1.2 Software product management

Software product management is a business activity focusing on the software products that are developed and sold by the business. Product managers (PMs) take overall responsibility for the product and are involved in planning, development, and marketing. They are the interface between the software development team, the broader organization, and the product's customers. PMs should be full members of the development team so that they can communicate business and customer requirements to the software developers.

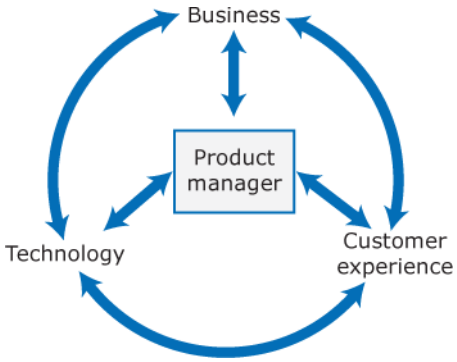
Software product managers are involved at all stages of a product's life—from initial conception through vision development and implementation to marketing. Finally, they make decisions on when the product should be withdrawn from the market. Mid-size and large software companies may have dedicated PMs; in smaller software companies, the PM role is likely to be shared with other technical or business roles.

The job of the PM is to look outward to the customers and potential customers of the product rather than to focus on the software that is being developed. It is all too easy for a development team to get caught up in the details of "cool features" of the software, which most customers probably don't care about. For a product to be successful, the PM has to ensure that the development team implements features that deliver real value to customers, not just features that are technically interesting.

In a blog post, Martin Eriksson[3] explains that product managers have to be concerned with business, technology, and user experience issues. Figure 1.4, which I based on Martin's diagram, illustrates these multiple concerns.

Figure 1.4

Product management concerns



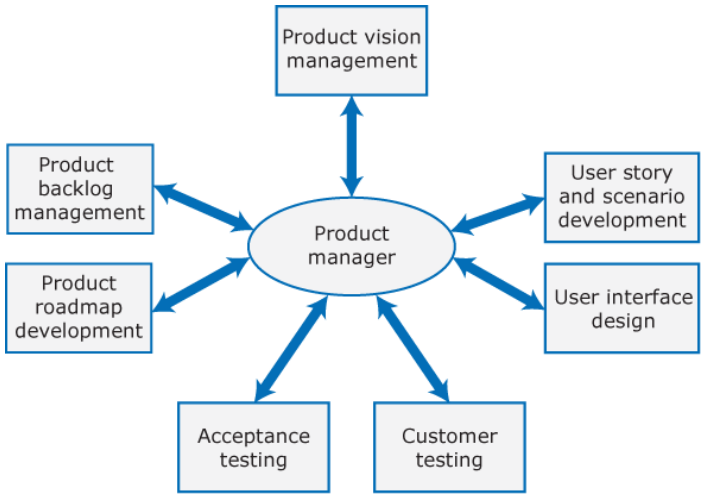
Product managers have to be generalists, with both technical and communication skills. Business, technology, and customer issues are interdependent and PMs have to consider all of them:

1. *Business needs* PMs have to ensure that the software being developed meets the business goals and objectives of both the software product company and its customers. They must communicate the concerns and needs of the customers and the development team to the managers of the product business. They work with senior managers and with marketing staff to plan a release schedule for the product.
2. *Technology constraints* PMs must make developers aware of technology issues that are important to customers. These may affect the schedule, cost, and functionality of the product that is being developed.
3. *Customer experience* PMs should be in regular communication with customers to understand what they are looking for in a product, the types of user and their backgrounds, and the ways in which the product may be used. Their experience of customer capabilities is a critical input to the design of the product's user interface. PMs may also involve customers in alpha and beta product testing.

Because of the engineering focus of this book, I do not go into detail about the business role of product managers or their role in areas such as market research and financial planning. Rather, I concentrate on their interactions with the development team. PMs may interact with the development team in seven key areas (Figure 1.5).

