

## **Orchestral Product Development**

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Please take your seats. The show will soon begin. What show? What does this have to do with product development (PD)?

When attending a performance by a symphony orchestra, you are witnessing a tightly-coupled, highly predictable process executed by a highly functioning multifunctional team. Isn't this how PD should be executed?

There are many similarities between an orchestra and the product development process. An orchestra's "product" is delivered during the performance. The "product" is the set of emotions felt by each member of the audience. The quality and longevity of that "product" can be judged by how deeply the emotions are felt and how long the feelings last in each person.

I have used this analogy for many years while teaching product development, Six Sigma, DFSS and coaching PD teams. The analogy helps to create images of an "envisioned state". Consider some similarities.

**The Musical score.** This "is" the documented PD process. The score documents the actions to be taken to produce the deliverables, the order in which to take them, who performs which actions and when each action ends. Are there stages and gates? Well, in a sense. During the performance, the audience has the opportunity, at the end of each movement (stage), to assess (review) and applaud (approve) the work accomplished so far. This is real-time customer feedback. Perhaps a bit like the Agile method of PD.

**The Orchestra.** This "is" the core PD team. It consists of different sections (mechanical, electrical, S/W, etc.) with their differing responsibilities, deliverables and expertise. It is crucial to realize that, in an orchestra, each person in each section has very precisely defined responsibilities and deliverables. They never play a note that is not theirs. They never deliberately add or delete a note unless their defined role calls for improvisation.

Each section fulfills its role by expertly delivering the sound of each note to be played by their section (designs, analyses, code, etc.). There is a person in "first chair". That person is "best in class". She is the one we all want to have on our team. She represents her section and takes some responsibility for her section's behavior (subteam leader).

**The Conductor.** This person wears many hats. As a project manager, this person controls the execution of the score. They insure that the orchestra has the right number of capable members. They use their experience to alter how the score is executed to satisfy changing stakeholder needs.

As a systems engineer, the conductor integrates the deliverables of each section (system integration). They control the rate at which notes are played, how loudly or softly. They ensure that one section does not over or under play. This is real-time critical parameter management. Real-time assessment of the critical to function (CFR) and critical to quality (CTQ) parameters of the system.

**The Audience.** Unspoken needs!! Music satisfies on an emotional, psychological and visceral level. Can you make the audience (customer) cry, laugh or feel lifted? Can

the conductor alter the orchestra's execution of the score to adjust to changing unspoken needs?

The most important point to remember is that tremendous effort and planning precedes the concert. In terms of effort expended, the performance is the most trivial part. A world-class orchestra can "do it in their sleep", night after night.

Each member has devoted years of practice and study to master their instrument, (their engineering discipline). Each has studied and practiced the score (a particular engineer who understands a company's PD process and has performed their part of it many times). The conductor has spent many years, working their way up to this critical position (seasoned project managers and systems engineers).

I hope this simple analogy has caused you to rethink PD. I hope that it helps you to strive to an even higher "envisioned state" of PD at your company. Can you recall in your career when you've witnessed world-class orchestrated PD at your company?

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