



New Product Development Does Not Need To Be Painful

By: Larry Turner

In many firms the new product development process is downright painful. New products are never done, milestones are missed, the product once launched does not sell, and the list goes on. When small to mid-sized companies hear about a new product development process, their immediate thoughts include a slowed down and bureaucratic laden program that will never allow them to get a product released or allow for any product specification modifications to meet changing market conditions.

The most important aspect of a successful development program is communication. The inclusion of all functions to the development program will allow for any issues to be handled proactively and not reactively once the product is developed and ready to be transferred into manufacturing or at product launch. The development process is not owned by engineering, but rather the entire company. Marketing has a vested interest in the product and is responsible for the product definition, sales has to sell the product once commercialized, manufacturing needs to be involved with product design to have input that will make the manufacturing process easier, and accounting/finance has to account for costs in the development program and also product costs once in manufacturing. Early inclusion of all key functional representatives allows for an overall smoother transition through the development program.

A Process That Works

There are a number of ways to get new product designed and allow for changes in scope to accommodate competitive environment changes. A development program has at minimum three stages: 1.) Requirement definition, 2.) Design and manufacture, and 3.) Product Launch. Many new product development processes compartmentalize these steps into five to seven distinct steps, but the key component in this process regardless of how many steps is in defining the market requirements and the product to be developed. Figure 1 illustrates a program with 5 steps for product development plus one for on-going product support.

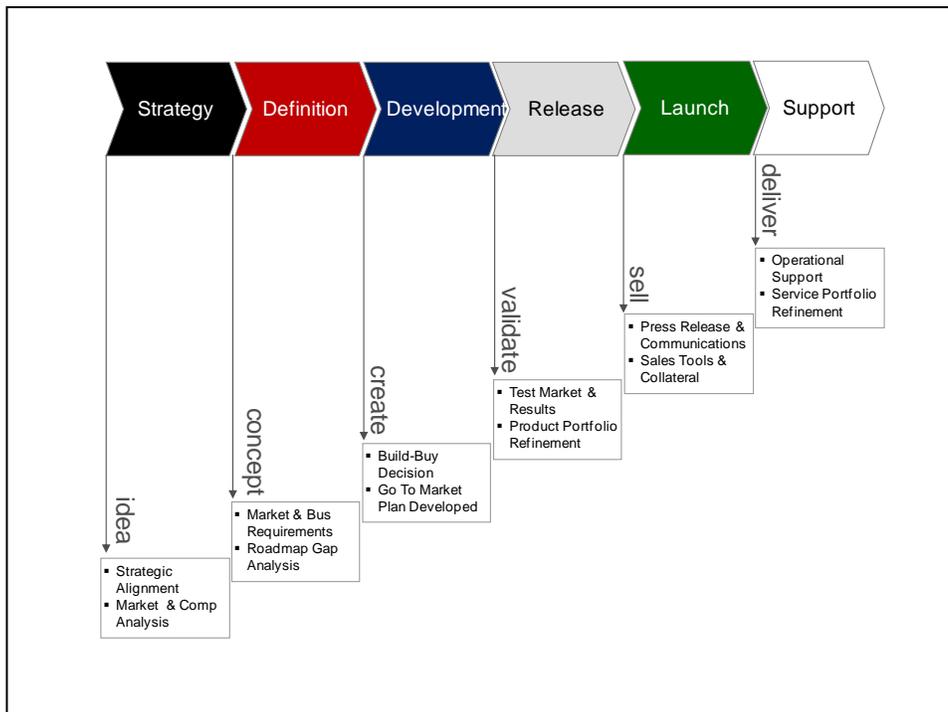


Figure 1: Typical Development Program

Market requirement definition needs to be from the user's point of view. How will the user interface with the product and what does the product do? The requirement document needs to outline the opportunity or need, and define the product as it relates to the market need. This document only needs to be a few pages in length and should have all key information the development team needs to create a product specification. In Figure 1, market requirement would take place in the Strategy and Definition stages. The Strategy stage also includes the initial Return on Investment (ROI) evaluation for a go-no go decision regarding the program.

