

Life Cycle Plan (LCP)

<e-Lockbox>

<Team 10>

<Team members and roles>

Cheng Zhang	Prototyper / Chief Developer
Guancheng Li	Project Manager/ Prototyper/ Developer
Yutong Guo	Operational Concept Engineer/ Developer/ Tester
Qing Wei	Life Cycle Planner/ Feasibility Analyst/ Developer
Si Zhao	Software Architect/ Tester

<04/18/17>

Version History

Date	Author	Version	Changes made	Rationale
10/10/16	Qing Wei	1.0	<ul style="list-style-type: none">• First version of LCP	<ul style="list-style-type: none">• Initial draft for FC package
10/15/16	Qing Wei	1.1	<ul style="list-style-type: none">• Revised LCP after FCR ARB	<ul style="list-style-type: none">• Correct mistakes after FCR ARB
11/28/16	Qing Wei	2.0	<ul style="list-style-type: none">• Add phases in 577B	<ul style="list-style-type: none">• Update for DC package
02/12/17	Qing Wei	3.0	<ul style="list-style-type: none">• Add details for development phase	<ul style="list-style-type: none">• Update for RDC package
04/18/17	Qing Wei	4.0	<ul style="list-style-type: none">• Add transition plan	<ul style="list-style-type: none">• Update for As-Built package

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1. Introduction

1.1 Purpose of the LCP

The purpose of Life Cycle Plan is to streamline project, to improve development speed, to improve quality, to improve project tracking and control, to minimize overhead, to minimize risk exposure and to improve client relations.

With a Life Cycle Plan, team members can be more clear about what our goals are, when we should achieve these goals and what we should do during each specific time period. What's more, it is easier for clients to track and control the project's progress.

1.2 Status of the LCP

The status of the LCP is currently at the As Built Package version number 4.0. The major changes from Rebaselined Development Commitment Package version number 3.0 are:

- Update Milestones and Products
- Update Iteration Plan
- Add Transition Plan

1.3 Assumptions

- Schedule: 12 weeks in Fall 2016, 12 weeks in Spring 2017, and 24 weeks in total.
- Personnel resources: 7 team members in project e-Lockbox in Fall 2016; 4 main team members and 1 Directed Research team member in Spring 2017.

2. Milestones and Products

2.1 Overall Strategy

The e-Lockbox System is following Architected Agile process because there is no Non-Development Item or Web service that would fit to most of the core capabilities.

Exploration phase

Duration: 09/12/16 – 09/22/16

Concept:

- Analyze current system.
- Identify client's requirements.

Deliverables: Valuation Commitment (VC) Package

Milestone: Valuation Commitment Review (VCR)

Strategy: First Incremental Commitment Cycle

Valuation phase

Duration: 09/23/16 – 10/10/16

Concept:

- Identify project operational concepts, architecture, feasibility evidences and life cycle plan.
- Confirm and prioritize win conditions.
- Prototype top risks.
- Review current code.

Deliverables: Foundation Commitment (FC) Package

Milestone: Foundation Commitment Review (FCR)

Strategy: First Incremental Commitment Cycle

Foundation phase

Duration: 10/11/16 – 12/06/16

Concept:

- Identify more clear project operational concepts, win conditions, architecture, feasibility evidences and life cycle plan.
- Implement prototype demo.

Deliverables: Development Commitment (DC) Package

Milestone: Development Commitment Review (DCR)

Strategy: First Incremental Commitment Cycle

Foundation phase – Rebaseline

Duration: 01/09/17 – 02/12/17

Concept:

- Reallocate roles and responsibilities.
- Access project status and start project implementation.

Deliverables: Rebaselined Development Commitment (RDC) Package

Milestone: Rebaselined Development Commitment Review (RDCR)

Strategy: Incremental Commitment Cycles (Architected-Agile)

Development phase – Construction

Duration: 02/13/17 – 04/16/17

Concept:

- Project implementation and test
- Contact with clients and write User Manual

Deliverables: Core Capability Drivethrough Report & AsBuilt Package

Milestone: Design Code Review & Core Capabilities Drivethrough (CCD) & Transition Readiness Review (TRR)

Strategy: Incremental Commitment Cycles (Architected-Agile)

Development phase – Transition

Duration: 04/17/17 – 04/30/17

Concept:

- Install/Transit the system
- Train users
- Archive final product
- Release product and obtain client evaluation

Deliverables: Product Archive

Milestone: Operation Commitment Review

Strategy: Incremental Commitment Cycles (Architected-Agile)

Operation phase

Duration: 05/01/17 – 05/05/17

Concept:

