

Once again this is a refresher of The Model House



This is our Model House of The Thinking System - It's only a model but can be very powerful in constructing a new Culture of Continuous Improvement. You will see this model throughout this entire training course of CPI2. We will show you how we built this Control Tower from the ground up and why each piece is an integral part of constructing the Continuous Improvement Culture.

It's important to understand that this tower builds the structure for discussing the "What" is required to build the Continuous Improvement Culture but not the "How". That will come later.

Each element can be monitored with metrics. Care must be taken to understand the impact a metric has and create value in their use. The point of metrics is to focus on those that are NOT meeting the target, problem solving, and making improvement. It is NOT about lowering the standard in order to meet the target.

In this Session we will be focusing on Problem Solving and Process Structure and Management. These are the pillars of the House that begin framing the Culture of Continuous Improvement. With Standard Work being the

foundation and Continuous Improvement being the intent Problem Solving is the Method.


Problems exist everywhere

Problems about business	<ul style="list-style-type: none"> • Logistics, research, development, procurement, production, sales, after maintenance, system, people, corporate culture
Problems about people	<ul style="list-style-type: none"> • Knowledge, skills (technology), attitude & motivation
Problems of production	<ul style="list-style-type: none"> • 4M (Man, Machine, Material, Method) • Quality, Cost, Delivery
Problems about sales	<ul style="list-style-type: none"> • 4P (Product, Price, Place, Promotion)
Problems about resources	<ul style="list-style-type: none"> • People, goods, money, information
Problems about work procedure	<ul style="list-style-type: none"> • PDCA (Plan, Do, Check, Action) • Input, process, output
Problems with some constituent factors	<ul style="list-style-type: none"> • Profit=sales and cost • Productivity=amount of input and output • Efficiency=volume of work and work speed


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I've always been told if you don't think you have a problem, you have a big problem. In the world of Continuous Improvement and Innovation the goal is to anticipate the problem before it occurs. Almost everything that exists can be improved, especially when it comes to business processes or operations. As you see in this slide it shows some of the problems and the areas you find them.

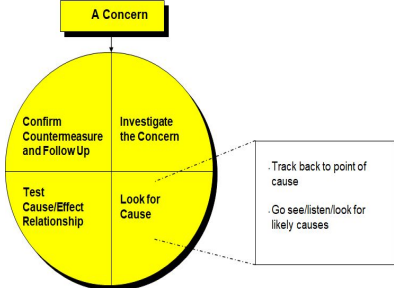
For example we all have experienced problems regarding resources, especially in not having enough people or money. But through Continuous Improvement thinking and problem solving methodology resources can and will be found. I was once told to start a shipping department at a Toyota plant and when I asked what my budget was and how many people I would be able to add I was quickly told, no money and no additional FTE to my department. Fortunately through CI and Problem Solving we were able to get creative and start the shipping department at Zero start up cost with all the equipment, software, and people needed to run a full blown shipping department.



Practical Problem Solving



1. It is derived from the concept of critical thinking that has these components:
 - a. Raises vital questions and deviations from existing standards, formulating them clearly and precisely
 - b. Gathers and assesses relevant information, using abstract ideas to interpret it effectively, coming to well-reasoned conclusions and solutions, and testing them against relevant criteria and standards
2. It is a process for resolving deviations from a standard



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Problem Solving is used in many different ways. For instance, currently the Air Force has a Master Black Belt program where people go through training for Green Belt, Black Belt, and Master Black Belt. When a major problem is identified the Black Belt or Master Black Belt comes in and works to fix the problem. Typically in the business world of Six Sigma and Master Black Belts this would be a very technical problem that requires an incredible amount of data analysis, test, etc. When the Black Belt leaves the problem would normally be fixed, however the learning of the problem solving process and the detail of actions taken may be lost. There are definitely very specific needs for this type of in depth analysis. Many of the same concepts and tools come into play.

But what we are focusing on is the everyday need for basic problem solving by process owners in all types of situations.

