

The Role of Product Management in a Software Products Company

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Throughout the software products industry, companies everywhere strive for a common goal: to develop and deliver a software product that reaches a dominant position in the marketplace. To achieve this goal, the software team must deliver the right product to the market -- one that meets the individual user's needs, has the right features, and delivers the right benefits, including economic advantages for users and other stakeholders. For even if the company is the proud owner of a very successful marketing program, or has other non-technical assets in its war chest, the product must still be "good enough" to overcome the intense competitive pressures in the marketplace and maintain the company's strong position.



To ensure that their software teams build the right software the right way, many companies turn to standard processes such as Rational Software's Rational Unified Process® (RUP®), a comprehensive set of industry best practices that provide proven methods and guidelines for developing software applications. Through the application of use cases and other requirements techniques, the RUP helps software teams build the right software by helping them understand what user needs their products must fulfill. And, with its comprehensive architecture, design, coding, and testing practices, the RUP also helps teams build software in the right way, thereby assuring the reliability, scalability, and adaptability of the solution to changing customer needs.

However, the RUP and other processes do not cover other factors that are necessary for commercial product success. These include pricing and licensing strategies, branding, labeling, positioning, and support and services, among others. When all of these factors are properly considered

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and integrated with the application itself, the result is a whole product solution that meets the user's needs, the needs of other non-user stakeholders, and the customer's commercial requirements. And, as we will discuss in this article, it is primarily the responsibility of the product manager to make this happen.

The Role of a Product Manager

Creating a whole product solution from a set of bits and bytes is not a trivial activity. It requires a reasonably in-depth knowledge of the technology (e.g., "Can we really rely on vectoring to a hosted Web-based external Help system?") as well as market factors (e.g., "This may not seem like an important feature to you, but our competitors have positioned it as necessary, and we will not be successful without it").

Who makes the tough decisions to help guide teams to commercial success? Who takes the time to understand what services might be necessary to assure customer success? In most commercial product companies, it is the *product manager* who is empowered to make these decisions. As Figure 1 shows, by mixing one part engineering knowledge and one part marketing savvy with an equal measure of commercial reality, the successful product manager can craft a *whole product solution* that addresses real market needs.



Figure 1: Product Manager's Formula for Success

Primary Activities for a Product Manager

What does it take to be a good product manager? On one hand, it requires someone who can focus almost exclusively on the success of the product in the marketplace. That seems simple enough. On the other hand, it requires the skill set of a "jack of all trades," someone who understands software technology and works well with the development team, is comfortable in marketing and customer pre-sales situations, is an excellent communicator, and who can negotiate with internal and external stakeholders.

In the Rational Unified Process, practitioners are guided through the *role* they play in the software development process with guidelines and best practices that define the *activities* they'll be engaged in, as well as some of the *artifacts* they will need to create in order to achieve success. If we were to extend the RUP to provide guidelines for the product manager role, then the result might look like Figure 2 below. In the following sections, we'll discuss each of these activities briefly so that we can better understand the key role this team or individual plays.

