CHAPTER 2: PROJECT MANAGEMENT

In this chapter, we introduced how object-oriented systems development projects were managed. Specifically, we described how projects were identified and how the identification led to a system request. Next, we presented the three different types of feasibility analysis and how their results helped in selecting a project. After that, we reviewed a set of traditional project management tools that can be applied to planning and managing of an object-oriented systems development project and demonstrated employing use-case points as a method that can be used to estimate the effort it will take to develop an object-oriented system. We next discussed the use of evolutionary work breakdown structures and iterative workplans in conjunction with the Unified Process. We then covered the issues related to assigning the right people to the development team. Finally, we described topics associated with the environment and infrastructure management workflows of the Unified Process. In this installment of the CD Selections case, we see how Margaret and the development team work through all of these topics with regard to the Web-based solution that they hope to create.

Project Identification and System Request

At CD Selections, all potential IT projects are reviewed and approved by a project steering committee that meets quarterly. The committee has representatives from IT as well as from the major areas of the business. For Margaret, the first step was to prepare a system request for the committee. Using the system request template (see Figure 2-2) Margaret prepared a system request (see Figure 2-A). Of course, the sponsor is Margaret, and the business needs are to increase sales and to better service retail customers. Notice that the need does not focus on the technology, such as the need "to upgrade our Web page" The focus is on the business aspects: sales and customer service.

For now, the business requirements are described at a very high level of detail. In this case, Margaret's vision for the requirements includes the ability to help brick-and-mortar stores reach out to new customers. Specifically, customers should be able to search for products over the Internet, locate a retail store that contains the product, put a product on "hold" for later store pick-up, and order products that are not currently being stocked.

The business value describes how the requirements will affect the business. Margaret found identifying intangible business value to be fairly straightforward in this case. The Internet is a "hot" area, so she expects the Internet to improve customer recognition and satisfaction. Estimating tangible value is more difficult. She expects that Internet-ordering will increase sales in the retail stores, but by how much?

Margaret decided to have her marketing group do some market research to learn how many retail customers do not complete purchases because the store does not carry the item they are looking for. They learned that stores lose approximately 5% of total sales from "out-of-stocks and non-stocks." This number gave Margaret some idea of how much sales could increase from the existing customer base (i.e., about $50,000 per store), but it does not indicate how many new customers the system will generate.

Estimating how much revenue CD Selections should anticipate from new Internet customers was not simple. One approach was to use some of CD Selections' standard models for predicting sales of new stores. Retail stores average about $1 million in sales per year (after they have been open a year or two), depending upon location factors such as city population, average incomes, proximity to universities, and so on. Margaret estimated that adding the new Internet site would have similar effects of adding a new store. This would

System Request—Internet Order Project

Project sponsor: Margaret Mooney, Vice President of Marketing

Business Need: This project has been initiated to reach new Internet customers and to better serve existing customers using Internet sales support.

Business Requirements:

Using the Web, customers should be able to search for products and identify the brick-and-mortar stores that have them in stock. They should be able to put items on hold at a store location or place an order for items that are not carried or are not in stock. The functionality that the system should have is as follows:

- Search through the CD Selections inventory of products.
- Identify the retail stores that have the product in stock.
- Put a product on hold at a retail store and schedule a time to pick up the product.
- Place an order for products not currently in stock or not carried by CD Selections.
- Receive confirmation that an order can be placed and when the item will be in stock.

Business Value:

We expect that CD Selections will increase sales by reducing lost sales due to out-of-stock or non-stocked items and by reaching out to new customers through its Internet presence. We expect the improved services will reduce customer complaints, primarily because 50% of all customer complaints stem from out-of-stocks or non-stocked items. Also, CD Selections should benefit from improved customer satisfaction and increased brand recognition due to its Internet presence.

