

# T. H. E. Solution LLC

Taming the development of intelligent products

## Product Development Frequently Asked Questions

### *What is the product development chain?*

The product development chain is composed of those parts of a company that are directly tied to the activity of product development. Typically includes: product management (marketing), product design engineering, purchasing and manufacturing engineering.

### *What is quality?*

Quality is customer satisfaction. It reflects meeting or exceeding customer expectations. It is composed of multiple components. One of these is functional quality, the measure of the products conformance to specification (i.e. it functions “correctly”). It is often mistaken for “complete” quality. Customer satisfaction requires much more including (but not limited to) price, availability and the “right” function set.

### *What is cost of non-conformance?*

It is a costing accumulation based on Philip B. Crosby’s cost of quality. Composed of all the costs associated with doing things wrong. This includes the cost to pay for warranty and other returns, the cost to correct product defects, scrap costs etc. One of the best gauges of your product development chain is the cost of non-conformance. In well-run organizations it approaches zero.

### *What is change management?*

Change management is concerned with how an organization changes some meaningful aspect of itself, typically one or more business processes. 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.

### *What is a business process?*

A business process is nothing more than the steps to be taken to perform a specific business activity. Such an activity is product development. It requires the interaction of multiple individuals in different business units to accomplish the desired goal. When appropriate, it is the formalization of good “practice”.

*What is a process model?*

A process model is a formalized description of the important who, what, why and how of a process. It typically takes the form of written language combined with some form of flow chart diagrams. Like all models, it is based on a perception of the system to be modeled. This includes basic assumptions about what is important (i.e. what is worth describing).

*What is the reference product development process model used by T. H. E. Solution LLC?*

As a company follows the path on continual improvement, the appropriate process model will change and should become an increasingly better “fit” for that organization. Therefore, there is no single product development process model that is appropriate for every manufacturer of intelligent products. Instead, Silver Bullet Technology uses a straw man, the reference model, which serves as a good starting point for small to medium manufactures of intelligent products. This includes a set of management practices along with the product development process model based on a rational front-end exploration coupled with small step iterative development.

*What is a front-end exploration?*

The front-end exploration is a series of activities that are intended to

1. Eliminate projects that do not make business sense.
2. Assure that authorized projects have a high probability of being successful.

It is normally only done once prior to project inception. It is a heavily customer-oriented approach that uses competitive analysis as the basic data-gathering tool and incorporates much of QFD and traditional project planning.

*What is QFD?*

Quality Function Deployment (QFD) is a set of powerful product development tools that were developed in Japan to transfer the concepts of quality control from the manufacturing process into the new product development process. The main features of QFD are a focus on meeting market needs by using actual customer statements, its effective application of multidisciplinary teamwork and the use of a comprehensive matrix for documenting information, perceptions and decisions.

*What is meant by “small step iterative development”?*

This is an approach to product development based on a series of fairly short development cycles (specify – design – implement – test) that add and/or change new features/functions. The features/functions included in a cycle are added based on priority and functional cohesion.