Synchronous Solutions

The continuous pursuit of excellence

The Core Cause

An essential approach to improve productivity

Every company will experience problems (aka issues, glitches, difficulties, snags, attacks by Murphy, etc.). Things just don't run smooth all the time. Employees don't perform at the same levels every day and even the most robust equipment will inevitably break down. In a custom manufacturing business, these issues are more profound.

To deal with this reality, you must do two things:

- Maintain a level of *Protective Capacity.*
- Identify and respond to the *Core Causes* of every disruption that occurs.

Protective Capacity is the ability to absorb variability. It is about intentionally unbalancing the capacity levels throughout your processes. With that additional capacity at selected process steps, you can overcome the disruptions of Murphy and protect the productivity of your overall system. While things do go astray, you should design your system to accommodate that reality. For more on this subject, see "The Wisdom of an Unbalanced Capacity System" in the September 2018 edition of the Slippery Rock Gazette.

Having established and maintained prescribed levels of *Protective Capacity,* you will also need to track every issue that disrupts the consistent flow of information and/or material through your system.

> You can't solve a problem and prevent its recurrence unless you know the true *core cause* that created it in the first place.

Every day, you should consider where every job (order) in your pipeline should be relative to the day it is planned to be finished (installed or shipped). When a job is not where it should be, you should work to identify the reason for this. It could be:

- A machine broke down. Was this a random event or was it predictable? Was preventative maintenance performed as needed? Were there signals that the machine needed attention? Should you have had a replacement part in stock? Was the operator properly trained?
- A key employee was absent. Was the absence a chronic problem with this employee? Did you have other people trained to fill in for this person? Did you have the necessary *Protective Capacity* in place?
- A piece of material was broken during processing. Was the breakage a preventable event? Was the material movement handled in a safe manner? Was the processing equipment set up properly? Did you have color-matched replacement material available?

Note that the issues just listed are *conditions.* None of them are *core causes.* "A machine broke down" is not a definition of *what happened.* It is only a summary of the result of some action or inaction that created the problem. The questions following each condition will direct you to the true *core causes*.

What was the first domino to fall?

Identifying the true *core cause* of an issue is not easy. It does take a bit of effort and diligence. And, it is everyone's responsibility. In a meeting to review the status of jobs in the pipeline, you should do three things:

1. Identify the issue. Job number (or name) and the brief description of the issue (example: Job 123 is behind schedule, i.e. not where it should be today relative to the day it is promised to be finished.)
2. Identify the *core cause* of that issue (example: CNC machine was down yesterday for Preventative Maintenance). This does require some investigation and always requires effort to correctly drill down to the true *core cause*. Persons reporting on job status should have already thought about its *core cause*.
3. Designate an *owner* of each issue who will be charged with assuring that the issue will be addressed and that the job will be in the correct location the following day. The owner may not actually do any of the work on the job but is the one person who should assure that the work gets done. This is the person who will be held accountable for the resolution of the issue.

