

Given below is a Project Management Plan for a real life project executed by a commercial company. This example is from my book *Software Project Management in Practice* (2002, Addison Wesley). The project planning here follows the methods and style of the parent company, some of which have been discussed in the Chapter. The plan here does not give the CM plan or the detailed schedule of project tasks – more on these are available in the book. How the plan was evolved and the methods followed for it are also given in the book.

PROJECT MANAGEMENT PLAN FOR ACIC PROJECT

1. PROJECT SUMMARY

1.1 Project Overview

ACIC is a USA-based Investment firm. This application has 2 components. First, a Brokerage Account Opening application on ACIC's web-site which will allow any Internet user to open a Brokerage Account with ACIC. Second, an account opening and maintenance application which is primarily for ACIC's representatives to open accounts for the applications received in Paper format. This is an Intranet application. The application will provide features like account history viewing and account balance, status and activity information. This will allow ACIC to effectively evolve to a client/account servicing application in addition to being an account opening engine. This is an enhancement of an existing application; the earlier development was also done by Infosys.

Project code	Project Name	Customer
xxxxxxxxx	ACIC Project	ACIC Corporation

Project Leader(PL)	Configuration Controller(CC)	Business Manager(BM)	Backup PL	Backup CC
BB	SB	HR	BS	HP

Project Type	Platform	Number of Phases
Development	Java, Win NT, DB2	Four Phases.

Project Start Date (including onsite, offshore)		Project end date	Total Estimated Revenue
On-site	Off-shore		
April 3 rd , 2000	May 15 th , 2000	Nov 3 rd , 2000	US \$ xxx,xxx

Project and Customer Contact Personnel			
Name and Designation	Phone number	Fax number	E-mail id.

Project Scope
<p>To provide an effective, efficient means of account maintenance activities To allow reps to access information. Provide a complete picture to the client rep for account status, valuation, order status, and trade activity Increase the intelligence of the update process Provide an interface that is able to display required account history elements Provide capability to close and reactivate an account</p>
Project's Value-add to the customer
<p>This project will allow ACIC to effectively evolve to a client account servicing application in addition to being the account opening engine.</p>
Infosys Objectives
<p>Strengthen relationship with ACIC by delivering high quality software on time. Become preferred vendor by developing expertise on their products and systems.</p>

1.2 Commitments made to the customer

Sl#	Milestone Date	Milestones	Deliverables
1	26 th May 2000	Inception: Requirements Signoff	Business analysis and requirements specifications, Use-Case catalog, Screens, Iteration plan
2	15 th May – 23 rd June 2000	Elaboration: Iteration-1	Sequence diagrams, Class diagram, Source code, Plan for the next cycle
3	26 th June – 7 th July 2000	Elaboration: Iteration-2	Supplementary specifications, Sequence diagrams, Class diagram, Architecture document, Source code, Iteration plan for the next cycle
4	10 th July – 21 st July 2000	Construction: Iteration-1	Source Code, Review reports, Test reports, Iteration plan for the next cycle
5	20 th July – 28 th July 2000	Construction: Iteration-2	Source code, Review reports, Test reports, Iteration plan for the next cycle
6	31 st July – 8 th Aug 2000	Construction: Iteration-3	Source Code, Review reports, Test reports, Iteration plan for the next cycle, Deployment plan for the product
7	9 th Aug – 1 st Sep 2000	Integration Testing Phase	Test Plans, Test reports
8	4 th Sep – 15 th Sep 2000	Onsite Code delivery and setup	Code
9.	18 th Sep – 22 nd Sep 2000	Acceptance Test and Production migration	Test reports
10.	18 th Sep – 29 th Sep	Onsite Reconciliation	Code

	2000	and Regression Test	
11.	2 th Oct– 26 th Oct 2000	Acceptance Test	Test Results
12.	27 th Oct – 3 rd Nov 2000	Roll out and Support	Project Sign off

Other commitments	
SI#	Commitments
1	This project will follow the Rational Unified Methodology (RUP).

1.3 Assumptions

Assumptions made while planning
<ul style="list-style-type: none"> • Migration to Visual Age for Java 3.0 will not be done by this team • Intelligent update to business partners will be incorporated in only the maintenance part of the application and not in the ‘Account opening’ engine • Qualified people will approve ‘Rational Unified Process’ methodology for implementing this project • Changes in functional and technical requirements during the life cycle of the project may have an impact on the schedule. Any impact on cost or schedule due to these changes will be intimated to ACIC • ACIC reviewers will get 7 days to approve a milestone document. If no comments are received within this time period, it will be considered as approved.

