

Start Somewhere:

Quality & Culture

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Good evening, thank you for joining the group tonight. I need to take amount to thank the section for allowing me to speak with you today, especially about a topic I find so critical.

Start somewhere is the tagline I attach to all my process improvement endeavors. My focus is typically first step quality systems and introducing quality principles to an organization. This talk will go through the mechanisms I use and teach my clients and peers to use.

About me

“Solutions Engineer”

- 15 years in nuclear operations & maintenance
- 10 years in manufacturing
- Bachelors in Nuclear Engineering
- Masters in Management Science
- Quality Engineer, Consulting, Photography, Systems Design



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About me, I don't like talking about myself, so I tried to keep this short. Montana native, I've settled in SLC. I consider what I do to be solutions engineering. I've had the privilege to work in a myriad of industries, all with different types of regulations and standards. What I started to notice is most of the problems have the same root cause. Thusly I have tailored my approach to attack the typical RC rather than more symptomatic indications. Currently, by day I am a quality engineer at a medical device company, I do consulting, photography, music, and game design as my other enterprises.

“Culture eats strategy for breakfast”

-Peter Drucker

If you haven't heard this before, I bet you have watched it happen. If this is new to you, let me be the first to implore you it is, in fact, the gospel. No improvement campaign, CAPA, audit result, incentive, or shiny new CEO can overcome established culture. So today I will talk about the quality tools you can leverage to influence culture from wherever you exist in the quality system.

What is culture?

First, what is culture? What are we talking about. Culture is the established mechanisms of interaction, systems, people, and process all contributing to the output of the organization. Culture is “how you do things”.

What makes culture?

Culture is based on relationships within the business. The people responsible for this are..you guessed it, the leadership team. They set expectations and live with whatever the output of their set vs. what is delivered produces.

Who owns culture?

I answered this a little before. Leadership owns culture. So leadership then, has the responsibility to leverage culture to make the business better, or fail in doing so and make it worse.

How can quality principles help shape culture?



Quality principles and quality tools are going to succeed or fail based on culture. Thusly, it is imperative to understand where and how to leverage these to get somewhere if you seek to influence, mold, or change culture. I'll discuss two areas I find most useful and then three case studies where they were useful.

Quality & Culture: Leadership

You likely hear this just too much. Thing is, it's true. Leadership is the key ingredient at every level of culture. So let's get into it.

Leadership As a quality tool

- Communication
- Expectations
- Learning & Teaching



Leadership is a huge topic, I will only go through a few pieces here as I find they are very useful in molding culture.

Leadership: Communication

- Communicate "why"
- Communicate up and down
- Communicate who



First line is huge. Why. Deming's first management point is constancy of purpose. Many, many problems will go away if an organization has a good understanding of purpose. Communicating up and down is following Deming's point 9, to remove barriers in the workplace. Barriers choke communication within the organization. This action also provides other benefits related to ownership, workmanship, and belonging. Communicate who your customer is. This means inside and outside the organization. No matter what your output is, you have customers inside and outside.

Leadership: Expectations

- External
- Internal
- Enable success



The customer sets the expectations externally. Leadership must carry this over and connect it to the “why”. Leaders then must set internal expectations. These are tied to the why and the needs of internal customers.

Finally, provide the atmosphere for expectations to be met. When they are not, find out why. Expectations as a group enable pride in workmanship as Deming notes in point 12.

Leadership: Learning & Teaching

- Seek perspectives
- Understand new perspective
- Pass it on



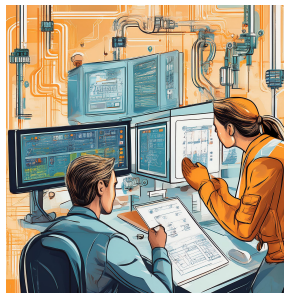
Deming’s management points touch on learning and education twice. 6 & 13 respectively. Following this thread, the best way to self-improve is through new perspectives. Find them and see where they take your thinking. Once you have, present them to you people. To your peers. Integrate them into your training program. One way to start this type of system is for leaders to have a reading list they generate and publish.

Quality & Culture: Tools of the Trade

So, we established the role of leadership, let's go through some typical quality tools we likely have at our disposal. These are mostly entry-level tools. Thing is, if we seek to influence culture, the simpler, the better. So let's see what those are.

Quality Tools: Information vs. Data

- Process monitoring
- Customer feedback
- KPI analysis



Process monitoring, one of the older tools here. Monitor your system outputs, do even some basic analysis to see what you find. Sometimes, the answers surprise you. Customer feedback is also data you can turn into information. I prefer to go over KPI analysis as it relates to management review. Too often this activity is not one to drive action when it should be.