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1. It is a process for resolving deviations from a standard

Problem Solving is part of a chain of events that are vital to accomplishing tasks:

1. When a deviation occurs the **member must signal**




2. The problem is taken up

Problem Solving starts when a deviation occurs and the **member signals that there is a problem. It is the person's, performing the job, responsibility to make that signal.**


- The responder's reaction to the signal sets the member's perception of their level of priority and determines propensity to signal again
- The responder is not responsible to solve the problem but to enable it to be solved by the member, including a temporary fix if that is possible. Sometimes you have the "just do it" for now and come back with a permanent countermeasure and sometimes you have a "just do it" as the permanent fix.
- Can you imagine the possibilities of what happens when someone pushes the "help" button and no one responds? That's why it's important for the responders to be identified in all situations. Who is answering the call button?

Once the problem is taken up you must be accountable to a process and the process owner (member) must be accountable to solving problems. This begins the cycle for solving the problem and this cycle is the actualization of critical thinking



Problem Solving - 8 Step Process

Team Lead: Team Members: Black Belt Mentor: Black Belt Candidate:	Approval Information/Signatures: Start Date: _____ End Date: _____	Process Improvement Effort Title: Alignment – Goal: _____ Objective: _____
1. Clarify & Validate the Problem	4. Conduct Cause Analysis	6. See Countermeasures Through
2. Break down the Problem & Identify Performance Gaps		
3. Set Improvement Target(s)		



Step 1. Clarify the Problem

Step 2. Break Down the Problem

Step 3. Target Setting

Step 4. Root Cause Analysis

Step 5. Develop Countermeasures

Step 6. See Countermeasures Through

Step 7. Monitor both Results and Processes

Step 8. Standardize Successful Processes

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- How Problem Solving fits in the system of CI
 - A stable standard is required to begin improvement and instability is eliminated with Problem Solving
 - CI is improvement to a standard through waste elimination done with Problem Solving
 - Before improvement becomes a standard it must be proven over time to achieve the planned results and Problem Solving requires validation that the solution corrects the problem


- Let's be clear about what an A3 really is and its purpose. Literally an A3 is the size of paper. Just as you have A4, Legal size, 8 ½ x 11, and so on. The purpose of the A3 is to tell a clear and well documented story. The A3 can tell the story of a new project, the story of a new and innovative idea, a proposal for a policy change, and of course as the 8 step process for problem solving. In our situation of the Pillar of Problem Solving we focus on Problem Solving using an A3 format. The size of the paper is not important but making a clear presentation / story of the problem is very important.

- **What is your plan to resolve the problem (A3)?** If you have not had a Problem Solving class please let us know so we can get you prepared for the Simulation. And we have provided links to Problem Solving.


- Each segment of Problem Solving is a precedence for the following segment
 - Step 1 Clarify the Problem

- Step 2 Break Down the Problem
 - Gather the facts of the problems
 - Facts define the problems
 - Compare observations to the standard.
 - Observe and hear what is actually happening.
 - Observe and hear what is surrounding the site of the problem.
- Step 3 Target Setting
 - Create measures with responsibility
- Step 4 Root Cause Analysis
 - Explore the problem more deeply to find the root cause - Follow the 5 why's and then ask one more
 - By having a process and following it there is assurance that the best critical thinking has occurred
 - Accountability comes from taking the root cause and testing its validity. Every problem has one root cause
- Step 5 Develop Countermeasures
 - Think about stakeholders and risk and create high value-added measures
 - Brainstorming in teams is a very effective way to identify “potential” countermeasures. But there are rules for brainstorming as you see in this slide.
 - There are rules to Brainstorming
 - No criticism (Don't Judge)
 - Welcome unusual ideas (share ideas off the top of your head)
 - Focus on quantity (generate as many ideas as possible)
 - Combine and improve ideas (ideas can be combined to lead to a good idea)
 - And, there are steps to follow
 - Decide the discussion theme
 - Select members: 5 - to 10 people (hopefully with different specialities and backgrounds)





- As a team go through the implementation of the Countermeasures
- Every countermeasure is a direct resolution to the root cause
- Step 7 Monitor both Results and Processes
 - Learn from success and failure through the evaluation of results and processes
 - Follow-up is required and has its own plan
 - The plan is the communications method for allowing leadership to monitor improvement
- Step 8 Standardize Successful Processes
 - Entrench the process of success and continue to raise the stand level
- Even though this is the 8 Step Process it is not complete unless you add Step 9
 - Step 9 Document and Share Success with the rest of the organization
 - This Thinking has to be in place to build the culture of Continuous Improvement



Document and Share Success



Repeatability →

 Re-evaluate the process	 Success that can be repeated
 No Good	 Good Luck!

