The project evaluation report which can be found in Appendix K covers whether the project met the initial scope, time and cost goals. It states the final budget and also discusses lessons learned throughout the process, things that went right, things that went wrong and what would be done differently on the next project.

The final part of the project is to get the project signed –off to officially end the project, this is a formal document and stands as an acceptance of the project results meaning no changes can, or will be made after the document is signed.

A project sign off sheet for SIREN can be found in Appendix L, this includes details such as the project duration, goals and deliverables along with the signatures from the project manager and the lead developer, and any other remarks that may need to be documented.

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Article IV. Appendix

A.   Business Case

Business Case for SIREN project

Date: 17/11/15

Prepared by: Joanne Kennedy

1.0 Introduction/ Background To develop a bespoke computer networking system; this would store criminal records, intelligence on criminals and suspects, and log crimes.
2.0 Business Objective Software which could be used to look for a pattern in crimes, and predictions could then be made in order to deploy officers to patrol high-risk crime areas more frequently.
3.0 Current Situation and Problem/Opportunity Statement A new system would provide termination of maintenance of old systems which in the long run would reduce outgoing costs as the cost for development will be shared due to collaboration with other policing organizations. It will improve user satisfaction and it would provide significant additional functionality that off-the-shelf programs don't have. Current software CIS becoming obsolete and no longer fit for purpose, CIS increased risk of failure and would no longer be supported by the supplier
4.0 Critical Assumption and Constraints All technical requirements will be met All functional requirements will be met Software will be tailored and far better than off-the-shelf solution Software will have the ability to be integrated into other police organizations Will provide long-term cost benefits Will provide value to company and meet objectives Will help to drop crime numbers in local areas You must complete 85% of the project in 12 months You will be allocated 4 developers and 1 lead developer

5.0 Analysis of Option and Recommendation

Database can be built in Oracle or SQL – recommendation SQL due to online community

Project can be shared with other police forces or solo – recommendation is to share due to splitting costs and easy integration as this will have been specified from the offset.

6.0 Preliminary Project Requirements

Crime management

General incident management

Custody/prisoner management

Intelligence management

Property management

Court case preparation

7.0 Budget Estimate and Financial Analysis

£390,000

8.0 Schedule Estimate

15 months, due to the scale of the project

9.0 Potential Risks

Scope creep

Project delay

Raised budget

10.0 Exhibits

Exhibit A: Financial Analysis

Financial Analysis for SIREN

Created by: Joanne Kennedy		Date: 17/11/15				
Discount rate	8.00%					
		Year				
	0	1	2	3	Total	
Costs	300,000	30,000	30,000	30,000		
Discount factor	1.00	0.93	0.86	0.79		
Discounted costs	300,000	27,900	25,800	23,700	377,400	
Benefits	0	360,000	360,000	360,000		
Discount factor	1.00	0.93	0.86	0.79		
Discounted benefits	0	334,800	309,600	284,400	928,800	
Discounted benefits - costs	(300,000)	306,900	283,800	260,700	551,400 ← NPV	
Cumulative benefits - costs	(300,000)	6,900	290,700	551,400		
ROI	146%					
		Payback in Year 1				

Project Charter

Project Title: SIREN

Project Start Date: 04/01/16   **Projected Finish Date:** 31/03/17
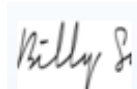
Authorized Budget: £390,000

Development Approach: Traditional Waterfall Approach

Project Objectives: Derive a bespoke computer networking system which would store criminal records, intelligence on criminals and suspects, and log crimes. This would be used to look for a pattern in crimes, and predictions could then be made in order to deploy officers to patrol high-risk crime areas more frequently.

Project Team:

- The project manager (Joanne Kennedy - 07807674864) is responsible for the management of the project. The project manager will have authority for the project, including staff hiring, and contracting with contractors and suppliers.
- The lead developer of Memex Technology (Billy Smith - 07845654512) is responsible for overseeing his team and contributing to the planning, designing, development, testing and delivering of the project.

