



## LEAN Work Authorization and Change Management

Pamela Walter  
*Leidos*

### Objectives

1. Outline the 5 Basic Lean Principles
2. Plan Do Check Act (PDCA) Cycle
3. Based on the PDCA, discuss how we applied to our Work Authorization and Change Management Processes
4. Discuss the Challenges
5. Discuss the Outcome

## 5 Principles of Lean Thinking

### 1. Identify Customers and Specify Value

- Recognize that only a small fraction of the total time /effort adds value for the end customer.
- Clearly defining Value for a specific product or service from the end customer's perspective, all the non value activities (waste) can be targeted for removal.

### 2. Identify and Map the Value Stream

- The entire set of activities across all parts of the organisation involved in delivering the product or service.
- End-to-end process that delivers the value to the customer.
- Understanding what your customer wants the next step is to identify how you are delivering (or not) to them.

5 Principles description from Cardiff University: Lean University. <http://www.cardiff.ac.uk/lean/principles>

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## 5 Principles of Lean Thinking (continued)

### 3. Create Flow by Eliminating Waste

- Typically you will find that only 5% of activities add value, this can rise to 45% in a service environment.
- Eliminating this waste ensures that your product or service “flows” to the customer without any interruption, detour or waiting.

### 4. Respond to Customer Pull

- Understanding the customer demand on your service
- creating your process to respond to customer. Such that you produce only what the customer wants when the customer wants it.

### 5. Pursue Perfection

- Creating flow and pull starts with radically reorganizing individual process steps
- The gains become truly significant as all the steps link together.
- As this happens, more layers of waste become visible and the process continues towards the theoretical end point of perfection
- Where every asset and every action adds value for the end customer

5 Principles description from Cardiff University: Lean University. <http://www.cardiff.ac.uk/lean/principles>

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## Plan-Do-Check-Act (PDCA) Cycle



### Plan

- Create a plan for change, identifying specifically what you want to change. Define the steps you need to make the change, and predict the results of the change.

### Do

- Carry out the plan in a trial or test environment, on a small scale, under controlled conditions.

### Check (or study)

- Examine the results of your trial. Verify that you've improved the process. If you have, consider implementing it on a broader scale. If you haven't improved the process, go back and try again.

### Act

- Implement the changes you've verified on a broader scale. Update the standard operating procedures

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## Application of Lean PDCA to Specific Processes – *Plan*



Identified need to streamline Work Authorization & Change Management Process. Reduce time/effort/errors. Eliminate data trace related CARs, double/triple entry. Tie processes more closely together, automate workflow.

- Established requirements by detail review and comparison of two processes, data used in processes; approval requirements of process, identifying bottlenecks, and identifying parallelism

Review current process and identify areas for improvement

- Most errors are not due to systems, document feedback from PC/CAM/PM- identify where most time is spent-identify waste and duplicative steps

Strategize on how improvements can be made

- Identified a need for a automated system, identified resources, estimated cost, created a timeline, and authorized budget/management buy in

What will the end result achieve

- LESS: steps, manual data entry, time, CARs, focus on paper
- MORE: time, focus, attention on analysis and use of data

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## Application of Lean PDCA to Specific Processes – *Do*



Carry out the plan in a trial or test environment, on a small scale, under controlled conditions.

- Developed an application called PMPT
- Used working group to test as features were available and identify programming/business rules/policy compliance (WG included users, EV SMEs, programmers, Director of EVM)
- Two Phased development used before going live on a test program—tested with real program data
- Tested on a single program—less than 50M
- Provided Training and SME to program

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## Application of Lean PDCA to Specific Processes – *Check*



Examine the results of your trial.

- Real-time collection of data to monitor process flow, time to complete each step, and noted non tangible benefits, identified some areas re

Verify that you've improved the process

- Internal surveillance validated reduction of data trace errors, automated logs were accurate, approval flow, and BCR to BSPD data consistent and , reduced time to create both sets of documentation

Yes—consider implementing it on a broader scale

- Program Management Process Tool (PMPT) required some immediate bug fixes before rolling out
- After fixes were developed PMPT was planned to roll out to 2 new Programs

No—go back and try again.