2. PROJECT PLANNING

2.1 Project Processes

Standard Process followed

The standard development process of Infosys will be followed. However, it will be enhanced with Rational Unified Process methodology (RUP), as it is a commitment. The development process will be tailored to match the RUP.

Tailoring Notes

Deviations from standard process	Added/Modified/Deleted	Reasons for deviations
Only those use cases that are going to be taken up in a particular iteration will be elaborated at that point of time.	Modified	As iteration based development is being done
Development of logical object	Modified	Conformance to RUP

model will be done incrementally in the first few iterations		methodology
Development of physical object model will be done incrementally in the first few iterations	Modified	Conformance to RUP methodology
Physical database design may be refined in later iterations	Modified	Conformance to RUP methodology
Development of unit test plan will be done in each iteration	Modified	As iterative approach is being used
Logging of defects will be iteration wise	Modified	As iterative approach is being used
Requirement traceability will be done through the Requisite Pro tool	Modified	Conformance to RUP methodology
No vision document and Business case, as we started with the 'Scope document' which serves the same purpose	Modified	Deviation from RUP

Requirements Change Management Process

Change Requests Tracking
<ul style="list-style-type: none"> Changes requested by customer will be logged in ChangeRequest.xls and analyzed for impact on the project. A change request form will be submitted to customer for approval. Change requests that are approved will be attached to the project contract as addenda. Major changes usually have an effort / delivery-on-time impact on the project. The customer needs to formally approve these. As this is a short duration project, if any one or a group of change requests takes more than 2% of the total estimated effort for the project, re-estimation of the project schedule and effort will be done.

Requirements Traceability

Requisite Pro tool will be used.

2.2 Estimated Size and Effort

Estimation Criteria	
Program/Function (Use Case)	Criteria
Simple Use Case	3 or Fewer Transactions
Medium Use Case	4 to 7 Transactions
Complex Use Case	> 7 Transactions

Use Case	Description	Complexity
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Number		
Use Case 1	Screen Navigation	Complex
Use Case 2	Update Personal Details	Medium
Use Case 3	Add Address	Medium
Use Case 4	Update Address	Complex
Use Case 5	Delete Address	Complex
Use Case 6	Add Telephone Number	Medium
Use Case 7	Update Telephone Number	Complex
Use Case 8	Delete Telephone Number	Complex
Use Case 9	Add Email	Medium
Use Case 10	Update Email	Medium
Use Case 11	Delete Email	Medium
Use Case 12	Update Employment Details of a party	Medium
Use Case 13	Update Financial Details of a party	Medium
Use Case 14	Update Details of an Account	Medium
Use Case 15	Maintain activities of an Account	Complex
Use Case 16	Maintain memos of an Account	Simple
Use Case 17	View History of Party Details	Complex
Use Case 18	View History of Account Details	Complex
Use Case 19	View History of Option Level and Service Options	Simple
Use Case 20	View History of Activities and Memos	Simple
Use Case 21	View History of Roles	Complex
Use Case 22	View Account Details	Simple
Use Case 23	View Holdings of an Account	Complex
Use Case 24	View 'Pending Orders' of an Account	Complex
Use Case 25	Close/Reactivate Account	Simple
Use Case 26	Intelligent update to business partner of ACIC	Complex

Estimated Build Effort			
Program/Function	Effort (Based on data from earlier project)	Number of Units	Total Build Effort (in person-days)
Simple Use Cases	1 Person Days	5	5
Medium Use Cases	5 Person Days	9	45
Complex Use Cases	8 Person Days	12	96
TOTAL			146

Phase-wise Effort Estimate		
Activity/Phase	Person-days	% of total effort
Requirements	50	10
Design	60	12
Build	146	29
Integration test	35	7
Regression Test	10	2
Acceptance test	30	6
Project management	75	15
Configuration management	16	3
Training	50	10
Others	40	6

Estimated Effort	501	100%
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Effort Estimate by Iterations	Person days	% of Total Effort
Project Initiation	25	5
Inception Phase	24	5
Elaboration Phase: Iteration-1	45	9
Elaboration Phase: Iteration-2	34	7
Construction Phase: Iteration-1	27	5
Construction Phase: Iteration-2	24	5
Construction Phase: Iteration-3	21	4
Transition Phase	110	22
Project Closure	10	2
Project Management	75	15
Configuration Management	16	3
Training	50	10
Others	40	8
Total Estimated Effort	501 Person Days	100%

2.3 Schedule

Specified as milestones in the section on Commitments to the Customer.