The product specification contains all the technical aspects of how the product will work and be designed as well as an estimate of development time and cost. The final product specification is usually a result of negotiation with the author of the market requirement document, the product manager or marketing manager; with trade-offs being discussed related to product availability timing, development costs, product costs, and final product functionality. It is during this negotiation that it is best to discuss options or alternatives from a product availability standpoint. In Figure 1, this step would take place in the Definition stage prior to actual Development.



It is critical to get new product out as soon as possible, as opposed to the product being perfect and taking two to three times the development time before release. In many cases a phased approach can be used that will allow a basic product to be launched in a shortened cycle time, while additional features and functionality are added in later phases that provide for new product or enhancements to be launched at a later date. REMEMBER... the longer the product is in development the more likely market changes will take place that may hinder market acceptance of your new product.

Once the product is defined and approved by all constituents it is time to start with the Development stage of the program. There are many development models that allow tracking of progress and managing the development program to milestone commitments. One methodology that is worth investigating is the SCRUM¹ development model. In the SCRUM model the development team works to a backlog of activities, these activities could be subprojects of the main development program broken down into distinct sections referred to as Sprints. Each Sprint is no longer than 30 days and during that time the development team is heads-down on their activities in the Sprint. These distinct Sprints allow for some adjustment to product scope at the end of each Sprint – these modifications can be adjustments to the market need or changes due to knowledge gained from additional market input. By keeping scope creep out of the development time it allows the development team to manage their activity during the Sprint only to those items carved out for that Sprint.

A design review at the point where the project is ready to be transferred into manufacturing allows a final approval by all functions and assures the product is ready to be moved into manufacturing. Product testing takes place prior to the design review, with a test plan that is based on the product functional specification. If possible, the testing should be performed by a group outside of engineering to provide an unbiased test where product problems are documented and reported to the engineering project manager when they occur so recovery can take place as soon as possible.

The transition to manufacturing, as identified in Figure 1 as the transition from Development to Release, can be handled in a number of ways depending on the size of the organization and resources available. In any case, the transition is a cooperative effort between engineering and manufacturing and not engineering throwing the design over the wall to manufacturing. The transfer of design from engineering to manufacturing is further facilitated with the cross-functional communication outlined earlier in this paper. The cross-functional involvement allows the planners and purchasing to be involved with vendor selection and communicate with key vendors regarding needs early in the process. It also allows for key assembly personnel to have input into the design to

¹ Wikipedia: SCRUM (development)



aid in the manufacturing process. All of which speeds time of first production to full production and also speeds time to market.

It is at this point that marketing and sales is involved with product launch activities. This varies by company and industry, but in most cases announcements to the market includes training of sales and distribution channels. The training needs to be not only functional, but more importantly, on how to sell the product and how the new product fits within the current product line and stacks up against competitive product offerings. The Launch stage in Figure 1 outlines the timing for market release.

Transforming an existing organization to a new or modified new product development program is not as difficult as it may seem. There are many organizations that have taken advantage of streamlined development programs, and moving in a completely or slightly different direction with your development process can be managed starting with the next project after management has launched the new program. To get started, it is best to appoint a high level company sponsor to kick off the program. The sponsor of the program becomes intimately involved with managing the change in the organization and is also the key communication to the management team. If expertise does not exist in the organization it is advisable to bring in a subject matter expert (SME) to support the sponsor in facilitating the change. When selecting the SME it is important that the firm or individual contracted have the first hand experience to help make the organizational changes to move your company forward.

Changing your development process will improve not only your internal organization, but also the perception by the market that there have been substantial process improvements in your organization. Be ready for some exciting times in moving the company forward and creating excitement through an increased level of activity in your company.

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