Quality Tools: People Systems

- CAPA
- Audits
- Training



In too many places, CAPA is a dirty word. In reality, it is one of the best tools you have to fix your problems. Audits help too and are often maligned as well. Finally, the best one is training. Give people what they need with training. Here you can teach them how to use audits to find issues and CAPA to make them better.

Quality Tools: External Resources

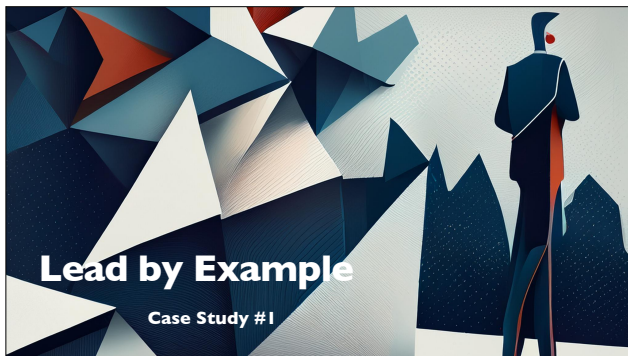
- Benchmarking
- Networking
- Conferences



Benchmarking can be an eye-opener if you have never done it. Sometimes, the tools other companies have ideated and put to use will blow your mind. And sometimes they will illustrate how you are on a better path. Networking introduces you to new people and new ideas. A friend of mine considers networking the act of “constantly seeking to add value to others”. I can’t see a reason to disagree with his terminology. Conferences are a great source of ideas, information, and methods to apply tools.

Quality & Culture: Case Studies

Tying leadership and quality tools to build the culture you need for your organization. I'm going to talk about these in the light of their impact on culture and how they use the various tools we have discussed.



Leaders don't have to be the boss. When executed properly, one department can influence the entire organization.

Leading by Example **Quality Department Style**

- Set the standard for communication
- Establish expectations
- Utilize your people's knowledge
- Act on their ideas
- Institute training

Quality departments are sometimes “the bad cop”. We have to get rid of this moniker.

I was able to do this as a quality manager at a local manufacturer and here is how. Communication with the team and from the team. Weekly stand-ups to see where things were. This understanding was then immediately communicated with leadership in other departments. Set expectations for your people and their conduct. To help lose the negative association with quality personnel, we increased our time on floor and interacting with operations. The team’s understanding of the other employees was a critical piece of this success. We used their ideas to rearrange the office and workspaces, providing them ownership. To improve their performance potential, we built a training and competency system. We did these things in about six months. It was work, it wasn’t perfect, the results were better than I could have hoped.

Leading by Example **Culture Impact**

- Reframing purpose
- Morale
- Quality of work



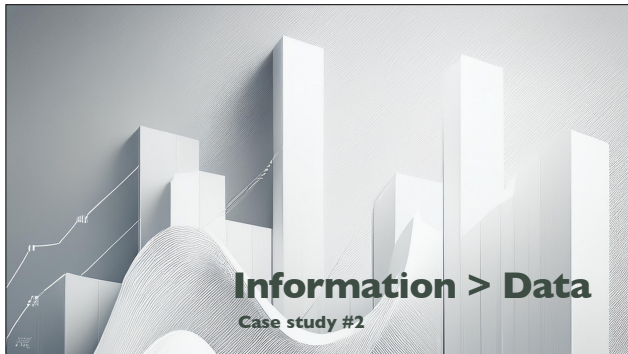
I mentioned how quality can have a bad reputation. When quality professionals can reframe their role as it aligns to company purpose, other people will notice. The downstream effects of communication from inside the QA dept to operations turned things around for my staff. Morale was an immediate byproduct. Happy people do better work. It takes consistent effort to maintain this system and it is worth every minute.

Leading by Example

Leadership + Quality Tools

- Communication
- Customer feedback (internal)
- Setting expectations
- Seeking & sharing perspectives
- Process monitoring

These are most of the principles I covered before that are applicable to this case study. Communication is the first step. We are, throughout this situation, communicating with the department's primary customer, seeking their feedback & perspective, and monitoring their process output related to the interaction component of the work. As a department head, I set expectations and was present to follow up on them. My action rubbed off onto other department heads and my employees attitudes spread around as well.