2.4 People

People by Role		
Role	Required#	Date
PL	1	4 th May 2000
Onsite Co-ordinator	1 (50% time)	4 th May 2000
Module Leader	1	15 th May 2000
Developers	3	15 th May 2000
Developers	1	17 th July 2000
Developers	1	1st August 2000
Developers	1	14 th August 2000
Total	9 (actually 8.5)	

People by Skill and Experience			
Area	Total #	0-12 months experience	> 12 months experience
Java	7	7	0
DB2	2	0	2
Total	9	7	2

People Requirement Plan			
Month	Offshore	Onsite	Total
May 2000	4	1 (50%)	5
June 2000	5	1	6

July 2000	5	1	6
Aug 2000	8	1	9
Sep 2000	7	2	9
Oct 2000	3	2	5

2.5 Development Environment

Hardware	Software
<ul style="list-style-type: none"> • NT Server 	<ul style="list-style-type: none"> • WIN NT
<ul style="list-style-type: none"> • MainFrame 	<ul style="list-style-type: none"> • DB2
<ul style="list-style-type: none"> • Intel PC 	<ul style="list-style-type: none"> • Visual Age for Java, Java, Win NT

2.6 Hardware and Software Resources Required

Item Description	Required #	Date
PCs with 128 RAM	6	1 st May 2000
1 GB space on server	1	1 st May 2000
Visual Age for Java	6	4 th May 2000
DB2	6	4 th May 2000
Rational Rose	5	15 th May 2000
Requisite Pro	1	15 th May 2000

2.7 Tools

Tools List	
Tools to be developed in the project	None
In-house tools to be used in the project	None

2.8 Training Plan

Training Area	Duration	Waiver Criteria
Technical		
Java Language	7 days	<ul style="list-style-type: none"> • If already trained
Visual Age for Java	3days	<ul style="list-style-type: none"> • Exposed as part of initial training
Java Applets	4 hrs	<ul style="list-style-type: none"> • If already trained
Java Swing	4 hrs	<ul style="list-style-type: none"> • If already trained
Persistence Builder	4 hrs	<ul style="list-style-type: none"> • If already trained
Rational Rose and Requisite Pro	8 hrs	<ul style="list-style-type: none"> • Mandatory
OOAD	1day	<ul style="list-style-type: none"> • If already trained
Business domain		
System Appreciation	7 days	<ul style="list-style-type: none"> • If already trained
Process Related		
Quality system	3 hrs	<ul style="list-style-type: none"> • If already trained
Configuration Management	2 hrs	<ul style="list-style-type: none"> • If already trained for CC. For others on the job training
Group Review	4 hrs	<ul style="list-style-type: none"> • If already trained

Defect prevention	4.5 hrs	• Mandatory
SPC tool	4.5 hrs	• If already trained
RUP methodology	2 hrs	• Mandatory

2.9 Quality Plan

Quality Goals

Project Quality Goals			
Goals	Value	Basis for setting goals	Org.wide Norms
Total number of defects injected	145	0.033 defects/Person hour. This is 10% better than Synergy 1.5, which is 0.036 defects/Person Hour	0.052 defects/Person Hour.
Quality (Acceptance defect density)	5	3 % or less of total estimated number of defects	6% of estimated number of defects
Productivity	57	3.4 % productivity improvement to Synergy 1.5	50
Schedule	Delivery on time		10%
Cost of quality (In %)	32%	31.5%	32%

Estimates of defects to be detected

Review / Testing stage	Estimated number of defects to be detected	% of defects to be detected	Basis for estimation
Requirements & Design review	29	20%	Referenced similar Project estimations (Synergy 1.5) and PCB
Code review	29	20%	-Do-
Unit testing	57	40%	-Do-
Integration + Regression testing	25	17%	-Do-
Acceptance Test	5	3%	-Do-
Total estimated number of defects to be detected	143	100%	

Strategy for meeting Quality Goals

Strategy	Expected benefits
Do defect prevention using the standard defect prevention guidelines and process; use standards developed in synergy for coding.	10 -20 % reduction in defect injection rate and about 2% improvement in productivity
Group Review of Program specs for first few/logically complex Use Cases	Improvement in quality as overall defect removal efficiency will improve; some benefits in

Group review of design docs/first time-generated code by Project Leader, Developer and one Consultant.	productivity as defects will be detected early.
Introduction of RUP methodology and implementing the project in iterations. Milestone analysis and defect prevention exercise will be done after each Iteration.	Approximately 5 % reduction in defect injection rate and 1% improvement in overall productivity

