Lesson 2 – People or Process

“Welcome to MC” greets George, the manager of Multicoat. “Mick tells me you’re here to help with our lens wastage problem”

“Yes, I am” you reply as you look around the clean-room facility where the lenses receive their anti-reflective coatings. George explains that there are 3 high-level process steps in his department; loading – where the lenses are loaded onto individual clips and then into a cradle of 24 lenses. These cradles then go through the next step called dipping, which is where the lenses get cleaned in special caustic baths and then dipped in special resins to make them scratch resistant. After the resins have cured the go to the final step which is anti-reflective coating, or AR coating, where a nano-film of transparent coatings are vaporised onto the lenses in special vacuum-chamber coating machines

“I’ve got a bunch of problems here, least of all is the lens wastage” George offers, “I’m having problems with my night shift team, because we are working 24 hours here it is hard to get consistency across the 3 shifts. Every morning the day shift complains about the housekeeping and sloppy paperwork the night shift left behind, the afternoon shift complains about the leans wastage caused by the day shift, and in the morning I find emails from the night shift supervisor about the afternoon shift not following procedures. All the bickering is having an effect on moral, and I’m sure it’s having an impact on the lens wastage. It looks like all my lens wastage problems are caused by my people, and I feel I’m fighting fires everyday”

“Maybe if we can reduce the lens wastage we can take away some of the tension across the different shifts?” you suggest. George doesn’t look convinced.

“Perhaps we can start with a lens wastage report for your department George, maybe that can tell us where most of the waste is happening?”

“Unfortunately we don’t have any reports, we’ve been asking IT for weeks to write a report for us and we are still waiting. I know you lean Six Sigma guys like data but I can’t give you any. I do have some awareness of the problems though. Here are my top 4 problems as I see them;”

1. “We have a big problem with faulty lenses – these are lenses that have blemishes in the plastic that we only find after we strip off the manufacturers coatings in the caustic baths. Not sure what we can do about that as it’s the way the lenses come into us, and it’s impossible to detect this problem before we start work on the lenses. Still, it’s our biggest problem”
2. “Another problem we have is what we call “dropped lenses”. When we send the lenses through our different caustic and cleaning baths we have them loaded into a set of 24 clips loaded in a cradle. Sometime when we unload the cradle we notice there are lenses missing, and we usually find them sitting in the bottom of the baths when we clean them out each night. Unfortunately, by the time we find them they are usually too damaged – either dissolved away by the caustic or scratched from sitting in the sonic baths. If we find them in the resin baths we can save them, buy it takes a bit of rework to do this. I have 3 people per shift load the lenses onto the clips and I’m convinced each person has their own way of doing it – I’d love to know which way prevents the lenses from falling out of the clips”
3. “One of our more dramatic problems is when the robots crash” says George. “You’ve got robots in Multicoat?” “Oh yes, they automatically move the cradles of lenses through the different cleaning and resin baths in the correct sequence and timing. Every now and then their positioning goes out of alignment and it drops a full cradle of 24 lenses. Probably only happens 2 or 3 times a week. We’ve contacted the robotic company in Italy but we haven’t heard back from them. Not our biggest cause of wastage, more of a nuisance issue”
4. “One other nuisance issue is lens mix-ups. Mostly getting the left & right eyes of a single job mixed up, which is easily corrected, but also getting the lenses mixed up from one job to the next. I’d say it affects 10-20 lenses a day. We don’t notice it in our department, it’s the downstream departments that detect the issue and they blame it on Multicoat. It is probably happening in all 3 stages of my process – loading, dipping and coating, but it’s impossible to pinpoint where exactly it happens. My night shift supervisor, Pauline, has some good ideas about how to prevent this kind of problem. Unfortunately for Pauline not many people like her because of her abrupt manner, but it might be worth talking to her about it”

“Without any data to give you, there are some options on fixing our lens wastage problem. Where should we start?” George asks

Questions

1. How will you answer George’s question?
2. What analysis tool did you use to reach a decision, and explain why you made that choice?