

Singing the Configuration Management Blues

By Joel Kohler, PMP

When B.B. King sings the blues, the audience enjoys it. When project managers “sing the blues,” it’s rarely enjoyable to anyone within earshot.

So why do design changes, mismatched parts, repetitive safety problems, or high rates of returns allow some businesses to continue “in the pink,” while other similar businesses suffer the blues?

If problems like these are getting you down, you may have the “configuration management blues.” Good configuration management is necessary to keep your products good, your projects on track, and your whole group playing together. Without it, if you’re lucky enough to still be in business, you’ll definitely have a case of the blues.

The “Low-Down” on Configuration Management

Configuration management is a critical part of project management. It’s an organized process that tracks and controls all of the product changes that ripple through every project.

With the help of Andy Crowe’s project management text, *“The PMP Exam”* (2005), we can further define the process. It is the system of managing documentation, change control, accounting, and auditing. The purpose of configuration management is ensuring consistency, while minimizing mismatches.

Here are some key features of configuration management:

- It applies to the physical characteristics of your project’s product.

- It is used to ensure that the configuration of the product stays in line with the plan.
- It takes every element of the project into account—making certain that the product’s configuration is reflected in the project plan, the billing, and the project documentation.

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It is a management-level program that is implemented throughout an organization. It can start with the boss, the project manager, your spouse, the configuration manager, the facility design manager, the dean, or someone with similar authority.

Configuration management uses these implementation tools:

- Approved procedures
- Formal, structured business methods
- Training programs
- Self-assessments
- Lesson-learned programs
- Corrective action, including punishment

Getting a Heads-Up on the Low-Down

Even some industry experts have a hard time understanding configuration management.

One industry bible, *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)*, devotes more than 90 words to trying to explain configuration management. This explanation talks about “a collection of formally documented procedures” used to manage changes. In addition to recording and reporting each change, configuration management, according to the *PMBOK® Guide’s* explanation, “includes the documentation-tracking

systems and defined approval levels necessary for controlling changes.”

If it's that difficult to explain, it's no wonder many people don't understand configuration management.

“Unlike project communications management, or project risk management, an understanding of configuration management cannot be deduced from its title alone,” says one project manager with BWXT/Pantex. “Couple this lack of intuitive understanding with a difficult and lengthy explanation, and you get a difficult program to implement, and one with frequent noncompliance.”

To help us understand configuration management, let's look at some common characteristics of projects. Let's see how “pink” projects and “blue” projects explain configuration management at work.

Is Your Program in the Pink or Having the Blues?

Two different projects may have the same hardware or procedures yet experience dramatically different outcomes in the marketplace. What's the difference? If the procedures, the training, and the way of doing business are all similar, why is one program in the pink, and the other oh-so-blue?

“It is all in the soft skills of the boss,” says an engineering manager at WGI. “That is, how the boss chooses to implement the program. Since configuration management adds to overhead costs, these managers have figured out that the benefits of a pink program far exceed the costs of blue.”

Following are some soft skills to look for. These will help you evaluate your program and your project manager.

In the Pink

Pink programs are characterized by strong, independent managers. They develop and support configuration management programs. Pink managers are strong enough to:

- Know the problem symptoms to watch out for, and react before problems are endemic
- Issue stop work orders, even stand-down an entire project when necessary
- Fire staffers who don't follow procedures, or who don't communicate back up the line

Following procedures is important. Managers must have the tools to detect noncompliance with procedures. They

must also take procedural violations seriously, such as having a “three strikes and you're out” policy.

Pink program managers are not intimidated by workers, project managers, or even customers. They will not accept, rationalize, or ship nonconforming products. Instead, pink managers:

- Demand that nonconforming products be reworked—regardless of the schedule impact
- Attack the cause of nonconforming products—before the nonconformances become fatal to the project
- Have the courage to report bad news to the customer

Team work is another important part of keeping your program in the pink.

It takes team work to implement configuration management programs. That's partly because you have to have buy-in from top to bottom in the organization to implement configuration management.

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Singing the Blues

Even the best-managed configuration programs suffer the blues from time to time.

“Experiencing the occasional blue note is a fact of life,” says senior project engineer. “That's because configuration management programs are inherently difficult to understand, are based on procedures compliance, and rely heavily on individual follow-through and personal work ethics.”