- Support clients, users, and maintainers
- Solve problems

Deliverables: NA

Milestone: NA

Strategy: Incremental Commitment Cycles (Architected-Agile)

2.2 Project Deliverables

2.2.1 Exploration Phase

Table 1: Artifacts Deliverables in Exploration Phase

Artifact	Due date	Format	Medium
Client Interaction Report	09/16/16	.doc, .pdf	Soft copy
Win Conditions Report	09/26/16	.doc, .pdf	Soft copy
Top Risk Prototype	09/30/16	.ppt	Soft copy
Jira	Every Monday	website	Jira
Progress Report	Bi-weekly Wednesday	.xls	Soft copy

Risk and Defect Report	Bi-weekly Wednesday	.xls	Soft copy
Project Plan	Bi-weekly Wednesday	.mpp	Soft copy

2.2.2 Valuation Phase

Table 2: Artifact Deliverable in Valuation Phase

Artifact	Due date	Format	Medium
Foundation Commitment Package • Operational Concept Description (OCD) • Prototype (PRO) • System and Software Architect Description (SSAD) • Life Cycle Plan (LCP) • Feasibility Evidence Description (FED)	10/17/16	.doc, .pdf	Soft copy
Jira	Every Monday	website	Jira
Progress Report	Bi-weekly Wednesday	.xls	Soft copy
Risk and Defect Report	Bi-weekly Wednesday	.xls	Soft copy
Project Plan	Bi-weekly Wednesday	.mpp	Soft copy

2.2.3 Foundations Phase

Table 3: Artifact Deliverable in Foundations Phase

Artifact	Due date	Format	Medium
Development Commitment Package • Operational Concept Description (OCD) • Prototype (PRO) • System and Software Architect Description (SSAD) • Life Cycle Plan (LCP) • Feasibility Evidence Description (FED) • Test Plan and Cases (TPC)	12/05/16	.doc, .pdf	Soft copy
Jira	Every Monday	website	Jira
Progress Report	Bi-weekly Wednesday	.xls	Soft copy
Risk and Defect Report	Bi-weekly Wednesday	.xls	Soft copy
Project Plan	Bi-weekly Wednesday	.mpp	Soft copy
Technical Debt	Bi-weekly Friday	.xls	Soft copy

2.2.4 Foundations Phase – Rebaseline

Table 4: Artifact Deliverable in Foundations Phase – Rebaseline

Artifact	Due date	Format	Medium
Rebaselined Development Commitment Package <ul style="list-style-type: none"> • Operational Concept Description (OCD) • Prototype (PRO) • System and Software Architect Description (SSAD) • Life Cycle Plan (LCP) • Test Plan and Cases (TPC) • Feasibility Evidence Description (FED) 	02/15/17	.doc, .pdf	Soft copy
Jira	Every Monday	website	Jira
Progress Report	Bi-weekly Wednesday	.xls	Soft copy
Risk and Defect Report	Bi-weekly Wednesday	.xls	Soft copy
Project Plan	Bi-weekly Wednesday	.mpp	Soft copy
Technical Debt	Bi-weekly Wednesday	.xls	Soft copy

2.2.5 Development Phase – Construction

Table 5: Artifact Deliverable in Development Phase – Construction

Artifact	Due date	Format	Medium
Core Capability Drivethrough Package <ul style="list-style-type: none"> • Acceptance Test Cases (ATC) • Report and Concern Logs • Server Manual • User Manual 	03/29/17	.doc, .pdf	Soft copy
AsBuilt Package <ul style="list-style-type: none"> • Operational Concept Description (OCD) • Prototype (PRO) • System and Software Architect Description (SSAD) • Life Cycle Plan (LCP) • Feasibility Evidence Description (FED) • Test Plan and Cases (TPC) • Test Procedure and Results (TPR) • Technical Manual • User Manual • Support Plan (SP) 	04/28/17	.docx, .pdf, .zip	Soft copy

• Source Code • Release Description			
Jira	Every Monday	website	Jira
Progress Report	Bi-weekly Wednesday	.xls	Soft copy
Risk and Defect Report	Bi-weekly Wednesday	.xls	Soft copy
Project Plan	Bi-weekly Wednesday	.mpp	Soft copy
Technical Debt	Bi-weekly Wednesday	.xls	Soft copy

2.2.6 Development Phase – Transition

Table 6: Artifact deliverable in Development Phase – Transition

Artifact	Due date	Format	Medium
Project Archive	05/05/17	.zip	Soft copy
Jira	Every Monday	website	Jira
Progress Report	Bi-weekly Wednesday	.xls	Soft copy
Risk and Defect Report	Bi-weekly Wednesday	.xls	Soft copy
Project Plan	Bi-weekly Wednesday	.mpp	Soft copy
Technical Debt	Bi-weekly Wednesday	.xls	Soft copy

2.2.7 Operation Phase

Table 7: Artifact deliverable in Operation Phase

Artifact	Due date	Format	Medium
N/A	N/A	N/A	N/A

3. Responsibilities

3.1 Project-specific stakeholder's responsibilities

The owner of the project is Pamela Clay and we have four main team members and one directed research team member.