Reviews

Review Point	Review Item	Type of review
End of Project Planning	Project Plan DCS set up Project Schedule	Group Review SQA Review SQA Review
End of Project Planning	CM Plan	Group Review
End of 90% of Requirements (This should be at the end of First Elaboration Iteration)	Business analysis and requirements specification document, Use Case Catalog	Group Review
End of 90% Design (This should be at the end of Second Elaboration Iteration)	Design Document, Object Model	Group Review
Beginning of each Iteration	Iteration Plans	One person review
End of Detailed design	Complex/first time generated Program Specs incl. Test Cases, Interactive diagrams	Group Review
After coding for first few programs	Code	Group Review
After self testing of a process	Code	One person review
End of Unit Test Plan	Unit Test Plan	One person review
Beginning of Integration Test	Integration Test Plan	Group Review

2.10 Risk Management Plan

SI #	Risks	Probability	Impact	Risk Exposure	Mitigation Plan
1	Support from database architect and the database administrator of the customer	0.5	8	4	<ul style="list-style-type: none"> Plan carefully for the time required from each of this groups and give enough prior notice Onsite co-ordinator to work closely with these groups
2	As RUP is being used for the first time, the understanding of the team may not be complete	0.9	3	2.7	<ul style="list-style-type: none"> Work closely with experts in the R&D lab of Infosys Keep the customer in the loop throughout the project and escalate for any Schedule/Effort deviations

					<ul style="list-style-type: none"> Train the team on RUP methodology
3	Personnel Attrition: Team members might leave at short notice.	0.3	7	2.1	<ul style="list-style-type: none"> Assign tasks so that more than one person is aware of the units/use cases in the project
4	Working with customer's mainframe DB2 over the link – link may not be as efficient as it is expected.	0.1	8	0.8	<ul style="list-style-type: none"> Do extra code reviews, desk checking etc. to minimize the reliance on link Escalate as soon as the link goes down.

3. PROJECT TRACKING

3.1 Measurement Plan

Metric to be collected	Unit of Measurement	Tools used
Size	LOC , FP, S/M/C count	<ul style="list-style-type: none"> Line counters
Effort	Person-days	<ul style="list-style-type: none"> WAR
Defects	Number of Defects	<ul style="list-style-type: none"> BugsBunny
Schedule	Elapsed time	<ul style="list-style-type: none"> MSP

3.2 Task Tracking

Activity	Procedure
Task scheduling	<ul style="list-style-type: none"> The PL schedules tasks using MS Project Refinement and rescheduling will be done when necessary
Task assignment	<ul style="list-style-type: none"> The latest schedule is made available to the team members. Once the Schedule is uploaded to WAR-MSP system, the tasks will show in their respective WARs.
Task status tracking	<ul style="list-style-type: none"> Task tracking is done daily.
Project meeting	<ul style="list-style-type: none"> Once a week.
Causal analysis meeting	<ul style="list-style-type: none"> After every iteration

3.3 Issues Tracking

Issues Types	Where logged	Who can log	Who reviews, when	When Escalated
Onsite Issues	IssueTracker.xls	Any member of the project	PL, Daily	2 days

Customer Issues	Issues Log.xls	Onsite team, PL	PL, Daily	2 days
Business Manager Issues	Weekly Status report	BM	BM, PL Weekly	5 days
Issues with Support Services	Request Tracker	Any team member	Support Services, Daily	2 days

3.4 Customer Feedback

Item	Logging and Tracking Process
Customer Feedback	<ul style="list-style-type: none"> The AM/PL gets the customer feedback. The BM files it.
Customer Complaints	<ul style="list-style-type: none"> Customer complaints received will be entered and tracked using CustomerComplaints.xls

3.5 Quality Tracking

Quality Activity	Action
Defect tracking	Use DCS for logging defects and tracking them to closure
Reviews (requirements, high level design, detailed design)	Check against project goals in quality plan
Code review	Check against limits for each program through SPC tool
Independent unit testing	Check against limits for each program through SPC tool
Integration testing/System testing	Check against project goals in quality plan

3.6 Review by Senior Management (BM)

Sl#	Item for review	Frequency of review
1.	Schedule	Every version change
2.	Project plan	When some significant changes are made
3.	Milestone report	End of milestones

3.7 Status Reporting

Report To	Frequency
Business Manager	Weekly on Monday by e-mail
Customer	Weekly on Monday

3.8 Deviation Limits at Milestones

Actual vs estimated of:	For the first five milestones	For the rest of the milestones
Effort	10%	5%
Schedule	10%	5%