Conservative estimates of tangible value to the company include:

- $750,000 (75% of $1,000,000) in sales from new customers
- $1,875,000 (75% of $2,500,000) in sales from existing customers
- $50,000 in sales from customers not facing "out-of-stock or non-stocked" items

Special Issues or Constraints:

- The Marketing Department views this as a strategic system. This Internet system will add value to our current business model, and it also will serve as a proof-of-concept for future Internet endeavors. For example, in the future, CD Selections may want to sell products directly over the Internet.
- The system should be in place for the holiday shopping season next year.

FIGURE 2-A System Request for CD Selections

suggest on-going revenues of $1 million, give or take several hundred thousand dollars, after the website had been operating for a few years.

Together, the sales from existing customer ($2.5 million) and new customers ($1 million) totaled approximately $3.5 million. Margaret created conservative and optimistic estimates by reducing and increasing this figure by 25 percent. This created a possible range of values from $2,625,000 to $4,375,000. Margaret is conservative, so she decided to include the lower number as her sales projection.

Finally, Margaret wanted to impress on the project steering committee the importance of funding this specific project. To accomplish this, she made sure that the committee realized that the Marketing Department viewed the system that this project would produce as a strategic investment. And, she made certain that the committee realized, for the system to have an early success and an immediate impact, that the system really needed to be operational before the holiday shopping season next year. Consequently, she included this additional information as part of the system request.

Feasibility Analysis

Once Margaret and her Marketing group completed the system request, they submitted it to the steering committee for their next meeting. When the steering committee met, they placed the Internet Order project high on its list of projects. A senior systems analyst, Alec Adams, was assigned to help Margaret conduct a feasibility analysis because of his familiarity with CD Selections' sales and distribution systems. He also was an avid user of the Web and had been offering suggestions for the improvement of CD Selections' Web site.

Alec and Margaret worked closely together over the next few weeks on the feasibility analysis. Figure 2-B presents the executive summary page of the feasibility analysis; the report itself was about 10 pages long, and it provided additional detail and supporting documentation.

As shown in Figure 2-B, the project is somewhat risky from a technical perspective. CD Selections has minimal experience with the proposed application and the technology because the ISP had been managing most of the website technology to date. One solution may be to hire a consultant with e-commerce experience to work with the IT department and to offer guidance. Further, the new system would have to exchange order information with the company's brick-and-mortar order system. Currently, individual retail stores submit orders electronically, so receiving orders and exchanging information with the Internet systems should be possible.

The economic feasibility analysis includes refined assumptions that Margaret made in the system request. Figure 2-C shows the summary spreadsheet that lead to the conclusions on the feasibility analysis. Development costs are expected to be about $250,000. This is a very rough estimate, as Alec has had to make some assumptions about the amount of time it will take to design and program the system. These estimates will be revised after a detailed workplan has been developed and as the project proceeds[1]. Traditionally, operating costs include the costs of the computer operations. In this case, CD Selections has had to include the costs of business staff, because they are creating a new business unit, resulting in a total of about $450,000 each year. Margaret and Alec have decided to use a conservative estimate for revenues although they note the potential for higher returns. This shows that the project can still add significant business value, even if the underlying assumptions prove to be overly optimistic. The spreadsheet was projected over three years, and the ROI and break-even point were included.

The organizational feasibility is presented in Figure 2-B. There is a strong champion, well placed in the organization to support the project. The project originated in the business or functional side of the company, not the IT department, and Margaret has carefully built up support for the project among the senior management team.

This is an unusual system in that the ultimate end users are the consumers external to CD Selections. Margaret and Alec have not done any specific market research to see how well potential customers will react to the CD Selections system, so this is a risk.

An additional stakeholder in the project is the management team responsible for the operations of the traditional stores and the store managers. They should be quite supportive given the added service that they now can offer. However, Margaret must convince them that the Internet Sales System will not be viewed as a threat to stores' future sales. As such, Margaret and Alec need to make sure that the management team and store managers are included in the development of the system so that they can incorporate the system into their business processes.