Results →

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- Step 9 Document and Share Success
- How Problem Solving fits into the system of CI
- Critical thinking is the proof of complete thinking
 - Problem solving - critical thinking is a key competency in the development of the individual within a CI organization
 - The best critical thinking is about the job the member holds
 - A member should not improve another member's process (unless you are in a team)
 - This is part of process accountability
 - Problem Solving involvement comes from both accountability and mutual trust and respect

The process of sharing the problem, the countermeasures, what worked and what didn't work, and the final results is of the utmost importance. When you have such a large organization there is no doubt that someone else is having the same or similar problem as the one you just solved. Share, share, and share some more. So you can share the knowledge that you gained and others can make the same improvements you have. Make yours the Model Process.



Process Structure and Management

Process is

- Design & Development of an end-to-end System
 - Defining the individual functional processes but linking them to the whole (VSM)

Structure is

- Building the Organization that supports a cross functional (non-silo) work environment that works through barriers

Management is

- Design and Development of a Governance System that Manages the entire process and breaks down barriers

Process Structure and Management are identified as one of the major pillars.

These are three major components of supporting a strong Thinking System.

How do you improve something if you don't understand it?

And how can you improve what doesn't belong to you?

And finally how can you maintain continuous improvement, processes, and structure if you don't have a way to manage it?



Process Structure and Management

- Step 1
 - Document Processes with Standard Work or Standard Operating Procedures
- Step 2
 - Identify Process Owners
- Step 3
 - Provide Quality Loop or Feedback Loop
- Step 4
 - Identify the top level required as the Governance Team / Steering Committee
- Step 5
 - Institutionalize - Make it the Model Process and Share It!

- How do we get started with creating Process Structure and Management?



- Step 1

- Document Processes with Standard Work or Standard Operating Procedures

- I know we have talked about this in almost every session we have had so far and we will continue to address documenting the process if you have not already done so. Processes need to be documented in Administration and Operations. The tools and documentation may look a little different but the Methods are the same. Even when the process, the structure, or the management system is not the best write it down so you have a starting point. Write what you know and ask other process owners to correct or write in what they do and what they know. This is the basis of Value Stream Mapping and Standard Work that enables effective management of

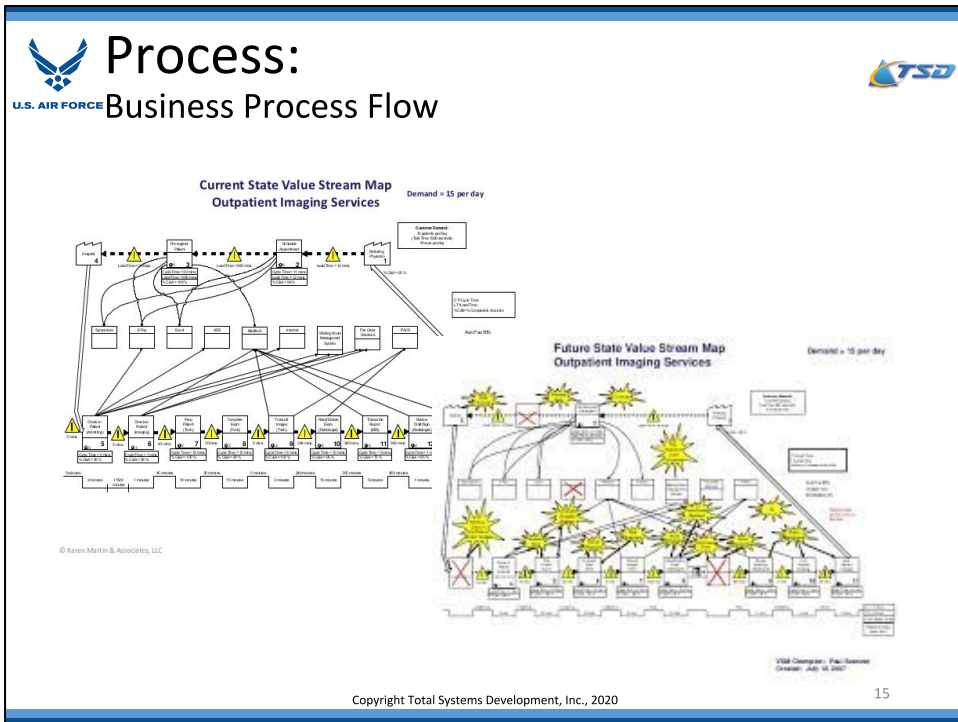
- Individual processes
- The System
- The Final Product