Here are some examples of “blue notes” to avoid:

- Business suffers from high return rates because customer shipments do not work, do not match customer orders, or do not match customer expectations.
- Repetitive safety violations, internal procedures that are not followed, or business practices that violate the law.
- Mismatches between the product requirements and the product's physical characteristics. For one example, your design does not allow enough space for the necessary wiring. Or the directions to assemble the bike are in Chinese, and some of the parts are missing.
- Mismatches that threaten life or safety. For example, avoid mismatches between controlled wiring diagrams where the actual field installation might lead to serious or life-threatening injury to a maintenance worker.
- Design changes are prevalent and the change documentation is inadequate or nonexistent. This might happen if the design was changed to require three

separate electrical penetrations, while the physical design shows only two holes.

“Blue notes” don’t just occur on your projects, they are part of everyday life. They happen when the waiters at the restaurant deliver the wrong food, and then bill you incorrectly. Say you ordered French toast, but the waiter delivered French fries. Or you ordered one drink, but were billed for two. Those are blue notes. Even worse, things often go downhill from there, causing a snowball effect.

Stopping the Snowball Effect

You need to stop the snowball from rolling downhill and getting larger. Pay attention to the snowball effect. Blue notes have a tendency to quickly spiral out of control, into a full-bore blue symphony.

To stop the snowball effect, you need to understand and practice configuration management. You have to catch things early and be proactive, rather than being late and playing catch up. Identify and correct blue notes before they become your closing number.

Here are some actual examples. See what can happen when management ignores the early warnings in the blue notes:

- Mercedes-Benz experienced a worldwide slide in quality. Products had high failure rates, leading to increased customer dissatisfaction and decreased sales.
- Merck had a crisis with a new drug, Vioxx. This started when the drug was linked to fatalities.
- Enron’s illegal trading led to the demise of the company, plus massive shareholder losses.
- An Eastern Airlines L-1011 lost all three engines. This occurred after an oil change was done the previous night during a rainstorm. The headlights of ramp trucks were used for lighting, with the replacement of O-rings getting overlooked. The oil poured out in flight.
- The demise of ValuJet and SabreTech after illegally loaded oxygen canisters activated and triggered a fatal crash.

Curing the Configuration Management Blues

There’s only one cure for the configuration management blues. You need a solid plan, and a steady hand. Follow the steps below when you realize that your program or product has the configuration management blues. But beware, once infected with the blues, your endeavor may die before the cure takes hold.

How can you tell if your product is suffering the configuration management blues?

Here are some common “clues to the blues”:

- Key product requirements are not being realized in the final products
- A change has occurred, but it is not consistently implemented.
- The documentation does not describe the actual conditions
- Changes are not being controlled
- Procedures are not being followed
- Problems are repetitive
- Problems are costly

Here are some things you should do:

- Be honest with yourself, your shareholders, and your customers. Realize that curing the blues is going to take some time—if you are lucky enough to get “one last chance.”
- Ask for one more chance.
- Stop work, stand down, contemplate, and analyze what is happening.
- Fire your configuration manager. Hire a replacement who has the guts to implement the program.
- Fire the staffers (or even the entire staff) who are responsible for the problem deluge.
- Rewrite your procedures.
- Retrain your staff.
- Monitor your results.
- Change the name of your product.
- Once improvement occurs, stick to the plan.

Summary

Configuration management is a necessity if you want to maintain control over your work product and your delivery schedule.

Although some struggle to explain it concisely, here’s what configuration management boils down to. It’s a process that keeps you on top of all the product changes.

Put the procedures in place to track changes every step of the way. Then keep the commitment to make everyone on your team stay with that plan. Success depends on individual follow-through, and firm personal work ethics. Strong, proactive managers lead successful programs.

Leave the blues-singing to B.B. King. Put a configuration management program in place, and keep your program in the pink.

References

- Crowe, A. (2005). *The PMP exam: How to pass on your first try*. Chicago: Independent Publishers Group.
- Project Management Institute (PMI). (2004). *A guide to the project management body of knowledge (PMBOK® guide)*

(3rd ed.). Newtown Square, PA: Project Management Institute.

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