[1] Some of the salary information may seem high to you. Most companies use a "full cost" model for estimating salary cost in which all benefits (e.g., health insurance, retirement, payroll taxes) are included in salaries when estimating costs.

Internet Order Feasibility Analysis Executive Summary

Margaret Mooney and Alec Adams created the following feasibility analysis for the CD Selections Internet Order System Project. The System Proposal is attached, along with the detailed feasibility study. The highlights of the feasibility analysis are as follows:

Technical Feasibility

The Internet Order System is feasible technically, although there is some risk.

CD Selections' risk regarding familiarity with Internet order applications is high

- The Marketing Department has little experience with Internet-based marketing and sales.
- The IT Department has strong knowledge of the company's existing order systems; however, it has not worked with Web-enabled order systems.
- Hundreds of retailers that have Internet Order applications exist in the marketplace.

CD Selections' risk regarding familiarity with the technology is medium.

- The IT Department has relied on external consultants and an Information Service Provider to develop its existing Web environment.
- The IT Department has gradually learned about Web systems by maintaining the current Web site.
- Development tools and products for commercial Web application development are available in the marketplace, although the IT department has little experience with them.
- Consultants are readily available to provide help in this area.

The project size is considered medium risk.

- The project team likely will include fewer than ten people.
- Business user involvement will be required.
- The project timeframe cannot exceed a year because of the holiday season implementation deadline, and it should be much shorter.

The compatibility with CD Selections' existing technical infrastructure should be good.

- The current Order System is a client-server system built using open standards. An interface with the Web should be possible.
- Retail stores already place and maintain orders electronically.
- An Internet infrastructure already is in place at retail stores and at the corporate headquarters.
- The ISP should be able to scale their services to include a new Order System.

Economic Feasibility

A cost–benefit analysis was performed; see attached spreadsheet for details. A conservative approach shows that the Internet Order System has a good chance of adding to the bottom line of the company significantly.

ROI over 3 years: 229 percent

Total benefit after three years: $3.5 million (adjusted for present value)

Break-even occurs: after 1.32 years

Intangible Costs and Benefits

- Improved customer satisfaction
- Greater brand recognition

Organizational Feasibility

From an organizational perspective, this project has low risk. The objective of the system, which is to increase sales, is aligned well with the senior management's goal of increasing sales for the company. The move to the Internet also aligns with Marketing's goal to become more savvy in Internet marketing and sales.

The project has a project champion, Margaret Mooney, Vice President of Marketing. Margaret is well positioned to sponsor this project and to educate the rest of the senior management team when necessary. To date, much of senior management is aware of and supports the initiative.

The users of the system, Internet consumers, are expected to appreciate the benefits of CD Selections' Web presence. And, management in the retail stores should be willing to accept the system, given the possibility of increased sales at the store level.

Additional Comments

- The Marketing Department views this as a strategic system. This Internet system will add value to our current business model, and it also will serve as a proof of concept for future Internet endeavors.
- We should consider hiring a consultant with expertise in similar applications to assist with the project.
- We will need to hire new staff to operate the new system, from both the technical and business operations aspects.