Once the process is documented the person doing the work is accountable for four things:

- Performing the standard exactly as written

- Signaling when not able to complete the process
 - Resolving deviations from the standard, and
 - Improving the standard by eliminating waste
- Step 2
 - Identify Process Owners
 - It is so important to understand the end to end value stream and who the process owners are in each step. For example, you can't hire, promote and give pay increases without the go ahead from an AF decision maker. You may own part of the process but the end to end owner is someone somewhere in the AF and they set the guidelines for what, when, and how you can do these things. And while you are responsible for ensuring the CFETP is up to date you have others that have to agree or signoff, or at the very least, that define much of the format and content. So you have to determine who the owner is in each step of the Value Stream - Creating swimlanes is a great way to help identify process owner.
- Step 3
 - Provide Quality Loop or Feedback Loop
 - This is about building structure around processes and making the connections. If you make a change to your part of the process you need to ensure that the entire process chain is aware of the changes made. You need to make it Easily (visually) understood and managed and share a form of Visual Management in process layout and design
- Step 4
 - Identify the Governance Team
 - The role of the Governance Team is regulating influence to direct and control the actions and affairs of management and others. They are the ones that keep you legal but break down barriers. This Governance team holds project teams accountable to schedules, metrics, responsibilities, etc. Through their guidance and leadership the major projects would be shared as a Model Process with other sites with same or similar processes which could benefit from the work you have done.
- Step 5
 - Formalize and Institutionalize
 - Task accomplishment is the result of a process being established that is consistent (reliable) with the best way we know how to do something. Internal and External Customers as well as regulations determine what the process must encompass but not always the how. The End to End Process

- Owner will specify the requirements but the person doing the work will create the standard work within in the sub-process.
- When good processes are realized don't just say great job and move on! You have to communicate to others. Trust me... there are others out there that are struggling with the same issues as you. Share your success and let other know. Make it a model process!



When targeting processes for improvement they should be in alignment with the SA&D - Annual Business Plan. You can never lose site of the overall business strategy and goal.s

The chart at the top is showing the Current state for outpatient imaging services. It's just an example to show that Process Structure starts with an End to End Value Stream. Individual development of the process and member comes from interaction with the process