Table 8: Stakeholder's Responsibilities in each phase

Team Member / Role	Primary / Secondary Responsibility					
	Exploration	Valuation	Foundation	Foundation-Rebaseline	Development-Construction Iteration	Development-Transition Iteration
Name: Client Role: Administrator, Case manager, General user (staff)	Primary Responsibility <ul style="list-style-type: none"> Introduce current system Give access to current system Provide requirements Secondary Responsibility <ul style="list-style-type: none"> Interact with team members Attend win-win negotiations 	Primary Responsibility <ul style="list-style-type: none"> Provide detailed requirements and help capture operational concepts Offer feedback for prototype Secondary Responsibility <ul style="list-style-type: none"> Interact with team members Attend ARB presentation 	Primary Responsibility <ul style="list-style-type: none"> Provide feedback Secondary Responsibility <ul style="list-style-type: none"> Interact with team members 	Primary Responsibility <ul style="list-style-type: none"> Access rebaseline prototype Secondary Responsibility <ul style="list-style-type: none"> Interact with team members 	Primary Responsibility <ul style="list-style-type: none"> Provide feedback for developing system Secondary Responsibility <ul style="list-style-type: none"> Interact with team members 	Primary Responsibility <ul style="list-style-type: none"> Test updated system Offer feedback Secondary Responsibility <ul style="list-style-type: none"> Interact with team members
Name: Youth Role: Clients of Living Advantage	N/A	N/A	N/A	N/A	N/A	Primary Responsibility <ul style="list-style-type: none"> Test updated system Offer feedback
Name: Guancheng Li Role: Project Manager, Prototyper, Developer	Primary Responsibility <ul style="list-style-type: none"> Explore current system Provide detailed project plan Record project progress bi-weekly Secondary Responsibility <ul style="list-style-type: none"> Analyze and prioritize capabilities 	Primary Responsibility <ul style="list-style-type: none"> Provide detailed project plan Record project progress bi-weekly Secondary Responsibility <ul style="list-style-type: none"> Assess prototype and components 	Primary Responsibility <ul style="list-style-type: none"> Provide detailed project plan Record project progress bi-weekly Secondary Responsibility <ul style="list-style-type: none"> Develop Prototype 	Primary Responsibility <ul style="list-style-type: none"> Provide detailed project plan Record project progress bi-weekly Develop updated system Secondary Responsibility <ul style="list-style-type: none"> Test system 	Primary Responsibility <ul style="list-style-type: none"> Provide detailed project plan Record project progress bi-weekly Develop updated system Secondary Responsibility <ul style="list-style-type: none"> Test system 	Primary Responsibility <ul style="list-style-type: none"> Provide detailed project plan Record project progress bi-weekly Develop updated system Provide release description Secondary Responsibility <ul style="list-style-type: none"> Test system
Name: Yutong Guo Role:	Primary Responsibility <ul style="list-style-type: none"> Explore current system 	Primary Responsibility	Primary Responsibility <ul style="list-style-type: none"> Finalize requirements 	Primary Responsibility <ul style="list-style-type: none"> Develop updated system 	Primary Responsibility <ul style="list-style-type: none"> Develop updated system 	Primary Responsibility <ul style="list-style-type: none"> Develop updated system

