

T. H. E. Solution LLC

Taming the development of intelligent products

The Product Development Chain Continual Improvement Process Model

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It probably goes without saying that improving anything requires change. But there are two diametrically different approaches to change management. One looks at change as moving from where you are to some known final state. This typically requires drastic actions. The process re-engineering movement used this type of change management.

Unless your business is in fact “terminal”, the approach we use is continual change. We know where we are and have some idea of where we want to go. We get there in relatively small steps, continually checking for a change in exactly where we want to go and how we might want to get there. An overview of the specific approach we recommend is provided in Figure 1.

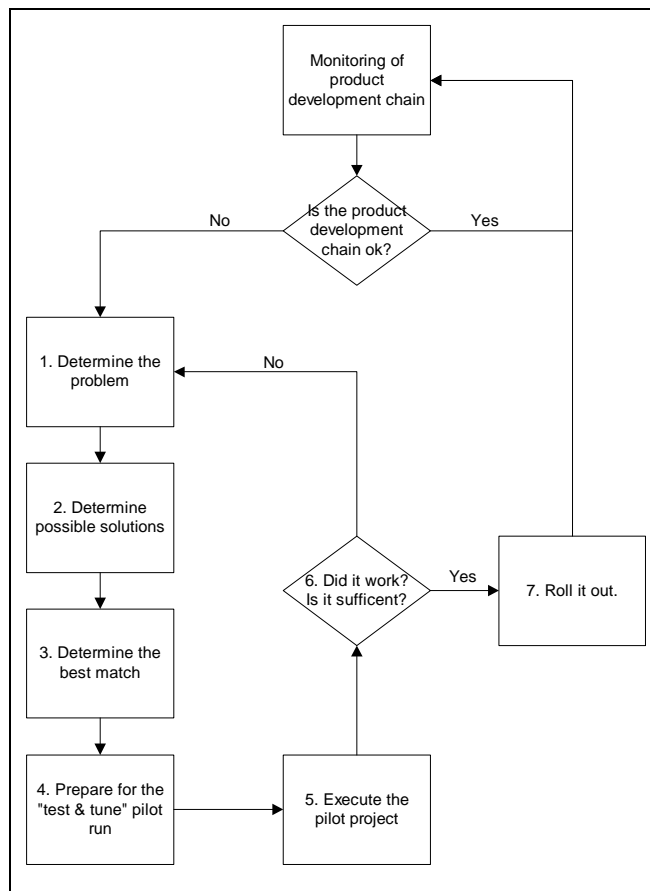


Figure 1, Continual Change Process

The process is based on the idea of continual change. Continual change does not imply change for changes sake, but change when a need is detected. This implies that the well being of the

product development chain needs to be monitored. An outline of reference monitoring practices follows:

1. Continuous company monitoring
 - a. Sales by product/product line
 - b. Variable manufacturing cost ratio
 - c. Cost of non-conformance (company and product/product line)
2. Periodic monitoring
 - a. Product/product line competitive analysis
 - i. Top (3) competitors
 - ii. Comparison of
 1. Product characteristics
 2. Component costs
 3. Direct manufacturing costs
 4. Support costs
 - b. Customer perceived value “survey”

A seven-step process is executed once a need to change is detected. A brief explanation of each follows.

PROBLEM DETERMINATION

Problem determination requires two steps. The first is the development of an initial working definition of the problem. The second step is to gain a consensus on the problem definition.

DETERMINE POSSIBLE SOLUTION OPTIONS

There are a wide variety of management practices, process models, tool sets etc. that can be relevant. The set of changes that provides a possible solution is determined by:

1. The nature of the problem.
2. Current stage of product development
 - a. Basic
 - b. Controlled
 - i. Reproducible
 - ii. Process
 - c. End to end quality
 - d. Collaborative
3. Ability to undertake change
 - a. Company commitment
 - b. Personnel’s ability to understand and absorb
 - c. Resources
 - d. Propensity for risk
4. Availability of adequate pilot projects
5. Pilot project time and financial constraints
6. Resource limitations (especially personnel)

DETERMINE THE BEST MATCH

Determining the best solution is in theory a cost – benefit calculation. In reality it is not. Change decisions, business or other, are made with an emotional bent and their acceptance even more so. Determining the best solution is the art of finding the sub-set of possible options that will solve the problem and have the active support of the primary movers in the product development chain. Guidelines are outlined below:

1. It is a consensus decision.
2. It provides coherent guidance for changes in all impacted areas: people, process and tools.
3. A specific pilot project is selected to serve as the initial “test and tune” prototype.
4. The criteria for deciding if the pilot is successful and sufficient are agreed upon.
5. The primary constituents of the team(s) that will work on the pilot project are identified.
6. The preparation activities that will precede the pilot are outlined and agreed upon.
7. A plan (how, who, when) for communicating the solution to the company as a whole is devised.

PREPARE FOR PILOT PROJECT

Preparing for the “test and tune” pilot project can include a wide variety of activities. The actual nature of these is highly dependent on the scope of the changes being made. In general it will include:

1. Execution of the communication plan.
2. Training for the pilot project team members.
3. Tool procurement.

EXECUTE THE PILOT PROJECT

In most cases this step takes the longest time and the most effort.

EVALUATE THE PILOT PROJECT

Did the pilot work satisfactorily? Are the changes likely to be sufficient to address the stated problem? If not, what is not sufficiently addressed?

ROLL IT OUT

If the pilot indicates that the proposed change(s) was satisfactory and sufficient there is still one step left, rolling it out on a larger scale. As with the preparation for the pilot project this will often require communications, training and tools.