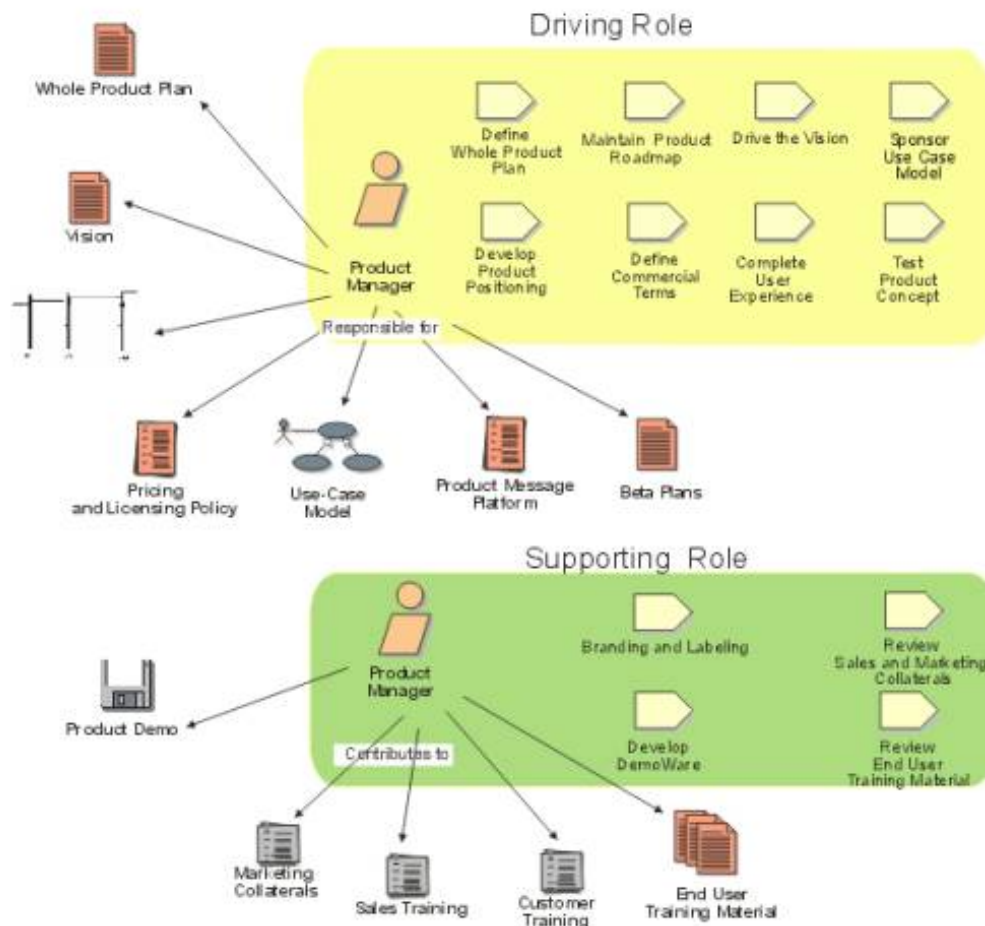


Figure 2: Product Manager Activities Expressed in RUP Constructs¹

Driving the Vision

As a former US president once indicated, the "vision thing" is not so easy. It's obvious that you should have one, but where does it come from? For a product, the answer is that the vision is not so much an *input*, but rather the *output* of a process that involves synthesizing requirements, constraints, wild ideas, and technological opportunities into a cohesive whole. Figure 3 illustrates these varied sources of input for the process.