Most of you have likely heard “data rich, information poor”. Sometimes, we don’t even have information. We have hunches, guesses, loose ideas with little attachment to fact. In these cases, find the data and turn it into information

Information > Data

Manufacturing Metrics

- Determine what to collect, what you are looking for, when to look at it
- Analyze your data
- Refine your collection methods
- Analyze again
- Repeat

We talked about process monitoring before. In this case, only gross rejects were analyzed for trend and then only quarterly. So based on the highest output manufacturing system, all rejected components and assemblies started tracking. Immediately some problems people had a “hunch” about were either proved or disproved. We didn’t stop there, after a year, the whole collection mechanism was analyzed and revised.

Another year went by, same thing. All of this was done in one spreadsheet with minimal effort. This case involved the correction of a manufacturing defect that cost nearly \$50k in waste. As the process exists to this day, it is used to identify if any reject causes have started to trend above the now established baselines.

Young organizations are especially bad at output monitoring. Often, they are afraid to start sometimes simply because they “don’t know where to start”. So I propose taking just a few minutes and pick the first place that comes to mind. Figure out how you can monitor that thing and just get going. It can save you lots of time and money.

Information Rich **Culture Impact**

- Morale
- Ownership
- Attention to detail

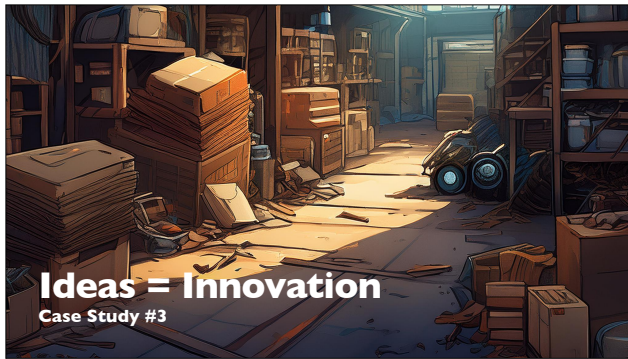


Knowing they have someone there to help them with reducing waste was a huge morale boost. Previously, if a large number of defects occurred there was limited data to see if there was a visible trend before the larger event. Communication of process information provided an additional layer of ownership to the manufacturing team. Also, when they saw some issues as they started, they had the confidence to reach out and ask ahead of the problem. As the monitoring system came out of the quality department as a “let’s try it” the results improved the relationships between the departments.

Information > Data **Leadership + Quality Tools**

- Process monitoring
- KPI analysis
- Communication
- Enabling success

Of course this example was process monitoring. Also, the results of this system added value to KPI analysis for management review. Communication goes without saying. The purpose here was to inform the team what issues were present and discover which of them could be solved. Ultimately, the trended data is enabling the team to look at defects from errors vs. as delivered. Eventually, this will feed into training. All of this provides a mechanism to enable people to be successful.



Ideas = Innovation

Storage Stagnation

- High output machine shops use **lots** of metal
- Storing metal bar, tube, pipe is tedious
- Process mapping + new ideas
- Surprising results

The warehouse can represent a great place to find waste. Something to consider to find these opportunities is the process map. In this case, the process map allowed the team to ask a few questions and get some novel answers. After the process map was built, the question of “what if we cut the stock to length right away” came out. This meant we needed a special rack to store it...which turned a conundrum into an amazing process improvement. Stock was going to be cut to length for the machine anyway. From the order the lengths and amounts were already known. So receive-store-retrieve-cut-deliver turned into: receive-cute-store-retrieve-deliver. A small change, except the alteration meant over 4x the material could be stored and nearly all handling labor was done up front.

Ideas

Culture Impact

- Ownership
- Buy-in
- Pride



This action was fruitful for personnel engagement. A large component of the shop floor team was involved in the improvement. We asked them all about their work and their day. We asked about getting material when they ran out at machine, we removed issues with getting the right material, we asked about difficulty in getting what they needed during their shift. The solution also provided the floor with a safer way to have material as every machine had a special rack of the in-use material forklifted to them. Downtime from wrong material disappeared immediately. The team helped at every step and they knew it. And removing the shame when you put the wrong metal on for a job was huge.

Ideas = Innovation

Leadership + Quality Tools

- Seeking & understanding perspectives
- Communication between stakeholders
- CAPA corrective & preventive
- Customer feedback (internal)

As the stockroom had many customers, this project involved a lot of perspectives. Communication was important to ensure the end result was right. CAPA as a functional action was used here as we had problems (wrong material on CNC) and knew we needed a preventive solution (running out of storage space). Customer feedback from the shop was part of understanding the ultimate direction taken.