Figure 1.5

Technical interactions of product managers



1.2.1 Product vision management

Some writers say that the product manager should be responsible for developing the product vision. Large companies may adopt this approach, but it is often impractical in small software companies. In startups, the source of the product vision is often an original idea by the company founders. This vision is often developed long before anyone thinks about appointing a PM.

Obviously, it makes sense for PMs to take the lead in developing the product vision. They should be able to bring market and customer information to the process. However, I think all team members should be involved in vision development so that everyone can support what is finally agreed. When the team "owns" the vision, everyone is more likely to work coherently to realize that vision.

A key role of PMs is to manage the product vision. During the development process, changes are inevitably proposed by people from both inside and outside of the development team. PMs have to assess and evaluate these changes against the product vision. They must check that the changes don't contradict the ideas embodied in the product vision. PMs also have to ensure that there is no "vision drift," in which the vision is gradually extended to become broader and less focused.

1.2.2 Product roadmap development

A product roadmap is a plan for the development, release, and marketing of the software product. It sets out important product goals and milestones, such as the completion of critical features, the completion of the first version for user testing, and so on. It includes dates when these milestones should be reached and success criteria that help assess whether project goals have been attained. The roadmap should include a release schedule showing when different releases of the software will be available and the key features that will be included in each release.

The development of the product roadmap should be led by the product manager but must also involve the development team as well as company managers and marketing staff. Depending on the type of product, important deadlines may have to be met if the product is to be successful. For example, many large companies must make decisions on procurement toward the end of their financial year. If you want to sell a new product to such companies, you have to make it available before then.

1.2.3 User story and scenario development

User stories and scenarios are widely used to refine a product vision to identify features of the product. They are natural language descriptions of things that users might want to do with a product. Using them, the team can decide what features need to be included and how these features should work. I cover user stories and scenarios in Chapter 3.

The product manager's job is to understand the product's customers and potential customers. PMs should therefore lead the development of user scenarios and stories, which should be based on knowledge of the area and of the customer's business. PMs should also take scenarios and stories suggested by other team members back to customers to check that they reflect what the target users of the product might actually do.

1.2.4 Product backlog management

In product development, it is important for the process to be driven by a "product backlog." A product backlog is a to-do list that sets out what has to be done to complete the product development. The backlog is added to and refined incrementally during the development process. I explain how product backlogs are used in the Scrum method in Chapter 2.

The product manager plays a critical role as the authority on the product backlog items that should take priority for development. PMs also help to refine broad backlog items, such as "implement auto-save," in more detail at each project iteration. If suggestions for change are made, it is up to the PM to decide whether or not the product backlog should be rearranged to prioritize the suggested changes.

1.2.5 Acceptance testing

Acceptance testing is the process of verifying that a software release meets the goals set out in the product roadmap and that the product is efficient and reliable. Product managers should be involved in developing tests of the product features that reflect how customers use the product. They may work through usage scenarios to check that the product is ready to be released to customers.

Acceptance tests are refined as the product is developed, and products must pass these tests before being released to customers.

1.2.6 Customer testing

Customer testing involves taking a release of a product to existing and potential customers and getting feedback from them on the product's features, its usability, and the fit of the product to their business. Product managers are involved in selecting customers that might be interested in taking part in the customer testing process and working with them during that process. They have to ensure that the customer can use the product and that the customer testing process collects useful information for the development team.

1.2.7 User interface design

The user interface (UI) of a product is critical in the commercial acceptance of a software product. Technically excellent products are unlikely to be commercially successful if users find them difficult to use or if their UI is incompatible with other software that they use. UI design is challenging for small development teams because most users are less technically skilled than software developers. It is often difficult for developers to envision the problems that users may have with a software product.

Product managers should understand user limitations and act as surrogate users in their interactions with the development team. They should evaluate UI features as they are developed to check that these features are not unnecessarily complex or force users to work in an unnatural way. PMs may arrange for potential users to try out the software, comment on its UI, and assist with designing error messages and a help system.