Sponsor Sign-off:

Memex Technology Team Contract

Project Name: SIREN

Project Team Members Names and Sign-off:

Name	Sign-off on Team Contract
Billy Smith	*Billy S.*
John Doe	*John Doe*
Jane Bore	*Jane Bore*
Jack Skittle	*Jack Skittle*
Simon Elf	*Simon Elf*

Code of Conduct: As a project team, we will:

- Comply will laws and regulation
- Maintain confidentiality
- Do not use our position for personal gain

Participation: We will:

- Participate in all areas relating to the development of software
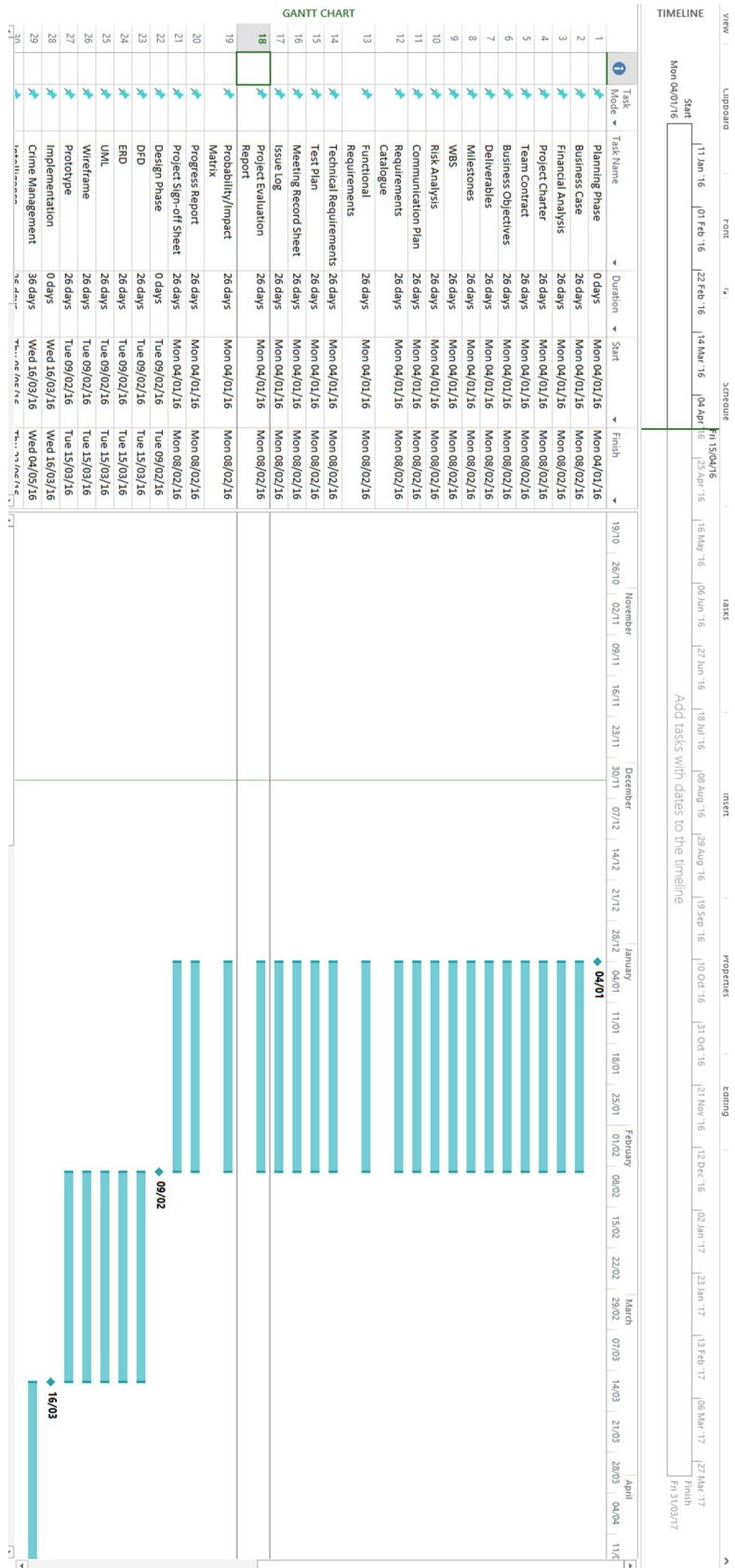- Participate in training days
- Participate in team building activities

Communication: We will:

- Communicate with team members
- Report to lead developer
- Maintain strong client communication

Problem Solving: We will:

- Plan for contingencies
- Make use of risk assessment documentation
- Find solutions to problems we encounter

