About this Newsletter Series
As BigLever Software’s Vice President of Customer Success, Dr. Paul Clements helps BigLever customers understand and apply the latest product line engineering (PLE) approaches, create optimized deployment plans, and establish successful ongoing PLE practices.

In this newsletter series, Dr. Clements shares his unique insights, observations, and valuable lessons learned from interactions and collaboration with customers.

We appreciate your interest and welcome your feedback regarding your organization’s PLE challenges and issues.

Video: Introduction to PLE
Have you ever wanted to explain PLE in a nutshell to colleagues, co-workers or decision-makers in your organization?

This new introductory video – Product Line Engineering for Systems and Software – conveys both the technical and strategic business impact of PLE, in a way that crosses all organizational boundaries.

Featuring some of the industry’s most notable PLE deployments, this 11-minute video provides a concise view into how PLE is changing the fundamentals of how companies create, maintain, evolve, and compete with their product lines.

>> View the video.

SPLC Best Paper Award
The International Software Product Line Conference (SPLC) brings
First, we elicit features for that product line from the participants. You'd think this would be the step that, on a flowchart, would be labelled "Magic happens here," but in fact it's surprisingly straightforward. We ask, "How does this part of your system differ from product to product?" That's it. To our surprise and pleasure, the differences usually come pouring out. Those that signify distinguishing customer-facing characteristics are features.

Our Gears operator captures the features by building a feature tree — essentially, a decision tree that lays out the choices that must be made to specify individual products. In a matter of minutes we have a nice feature model defined.

Then we ask which combinations of these features are useful, and our operator captures those as feature profiles. (An important point about feature profiles is that they prevent you from worrying about the often-astronomical number of feature combinations that you don't care about.)

Next we explore if there are any combinations of features that must always co-occur, or must never co-occur, and we help our operator turn those into feature assertions, which are a vital part of the domain knowledge. Finally, we ask our Gears operator to build a matrix for this product line, which is a Gears construct for specifying all of the choices associated with particular products.

Second, we turn our attention to configuring one or more assets by inserting variation points.

Each Getting Started Workshop has a focus (established during the preparation phase) on particular lifecycle assets. Requirements are a favorite, but code, user manuals, project plans, build scripts, test artifacts, and more also frequently play a role. This step involves working on the focused asset associated with the production line we just built.

Suppose the asset is a requirements specification, maintained in DOORS. We will comb the existing specification looking for places where it differs from specs for other products, or where it is product-specific, or where it attempts to be product-agnostic through "if" clauses. We then convert those areas to variation points, demonstrating the DOORS/Gears interface.

Third and finally, we actuate.

Actuation is the term we use for Gears configuring shared assets into product-specific instances, based on the feature profile for a product. Once we have an asset "wired up" with variation points expressed in terms of the features in our feature model, we add it to the production line's matrix, and the operator pushes the Gears "actuate" button for a product. We then examine the generated asset instances, to show that they are configured appropriately for that product. We repeat the actuation step for every product in the matrix.

For a workshop really "in the groove," we can accomplish this milestone by lunchtime on the first day.

At SPLC 2012, BigLever co-presented a case study paper entitled *Mega-Scale Product Line Engineering at General Motors*. This paper was selected by the program committee to receive the Best Paper Award for the Industry Track, which provides practitioners the opportunity to learn from the experiences and successes of other practitioners in the field.

This case study highlights the innovative new Bill-of-Features™ approach that enables companies to address the complexities that occur in the engineering of highly complex product lines. Analogous to the Bill-of-Materials, a term that is used in mechanical design to designate the listing of parts that characterize a product, Bill-of-Features is the listing of PLE features that characterize a product.

See the case study.

- **Getting Started Package**

  BigLever's Getting Started Package is an intense, hands-on program which entails the creation of a tangible, small scale pilot project that serves as the catalyst for learning and change within your organization. This special package—a $10,000 value—costs $5,000 and includes:

  - 3 days of onsite pilot project development and consulting
  - 1/2 day each of interactive offsite preparation and post-processing to summarize results
  - Satisfaction Guarantee: Cost of the package is refundable if you are not 100% satisfied.

  The Getting Started Package will help you energize and accelerate your PLE transition, gain...
Next: Observations.

In my final installment I'll explore some key observations about the getting started process and the insights that companies gain from this experience.

Best Regards,
Dr. Paul Clements
BigLever Software Vice President of Customer Success
pclements@biglever.com

Don't miss your Newsletter!

Please help us make sure that you continue to receive the BigLever Newsletter by confirming your subscription with us. This ensures that future newsletters will be successfully delivered to your Inbox and not misplaced into your junk mail or spam folder. To confirm, simply click the "confirm" link in the white bar below. After confirming, you can unsubscribe from our newsletter distribution at any time.

About BigLever

BigLever Software, Inc.™ is the leading provider of systems and software product line engineering framework, tools and services. BigLever's patented Gears™ solution enables organizations to reduce development costs and bring new product line features and products to market faster, enabling businesses to more reliably target and hit strategic market windows.

BigLever Software, Inc.
10500 Laurel Hill Cove
Austin, TX 78730
www.biglever.com
512-777-9552
info@biglever.com