FIGURE 2-B Feasibility Analysis for CD Selections

	2012	2013	2014	Total
Increased sales from new customers	0	750,000	772,500	
Increased sales from existing customers	0	1,875,000	1,931,250	
Reduction in customer complaint calls	0	50,000	50,000	
TOTAL BENEFITS:	0	2,675,000	2,753,750	
PV of BENEFITS:	**0**	**2,521,444**	**2,520,071**	**5,041,515**
PV of ALL BENEFITS:	**0**	**2,521,444**	**5,041,515**	
Labor: Analysis and Design	42,000	0	0	
Labor: Implementation	120,000	0	0	
Consultant Fees	50,000	0	0	
Training	5,000	0	0	
Office Space and Equipment	2,000	0	0	
Software	10,000	0	0	
Hardware	25,000	0	0	
TOTAL DEVELOPMENT COSTS:	254,000	0	0	
Labor: Webmaster	85,000	87,550	90,177	
Labor: Network Technician	60,000	61,800	63,654	
Labor: Computer Operations	50,000	51,500	53,045	
Labor: Business Manager	60,000	61,800	63,654	
Labor: Assistant Manager	45,000	46,350	47,741	
Labor: 3 Staff	90,000	92,700	95,481	
Software Upgrades	1,000	1,000	1,000	
Software Licenses	3,000	1,000	1,000	
Hardware Upgrades	5,000	3,000	3,000	
User Training	2,000	1,000	1,000	
Communications Charges	20,000	20,000	20,000	
Marketing Expenses	25,000	25,000	25,000	
TOTAL OPERATIONAL COSTS:	446,000	452,700	464,751	
TOTAL COSTS:	700,000	452,700	464,751	
PV of COSTS:	**679,612**	**426,713**	**425,313**	**1,531,638**
PV of ALL COSTS:	**679,612**	**1,106,325**	**1,531,638**	
Total Project Benefits Costs :	**(700,000)**	**2,222,300**	**2,288,999**	
Yearly NPV:	**(679,612)**	**2,094,731**	**2,094,758**	**3,509,878**
Cumulative NPV:	**(679,612)**	**1,415,119**	**3,509,878**	
Return on Investment:	**229.16%**	(3,509,878/1,531,638)		
Break-even Point:	**1.32 years**	(Break-even occurs in year 2; (2,094,731 − 1,415,119]/2,094,731 = 0.32)		
Intangible Benefits:	Greater brand recognition			
	Improved customer satisfaction			

FIGURE 2-C Economic Feasibility Analysis for CD Selections

Project Selection

The approval committee met and reviewed the Internet Sales System project along with two other projects–one that called for the implementation of a corporate Intranet and another that proposed in-store kiosks that would provide customers with information about the CDs that the store carried. Unfortunately, the budget would only allow for one project to be approved, so the committee carefully examined the costs, expected benefits,

risks, and strategic alignment of all three projects. Currently, a primary focus of upper management is increasing sales in the retail stores and the Internet system and kiosk project best aligned with that goal. Given that both projects had equal risk, but that the Internet Order project expected a much greater return, the committee decided to fund the Internet Sales System.

Project Effort Estimation

Given the success of the system request being funded, Alec was very excited about managing the Internet Sales System project at CD Selections, but he realized that his project team would have very little time to deliver at least some parts of the system because the company wanted the application developed in time for the holiday season. Therefore, he decided that the project should follow an Enhanced Unified Process-based approach (see Figure 1-18). In this way, he could be sure that some version of the product would be in the hands of the users within several months, even if the completed system would be delivered at a later date.

As project manager, Alec had to estimate the project's effort and schedule–some of his least favorite jobs because of how tough it is to do at the very beginning of the project. But he knew that the users would expect at least general ranges for a product delivery date. He began by attempting to estimate the project's effort using use case points. Using the Use Case Point Template (see Figure 2-17) and the sample filled out worksheet (see Figure 2-18) Alec could estimate the effort to create the new system.

First, Alec had to sit down with Margaret and attempt to identify all of the different users that would interact with the system and to identify the different business processes that the system would support. At this point in time, Alec explained to Margaret that this was a very rough, but necessary estimate. Once they identified these, Alec categorized the different types of users into actors and identified the business processes as use cases. Once this was done, Alec and Margaret had to classify each actor and use case as being simple, average, or complex. In the case of the actors, Bricks and Mortar store and Distribution System had a well defined API. As such they were classified as simple actors. On the other hand, the Customer actor was classified as being complex. This gave an Unadjusted Actor Weight Total Value of 5. (See Figure 2-D).