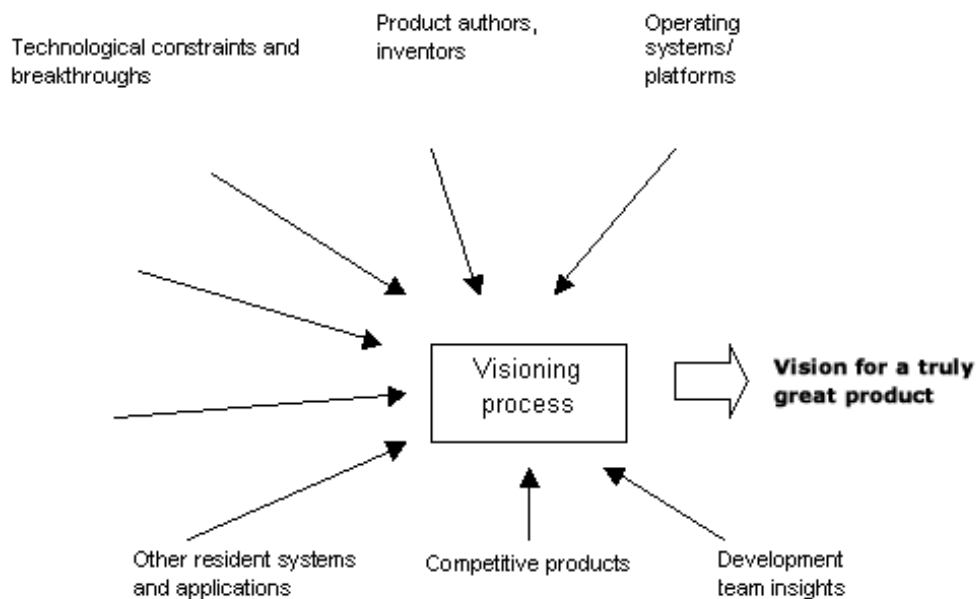


Figure 3: Inputs to the Product Vision

The product manager's role is to facilitate eliciting and analyzing inputs and to ensure that the proper conclusions are reached. Ideally, the team reaches these conclusions together and truly shares the vision. Even then, however, when push comes to shove and scope must be managed, as is inevitably the case, it is the product manager who must "make the call" based upon his or her view of the optimal path through conflicting constraints. If the product manager stays close enough to the customer and close enough to the technology, then the team knows they can trust that manager to make the call. After all, his job (and perhaps theirs) depends on it.

Maintaining the Product Roadmap

With the vision in hand, the next job is to factor it into a product roadmap -- a graphical view of the various code lines, major release dates, and other milestones for software delivery. Inputs to the process include the product requirement priorities, resource estimates provided by the engineering team, and knowledge of key external events such as marketing and promotion opportunities, sales training opportunities, and perhaps key dates in the customer's calendar.

The product manager's role is to gain agreement on what *should* be done and what *can* be done, and to then use this information to synthesize an optimum path to market, based on constraints in the internal and external environment. Although the job itself may not be easy, representing the result in a simple graphical model, such as that in Figure 4, is straightforward.