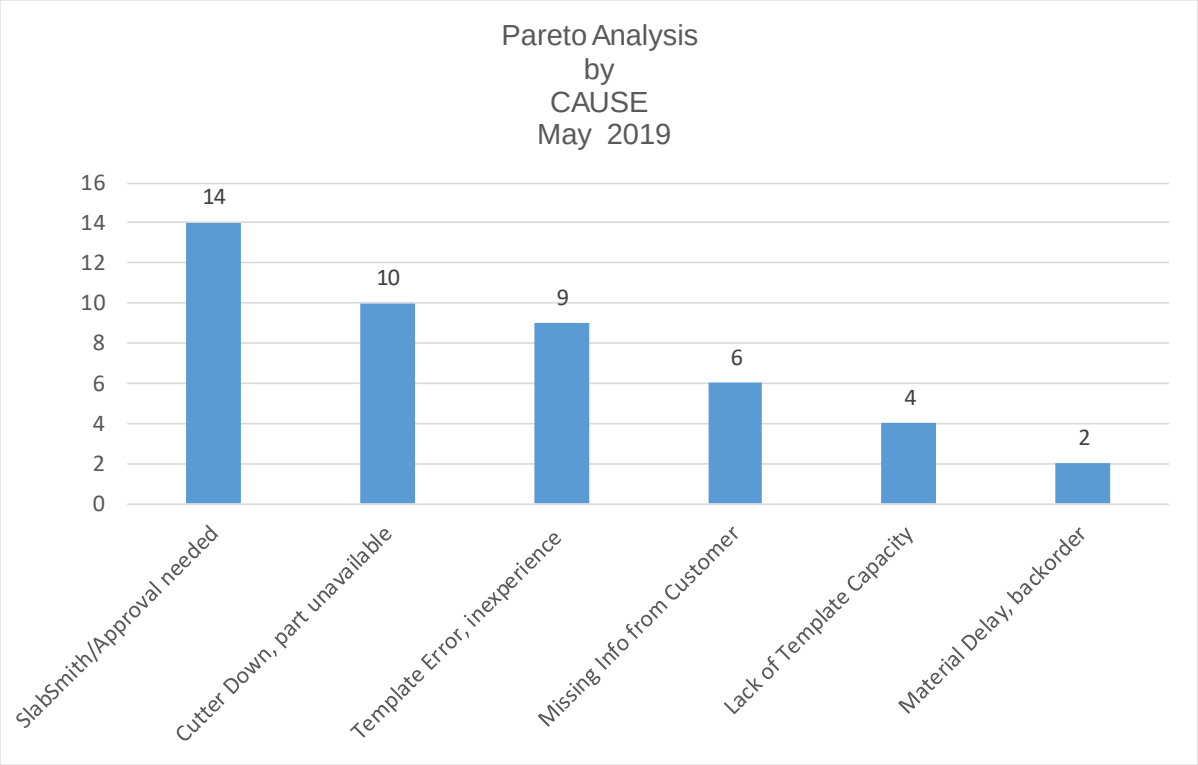
Note that identifying the *core cause* should always be about *what happened* and never about *who* made a mistake. If you let this process deteriorate into "pointing fingers" at who might have caused the problem, the concept will not work because people reporting the status will be careful to avoid blame. The purpose of the approach is to identify the true *core causes* so that actions can be addressed to prevent the most chronic of them.

Resolution of the current issue is the first step. The one person assigned as the *owner* of each issue should give it the necessary attention immediately to assure that it is resolved as quickly as possible. Not doing so in a timely manner can result in the issue becoming a crisis as the finish date approaches.

The next step is to accumulate the data to identify the best opportunities for continuous improvement and prevention of the chronic issues that cause the most frequent disruptions. This is about *preventing fires rather than continuing to fight the same ones over and over.*

> You can't fix everything, so focus on the frequently occurring *core causes* first.

Over time, you can collect the data of *core causes* and analyze them in a Pareto Analysis. This is also known as a "tall tent pole" chart. It is a graphic representation of the issues you have experienced so that it is easy to see which of them is chronic and often reoccurring.



Fundamentally, you should not fight the same fires over and over again. To avoid that condition, you should diligently identify the true *core causes* and address them in priority order. The Pareto Analysis is the best way to do that.

Then, it is a matter of organizing an effort to address each selected issue with a clear directive of the results you expect. Generally, we recommend selecting two or three issues to address at a time. Don't try to fix everything, because you will likely fix nothing.

The approach we like best is a formal Project Management Plan developed by Elliott Jaques called CPQQRT. This is a simple and powerful tool to assure that the issue is understood and that the expectations are clear. For every issue identification that you wish to address to prevent its chronic recurrence, organize the project by preparing a one-page summary of the task as follows:

- **C**ontext. Explain the situation that exists. Why is this an important issue to be addressed?
- **P**urpose. Describe the situation that you expect from a successful project.
- **Q**uantity and/or **Q**uality. List the specific output details that you expect.
- **R**esources. List the people who will be assigned to complete this project as well as any tools, equipment and budget that will be available to assist them. Usually three to five people are assigned to these projects with a designated Chair of the group.
- **T**ime. Clearly define the due date for completion of the project. It is desirable to receive weekly updates on the status of the project to avoid last minute actions.

Note that the key to this approach is that the owner/manager hold the assigned team accountable for the identified results. If you don't do this, the project will be reduced to "busy work" and you will not achieve the results you desire.

If you are a Seinfeld fan, you may recall the episode in which George Costanza was working for the NY Yankees. He was assigned a project by his boss and yet he had no idea of what he was supposed to do or the results that were expected. The Project Management Plan described above will prevent this dilemma and will help to assure the results you desire.

Don't be like George. Make sure everyone knows what is expected and is held accountable for desired results.

The test for successful results is the next Pareto Analysis in which you should expect that the issue identified does not show up as one of the chronic problems you experienced.

For more information on how to effectively address *true core causes,* contact:

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