Second, Alec and Margaret classified each use case based on the number of unique transactions that each had to handle. In this case, there were 2 simple use cases (Place InStore Hold and Place Special Order), 1 average use case (Create New Customer), and 2 complex use cases (Place Order and Checkout). Based on these, a value of 100 to the Unadjusted Use Case Weight Total was computed (See Figure 5-20).

Third, Alec computed a value of 55 for the Unadjusted Use Case Points. Fourth, he rated each of the technical complexity factors, rated each of the environmental factors, and computed the values for TCF and EF (See Figure 2-D). Fifth, using the Unadjusted Use Case Points and the TCF and EF values, Alec calculated a value of 67.5 for Adjusted Use Case Points. Sixth, based on the decision rule to determine whether to use 20 or 28 as the value of the person hours multiplier, Alec realized that he should use 28. Next, Alec was able to estimate the effort for the project to be 1,889.89 person hours. This equates to about 12 person months (1,889.89/160). In other words, it would take a single person working full time about 1 year to complete the project. However, Alec remembered the hurricane model (see Figure 2-22) and realized that at this point in the development, this estimate would have to be modified substantially since they have not created a requirements definition, system proposal, or a business process and functional model. Furthermore, since CD Selections had never built this type of system, based on his past experience with other systems, he suggested to simply double the estimate for right now and to redo it once they have a better understanding of the requirements.

Unadjusted Actor Weighting Table:

Actor Type	Description	Weighting Factor	Number	Result
Simple	External System with well-defined API	1	2	2
Average	External System using a protocol-based interface, e.g., HTTP, TCT/IP, or a database	2	0	0
Complex	Human	3	1	3
			Unadjusted Actor Weight Total (UAW)	**5**

Unadjusted Use Case Weighting Table:

Use Case Type	Description	Weighting Factor	Number	Result
Simple	1–3 transactions	5	2	10
Average	4–7 transactions	10	1	10
Complex	>7 transactions	15	2	30
			Unadjusted Use Case Weight Total (UUCW)	**50**

Unadjusted use case points (UUCP) = UAW + UUCW 55 = 5 + 50

Technical Complexity Factors:

Factor Number	Description	Weight	Assigned Value (0–5)	Weighted Value	Notes
T1	Distributed system	2.0	5	10.0	
T2	Response time or throughput performance objectives	1.0	5	5.0	
T3	End-user online efficiency	1.0	5	5.0	
T4	Complex internal processing	1.0	4	4.0	
T5	Reusability of code	1.0	3	3.0	
T6	Easy to install	0.5	3	1.5	
T7	Ease of use	0.5	5	2.5	
T8	Portability	2.0	4	8.0	
T9	Ease of change	1.0	3	3.0	
T10	Concurrency	1.0	3	3.0	
T11	Special security objectives included	1.0	5	5.0	
T12	Direct access for third parties	1.0	5	5.0	
T13	Special User training required	1.0	3	3.0	
			Technical Factor Value (TFactor)	**58.0**	

Technical complexity factor (TCF) = 0.6 + (0.01 * TFactor) 1.18 = 0.6 + (0.01 * 58)

Environmental Factors:

Factor Number	Description	Weight	Assigned Value (0–5)	Weighted Value	Notes
E1	Familiarity with system development process being used	1.5	1	1.5	
E2	Application experience	0.5	2	1.0	
E3	Object-oriented experience	1.0	0	0.0	
E4	Lead analyst capability	0.5	3	1.5	
E5	Motivation	1.0	4	4.0	
E6	Requirements stability	2.0	4	8.0	
E7	Part time staff	–1.0	0	0.0	
E8	Difficulty of programming language	–1.0	4	–4.0	
			Environmental Factor Value (EFactor)	**12.0**	

Environmental factor (EF) = 1.4 + (–0.03 * EFactor) 1.04 = 1.4 + (–.03 * 12)
Adjusted use case points (UCP) = UUCP *TCF *ECF 67.5 = 55 * 1.18 * 1.04
Person hours multiplier (PHM) PHM = 28
Person hours = UPC * PHM 1,889.9 = 67.5 * 28