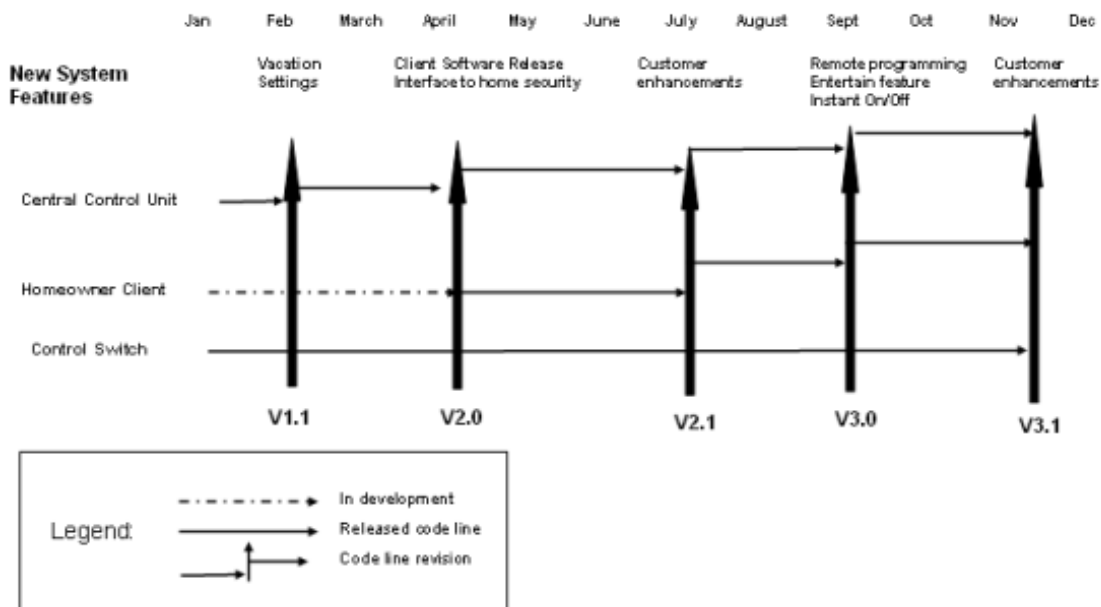


Figure 4: Sample Product Roadmap

Defining the Whole Product Plan

We've described the role the product manager has in developing and maintaining the Vision document and product roadmap. Although the Vision document is comprehensive, it needn't be long. Indeed, controlling the length to a manageable twenty-to-forty pages is an important skill, because so many stakeholders must be able to actually read and understand it. However, the scope of the Vision document, broad as it is, is not broad enough to define the whole product solution we referred to earlier. The whole product solution consists of the product itself, plus all the *ancillaries* -- in other words, those creature comforts that enable people to use or apply the product successfully.

Here are some questions to discover what these might be:

- What specific services will your company provide to help customers succeed with your product?
- What role does your company's customer support team play in assuring customer success?
- Is only one configuration of your product available, or are there multiple possible purchase configurations?
- Does your product operate standalone, or does your customer need to purchase a third-party software application to go along with it?
- Does your product require special hardware, significant bandwidth, secure access, or other computing resources?
- What price are customers willing to pay for your product, and over what period?

These and other similar questions are answered within the scope of the *Whole Product Plan*, which should cover the four dimensions of a successful

customer solution. These are:

- The product itself.
- Accompanying support and services.
- The commercial terms that define the business relationship between you and your customer.
- The documentation you provide to help assure your customers' success.

Figure 5 provides an annotated template that teams can use to help define the solution they are proposing for a customer.

Introduction

Purpose

Describe the four dimensions of the proposed whole product solution: product configuration, services and support, commercial terms, and documentation.

References

List additional documents (Vision document, use-case model, architecture document, etc.) that define the solution.

Solution Overview

Provide a general description of the product, including what problem it is designed to solve and how it will work.

Product Configuration

Components

Provide a list of components, Bill of Materials, and so on.

Configurations

Describe deployment and configuration options, if applicable.

Components Supplied by Customer

Describe third-party applications or components that must be supplied.

System Requirements

Specify system requirements, necessary to support the application.

Services and Support

Services

Describe any services -- site survey, installation, product training, mentoring, Web services, and so on -- that are part of the product solution.

Customer Support

Define parameters of the customer support plan.

Commercial Terms

Licensing

Describe licensing and licensing enforcement mechanisms, if applicable.

Pricing

Describe the proposed pricing model.

Documentation

Describe associated documentation, including user manuals, online help, Read Me, Installation Guides, Help About, and Release Notes.

Figure 5: Template for Preparing a Whole Product Plan

Sponsoring the Use-Case Model

The vision for a specific product release is typically expressed in terms of a set of product features. Once you have defined that set of features, the next step in the process is to convert them into a set of use cases that describe how each specific user interacts with the system to achieve specific objectives. Taken together, the set of all users and all use cases elaborates the vision in a manner that maps to an implementation in software -- and ensures that the vision is achievable.

By helping the development team define the use-case model for the product, the product manager can ensure that all prospective users' needs are met in the implementation and reflected in specific use cases. In addition, the product manager can play an active role in assisting with the development, elaboration, and review of the use cases themselves. However, the caveat is that the project team will develop a lot of use cases, and, depending on the level of specificity the team needs to employ, the workload can quickly overwhelm a small product management team. In other words, the product manager will need to manage the level of their involvement to make sure that the management team is looking at the entire forest rather than individual trees.

Testing the Product Concept

In an effective product development process, the product concepts will be tested at every opportunity with the customer and user community. Although the necessity for this seems obvious, experience has shown that it does not always happen, and the result is often a significant mismatch between the product and the customer's expectations and needs. Table 1 illustrates some recommended user "check-in points" and the contribution that a product manager can provide at each point.