Operational Concept Engineer, Tester, Developer	<ul style="list-style-type: none"> Identify client's requirements Identify operational concepts 	<ul style="list-style-type: none"> Capture and prioritize win-conditions Further identify operational concepts 	and operational concepts	<ul style="list-style-type: none"> Test system 	<ul style="list-style-type: none"> Test system 	<ul style="list-style-type: none"> Test system
Name: Qing Wei Role: Life Cycle Planner, Feasibility Analyst, Developer	Primary Responsibility <ul style="list-style-type: none"> Explore current system Estimate project effort and schedule using Secondary Responsibility <ul style="list-style-type: none"> Analyze and prioritize capabilities 	Primary Responsibility <ul style="list-style-type: none"> Provide the first version of LCP Secondary Responsibility <ul style="list-style-type: none"> Assess prototype and components 	Primary Responsibility <ul style="list-style-type: none"> Provide a new version of LCP Secondary Responsibility <ul style="list-style-type: none"> Develop prototype 	Primary Responsibility <ul style="list-style-type: none"> Provide a new version of LCP Develop updated system Secondary Responsibility <ul style="list-style-type: none"> Test system 	Primary Responsibility <ul style="list-style-type: none"> Provide a new version of LCP Develop updated system Secondary Responsibility <ul style="list-style-type: none"> Test system 	Primary Responsibility <ul style="list-style-type: none"> Provide a new version of LCP Develop updated system Secondary Responsibility <ul style="list-style-type: none"> Test system
Name: Cheng Zhang Role: Prototyper, Chief Developer	Primary Responsibility <ul style="list-style-type: none"> Explore current system Analyze and prioritize capabilities 	Primary Responsibility <ul style="list-style-type: none"> Assess prototype and components Secondary Responsibility <ul style="list-style-type: none"> Provide the first version of LCP 	Primary Responsibility <ul style="list-style-type: none"> Develop prototype Secondary Responsibility <ul style="list-style-type: none"> Provide a new version of LCP 	Primary Responsibility <ul style="list-style-type: none"> Develop updated system Secondary Responsibility <ul style="list-style-type: none"> Test system 	Primary Responsibility <ul style="list-style-type: none"> Develop updated system Secondary Responsibility <ul style="list-style-type: none"> Test system 	Primary Responsibility <ul style="list-style-type: none"> Develop updated system Secondary Responsibility <ul style="list-style-type: none"> Test system
Name: Si Zhao Role: System Architect, Tester	Primary Responsibility <ul style="list-style-type: none"> Explore current system Analyze current system architecture 	Primary Responsibility <ul style="list-style-type: none"> Develop new system architecture 	Primary Responsibility <ul style="list-style-type: none"> Assess system architect Secondary Responsibility <ul style="list-style-type: none"> life 	Primary Responsibility <ul style="list-style-type: none"> Set up development environments Test updated system 	Primary Responsibility <ul style="list-style-type: none"> Test updated system 	Primary Responsibility <ul style="list-style-type: none"> Test updated system
Name: Rui Ma Role: Feasibility Analyst, Requirements Engineer, Developer	Primary Responsibility <ul style="list-style-type: none"> Explore current system Identify the most appropriate process Secondary Responsibility <ul style="list-style-type: none"> Capture win-conditions 	Primary Responsibility <ul style="list-style-type: none"> Analyze business case 	Primary Responsibility <ul style="list-style-type: none"> Provide feasibility evidence for architecture agile 	N/A	N/A	N/A
Name: Stephen Hunt Role: IIV & V, Quality Focal Point	Primary Responsibility <ul style="list-style-type: none"> Verify and validate all work products 	Primary Responsibility <ul style="list-style-type: none"> Verify and validate all work products 	Primary Responsibility <ul style="list-style-type: none"> Verify and validate all work products 	N/A	N/A	N/A

3.2 Skills

Team members	Role	Skills
Guancheng Li	Project Manager, Prototyper, Developer	Current skills: • Experience on HTML, CSS, JavaScript, PHP, MySQL, Laravel (PHP Framework)
Cheng Zhang	Prototyper, Chief Developer	Current skills: • Experience on HTML, CSS, JavaScript, PHP, MySQL, Laravel (PHP Framework)
Qing Wei	Life Cycle Planner, Feasibility Analyst, Developer	Current skills: • Experience of HTML, CSS, JavaScript, PHP, MySQL, Laravel (PHP Framework)
Yutong Guo	Operational Concept Engineer, Tester, Developer	Current skills: • Experience of HTML, CSS, JavaScript, PHP, MySQL, Laravel (PHP Framework)
Si Zhao	Software Architect, Tester	Current skills: • Experience on HTML, CSS, JavaScript, PHP, MySQL, Laravel (PHP Framework)

4. Approach

4.1 Monitoring and Control

Approaches we are using in monitoring and controlling our project:

- Every weekday, we have formal team meeting at Leavey Library Discussion Room to finish team assignments and system development together. Project manager will check whether every team member has finished his/her tasks that day. If not, we will discuss and try to solve the encountered problems.
- We use Jira to log work and track project.
- Every two weeks, we submit progress report and project plan to guide our work in next two weeks.
- Every two weeks, we submit risk report, defect report and technical debt report to monitor our process.

