**Evidence-based Product Support (EbS)**

Evidence-based Product Support (EbS) is a systematic and data driven approach to improving organizational maturity. The EbS model closes the loop around the organization's product development and corrective action processes.

The goal is to move from reporting results to **controlling outcomes** by identifying the metrics important to the customer, defining parameters for those metrics that are observable, reachable and controllable, and implementing standardized processes for continuous measurement and control of the metrics across the entire product life cycle.

EbS Organizational Maturity Model:
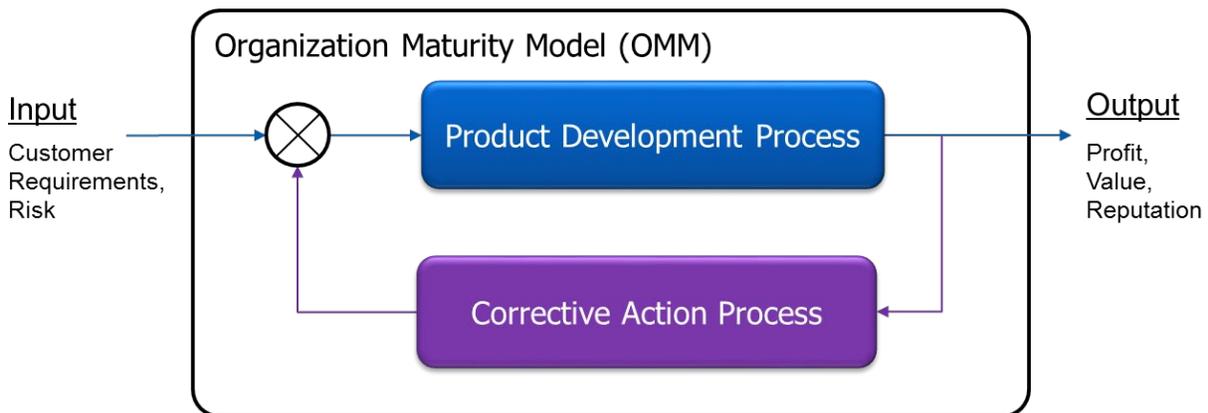
From control theory, a closed-loop feedback system takes an input such as voltage, and produces an output signal. The feedback path employs a sensor to measure the output signal against the desired signal and provides an adjustment factor to establish a better output for the next go around.

Applying this to an organization, the inputs such as product requirements and identified risks are provided to the forward path (product development process). The outcome is a product that seeks to optimize profit, customer value, and brand reputation (quality and reliability). Feedback paths such as post mortems, improved design guides, process training, FRACAS, and retaining engineers on consecutive programs can be effective in spurts, but are not standardized as an organizational process, and their outcomes do not map to the company metrics. Thus, they rarely make a sustained impact to organizational culture and performance.

In order to transform this loop into an organizational maturity model we must first clearly understand what we are measuring, define tangible parameters for those metrics within our grasp, and standardize the data and processes around those metrics. This then allows us to understand future performance, based upon decision made today.

A process cannot be controlled without proper measurement. If a process <u>can be controlled</u>, it <u>can be improved</u>!

EbS applies a structured approach that:

-helps to define the core competencies essential to organizational growth, and strategically flows lessons learned back to these areas.

-Integrates Design for Reliability (DFR) within the product development process that optimize performance, design complexity, and cost. DFR tools leverage evidence from the corrective action process and break down functional silos that exist in the product development process.

-Standardizes the data collection, classification, analysis, validation and reporting of the corrective action process.

All of which enable:

-The multiple feedback processes that exist within functions and programs to be combined through the way data is managed.

-The measurement of the effectiveness of the functional groups by their ability to prevent failures from re-occurring.

-The contiguous measurement and control across the state-based Quality and time-based Reliability.

An example is provided to illustrate the metrics and tools utilized to control outcomes for Military customers. This will demonstrate how EbS enables the organization to close-the-loop around a corrective action process that monitors design, manufacturing, and sustainment activities across the product life cycle.