Example IEEE software project management plan (SPMP)

This plan is for development of the MSG product by a small software organization consisting of three individuals: Al, the owner of the company, and two software engineers, Betty and Charlie.

The MSG product is to develop a software product to support the Martha Stockton Greengage (MSG) Foundation that helps young couples in purchasing their own homes by providing low-cost loans. The software must determine how much money is available each week to fund loans. To do this, the system must also help in the application and tracking of mortgages, manage foundation investments, and estimate incoming and outgoing cash flow.

1 Overview

1.1 Project Summary

1.1.1 **Purpose, scope, and objectives.** The object of this project is to develop a software product that will assist the Martha Stockton Greengage (MSG) Foundation in making decisions regarding home mortgages for married couples. The product will allow the client to add, modify, and delete information regarding the Foundation's investments, operating expenses, and individual mortgage information. The product will perform the required calculations in these areas and produce reports listing investments, mortgages, and weekly operation expenses.

1.1.2 **Assumptions and constraints.** Constraints include the following:

- The deadline must be met.

- The budget constraint must be met.

- The product must be reliable.

- The architecture must be open so that additional functionality may be added later.

- The product must be user-friendly.

1.1.3 **Project deliverables.** The complete product, including user manual, will be delivered 10 weeks after the project commences.

1.1.4 **Schedule and budget summary.** The duration, personnel requirements, and budget of each workflow are as follows:

- Requirements workflow (1 week, two team members, $3740)

- Analysis workflow (2 weeks, two team members, $7480)

- Design workflow (2 weeks, two team members, $7480)

- Implementation workflow (3 weeks, three team members, $16,830)

- Testing workflow (2 weeks, three team members, $11,220)

The total development time is 10 weeks, and the total internal cost is $46,750.

1.2 Evolution of the project management plan. All changes to the project management plan must be agreed to by Al before they are implemented. All changes should be documented in order to keep the project management plan correct and up to date.

2 **Reference materials.** All artifacts will conform to the company's programming, documentation, and testing standards.

3 **Definitions and acronyms.** MSG-Martha Stockton Greengage; the MSG Foundation is our client.

4 **Project organization**

4.1 **External interfaces.** All the work on this project will be performed by Al, Betty, and Charlie. Al will meet weekly with the client to report progress and discuss possible changes and modifications.

4.2 **Internal structure.** The development team consists of Al (owner), Betty, and Charlie.

4.3 **Roles and responsibilities.** Betty and Charlie will perform the design workflow. Al will implement the class definitions and report artifacts, Betty will construct the artifacts to handle investments and operating expenses, and Charlie will develop the artifacts that handle mortgages. Each member is responsible for the quality of the artifacts he or she produces. Al will oversee integration and the overall quality of the software product and will liaise with the client.

5 **Managerial process plans**

5.1 **Start-up plan**

5.1.1 **Estimation plan.** As previously stated, the total development time is estimated to be 10 weeks and the total internal cost to be $46,750. These figures were obtained by expert judgment by analogy, that is, by comparison with similar projects.

5.1.2 **Staffing plan.** Al is needed for the entire 10 weeks, for the first 5 weeks in only a managerial capacity and the second 5 weeks as both manager and programmer. Betty and Charlie are needed for the entire 10 weeks, for the first 5 weeks as systems analysis and designers and for the second 5 weeks as programmers and testers.

5.1.3 **Resource acquisition plan.** All necessary hardware, software, and CASE tools for the project are already available. The product will be delivered to MSG Foundation installed on a desktop computer that will be leased from our usual supplier.

5.1.4 Project staff training plan. No additional staff training is needed for this project.

5.2 **Work plan**

5.2.1 **Work activities and Schedule allocation**

Week 1	(Completed) Met with client, and determined requirements artifacts. Inspected requirements artifacts.
Weeks 2,3	(Completed) Produced analysis artifacts, and inspected analysis artifacts. Showed artifacts to client, who approved them. Produced software project management

	plan, and inspected software project management plan.
Weeks 4,5	Product design artifacts, and inspect design artifacts
Weeks 6-10	Implementation and inspection of each class, unit testing and documentation, integration of each class, integration testing, product testing, and documentation inspection.