4.1.1 Closed Loop Feedback Control

Ways team members get and provide feedback internally within our team:

- Every weekday, we have formal team meeting at Leavey library Discussion Room to finish team assignments and system development together. During the meeting, we can get and give some instant and timely feedback.
- Every team member's work will always be checked by other team members.

4.1.2 Reviews

Reviews we are using to control our project:

- Team internal review
Every weekday, we have a small internal team review at the end of team meeting.
- Foundation Commitment Review (FCR)
We use FCR before entering into foundation phase.
- Development Commitment Review (DCR)
We use DCR before entering into development phase.
- Rebaselined Development Commitment Review (RDCR)
We use RDCR before entering construction development phase iteration 1.
- Core Capability Drive-through (CCD)
We use of CCD before entering construction development phase iteration 2.
- Transition Readiness Review (TRR)
We use TRR before entering into transition development phase.
- Operation Commitment Review (OCR)
We use OCR before entering into operation phase.
- Peer Review (PR)
We use Peer Review to ensure quality of each member's work.

4.2 Methods, Tools and Facilities

Tools	Usage	Provider
COCOMO II	Estimate project costs	USC CSSE
Digital Ocean	Web Server	Digital Ocean
Github	Store source code	Github
Google Drive	Store project related documents	Google
Google Hangout	Video chat	Google
Jira	Log work	USC CSSE
Laravel	Develop proposed system	LARAVEL
MySQL	Database	Oracle Corporation
Microsoft Office	Create project related documents	Microsoft
Microsoft Project	Create project plan	Microsoft
OmniGraffle	Draw diagrams for documents	The Omni Group
Sublime Text	Review and edit code	Sublime HQ Pty Ltd
WeChat	Internal team communications	Tencent
Winbook	Identify win conditions	USC CSSE

5. Resources

Cost Estimation for project e-Lockbox:

- **Project Duration**
12 weeks for exploration, valuation and foundation phase in 577A
12 weeks for development and operation phase in 577B
- **Effort Estimates for 577B**
Assuming 12 hours/week of dedicated effort per person
Assuming 10 out of 12 weeks fill Construction phase
Total estimating effort: (10 weeks)(12 hours/week)(6 developing team members) = 720 hours
- **Programming language used:** HTML, CSS, JavaScript, PHP
- **Framework used:** Laravel (PHP framework)
- **Four Core Modules to be implemented**
Case Management, User Management, Activity Management, System Foundations

The following is module lists with its estimated source lines of code (SLOC).

Table 9: Component Modules

No.	Module Name	Brief Description	SLOC	REVL
1	Case Management	Administrator and Case Manager can add/delete/edit/view/activate/inactivate Youth users' cases.	3000	4%
2	User Management	Different roles of users are served with different functions.	1000	4%
3	Activity Management	Activities can be automatically created.	300	4%
4	System Functions	Log in, auto log out, send email from youth to case manager and security questions.	1000	4%

The following is COCOMO II Scale Drivers and rationales of choosing these values.

Table 10: COCOMO II Scale Driver

Scale Driver	Value	Rationale
PREC	High	The team has clear product objectives after one semester implementation and gained experience from 577A development.
FLEX	Nominal	We are stick to requirements, and the client is open to negotiation on specific design.
RESL	Nominal	We have already learnt many strategies that could be used for mitigating most further risks.
TEAM	High	Team members meet every weekday and cooperate very well.

PMAT	Nominal	The process maturity is CMM Level 2. Requirements are managed and processes are planned, performed, measured, and controlled.
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The following is COCOMOII Cost Drivers and rationales of choosing these values.

Table 11: COCOMO II Cost Drivers of Module 1 – Case Management

Cost Driver	Value	Rationale
RELY	Nominal	The effect of this module failure is moderate.
DATA	Nominal	Because case information, such as profile, document and report, would be stored in this module, the number of the bytes in the testing database is about 120K and the number of SLOC is about 3000. The D/P would be 40, which is between 10 and 100.
CPLX	Nominal	Case Management include basic processes for managing cases. Simple input/output and simple edits.
RUSE	Nominal	The e-Lockbox is a “across project”, reuse across modules.
DOCU	Nominal	The life cycle will be based on ICSM. We will complete right-sized documents to life-cycle needs.
TIME	High	The system should be available from 9 a.m. to 5 p.m. on weekday. The percentage of available execution time expected to be used by the system is about 70%.
STOR	High	The percentage of available storage expected to be used by the module is about 70%.
PVOL	Low	The platform may majorly change every 12 months and minorly change every 1 month.
ACAP	Nominal	The analysts’ analysis and design ability, efficiency and thoroughness, and the ability to communicate and cooperate are moderate.
PCAP	Nominal	The team’s ability, efficiency and thoroughness, and the ability to communicate and operate are moderate.
PCON	High	All developing team members will continue to register in 577B to complete this project.
APEX	Low	All team members have only 6 months’ experience on Laravel development.
PLEX	Nominal	Most team members have used MySQL, Web Server for 1 year.
LTEX	Nominal	Majority of team members have used HTML, CSS, PHP, and MySQL for 1 year.
TOOL	Nominal	Use basic software such as Microsoft project and Winbook and Jira to control life cycle.
SITE	Very High	Six developing team members meet every week day at Leavey Library Discussion Room to finish team assignments and system development together.