Quality & Culture: Failures

Too often, these talks only go through the success, the happy endings. I don't want to be just another one of those people who never talks about how you can fail at pushing on quality and leadership principles.



So I will discuss two real situations I have been a part of where we failed to get the outcomes we needed. One is my own failure and another is an organization failure. I'll go first.

Failure to Lead

People first

- Production manager position at a manufacturing company
- Established culture of hustle, long term employees
- I came with lots of new ideas
- I failed to understand the motivations of the team
- I was not employed here 6 months later

This company had never even attempted to look at process improvements. They hadn't considered changes to their front line process. I was very interested in all these things. The problem was, the front line workers couldn't connect my enthusiasm with their motivation. This meant my attempts and explanations and teaching went nowhere.

This was ~4years ago. My own post mortem on this has taught me I need to be more present for personnel if I expect them to follow me. I mistook their high level of confidence in their work to mean they would understand the directions I was interested in. This was incorrect and I did not do my due diligence to know them well enough to be an effective leader. There are other circumstances here that are not related to me, those are not terribly useful in my personal growth.

The takeaway here is ensuring you understand people before you start talking about what they should be doing differently.

Organizational Failure

Commitment to Consistency

- Large shipyard organization
- Established cultures and practices
- Highly risk averse culture
- Management by decree
- Lack of follow up
- Inconsistent message

I spent lots of my professional time in shipbuilding and repair. The organization functioned yet there were many, many strange practices. One such thing is the flavor of the month management style. Pick an idea and run with it for 6 months. Then pick another, 6 more months. Then ask about the first idea and why it has not been adopted.

The organization had a great mission. The mission (why) was well communicated and there was a good culture surrounding it. The yard had endless problems actually getting improvements done. This was due largely (in my observation) from lack of consistency. They would start strong and then lag in messaging. Getting a large group of people onboard is essentially a marketing action. And they just wouldn't commit the time to the long term outcomes. In your time there I saw 20-30 of these initiatives and nearly every one was dead within a year.

Leadership, especially in a large organization has to leverage consistent

communication of why and who and fools through.

Failures **Culture Impact**

- Fear
- Stagnation
- Turnover
- Waste



Failure to use quality tools, especially communication has lasting impacts on culture. The yard had many people who would just play along with new ideas until they, just as expected, died off. If quality professionals come too fast and too hard with ideas about efficiency and improvement we can have people immediately in fear for their livelihoods. Especially if we don't also bring information with us. Fear can lead to exodus of good people and a slide into wastefulness at all levels of the organization.

The quality tools we have at hand can be a great asset, we must use them appropriately.

Organizational Failure

Recovery

- Exit analysis
- Root cause determination
- Identify opportunities for growth

Quality professionals will preach RCA, CAPA, etc. from the roof tops. How many of us will talk consider the same systems for ourselves. No one listening today is free of a few failures in their life. How many of us have taken the time to dig in and find ways to prevent the next one? How we approach ourselves will be reflected in the steps we take in our profession.

I had a stretch where employment was a roller coaster. I had to look at the areas of my professional life and figure out ways to be better.

My personal fixes included actions to improve my consistency. Building better relationships with people I interact with professionally. Finding common structures in life and business to help me connect with people. I still screw up and I try to fix it, you can too.

Quality & Culture: Start Somewhere

Quality and culture are inseparable. The big picture I hope I have illustrated is how leadership from the direction of quality can be used to build culture in the direction you desire.

Quality & Culture

Starting Somewhere

- Lead by example
- Find the information you need
- Embrace new ideas



This first thing might be my favorite because you can start today. Want to have new ideas and perspectives? Start reading and build a reading list (I have one if you'd like it). Would you like your department to have more technical know-how? Start doing lunch and learns with them every month. Build a training deck about a topic relevant to your company. Offer to do trainings on it.

Find information from your data. This can be anywhere. I used a manufacturing example. You can do this if you handle customer feedback. Find out how to categorize what they tell you. Make the results useful, refine it, then do it some more.

Find new ideas inside or outside your organization. Find ideas you can explore within your organization's structure. A good place to consider: FiFo is the standard for lots of mfg companies. None of the standards tell you HOW to make it happen, only that you should. Find new ways, give them a try, see what happens.

Mao matter what , start somewhere.

“Everybody has to start somewhere...”

-Haruki Murakami

There's more to this quote, go find it if you like. If I have communicated nothing to you in the last 30 minutes or so, at least remember I encouraged you to start somewhere.

Questions?

Thank you!