Product Research and Development (PRD)

# Overview

Research and Development of new products is essential to an innovative company. Products can range from physical items to be sold to consumers to new business processes to be implemented into the company. Products can be developed under two different lifecycles, full and expedited. Full PRD takes longer and captures more details, while expedited PRD has a shorter life span. Expedited PRD often involves creating the base idea for a product to be pushed through full PRD later, an improvement or modification to an existing product, or a process product that must be incorporated into the company on priority.

## Business Rules

All comments and feedback throughout the PRD process should be saved for audit. This will allow for teams to see the evolution of the product, and understand why things became the way they are. The proposer, product owner, and interested parties should receive notification mail at each major phase of the PRD with a summary of relevant information for that phase. A report showing the accuracy of estimated level of estimates (LOE) is required to help improve estimate methods.

# Proposal

All PRD starts with the proposal of an idea. The proposer should select the type of PRD (Full/Expedited), full name of the product, a short name that can be used as a unique identifier, department who will own the development of the product, product type (physical/process), base requirements, benefit of the product, as well any supporting documentation. If the PRD proposed is of Expedited type, the proposer should provide whether the PRD modifies an existing product, or if the PRD is to be built from scratch. The proposer can also provide interested parties to receive notifications throughout the PRD process.

## Business Rules

The Proposal form should be one dynamic form, only showing relevant fields based on PRD type and product type. If the PRD modifies an existing product, the short name should be provided for reference. If the product is a physical type, the proposer should be able to indicate if a prototype or full product is to be built by the end of the PRD. A full product can only be developed in expedited PRD if an existing product exists and referenced.

# Research

After a product has been proposed, it enters the research phase. In a full PRD, the research team will work in correlation with the proposer and product owner. During expedited PRD, the product owner is not part of the research phase. The proposer should provide all initial and preliminary research, including uploading necessary documents. The research team furthers investigation of the newly proposed product, identifying deliverable segments of the product. The research team is responsible for evaluating the impact of the new product and comparing it to the proposed benefit of the product. In an expedited PRD, the research team is also responsible for defining the Level of Effort (LOE) to develop each segment of the product, while a full PRD’s LOE is defined by the product owner. In a full PRD, the product owner is also responsible for reviewing the research, can optionally add their own, and may kick it back to the research team requesting more detailed research or elaborations to be done.

## Business Rules

In a full PRD, the research phase can be iterative an unlimited amount of times, and does not enter the next phase until the product owner approves. Feedback and comments on the research should be retained at each step, providing a full audit of the process and research. In expedited PRD, the LOE calculated based on T-Shirt sizes to abstract the LOE from the research team. The points for sizes are as follows: XS=1, S=2, M=3, L=5, XL=8. In a full PRD, the department owner is able to assign points directly to the LOE to each segment of the product, using a numerical 10 scale. Each LOE point is equivalent to 2 hours of work, so an XL LOE would be worth 8 points, or 16 hours of work. If the process iterates several times, the finalized LOE should be used, while the rest of the LOEs are only kept for audit reference. A total LOE for the product is calculated from each segment’s LOE. At this stage, the proposer has the opportunity to kill the PRD if desired. This may be done for various reasons, but commonly because the estimated LOE

# Development

The development phase begins after the research phase has ended, and is completed by the product owner. A separate task is given to the product owner for each segment of the product that was assigned an LOE. The product owner will provide the actual time (in hours) spent on each segment of the product, any deliverables for that segment can be uploaded, new findings can be reported that were discovered during development, as well as a brief description of the implementation. Once each segment has been completed, and all the data has been collected, the review phase begins.

## Business Rules

Each segment of the product can be worked on in any order, and can be done concurrently.

# Review

The proposer and the product owner lead receive tasks to review the product. They will be presented with the most prudent information on the product. This includes each segments’ implementation description, actual LOE vs estimated LOE, benefit of the product, and metadata such as the PRD’s short name. The proposer and product owner lead choose independently whether the product is ready for market, should be abandoned, or should be used as a base line for another PRD case.

## Business Rules

The PRD process cannot be completed until the proposer and product owner come to a consensus. If they do not independently come to the same conclusion, a collaboration communication is sent to both parties informing them of each other’s responses, informing them to collaborate, and the independent reviews are re-initialized. Only products that result in a prototype can be fire off another PRD process. This will start the new PRD process with prudent information already filled in and a reference to the prototyped PRD. In the event that a new PRD process begins, the prototyped PRD still completes, as it’s research and development is complete.