SCED	Nominal	The schedule is fixed for 24 weeks, 12 weeks each on Fall 2016 and Spring 2017.
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Table 12: COCOMOII Cost Drivers of Module 2 – User Management

Cost Driver	Value	Rationale
RELY	Nominal	The effect of this module failure is moderate.
DATA	Nominal	Because user information, such as name, password, address and phone number, would be stored in this module, the number of the bytes in the testing database is about 15K and the number of SLOC is about 1000. The D/P would be 15, which is between 10 and 100.
CPLX	Nominal	User Management include basic processes for managing users and roles. Simple input/output and simple edits.
RUSE	Nominal	The e-Lockbox is a “across project”, reuse across modules.
DOCU	Nominal	The life cycle will be based on ICSM. We will complete right-sized documents to life-cycle needs.
TIME	High	The system should be available from 9 a.m. to 5 p.m. on weekday. The percentage of available execution time expected to be used by the system is about 70%.
STOR	Nominal	The percentage of available storage expected to be used by the module is less than 50%.
PVOL	Low	The platform may majorly change every 12 months and minorly change every 1 month.
ACAP	Nominal	The analysts’ analysis and design ability, efficiency and thoroughness, and the ability to communicate and cooperate are moderate.
PCAP	Nominal	The team’s ability, efficiency and thoroughness, and the ability to communicate and operate are moderate.
PCON	High	All developing team members will continue to register in 577B to complete this project.
APEX	Low	All team members have only 6 months’ experience on Laravel development.
PLEX	Nominal	Most team members have used MySQL, Web Server for 1 year.
LTEX	Nominal	Majority of team members have used HTML, CSS, PHP, and MySQL for 1 year.
TOOL	Nominal	Use basic software such as Microsoft project and Winbook and Jira to control life cycle.
SITE	Very High	Six developing team members meet every week day at Leavey Library Discussion Room to finish team assignments and system development together.
SCED	Nominal	The schedule is fixed for 24 weeks, 12 weeks each on Fall 2016 and Spring 2017.

Table 13: COCOMOII Cost Drivers of Module 3 – Activity Management

Cost Driver	Value	Rationale
RELY	Nominal	The effect of this module failure is moderate.
DATA	Nominal	Because case information, such as profile, document and report, would be stored in this module, the number of the bytes in the testing database is about 5K and the number of SLOC is about 300. The D/P would be 17, which is between 10 and 100.
CPLX	Nominal	Activity Management include basic processes for tracking cases. Simple input and output.
RUSE	Nominal	The e-Lockbox is a “across project”, reuse across modules.
DOCU	Nominal	The life cycle will be based on ICSM. We will complete right-sized documents to life-cycle needs.
TIME	High	The system should be available from 9 a.m. to 5 p.m. on weekday. The percentage of available execution time expected to be used by the system is about 70%.
STOR	Nominal	The percentage of available storage expected to be used by the module is less than 50%.
PVOL	Low	The platform may majorly change every 12 months and minorly change every 1 month.
ACAP	Nominal	The analysts’ analysis and design ability, efficiency and thoroughness, and the ability to communicate and cooperate are moderate.
PCAP	Nominal	The team’s ability, efficiency and thoroughness, and the ability to communicate and operate are moderate.
PCON	High	All developing team members will continue to register in 577B to complete this project.
APEX	Low	All team members have only 6 months’ experience on Laravel development.
PLEX	Nominal	Most team members have used MySQL, Web Server for 1 year.
LTEX	Nominal	Majority of team members have used HTML, CSS, PHP, and MySQL for 1 year.
TOOL	Nominal	Use basic software such as Microsoft project and Winbook and Jira to control life cycle.
SITE	Very High	Six developing team members meet every week day at Leavey Library Discussion Room to finish team assignments and system development together.
SCED	Nominal	The schedule is fixed for 24 weeks, 12 weeks each on Fall 2016 and Spring 2017.