Table 1: Testing the Product Concept

Check-in Point	Product Manager's Role
Concept Development	Facilitate requirements workshops, develop storyboards, presentations, and other "soft" models to elicit customer feedback.
Vision	Take primary responsibility for development of the Vision document. Circulate to all stakeholders for review. Collect and synthesize input, and drive to consensus.
Use-case Model Development	Facilitate development and view of overall use-case model. Participate directly in development of key use cases. Mentor use-case authors and review all work.
"Alpha" Testing (internal usage and early customer access programs)	Define and monitor this testing process. Oversee the definition of scripts and evaluation criteria to ensure that all use cases are tested and that feedback is collected.
Beta Testing (first formal customer evaluation process)	Work with sales team to identify and engage beta customers. Define and document commercial terms. Manage rollout and customer expectations. Collect feedback and drive it back into development efforts.

Completing the User Experience

In addition to the activities described above, creating a whole product solution also requires that the product manager attend to a myriad of other artifacts and details that directly affect the user experience. Some of these, such as user documentation and online help systems, are obvious needs. Others, such as copyright notices, startup splash screens, logo compliance, and more, may seem trivial at first, but together they create a significant impact on the user experience. Table 2 provides a checklist of some of these important artifacts and describes the product manager's role in each.

Table 2: Artifacts to Complete the User Experience

Item/Artifact	Product Manager's Role
User Documentation Manuals, On-Line Help, Other Support material - Read-Me, Help About, Release Notes, Administration and Setup Notes Supporting Software: Installation procedures, auxiliary scripts, embedded tutorials, miscellaneous utilities	Participate in concept development, design, and content plan.
User Presentation Corporate Logo, Product Logo and Graphic Standards	
	Locate or define standards, communicate to implementation team, monitor compliance.

Defining Commercial Terms

Another set of decisions that must be made before the product is ready for market is those that define the commercial terms of the relationship between you and your customer. These may well be as critical to your product's success as the product features themselves. Although some of

these decisions might be outside the product manager's scope or authority, as the primary product advocate, the product manager must be clear that the "buck stops here" when it comes to driving this set of consensus building and decision making activities. Table 3 below highlights these activities and the product manager's role in each.

Table 3: Commercial Terms and Product Manager's Role

Item/Artifact	Product Manager's Role
Licensing	Facilitate or define licensing and licensing enforcement policies. Work with development team to define and implement licensing use cases. Work with legal to draft license provisions. Work with operations to define and implement licensing mechanisms.
Pricing Policy	Facilitate or define product pricing and discount schedule. Work with sales and operations to build and validate price proposals.
Customer Support	Facilitate or define support policies, including access mechanisms, support levels, service level agreements, upgrade policies, and pricing for same.

Positioning and Messaging

As an acting member of the marketing department, the product manager is also responsible for *product positioning*. And, as the saying goes in retail, the key to success is "location, location, location." Your likelihood of success is in large part based on your ability to attract foot traffic into your store. And people will likely go to your store because it was convenient for them to get there, rather than because of any lead generation or promotion mechanism you deployed to drive them to you.

The same goes for software. But as locations in our industry are *virtual* rather than physical, the concept of *position* serves as a proxy for location. Your company's responsibility is to create a location in your customers' minds -- a position that highlights your product's strengths, minimizes its weaknesses, and ultimately causes customers to select software from your company rather than someone else's. In other words, *positioning* is how you differentiate your products and services from others in the marketplace

No matter what you and your product and marketing teammates think of your product, *the way in which potential buyers perceive it* will ultimately determine whether or not they will purchase it.

As an organizing technique for positioning, Geoffrey Moore² recommends the following starting point.

For	(target customer)
Who	(statement of the need or opportunity)
The (product name)	is a (product category)
That	(statement of key benefit, that is, compelling reason to buy)
Unlike	(primary competitive alternative)
Our product	(statement of primary differentiation)

If you and your team can agree on this simple statement of purpose, then you will be well on your way to building a solid *message platform*.

