Siemens PTI Product Management
What it is and why you should care

I recently read a discussion on a popular website with the topic: “What Is the Oldest Code Written Still Running?” There were a few comments from programmers who knew of various FORTRAN and COBOL routines that have been in use since the 1960s, but these were just code snippets. What about entire programs? There was some consensus that good candidates are the programs running some of NASA’s older spacecraft still in operation, such as Pioneer 10.

Well, when Pioneer 10 was launched in 1972, PSS®E was already being used by engineers to simulate power systems, and it’s not a big secret that large portions of the PSS®E codebase have been in place through all these decades. Our software has been around for a while. PSS®E was conceived and developed by some of the greatest minds in the industry, and Siemens PTI has a long, proven track record. We have built on this legacy with other products such as PSS®ODMS, PSS®MUST and PSS®MOD that address the current needs of the industry.

The question is, over 40 years later, how do we maintain this reputation? Our world and our industry have changed significantly over these past four decades, and will continue to change into future decades, We have to respond thoughtfully yet swiftly to these changes . Our plan is to vigorously work to reconnect to our customers and make our development more user-centric than ever. To help achieve this, we are applying product management.

What is product management? One way of describing it, is that it exists in a place where user experience, technology and business meet. User experience deals with the quality of your experience while using our software. Does it do what you need it to do? Is it intuitive, user-friendly and enjoyable to use? Technology involves the technical aspects of building the software, such as understanding the latest power system modeling techniques and the available computer operating systems. Business involves the marketing and financial activities, like understanding the competitive landscape and allocating R&D budgets.

Here’s the key: optimizing in just one of these areas is not enough. By considering all three areas together, we can design and create the best possible enhancements to our PSS Product Suite.

Here at Siemens PTI US, we use what’s called the Pragmatic Marketing approach to product management. Pragmatic Marketing is a tried-and-true framework for building really great products. I won’t go into all the gritty details, but there are two fundamental features that I think sum up the approach very well. The first is the concept of outside-in development.
1. **Outside-in Software Development**

The tendency when developing software is to have an "inside-out" approach. This is where important decisions about what will go into the product are decided by engineers and developers sitting in the office and dreaming up what they think should be built into the software. A fundamental aspect of good product management is avoiding this. Instead we should be building and maintaining a strong connection between actual user’s problems and what we do to address those problems.

You have problems. Your car broke down. You need a new roof. You’re having trouble properly modeling your tap-changing transformer’s impedance correction table because the interface is missing key features. We can’t help you with your car or your roof, but we passionately care about that transformer modeling problem and we want to solve it for you. The problems you face managing model data and simulating power systems are what our software should be addressing. We want to be engaged in “outside-in” development.

We find out what these problems are through user group meetings, site-visits, surveys and support cases. You have probably noticed that we have ramped-up our efforts to collect information through these channels. We are trying harder to determine what your problems are so we can make them go away as soon as possible. How do we determine what the biggest problems are? How do we know where to focus our limited resources? We do this with evidence-based prioritization.

2. **Evidence-based Prioritization**

We will readily admit that there are too many requests for us to implement everything that everyone wants into our software. Even if we could address everything requested, we certainly can’t do it by the next release. Therefore, we prioritize. There are many ways to complicate the prioritization process. We keep it simple, yet effective. All potential upgrades are scored and ranked based on two metrics: impact (how important it is to the users) and pervasiveness (how many users want it). The score used for ranking the enhancements is simply the product of these two metrics:

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\text{Score} = \text{Impact} \times \text{Pervasiveness}
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In practice these values are normalized and weighted appropriately. The pervasiveness value is fairly straight-forward. It could be as simple as the actual number of users who requested a certain enhancement. The pervasiveness value can also be extrapolated from survey data.

Impact is a little more difficult to pin down. It is a relative measure of how much an enhancement is likely to affect a user. This can be quantified by estimating potential savings of time and money, or by considering the reduction in frustration by addressing a usability problem. Impact is also related to how well we stack up to the competition. For each proposed enhancement, we assign an impact value between one and five, considering the factors that go into this number. Assuming the methodology is applied consistently and transparently, the numbers are hard to argue with and the rankings stand on their own.

The full process we use that occurs between gathering information and releasing software is described in the below infographic. After collecting the data through the various channels, we triage the requests. In triage, the inputs are filtered and consolidated. If a request is viable, a program enhancement will be added to the product roadmap and scheduled for a specific release based on its priority. Specifications are developed, and the enhancements are implemented by the team. It’s worth noting that our engineers are heavily involved in the whole process, and not just the implementation. This is why you are able to meet face-to-face with them at the user group meetings and other industry meetings. Our consultants also play an important role both in relaying information from clients and providing expert testing with large real-life systems.
Our process has gone through a lot of changes over the past few months, and we are continuously improving it. We hope that you have already seen positive changes in your ability to have your concerns heard. We are listening. As we prepare to release the next set of major versions of our products, you will see improvements that directly address the feedback that we have been gathering. We hope you see the difference. Here’s to the next 40 years.