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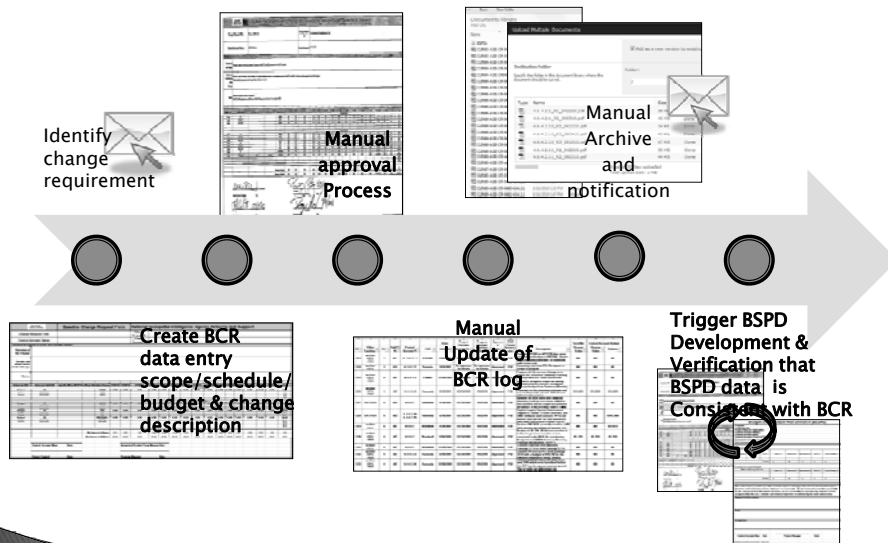
# Application of Lean PDCA to Specific Processes – *Act*

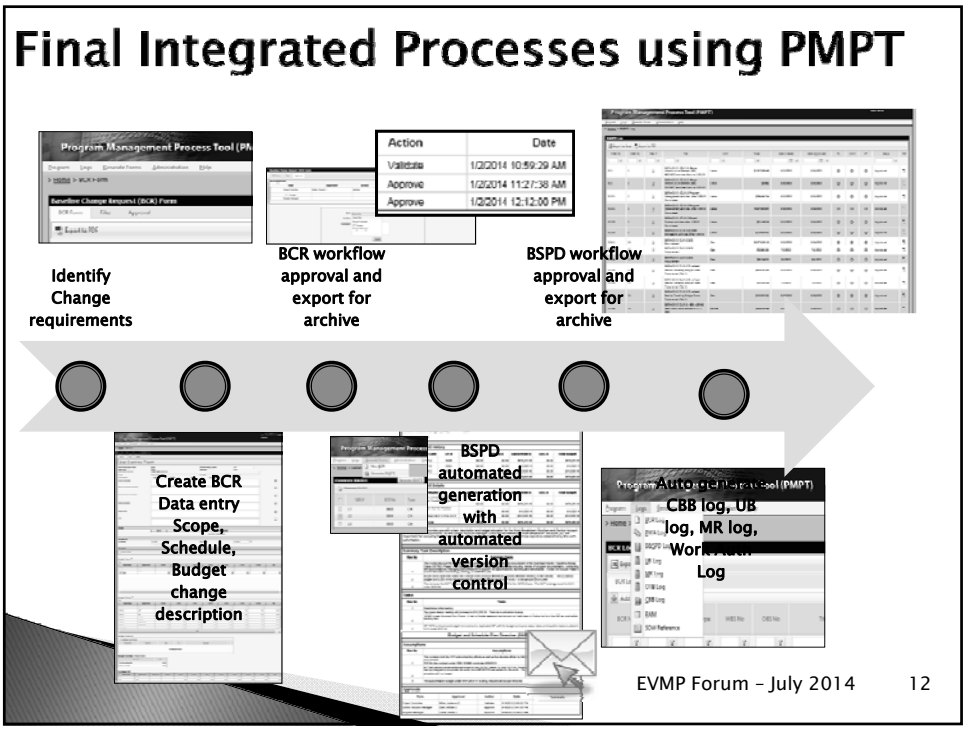
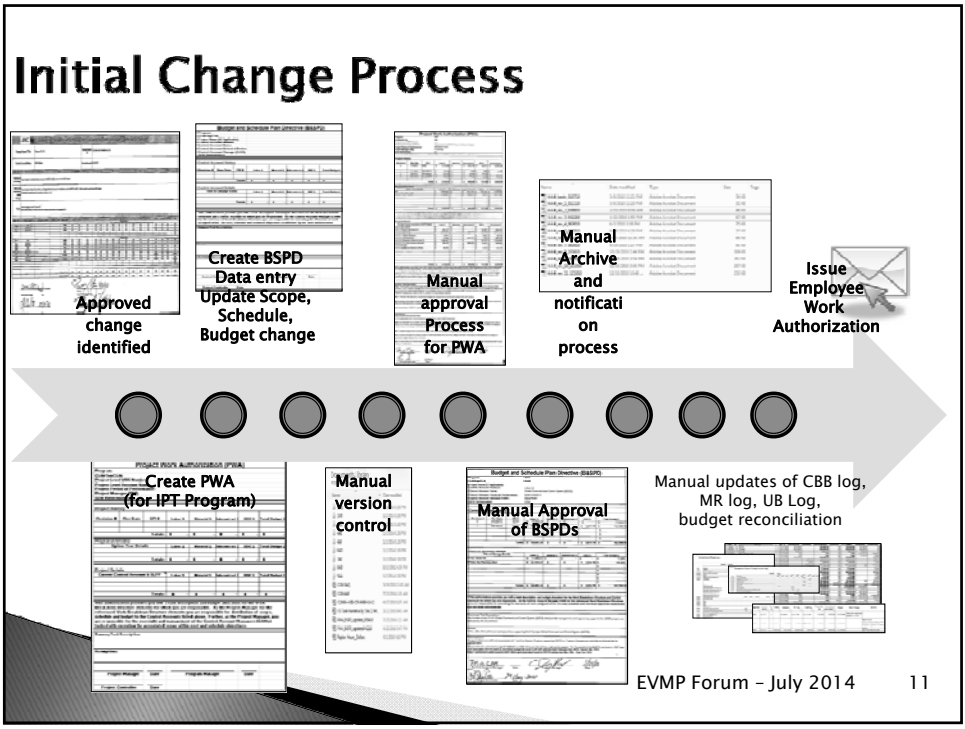