Defects	20%	20%
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3.9 Report to the Customer

- Milestones reports and weekly status reports
- Issues requiring clarifications
- Escalation, if any

3.10 Report to the BM

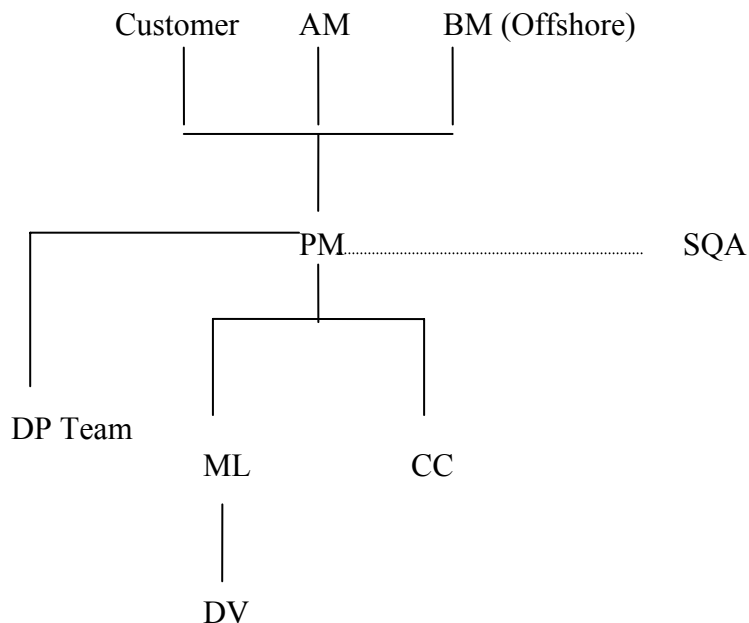
- Customer feedback
- Milestones and weekly status reports
- Issues requiring clarifications/attention
- Escalation, if any
- Number of Requirement changes and estimated effort for them
- Major changes in Plan

3.11 Escalation Procedures

Escalate Where	Threshold period	Name of the person	Designation of the person
At ACIC	3 days	Xxxx	Project Manager
At Infosys	3 days	Xxxx	Account Manager
At Infosys	3 days	Xxxx	Business Manager

4. PROJECT TEAM

4.1 Project Organization



4.2 Project Team

Sl. #	Initials	Responsibility	Start date	Expected End Date
1	BB	Project manager	4 th April 2000	3rd November 2000
2	KP	Onsite Co-ordinator	4 th April 2000	3rd November 2000
3	BS	Module leader, backup project lead	15 th May 2000	3rd November 2000
4	SP	Configuration controller	22 nd May 2000	13 th October 2000
5	DD	Developer	22 nd May 2000	29 th September 2000
6	HP	Developer, backup configuration controller	22 nd May 2000	29 th September 2000
7	NA	Developer	17 th July 2000	3 rd November 2000
8	SH	Developer	1 st August 2000	15 th September 2000
9	AL	Developer	14 th August 2000	31 st August 2000
10	JP	Developer	1st September 2000	22nd September 2000
11	SDS	Account manager	4 th April 2000	3rd November 2000
12	SB	SQA	15 th May 2000	3rd November 2000

4.3 Roles and Responsibilities

Role	Responsibilities
Business Manager (BM)	Resolve escalated issues Review project status Participate in critical technical reviews
Customer	Review design Resolve escalated issues Acceptance test planning & testing
Account Manager (AM)	Customer satisfaction Business growth Project financial plan Interfacing with sales and marketing Training related issues Employee related issues
Project manager (PM)	Project planning & scheduling Design Customer interaction Reviews Testing Reporting Task assignment & tracking Interact with software quality advisor from SEPG Ensure delivery as per contract Interface with other departments as per need Ensure open issues/customer complaints are closed properly Ensure project members are adequately trained
Module leader (ML)	Design Development

	Testing Reporting
Defect prevention team (DP Team)	Spread awareness in the team on defects and their prevention Analyze defect data Identify methods to reduce defect injection
Developer (DV)	Detail design for use cases Development Unit Testing & integration testing
Configuration controller (CC)	Prepare the CM plan Manage the configuration as per the CM plan
Software quality advisor (SQA) – from the SEPG	Process consultancy Quality assurance (audits) Install measurement tools & train project personnel Participate in reviews of project Plan & processes as necessary
Onsite Co-ordinator	Resolve any issues from Customer/Offshore Support during development

5. REFERENCES

Omitted.

6. ABBREVIATIONS USED

Ommitted.