



BIGLEVER NEWSLETTER: **From the PLE Frontline**

Paul's Three Surprises

Greetings from Paul Clements:

I joined BigLever in early November, 2011. For the previous 17 years I was in the Product Line Systems Program at Carnegie Mellon University's Software Engineering Institute. I started writing about product lines in the mid 1990's, helped create the SEI's Product Line Practice Framework, helped launch the Software Product Line Conference (SPLC) series of international conferences, and co-authored a book about software product lines.

I came to BigLever with the conceit that, although there's always more to learn, I knew a thing or two about product lines. It's been fun to see where my notions have stood up and where an adjustment has been in order.

Welcome to my newsletter series on three of the most delightful surprises I've found since coming to my new professional home.

#1: Product line engineering is not just about software.

I learned about product line engineering in the software product lines community. Imagine my surprise to learn that for many organizations building product lines, turning out configured source code is not at the top of their priority list – if it's even on the list at all.

For example, many BigLever customers list requirements management as the biggest pain point in their product line engineering. For those organizations, the big win comes from inserting feature-based variation points into their requirements assets, and then using BigLever's Gears solution to exercise those variation points to produce product-specific requirements.

This big win was demonstrated recently with one of our customers, a major defense contractor and long-time supplier of a major weapons system for one of the services. When a different service procured a version of this weapon system, instead of cloning a copy of the requirements and manually adapting it – which was the standard practice in the past – they were convinced to join the product line family, select the features of the system their version would exhibit, and let Gears turn out the requirements for it. Instead of 3 - 4 months expected under the clone-and-own method, their requirements were vetted and ready to support development in 2 weeks.

■ BigLever at IBM Innovate

As an IBM partner, BigLever will provide insight into the latest advances in product line engineering at this year's Innovate conference. BigLever's participation will include a case study session co-presented with Lockheed Martin and an industry panel discussion addressing the convergence of Application Lifecycle Management (ALM), Product Lifecycle Management (PLM) and Product Line Engineering (PLE) disciplines.

Innovate 2012

June 3 - 7, Orlando, Florida

Panel Discussion: The Convergence of Engineering Disciplines in Modern Systems Engineering

June 4, 4:15 PM - 5:15 PM

BigLever Panelist:

Dr. Charles Krueger

Case Study Presentation: Advances in PLE for Aerospace and Defense: Featuring Lockheed Martin and the Aegis Product Line

June 5, 10:15 AM - 11:15 AM

Presenters:

Dr. Paul Clements, BigLever

Susan Gregg, Lockheed Martin

Come see us at Innovate! Visit BigLever on the showfloor, booth 516, in the Ready for Rational Pavilion.

■ About BigLever and Product Line Engineering

As an industry thought leader, BigLever offers a variety of informational resources regarding new generation PLE solutions for systems and software, pragmatic PLE methodologies, and the latest real world PLE deployments.

Another customer, a global leader in automotive manufacturing, has prioritized requirements, design models, supplier specifications, calibration packages, and other assets ahead of the software in their product line plan. In fact, they've told us that over and above producing these product-configured assets, one of the key early benefits they anticipate has nothing to do with configuring any asset for any product. It's simply having a full, complete, consistent, top-to-bottom model that captures all the variation in their product line, using a consistent feature model and consistent variation point language in assets from one end of the engineering lifecycle to the other. This company's product line supports tens of thousands of product variants and several million product copies, each one of which runs millions or tens of millions of lines of code. Bringing the product line diversity in that engineering process (animated by some 5000 engineers) under top-to-bottom control represents an enormous payoff.

These and other lessons are why we no longer think of ourselves as just in the software product line business, but rather the more-encompassing product line engineering business.

We are about the production of a portfolio of related products using a common set of shared systems and software engineering assets and a common means of production. The products in the portfolio are described by the features they have in common with each other and the feature variations that set them apart. Throughout the full engineering lifecycle, a product is represented by a set of assets that have been configured based on features. If the product contains software, then the software numbers among the assets. But even non-software products have soft assets: requirements, design models, user documentation, supplier specs, test cases, development plans, project budgets, and much more.

So, surprise: No software? No problem.

That was a surprise to me, but not the biggest. That's coming up in a future issue of our newsletter.

Until then...

Best Regards,

Dr. Paul Clements

BigLever Software Vice President of Customer Success

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Introductory Overviews:

- [Product Line Engineering Solutions for Systems and Software](#)
- [Reuse is an Event. Sharing is a Journey.](#)

White Papers:

- [The Systems and Software Product Line Engineering Lifecycle Framework](#)
- [The Pragmatic 3-Tiered Product Line Engineering Methodology](#)

Case Studies:

- [General Dynamics & U.S. Army](#)
- [Lockheed Martin](#)
- [HomeAway](#)

Analyst Reports:

- [Product Line Engineering: Underwriting ALM and PLM convergence](#)
- [Managing Quality in Product Line Engineering: An Automotive Story](#)

■ Getting Started

It can be difficult to decipher where to begin with your transition to product line engineering practice. The important question is... where do you start next Monday? BigLever has a practical, proven approach – and a special package offer – to help you get started.

>> [Learn more.](#)

■ About BigLever

BigLever Software, Inc.TM is the leading provider of systems and software product line engineering framework, tools and services. BigLever's patented GearsTM 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.

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