Of course, establishing a position does you no good whatsoever unless you can articulate that position succinctly and memorably to the marketplace. That is the role of *messaging*. *Messaging* puts words behind your position and builds a platform that you can use to describe the more detailed aspects of your basic selling proposition to customers and others. The goal of messaging is *to help create a competitive advantage in the marketplace*.

Your message does not consist of just "any old words." It contains the *specific words and phrases, in the specific sequence* that you and your extended teams will use to deliver your product message to the marketplace, no matter what vehicle you use (e.g., print advertising, radio, sales presentations). Moreover, in this day of information and communication overload, these are the only words you should allow the extended team to use to describe your company's products and services. Each member of your company must learn to *use the same words, in the same way*, when they describe your company to outsiders, whether it be trade press, local press, industry analysts, customers, or partners. Otherwise, your customers will become quickly confused, and your message will be lost in the cacophony and constant bombardment of your competitors' more effective promotions.

As you come to agreement on your messaging, it is useful to document your messaging in a *core message platform*. This document summarizes your basic messages, as well as the product or solution features that support it, in a succinct and focused manner. The core message platform then serves as the basic input to all product marketing artifacts, including the Web site, data sheets, demos, and other sales materials.

Supporting Activities

Though typically led by others, there are a host of other activities in which the product manager should be involved in order to create an effective whole product solution. These include the following:

Branding and Product Labeling

Although this activity is typically owned by corporate marketing, the product manager plays a key role in defining and contributing to the outcome. Specifically, product management will typically be involved in naming the product, and then ensuring that the name and logo are applied

routinely throughout the documentation, and on the start-up screens, menus, and other user interface items in the application.

End User Training Materials

Most software applications embody a new method of some kind. Whether it be a process for translating product data to other languages, a new method for doing object-oriented design, or a way to run your manufacturing plant with less inventory, chances are that your software will require user training in both product usage and method. Competent users are a prerequisite for product success, so the product manager will typically play an advisory role in the development of training, and may also be engaged in providing, or finding, the requisite subject matter expertise.

Product Demo

Nothing kills a prospect's excitement faster than a poorly organized and badly delivered product demo. A typical engineering "walk through" of product features may well bore your customers to tears. Worse, they may become lost and confused as the demo jockey jumps from point to point, and perhaps they will even be intimidated by your "easy to use" software. If a product demo is done well, however, then there is no better opportunity to show prospects how *they can do their jobs better* with your product, and to *deliver or reinforce your key positioning and messages*. To ensure that the demo is effective and positions the solution properly to prospective customers, the product manager must take the reins and provide a specific demo script and supporting data, as well as interfaces and data sets.

Sales and Marketing Collateral

Although sales and marketing collateral are typically owned by product marketing, who other than the product manager could possibly ensure that the features and benefits of the new product are properly articulated? Also, as a representative for some of the more technical team members, product managers may be directly involved in the development and delivery of sales training materials.

Big Job, Significant Rewards

As we have seen, there is far more to building winning software products than simply packaging the application on a CD and adding an install script. There are a host of additional factors, some technical, some commercial, that must come together to create a *whole product solution* that addresses the individual user as well as the user's company business needs. By empowering a product manager (or product management team) to define and drive these additional factors, the software team can help assure that the whole product solution is properly *defined, developed, positioned*, and finally, *properly delivered* to the marketplace.

Although this means a very broad scope of responsibility and a lot of hard work for a product manager, the payoffs are just as substantial. When a product gets this kind of attention and support, success cannot be far

behind.

References

Rational Unified Process 2001. Rational Software Corporation, 2001.

Dean Leffingwell and Don Widrig, *Managing Software Requirements: A Unified Approach*. Addison-Wesley, 1999.

Notes

¹ Note that this graphic was developed by the author and is not officially part of the RUP.

² Geoffrey A Moore, *Crossing the Chasm: Marketing and Selling Technology Products to Mainstream Customers*. HarperCollins, 1991.



For more information on the products or services discussed in this article, please click [here](#) and follow the instructions provided. Thank you!