D. Gantt Chart

GANTT CHART

#	Task Name	Duration	Start	Finish
1	Planning Phase	0 days	Mon 04/01/16	Mon 04/01/16
2	Business Case	26 days	Mon 04/01/16	Mon 08/02/16
3	Financial Analysis	26 days	Mon 04/01/16	Mon 08/02/16
4	Project Charter	26 days	Mon 04/01/16	Mon 08/02/16
5	Team Contract	26 days	Mon 04/01/16	Mon 08/02/16
6	Business Objectives	26 days	Mon 04/01/16	Mon 08/02/16
7	Deliverables	26 days	Mon 04/01/16	Mon 08/02/16
8	Milestones	26 days	Mon 04/01/16	Mon 08/02/16
9	WBS	26 days	Mon 04/01/16	Mon 08/02/16
10	Risk Analysis	26 days	Mon 04/01/16	Mon 08/02/16
11	Communication Plan	26 days	Mon 04/01/16	Mon 08/02/16
12	Requirements Catalogue	26 days	Mon 04/01/16	Mon 08/02/16
13	Functional Requirements	26 days	Mon 04/01/16	Mon 08/02/16
14	Technical Requirements	26 days	Mon 04/01/16	Mon 08/02/16
15	Test Plan	26 days	Mon 04/01/16	Mon 08/02/16
16	Meeting Record Sheet	26 days	Mon 04/01/16	Mon 08/02/16
17	Issue Log	26 days	Mon 04/01/16	Mon 08/02/16
18	Project Evaluation Report	26 days	Mon 04/01/16	Mon 08/02/16
19	Probability/Impact Matrix	26 days	Mon 04/01/16	Mon 08/02/16
20	Progress Report	26 days	Mon 04/01/16	Mon 08/02/16
21	Project Sign-off Sheet	26 days	Mon 04/01/16	Mon 08/02/16
22	Design Phase	0 days	Tue 09/02/16	Tue 09/02/16
23	DFD	26 days	Tue 09/02/16	Tue 15/03/16
24	ERD	26 days	Tue 09/02/16	Tue 15/03/16
25	UML	26 days	Tue 09/02/16	Tue 15/03/16
26	Wireframe	26 days	Tue 09/02/16	Tue 15/03/16
27	Prototype	26 days	Tue 09/02/16	Tue 15/03/16
28	Implementation	0 days	Wed 16/03/16	Wed 16/03/16
29	Crime Management	36 days	Wed 16/03/16	Wed 04/05/16
30	Intelligence	36 days	Thu 05/05/16	Thu 23/06/16

Start: Mon 04/01/16   Finish: Fri 31/03/17

Timeline months: November, December, January, February, March, April

Milestones: 04/01, 09/02, 16/03

ID	ⓘ	Task Mode	Task Name	Duration	Start	Finish	01 October 28/09 09/11
1		📌	Planning Phase	0 days	Mon 04/01/16	Mon 04/01/16	
2		📌	Business Case	26 days	Mon 04/01/16	Mon 08/02/16	
3		📌	Financial Analysis	26 days	Mon 04/01/16	Mon 08/02/16	
4		📌	Project Charter	26 days	Mon 04/01/16	Mon 08/02/16	
5		📌	Team Contract	26 days	Mon 04/01/16	Mon 08/02/16	
6		📌	Business Objectives	26 days	Mon 04/01/16	Mon 08/02/16	
7		📌	Deliverables	26 days	Mon 04/01/16	Mon 08/02/16	
8		📌	Milestones	26 days	Mon 04/01/16	Mon 08/02/16	
9		📌	WBS	26 days	Mon 04/01/16	Mon 08/02/16	
10		📌	Risk Analysis	26 days	Mon 04/01/16	Mon 08/02/16	
11		📌	Communication Plan	26 days	Mon 04/01/16	Mon 08/02/16	
12		📌	Requirements Catalogue	26 days	Mon 04/01/16	Mon 08/02/16	
13		📌	Functional Requirements	26 days	Mon 04/01/16	Mon 08/02/16	
14		📌	Technical Requirements	26 days	Mon 04/01/16	Mon 08/02/16	
15		📌	Test Plan	26 days	Mon 04/01/16	Mon 08/02/16	
16		📌	Meeting Record Sheet	26 days	Mon 04/01/16	Mon 08/02/16	
17		📌	Issue Log	26 days	Mon 04/01/16	Mon 08/02/16	
18		📌	Project Evaluation Report	26 days	Mon 04/01/16	Mon 08/02/16	
19		📌	Probability/Impact Matrix	26 days	Mon 04/01/16	Mon 08/02/16	