Table 14: COCOMOII Cost Drivers of Module 4 – System Functions

Cost Driver	Value	Rationale
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RELY	Nominal	The effect of this module failure is moderate.
DATA	Nominal	Because case information, such as profile, document and report, would be stored in this module, the number of the bytes in the testing database is about 15K and the number of SLOC is about 1000. The D/P would be 15, which is between 10 and 100.
CPLX	Nominal	Case Management include process for managing and tracking cases. Simple input/output and simple edits.
RUSE	Nominal	The e-Lockbox is a “across project”, reuse across modules.
DOCU	Nominal	The life cycle will be based on ICSM. We will complete right-sized documents to life-cycle needs.
TIME	High	The system should be available from 9 a.m. to 5 p.m. on weekday. The percentage of available execution time expected to be used by the system is about 70%.
STOR	Nominal	The percentage of available storage expected to be used by the module is less than 50%.
PVOL	Low	The platform may majorly change every 12 months and minorly change every 1 month.
ACAP	Nominal	The analysts’ analysis and design ability, efficiency and thoroughness, and the ability to communicate and cooperate are moderate.
PCAP	Nominal	The team’s ability, efficiency and thoroughness, and the ability to communicate and operate are moderate.
PCON	High	All developing team members will continue to register in 577B to complete this project.
APEX	Low	All team members have only 6 months’ experience on Laravel development.
PLEX	Nominal	Most team members have used MySQL, Web Server for 1 year.
LTEX	Nominal	Majority of team members have used HTML, CSS, PHP, and MySQL for 1 year.
TOOL	Nominal	Use basic software such as Microsoft project and Winbook and Jira to control life cycle.
SITE	Very High	Six developing team members meet every week day at Leavey Library Discussion Room to finish team assignments and system development together.
SCED	Nominal	The schedule is fixed for 24 weeks, 12 weeks each on Fall 2016 and Spring 2017.

The following is the COCOMO II Effort Estimates for 577B.

USC COINCOMO 2.0 - /Users/qingwei/Documents/USC/2017SPRING/e-LockBox.cet

File Parameters Mode Help

e-LockBoxWebService's Overview COPSEMO

Scale Factor 16.63 Schedule (SCED)

+ Subcomponent - Subcomponent(s) More Acti...

X	Name	Size	Labor Rate (\$/Month)	EAF	Language	NOM Effort DEV	EST Effort DEV	PROD	COST	INST COST	Staff	Risk
<input type="checkbox"/>	CaseMan...	1,272	0.0	0.86	Non-spe...	3.98	3.43	370...	0.00	0.00	0.5	0.0
<input type="checkbox"/>	UserMan...	328	0.0	0.82	Non-spe...	1.03	0.84	389...	0.00	0.00	0.1	0.0
<input type="checkbox"/>	Activit...	300	0.0	0.95	Non-spe...	0.94	0.89	338...	0.00	0.00	0.1	0.0
<input type="checkbox"/>	SystemF...	328	0.0	0.82	Non-spe...	1.03	0.84	389...	0.00	0.00	0.1	0.0

Estimation

Total Lines Of Code: 2,228 Hours/PM: 152.0

Estimated	Effort	Schedule	PROD	COST	INST	Staff	Risk
Optimistic	4.80	6.00	463.88	0.00	0.00	0.8	
Most Likely	6.00	6.43	371.10	0.00	0.00	0.9	0.0
Pessimistic	7.50	6.90	296.88	0.00	0.00	1.1	

Report Updated.

Our team has five team members, including four main team members and one directed research team member. Four main team members will in charge of the project implementation.

According to the above picture, The pessimistic effort is 7.50 CII person-month. According to lecture, one 577B student effort is 1.67 CII person-month. Therefore, the number of team members we need to complete the project within the fixed schedule is $7.50 / 1.67 = 4.49 \approx 4$. In conclusion, we can finish the project within the schedule.

6. Iteration Plan

6.1 Plan

There are two iterations in the construction phase. The first iteration is for core capabilities which includes all modules and second is for full capabilities including all small functions and tests.

