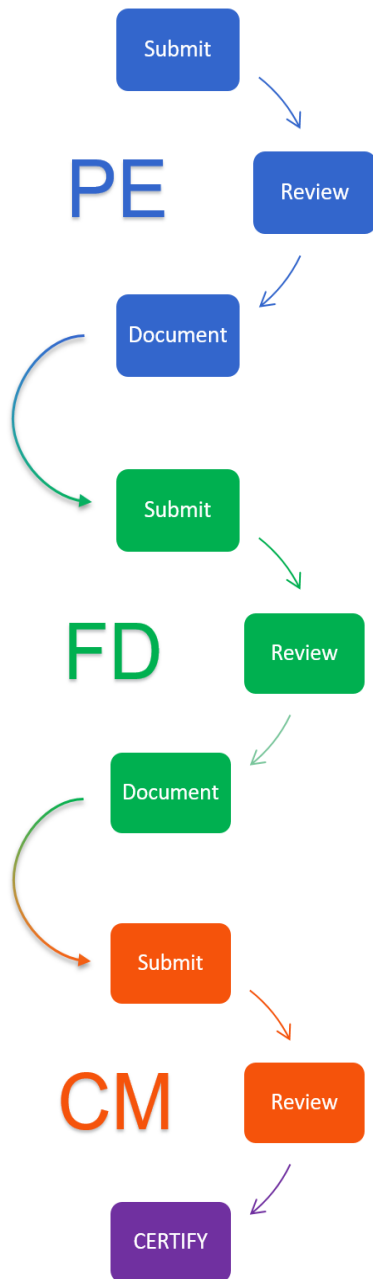


The Power of Process Thinking

How tearing up your checklists improves transit safety and security management



Transit agencies must comply with rigorous federal, state and local standards around safety and security. For many transit agencies, hazards are managed as items in a list; tracked as lines in a spreadsheet, a table, or sometimes in a database (usually Access). Each hazard or risk has associated information such as description, mitigation, required construction documentation, etc., and when something changes, this information is supposed to be updated. The list of items can be specific to a major construction project, or specific to one contract of such a project. Based on these lists, tasks get created and checklists get checked, spawning more changes to the list once the work is complete. If all goes well, the list gets updated and the documentation is stored, either electronically or in a binder or filing cabinet. And when the project ends or the contract completes, spreadsheets are formatted and printed, final reports are produced, certificates printed, binders are put on shelves, the database is archived, and the transit system goes into revenue operations.

While tracking hazards in this way is an understandable choice given regulatory guidelines and historical best practices, it is not a perfect fit. That is because the purpose of risk management is to mitigate hazards for the entire life of the system, not just during planning or construction. Risk management entails a series of sometimes connected, always interrelated, business processes that can span years or even decades. And using lists to manage long running business processes is awkward at best, introducing multiple points where mistakes can be made.

The Problem with Checklists

Lists make it hard to transition a hazard from one stage of the lifecycle (or process) to another. For example, how do you ensure, as you keep your assets in good operating order, that you don't negatively impact one of your existing mitigations? This type of handoff is labor-intensive and error-prone in a list-based system.

With a list, it is often difficult to figure out what has been done in the past. Tasks surrounding an item are carried out on an "as needed" basis and are hard to track. These tasks can vary greatly in terms of execution and logic applied; from project to project, between contracts, or even from one item to another on the same list. When dealing with a hazard or risk, things that happen early in the process of its mitigation will affect the things that happen later and need to be understood in context. It is

At the most basic level, safety and security management is a very long running business process. It involves a series of similar, but distinct steps that must be carried out and tracked as a project progresses through each phase of construction.

necessary to have a well-defined process for tracking changes and associated documentation, as well as a clear idea of what happened when (and by who).

When each hazard is localized in a list, usually kept by the Safety Specialist on their laptop or desktop, communicating an understanding to senior management of where you are in the overall Safety and Security Management Plan, and how that relates to your Safety Management System (SMS), is difficult. Spreadsheets and tasks are not effective ways to track interactions with the SMS. That information must be tracked separately, and manually, if it is tracked at all. And as often as not, the record is buried in email threads. This makes life difficult in many ways, but is especially troublesome when it comes to responding to an audit. Checklists, databases, and spreadsheets are passive collections of information, meaning they cannot enforce or facilitate a process. Using these methods is more of a necessary evil to achieve compliance than a value adding step. And addressing shortcomings in your checklist, documentation or audit trail during a triennial audit is time consuming, expensive, painful, and frankly, too late.

How Process Thinking Can Help

Mitigating a hazard in the design phase is very different from mitigating it in the construction phase. And it is nothing like maintaining something during revenue operations. An item list, checklist, or database is rigid; it cannot change easily to reflect these differences. But hazards and their mitigations are dynamic. They change all the time, often drastically. And as systems and elements evolve in their lifecycle (and their associated hazards and risks), new lists are created that are partially or completely disassociated with the prior lists. This makes tracking mitigations or reporting on them a daunting task.



In a managed process, project data, documents, work history, approvals, and other information stays with you through every stage of construction, and remains useful during revenue operations.

Often, hazards in the same stage of the lifecycle share similarities in how they should be handled, even if they are not similar in their actual characteristics. When you treat hazards as items, those similarities often get lost. It becomes easy to discover and exploit these similarities if you treat your hazards as processes, because it is easy to see where all hazards are in their lifecycle and how they relate to the process and what needs to happen next.

To sum up, treating your safety/security hazards as processes has many advantages over tracking them with checklists. Processes make it easy and natural to transition an item from one phase of design/construction/operations to the next. Processes also allow you to track who interacted with an item and when, as well as whether they deviated from a standard procedure and why; all very useful information to have at audit time. Parallel processes allow you to find similarities between disparate items, and exploit them to create more efficient systems. And finally, they give you the opportunity to store all the information and documents related to a hazard in one place, and easily find it again months or years later.

What's Next?

Now that we have introduced the idea of process thinking, we need to see what this specifically means within the context of a Safety Management System (SMS). In our next white paper, we will discuss how the principles of business process management (BPM) can improve your SMS.