Project: SIREN gantt Date: Fri 04/12/15	Task	▬▬▬	Manual Summary Rollup	▬▬▬
	Split	....	Manual Summary	⌐▬▬⌐
	Milestone	◆	Start-only	⌊
	Summary	▙▬▬▟	Finish-only	⌉
	Project Summary	▛▬▬▜	External Tasks	▬▬▬
	Inactive Task	▭▭▭	External Milestone	◇
	Inactive Milestone	◇	Deadline	⬇
	Inactive Summary	▙▬▟	Progress	▬▬▬
	Manual Task	▬▬▬	Manual Progress	▬▬▬
	Duration-only	▭▭▭		

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ID	Task Mode	Task Name	Duration	Start	Finish	01 October 28/09	09/11
20	📌	Progress Report	26 days	Mon 04/01/16	Mon 08/02/16		
21	📌	Project Sign-off Sheet	26 days	Mon 04/01/16	Mon 08/02/16		
22	📌	Design Phase	0 days	Tue 09/02/16	Tue 09/02/16		
23	📌	DFD	26 days	Tue 09/02/16	Tue 15/03/16		
24	📌	ERD	26 days	Tue 09/02/16	Tue 15/03/16		
25	📌	UML	26 days	Tue 09/02/16	Tue 15/03/16		
26	📌	Wireframe	26 days	Tue 09/02/16	Tue 15/03/16		
27	📌	Prototype	26 days	Tue 09/02/16	Tue 15/03/16		
28	📌	Implementation	0 days	Wed 16/03/16	Wed 16/03/16		
29	📌	Crime Management	36 days	Wed 16/03/16	Wed 04/05/16		
30	📌	Intelligence Management	36 days	Thu 05/05/16	Thu 23/06/16		
31	📌	General Incident Management	36 days	Fri 24/06/16	Fri 12/08/16		
32	📌	Property Management	36 days	Mon 15/08/16	Mon 03/10/16		
33	📌	Custody/Prisoner Management	36 days	Tue 04/10/16	Tue 22/11/16		
34	📌	Court Case Preperation	36 days	Wed 23/11/16	Wed 11/01/17		
35	📌	Testing	0 days	Thu 12/01/17	Thu 12/01/17		
36	📌	Validation	26 days	Thu 12/01/17	Thu 16/02/17		
37	📌	Test Against Test Plan	26 days	Thu 12/01/17	Thu 16/02/17		
38	📌	Test All Buttons	26 days	Thu 12/01/17	Thu 16/02/17		

	Task	▬▬▬	Manual Summary Rollup ▬▬▬
	Split	··················	Manual Summary ⊢──────⊣
	Milestone	◆	Start-only [
Project: SIREN gantt	Summary	⊢────⊣	Finish-only]
Date: Fri 04/12/15	Project Summary	⊢────⊣	External Tasks ▬▬▬
	Inactive Task	▭▭▭	External Milestone ◇
	Inactive Milestone	◇	Deadline ⬇
	Inactive Summary	⊢────⊣	Progress ▬▬▬
	Manual Task	▬▬▬	Manual Progress ▬▬▬
	Duration-only	▬▬▬	

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ID	Task Mode	Task Name	Duration	Start	Finish	01 October
						28/09 09/11
39	📌	Test With Suitable Test Data	26 days	Thu 12/01/17	Thu 16/02/17	
40	📌	Deployment	0 days	Fri 17/02/17	Fri 17/02/17	
41	📌	User Manual	31 days	Fri 17/02/17	Fri 31/03/17	
42	📌	Installation of Software	31 days	Fri 17/02/17	Fri 31/03/17	
43	📌	Product Evaluation Report	31 days	Fri 17/02/17	Fri 31/03/17	
44	📌	Project Sign-off	31 days	Fri 17/02/17	Fri 31/03/17	
45	📌	Final Invoice	31 days	Fri 17/02/17	Fri 31/03/17	

Project: SIREN gantt
Date: Fri 04/12/15

Task	▬▬▬	Manual Summary Rollup	▬▬▬
Split	....	Manual Summary	⌐‾‾‾⌐
Milestone	◆	Start-only	⊏
Summary	▐▬▬▬▐	Finish-only	⊐
Project Summary	▐▬▬▐	External Tasks	▬▬▬
Inactive Task	▭	External Milestone	◇
Inactive Milestone	◇	Deadline	⬇
Inactive Summary	▭	Progress	▬▬▬
Manual Task	▬▬▬	Manual Progress	▬▬▬
Duration-only	▬▬▬		