5.2.2 **Resource allocation.** The three team members will work separately on their assigned artifacts. Al's assigned role will be to monitor the daily progress of the other two, oversee implementation, be responsible for overall quality, and interact with the client. Team members will meet at the end of each day and discuss problems and progress. Formal meetings with the client will be held at the end of each week to report progress and determine if any changes need to be made. AL will ensure that schedule and budget requirements are met. Risk management will also be Al's responsibility.

Minimizing faults and maximizing user-friendliness will be Al's top priorities. Al has overall responsibility for all documentation and has to ensure that it is up to date.

5.2.3 **Budget allocation.** The budget for each workflow is as follows:

Requirements workflow	$3,740
Analysis workflow	$7,480
Design workflow	$7,480
Implementation workflow	$16,830
Testing workflow	$11,220
Total	**$46,750**

5.3 **Control plan**

Any major changes that affect the milestones or the budget have to be approved by Al and documented. No outside quality assurance personnel are involved. The benefits of having someone other than the individual who carried out the development do the testing will be accomplished by each person testing another person's work products.

Al will be responsible for ensuring that the project is completed on time and within budget. This will be accomplished through daily meetings with the team members. At each meeting, Betty and Charlie will present the day's progress and problems. Al will determine whether they are progressing as expected and whether they are following the specification document and the project management plan. Any major problems faced by the team members will immediately be reported to Al.

5.4 **Risk management plan**

The risk factors and the tracking mechanisms are as follows.

There is no existing product with which the new product can be compared. Accordingly, it will not be possible to run the product in parallel with an existing one. Therefore, the product should be subjected to extensive testing.

The client is assumed to be inexperienced with computers. Therefore, special attention should be paid to the analysis workflow and communication with the client. The product has to be made as user-friendly as possible.

Because of the ever-present possibility of a major design fault, extensive testing will be performed during the design workflow. Also, each of the team members will initially test his or her own code and then test the code of another member. Al will be responsible for integration testing and in charge of product testing.

The information must meet the specified storage requirements and response times. This should not be a major problem because of the small size of the product, but it will be monitored by Al throughout development.

There is a slim chance of hardware failure, in which case another machine will be leased. If there is a fault in the compiler, it will be replaced. These are covered in the warranties received from the hardware and compilers suppliers

5.5 **Project close-out plan.** Not applicable here.

6 **Technical process plans**

6.1 **Process model.** The Unified Process will be used.

6.2 **Methods, tools, and techniques.** The workflows will be performed in accordance with the Unified Process. The product will be implemented in Java.

6.3 **Infrastructure plan.** The product will be developed using ArgoUML running under Linux on a personal computer.

6.4 **Product acceptance plan.** Acceptance of the product by our client will be achieved by following the steps of the Unified Process.

7 **Supporting process plans**

7.1 **Configuration management plan.** CVS will be used throughout for all artifacts.

7.2 **Testing plan –** The testing workflow of the Unified Process will be performed.

7.3 **Documentation plan –** Documentation will be produced as specified in the Unified Process.

7.4 **Quality assurance plan and**

7.5 **Reviews and audits plan.** Betty and Charlie will test each other's code, and Al will conduct integration testing. Extensive product testing will then be performed by all three.

7.6 **Problem resolution plan –** Any major problems faced by the team members will immediately be reported to Al.

7.7 **Subcontractor management plan.** Not applicable here.

7.8 Process improvement plan. All activities will be conducted in accord with the company plan to advance from CMM level 2 to level 3 within years.

8 **Additional plans.** Additional components:

Security: A password will be needed to use the product.

Training: Training will be performed by Al at time o delivery. Because the product is straight forward to use, 1 day should be sufficient for training. Al will answer questions at no cost for the first year of use.

Maintenance: Corrective maintenance will be performed by the team at no cost of a period of 12 months. A separate contract will be drawn up regarding enhancement.