Iteration 1 – Core Capabilities

- Duration: 02/13/2017 - 03/24/2017
- Core capabilities are developed and tested
- Core Capability Drivethrough: 03/24/2017

Iteration 2 – Full Capabilities

- Duration: 03/27/2017 - 04/14/2017
- Full capabilities are developed and tested
- Transition Readiness Review: 04/14/2017

6.1.1 Capabilities to be implemented

Table 15: Construction iteration capabilities to be implemented

ID	Capability	Description	Priority	Iteration
1	OC-1 Case Management	<ul style="list-style-type: none"> • Activate/Inactivate a case • Assign a case • Visible/Invisible a document 	Must have	1
2	OC-2 User Management	<ul style="list-style-type: none"> • Edit user profile • View detailed user profile 	Must have	1
3	OC-3 Activity Management	<ul style="list-style-type: none"> • Add/Edit/Brief View/Detailed View/Delete an activity 	Must have	1
4	OC-4 System Foundations	<ul style="list-style-type: none"> • Settings • Auto Log out • Send email 	Should have	2

6.1.2 Capabilities to be tested

Table 16: Construction iteration capabilities to be tested

ID	Capability	Description	Priority	Iteration
1	OC-1 Case Management	<ul style="list-style-type: none"> • Create/Delete/Edit/View a case • Activate/Inactivate a case • Assign a case 	Must have	1

		<ul style="list-style-type: none"> • Create/Delete/Edit/View contact information • Create/Delete/Edit/View additional contacts • Create/Delete/Edit/View education history • Create/Delete/Edit/View work history • Upload/View/Download/Edit/Delete documents • Visible/Invisible a document 		
2	OC-2 User Management	<ul style="list-style-type: none"> • Create/Edit/Brief View/Detailed View a user account 	Must have	1
3	OC-3 Activity Management	<ul style="list-style-type: none"> • Create/ Delete/Edit/Brief View/Detailed View an activity 	Must have	1
4	OC-4 System Foundations	<ul style="list-style-type: none"> • Login security • Settings • Auto Log out • Send email 	Should have	2

6.1.3 Capabilities not to be tested

All core capabilities will be tested.

6.1.4 CCD Preparation Plans

The development team will prepare the system to be tested by stakeholders on March 24th, 2017. The stakeholders will be asked to try the system's core capabilities. The database needs to be insert some users and documents for stakeholders' tests. Stakeholders' experience and suggested improvements will be documented and followed by the development team.

The following stakeholders will be involved in Core Capability Drivethrough (CCD):

- Client: Pamela Clay (Living Advantage Inc.)
- Development Team: USC 577B Spring 2017 Team 10
- Mentor: USC 577B Spring 2017 Professors and TAs

The following are measures the development team needs to carry out to ensure a smooth CCD.

- Make sure all core capabilities have been implemented and tested.
- Prepare a draft User Manual
- Prepare usage scenarios for CCD
- Do a dry run well before CCD and test the system same way as stakeholders will do

6.2 Iteration Assessment

6.2.1 Capabilities Implemented, Tested, and Results

Table 17: Capabilities implemented, tested, and results

ID	Capability	Test Case	Test Results	If fail, why?
1	OC-1 Case Management	TC_06 – TC_18	Pass	
2	OC-2 User Management	TC_01 – TC_05	Pass	
3	OC-3 Activity Management	TC_19 – TC_22	Pass	
4	OC-4 System Foundations	TC_23 – TC_28	Pass	

6.2.2 Core Capabilities Drive-Through Results

We have logged all concerns and feedbacks during CCD in Report and Concern Logs. Please refer to ConcerLog_CCD_S17b_T10.V1.0.doc.

6.3 Adherence to Plan

We have finished all capabilities for our system and get positive feedback from our client. In addition, we strictly followed our plan to develop and transit our project.

7. Transition Strategy

7.1 Transition Objectives

The system is running on DigitalOcean server now. The team will support the system until the end of Spring 2017 semester. The team will provide clear documentation for future maintainers to successfully maintain and update the system, including user manual, technical manual, source code and etc.

7.2 Transition Process Strategy

The transition process contains the following steps.

- Preparation for transition
- Test the system with client and IT
- Train staff to use and evaluate the system
- Deploy and configure the system on server
- Deliver source code and documentation

7.3 Preparing for Transition

Before the transition can take place, client should provide the username and password of DigitalOcean Server to the team. Then the team can configure the environment and deploy the system on server.

7.3.1 Hardware Preparation

The team needs to prepare the following hardware.

- DigitalOcean

7.3.2 Software Preparation

The team needs to prepare the following software.

- Linux
- Apache
- MySQL
- PHP

7.3.3 Site Preparation

The transition site, mylaspace.com, is hosted by DigitalOcean server.

7.4 Stakeholder Roles, Responsibilities and Schedule

Due Date	Role	Responsibility
Done	Team, IT	Made preparations for transition and deployed the system on server
04/27/2017	Team, IT, Client	Test the system, train staff and improve the system according to their feedbacks
04/28/2017	Team	Finish all support documents and manuals
05/05/2017	Team	Deliver the system including source code and documentation