Work Breakdown Structure Template for SIREN

Prepared by: Joanne Kennedy   Date: 18/11/15

1.0 Plan

    1.1 Business Case

    1.2 Financial Analysis

    1.3 Project Charter

    1.4 Team Contract

    1.5 Business Objectives

    1.6 Deliverables

    1.7 Milestones

    1.8 Risk Analysis

    1.9 Gantt Chart

    1.10 Communication Plan

    1.11 Requirements Catalogue

        1.11.1 Functional Requirements

        1.11.2 Technical Requirements

    1.12 Test Plan

    1.13 Meeting Record Sheet

    1.14 Issue log

    1.15 Project Evaluation Report

    1.16 Probability/Impact Matrix

    1.17 Progress Report

2.0 Design

    2.1 DFD

    2.2 ERD

    2.3 UML

F.   Risk Analysis and Probability/Impact matrix

Risk Analysis

Risk No	Potential Risk
1	Scope Creep
2	Inaccurate Estimates
3	Inaccurate Dependencies
4	Inaccurate Requirement Specification
5	Lack of Change Management Process
6	Change Management Overload
7	Miscommunication
8	Inaccurate User Expectations
9	Lack of Communication
10	Resources Shortfall
11	Low Motivation
12	Design low quality
13	Inexperienced staff
14	Security Vulnerabilities
15	Failure to integrate
16	Delays
17	Failure to Follow Methodology
18	Lack of management
19	Product Reduces Innovation
20	Users Reject Product

Probability/Impact Matrix

Probability	Low	Medium	High
High		Risk 16	Risk 14
Medium		Risk 2, Risk 8	Risk 1, Risk 9
Low	Risk 5, Risk 6, Risk 10, Risk 17, Risk 18, Risk 19	Risk 3, Risk 12	Risk 4, Risk 7, Risk 11, Risk 13, Risk 15, Risk 20