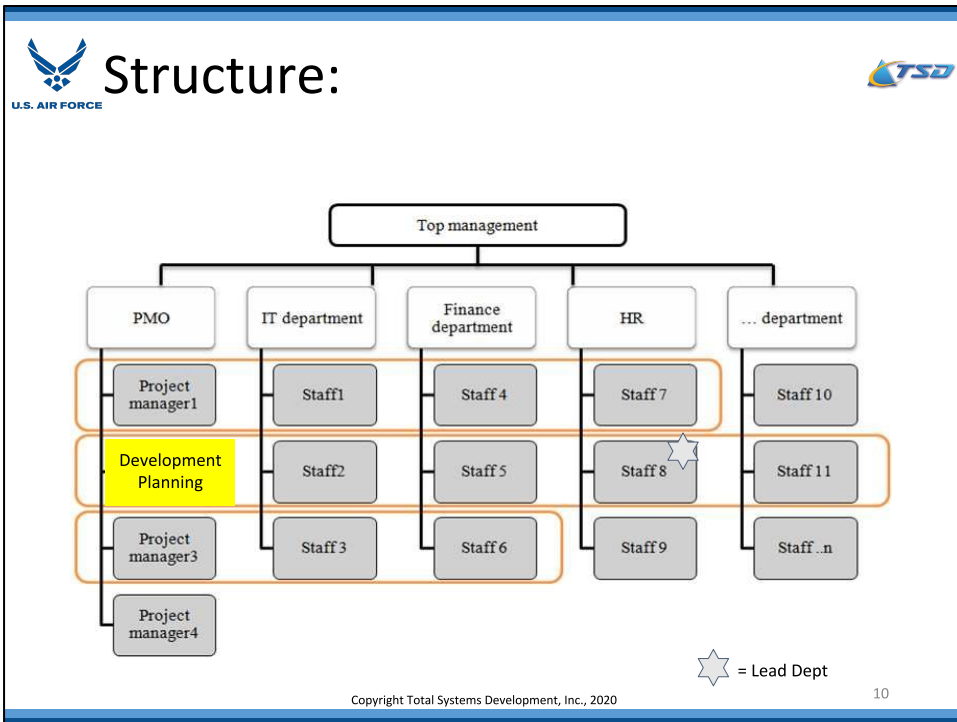
Within that Value Stream is a separation of sub-processes by functional area or department. When making improvements it's important to have all stakeholders involved to ensure a smooth continuous flow of service, product, and process. All the processes combined are the total work to be done by the team. The contribution to the operational and improvement plans are made through the stability of the process.

When focusing on continuous improvement you start with the standard of what you are doing now - the current situation - documented or not. If not documented write it down for others to see. The person(s) doing the job needs to write it down and be a part of the current state mapping. When making the Future State Map any Variability is waste. Observing the waste of variability (unevenness) is a key to management of the process

- Having quick response to problems develops trust and accountability
- Achieving “True Capacity” requires the management of both value add and waste
- The operational plan determines the pace of the processes

You will be amazed at the people from one functional group to another that will say “I didn’t know you did that!” as you go through the mapping process.

The chart at the bottom shows the future state with yellow flashes that identify areas for continuous improvement. The point is to eliminate waste and to achieve the goals of the business strategy.




Process Structure


The process structure is a horizontal approach where instead of organizing along the product or function, the organization is structured along the key processes. ... Once the core processes are identified, multi-skilled teams around the sub-processes are created and each team is lead by a process owner.

Process-based organizational structures are designed around the end-to-end flow of different processes, such as "Research & Development," "Customer Acquisition," and "Order Fulfillment." Unlike a strictly functional structure, a process-based structure considers not only the activities employees perform, but also how .

The key to great process structure is to work cross functionally to ensure the entire Value Stream is improved.



Management:



PK Presentation for Senior Management Approval: August 2020
 - Requirements & Suggested Preparation Items for PK Working Groups