Implement the changes you've verified on a broader scale. Update the standard operating procedures

- 2 New Programs set up within the PMPT tool
- Develop Quick Reference Cards for Self Help
- Conducted training sessions on tool use
- Establish working group to evaluate and test new features
- Establish Help Desk

# Initial Change Process





## Outcome of Change to Processes

### Before

- ▶ Multiple Data entry points
- ▶ Separate Excel based forms, logs etc. in file folders
- ▶ Separate parallel Processes
- ▶ Manual Signatures process
- ▶ Manual scan/data archive
- ▶ Manual Logs

### After

- ▶ 1 data entry point
- ▶ Web portal (no face to face required)
- ▶ Version and revision control
- ▶ Processes integrated where overlap
- ▶ Automated digital signatures/flow
- ▶ One-click generation of work authorization
- ▶ One-click export/tool as repository of records
- ▶ Automated Logs
- ▶ Automated notifications
- ▶ Process more defined across programs/data requirements (e.g. impact, time phased budget, change categories) so that based on type of change vital info is not left off
- ▶ Ties to Program level BCRs, Available budget in MR, UB, program
- ▶ Reconciles budget, identifies over allocation
- ▶ Built in warnings to check Schedule dates etc., retroactive changes
- ▶ WBS Dictionary/Ties to SOW/ verify WBS to SOW mapping

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## Challenges of Applying Change to Processes

### Clearly defining the Requirements

- Establishing the business rules
- Ease of user Interface
- Export of data/artifacts
- Assuring algorithms work
- Prioritizing requirements
- Deconflicting user needs and policy

### Resources

- From stakeholders to developers
- Availability of testers
- Impacts of reorganization on developers

### Time

- Prioritization of efforts
- Development schedule vs availability of programmers

### Money

- Prioritization of budget
- Budget availability tied to when resources were available
- Finding a program for start up with low implementation risk

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**Questions?**