Impact
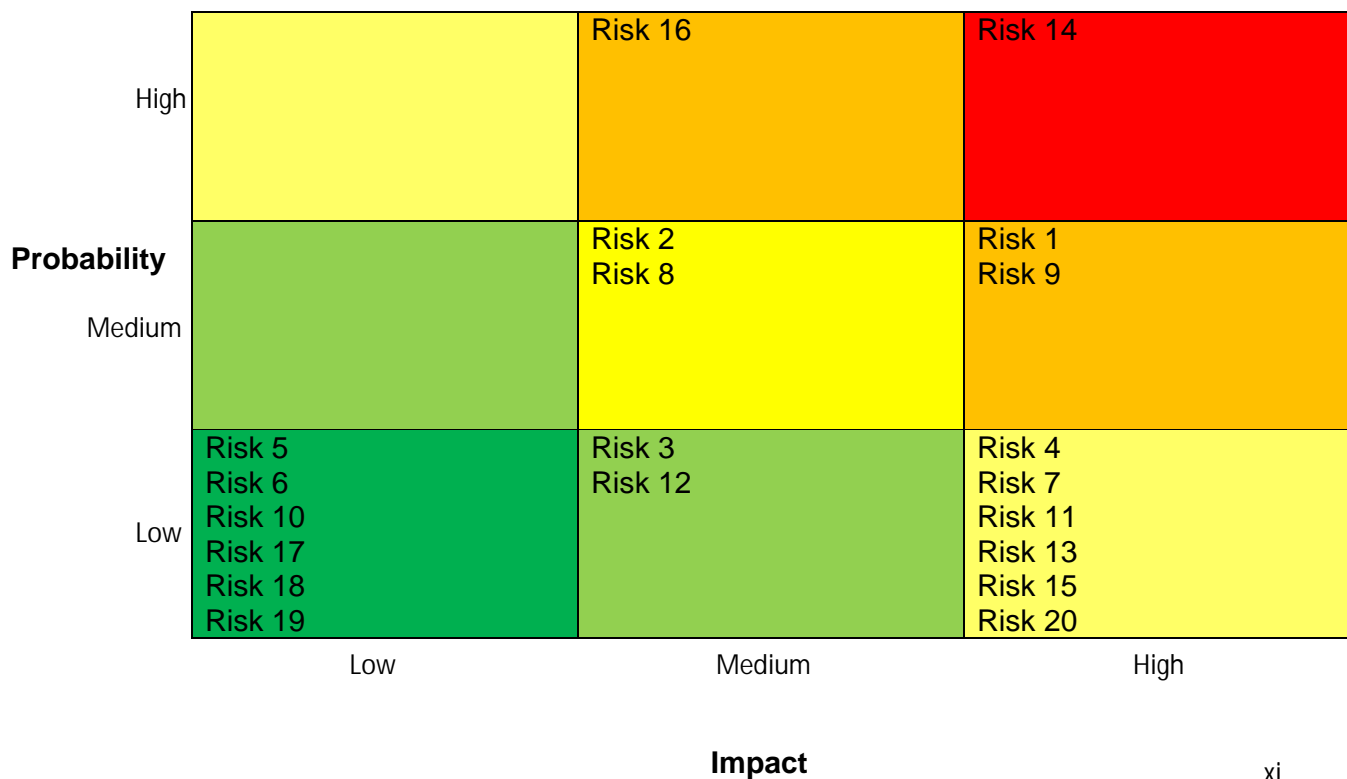
G.   Progress Report

Progress Report

Project Name: SIREN Team Member Name: Date: Reporting Period:
Work completed this reporting period:
Work to complete next reporting period:
What's going well and why:
What's not going well and why:
Suggestions/Issues:
Project changes

Communication Plan

What	Who	Purpose	When	Method
Initial Meeting		Discuss project requirements, deliverables, milestones and other planning documentation.	04/01/16	Formal Meeting
Progress Meeting		Discuss planning work produced and design document to be produced before next meeting.	08/02/16	Informal Meeting
Progress Meeting		Discuss design work produced and implementation work to be produced before next meeting.	15/03/16	Informal Meeting
Progress Meeting		Discuss crime management function implementation and what is to be produced before next meeting.	04/05/16	Informal Meeting
Progress Meeting		Discuss intelligence management function implementation and what is to be produced before next meeting.	23/06/16	Informal Meeting
Progress Meeting		Discuss general incident management function implementation and what is to be produced before next meeting.	12/08/16	Informal Meeting
Progress Meeting		Discuss property management function implementation and what is to be produced before next meeting.	03/10/16	Informal Meeting
Progress Meeting		Discuss custody/prisoner management function implementation and what is to be produced before next meeting.	22/11/16	Informal Meeting
Progress Meeting		Discuss court case preparation management function implementation and what is to be produced before next meeting	11/01/17	Informal Meeting
Progress Meeting		Discuss final testing work, final documents produced and the user manual requirements for next meeting.	16/02/17	Informal Meeting
Progress Meeting		Discuss user manual produced and discuss what will happen next.	17/03/17	Informal Meeting
20/03/17 – 31/03/17– Project Sign-off, installation and set-up of software on PC's and disk, handover of user manual and final project evaluation report and handover of final invoice.				

I. Meeting Record Sheet

Meeting Record Sheet

Date:

Attendees:

Meeting Objective:

Agenda:

Action Item	Assigned To	Due Date

Date and time of next meeting:

J.   Issue Log

Issue Log

Prepared by: **Joanne Kennedy**   **Date: 19/11/15**

Issue #	Issue Description	Impact on Project	Date Reported	Reported By	Assigned To	Priority (M/H/L)	Due Date	Status	Comments
1									
2									
3									
etc.									

Project Evaluation Report

Prepared by: Joanne Kennedy   **Date:**
Project Name: SIREN
Project Dates:
Final Budget:

1. Did the project meet scope, time, and cost goals?

2. In terms of managing the project, what were the main lessons your team learned?

3. Describe one example of what went right on this project.

4. Describe one example of what went wrong on this project.

5. What will you do differently on the next project based on your experience working on this project?

Project Sign-off Sheet

Project Name: SIREN	Project Manager: Joanne Kennedy
Start Date: 04/01/16	Completion Date:
Project Duration:	
Project Goal:	
Project Deliverables:	
By signing this document, I acknowledge that I have delivered all the stated deliverables at the agreed to quality levels.	By signing this document, I acknowledge that I have received all the stated deliverables at the agreed to quality levels.
Project Manager Name and Signature:	Lead Developer Name and Signature:
Date:	Date:

Remarks