FIGURE 2-D Use-Case Points Estimation for the Internet Sales Systems

Creating and Managing the Workplan

Once the estimation was underway, Alec began to create an evolutionary work breakdown structure and iterative workplan to identify the tasks that would be needed to complete the system. He started by reviewing the Enhanced Unified Process phases and workflows (see Figure 1-18) and the evolutionary work breakdown structure template (see Figure 2-19). At this point in time, Alec does not know enough to create a complete workplan. Consequently, he has included as much detail as he knows to be correct (see Figure 2-E). For example, Alec feels confident about the estimation of time to create the requirements definition and to elicit the requirements. However, he does not know whether how long it will take to develop the functional, structural, or behavioral analysis models until after he has a better idea of the actual requirements. Until this determination can be made, any estimation as to the time required would be simply a guess. As time passes, Alec expects to know much more about the development process and will add much more detail to the workplan. (Remember that the development process and the project management processes are iterative and incremental in nature.)

Staffing the Project

Alec next turned to the task of how to staff his project. On the basis of his earlier estimates, it appeared that about 3 people would be needed to deliver the system by the holidays (24 person-months over 10 months of calendar time means 3 people, rounded up).

First, he created a list of the various roles that he needed to fill. He thought he would need a couple of analysts to work with the analysis and design of the system as well as an infrastructure analyst to manage the integration of the Internet Sales System

	Duration	Dependency
I. Business Modeling		
a. Inception		
1. Understand current business situation		
2. Uncover business process problems		
3. Identify potential projects		
b. Elaboration		
c. Construction		
d. Transition		
e. Production		
II. Requirements		
a. Inception		
1. Identify appropriate requirements analysis technique		
2. Identify appropriate requirements gathering techniques		
3. Identify functional and nonfunctional requirements		II.a.1, II.a.2
4. Analyze current systems		II.a.1, II.a.2
5. Create requirements definition		II.a.3, II.a.4
A. Determine requirements to track		
B. Compile requirements as they are elicited		II.a.5.A
C. Review requirements with sponsor		II.a.5.B

(Continued)

FIGURE 2-E
Evolutionary Work Breakdown Structure for the Inception Phase for CD Selections.

FIGURE 2-E
(Continued)

	Duration	Dependency
b. Elaboration		
c. Construction		
d. Transition		
e. Production		
III. Analysis		
a. Inception		
1. Identify business processes		
2. Identify use cases		III.a.1
b. Elaboration		
c. Construction		
d. Transition		
e. Production		
IV. Design		
a. Inception		
1. Identify potential classes		III.a
b. Elaboration		
c. Construction		
d. Transition		
e. Production		
V. Implementation		
a. Inception		
b. Elaboration		
c. Construction		
d. Transition		
e. Production		
VI. Test		
a. Inception		
b. Elaboration		
c. Construction		
d. Transition		
e. Production		
VII. Deployment		
a. Inception		
b. Elaboration		
c. Construction		
d. Transition		
e. Production		
VIII. Configuration and change management		
a. Inception		
1. Identify necessary access controls for developed artifacts		
2. Identify version control mechanisms for developed artifacts		
b. Elaboration		
c. Construction		
d. Transition		
e. Production		