Presentation Information																																																			
<ul style="list-style-type: none"> Presentation Purpose: PK Activity Approval with TBA Senior Management cross-functional group Presentation Scope: <ul style="list-style-type: none"> Main PK Presenters: PK Working Group Champion (from Sr. Mgmt) and Working Group Leader Includes any PK Working Group that does not yet have final CEO signature approval for process flow(s) Presentation Attendees: <ul style="list-style-type: none"> To promote cross-functional discussion and simultaneous approval, attendance requirements are as follows: <ul style="list-style-type: none"> CEO, EVP, VP, SGM: Attend all presentations GM & Senior Managers: Attend some presentations for which feedback from specific functional responsibility will be required to confirm PK presentation content PK Leaders PK Leaders from PUR, P.C, PE, Sales: Attend all presentations PK Leaders from HR, Quality: Attend some presentations for which specific functional feedback will be required PK Working Group Members: Attend specific PK presentation only 																																																			
Suggested Presentation Breakdown																																																			
<ul style="list-style-type: none"> Each presentation is allotted 40 minutes (including Q&A) Suggested breakdown: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Activity</th> <th>Time</th> <th>Note</th> </tr> </thead> <tbody> <tr> <td>I. Activity scope & output (display items)</td> <td>5 min</td> <td>Devoted Output: PK is considered completed once CEO receives copies of supporting documents through CEO and appropriate Sr. Management; however, prior to requesting signatures, proper netawashhi w/ Sr. Management is still required</td> </tr> <tr> <td>II. Specific example review</td> <td>30 min</td> <td>During this portion, visualize or facilitate on-line analysis (table with dates) to close activity</td> </tr> <tr> <td>III. Next steps</td> <td>5 min</td> <td>During this portion, visualize or facilitate on-line analysis (table with dates) to close activity</td> </tr> </tbody> </table> 										Activity	Time	Note	I. Activity scope & output (display items)	5 min	Devoted Output: PK is considered completed once CEO receives copies of supporting documents through CEO and appropriate Sr. Management; however, prior to requesting signatures, proper netawashhi w/ Sr. Management is still required	II. Specific example review	30 min	During this portion, visualize or facilitate on-line analysis (table with dates) to close activity	III. Next steps	5 min	During this portion, visualize or facilitate on-line analysis (table with dates) to close activity																														
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<ul style="list-style-type: none"> Outside of this activity, continue to complete close out PK activity (main focus of Senior Management review is not to create a special report, but to use opportunity for netawashhi/ feedback and/or approval) Senior Management "Champion" is listed as main presenter; however, PK working group should take active role in explaining information Use/ delegate working group members to present All working group members should attend presentation as available to hear feedback and to support responses to questions from Senior Management 																																																			
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Presentation Format/Media									
<ul style="list-style-type: none"> Visual display (whiteboard with posted swim lane process flow(s) + any additional handouts or supporting documents required) Each PK working group is responsible for bringing necessary distribution materials Presentations will be conducted <u>in-person</u> (both in-person meetings, no TV conference or phone connection) Recommended method is to use "white board review" / stand up 									


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Process Management is a Method used to ensure the teaching, learning and engagement is taking place. Just as you are responsible for your learning the Leaders are responsible and accountable to the teaching, learning, and engagement of Continuous Improvement activities for all Airmen. Just imagine if 400,000 airmen made one CI activity each for each month of the year that's 4.8 million improvements in one year! Somebody, somehow has to manage all these great ideas.

A Management system has to be put in place for Engagement and Sharing the Knowledge. To encourage engagement we have used it as an introduction, training and coaching opportunity. It allows the Airmen to stand before their peers and leaders to share their accomplishment and to receive constructive feedback, positive recognition, and positive coaching.

In this example as a Senior General Manager I was required to take my Division's Engineering Gate System and our Parts Ordering Process to this Governing Committee to receive approval for implementing throughout North America. Part of the purpose for this process was to hold me accountable to complete CI activities and share the results.

This was not the only Management Method put in place. This real purpose of this process was to ensure that Senior Management understood Problem Solving and the importance of Continuous Improvement as we continued to receive both budget cuts and manpower cuts.

 **Office Management Development System - OMDS** 



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OMDS stands for Office Management Development System

Most likely when you hear OPEX or Lean Organization you have an image of operational process improvement in maintenance, refurbishment, rebuilding, etc

But we are about Daily Continuous Improvement. OMDS addresses the problems or inefficiencies in an Office Environment. The thing is the tools and methods are exactly the same. The document may look a little different such as the standard work chart, which is predominantly used in the operational processes, but is also very effective in the office for walk patterns, inventory of documents (physical or in a computer), and the amount of time required to perform a task or process within the Value Stream.

Just as you see in this picture in the OMDS meetings you have an Annual Plan, Strategic Plans, Master Schedules, Job Duties, Metrics (SQDCM) and Daily Musters or Meetings to ensure everything is on track or someone needs to raise their hand for support.

This Daily or Weekly meeting is another opportunity for consistent and up to date communication, for your team to ask questions, for your team to ask for help, for positive group and individual coaching.



Summary