	Duration	Dependency
IX. Project management		
a. Inception		
1. Create workplan for the inception phase		
2. Create system request		
3. Perform feasibility analysis		IX.a.2
A. Perform technical feasibility analysis		
B. Perform economic feasibility analysis		
C. Perform organizational feasibility analysis		
4. Identify project size		IX.a.3
5. Identify staffing requirements		IX.a.4
6. Compute cost estimate		IX.a.5
7. Create workplan for first iteration of the elaboration phase		IX.a.1
8. Assess inception phase		I.a, II.a, III.a IV.a, V.a, VI.a VII.a, VIII.a, IX.a, X.a, XI.a XII.a
b. Elaboration		
c. Construction		
d. Transition		
e. Production		
X. Environment		
a. Inception		
1. Acquire and install CASE tool		
2. Acquire and install programming environment		
3. Acquire and install configuration and change management tools		
4. Acquire and install project management tools		
b. Elaboration		
c. Construction		
d. Transition		
e. Production		
XI. Operations and Support		
a. Inception		
b. Elaboration		
c. Construction		
d. Transition		
e. Production		
XII. Infrastructure Management		
a. Inception		
1. Identify appropriate standards and enterprise models		
2. Identify reuse opportunities, such as patterns, frameworks, and libraries		
3. Identify similar past projects		
b. Elaboration		
c. Construction		
d. Transition		
e. Production		

Role	Description	Assigned To
Project Manager	Oversees the project to ensure that it meets its objectives in time and within budget.	Alec
Infrastructure Analyst	Ensures the system conforms to infrastructure standards at CD Selections. Ensures that the CD Selections infrastructure can support the new system.	Anne
Systems Analyst	Designs the information system—with a focus on interfaces with the distribution system.	Anne
Systems Analyst	Designs the information system—with a focus on the data models and system performance.	Brian
Programmer	Codes system.	Anne

Reporting Structure: All project team members will report to Alec.

Special Incentives: If the deadline for the project is met, all team members who contributed to this goal will receive a free day off to be taken over the holiday season.

FIGURE 2-F
Staffing Plan for the Internet Sales System

with CD Selections' existing technical environment. Alec also needed people who had good programmer skills and who could be responsible for ultimately implementing the system. Anne and Brian are two analysts with strong technical and interpersonal skills (although Anne is less balanced, having greater technical than interpersonal abilities), and Alec believed that they were available to bring onto this project. He wasn't certain if they had experience with the actual Web technology that would be used on the project, but he decided to rely on vendor training or an external consultant to build those skills later when they were needed. Because the project was so small, Alec envisioned all of the team members reporting to him because he would be serving as the project's manager.

Alec created a staffing plan that captured this information, and he included a special incentive structure in the plan (see Figure 2-F). Meeting the holiday deadline was very important to the project's success, so he decided to offer a day off to the team members who contributed to meeting that date. He hoped that this incentive would motivate the team to work very hard. Alec also planned to budget money for pizza and sodas for times when the team worked long hours.

Before he left for the day, Alec drafted a project charter, to be fine-tuned after the team got together for its kickoff meeting (i.e., the first time the project team gets together). The charter listed several norms that Alec wanted to put in place from the start to eliminate any misunderstanding or problems that could come up otherwise (see Figure 2-G).

Project objective: The Internet order system project team will create a working Web-based system to sell CDs to CD Selections' customers in time for the holiday season.

The Internet order system team members will:

1. Attend a staff meeting each Friday at 2 PM. to report on the status of assigned tasks.
2. Update the workplan with actual data each Friday by 5 PM.
3. Discuss all problems with Alec as soon as they are detected.
4. Agree to support each other when help is needed, especially for tasks that could hold back the progress of the project.
5. Post important changes to the project on the team bulletin board as they are made.

FIGURE 2-G
Project Charter for the Internet Order System

Coordinating Project Activities

Alec wanted the Internet Sales System project to be well coordinated, so he immediately put several practices in place to support his responsibilities. First, he acquired the CASE tool used at CD Selections and set up the product so that it could be used for the analysis-phase tasks (e.g., drawing the functional, structural, and behavioral models). The team members would likely start creating diagrams and defining components of the system fairly early on. He pulled out some standards that he uses on all development projects and made a note to review them with his project team at the kickoff meeting for the system. He also had his assistant set up binders for the project deliverables that would start rolling in. Already he was able to include the system request, feasibility analysis, initial workplan, staffing plan, project charter, standards list, and risk assessment.