

Low-Tech Lean: If MacGyver can do it so can you!

Sure, the reference to MacGyver is a bit dated; a television show featuring the talents of a former Special Forces agent ridding the world of bad guys that ended in 1990. He had the incredible ability to use the most mundane object like a paperclip or a chocolate bar and somehow manage to save the day; or the world for that matter. Each week millions would tune-in to watch MacGyver diffuse a bomb with a hairpin or plug a leak in a tank of acid with a wad of chewing gum: always in the nick of time of course!

Now we are ridding the world, or at least our plants, of waste and ingenuity is becoming ever more important. It's great fun to have the latest "bells and whistles" but it's not very practical for many companies when some of those bells cost tens of thousands for software, special racking, lifting devices, load-levelers, and etc. We must be committed to employing "creativity before capital" if becoming Lean on a budget is required.

Shouldn't Lean itself be "LEAN?" Certainly it should! Before spending money on any Lean improvement the team should rule out the possibility of using something already owned by the company, making the fixture or device in-house, or eliminating the need for the device altogether. We do this at home don't we? Baby food jars separate bolts from nuts, empty whipped topping bowls make handy containers for just about anything, and who hasn't used a little duct tape to temporarily solve a problem or two? Our toiletries are placed in convenient hangars with critical supplies nearby, and the list goes on. Low-Tech Lean is everywhere you look.

About two years ago one corner of my son's bed broke with a great thud and needed welding. Not owning a welder yet still needing a functional bed I placed a custom-fit oak log from our woodpile in the right spot and he enjoyed a good nights sleep. The log has been there ever since that night and literally has no negative impact on our lives. The bed works every bit as well as it did before and we now have a spare piece of firewood handy in case of an emergency. So was that one of those infamous "band-aid fixes" or was it a resourceful and creative approach to solving a small problem? We will likely not weld the bed at this point as we can see no benefits in doing so. The low-tech solution worked and we are happy with the result.

Working with one manufacturing company we bolted pvc pipe and a couple of quick-clamps to a bench top to hold a work piece in place while it was assembled. We already had all but one piece of the hardware needed to complete the project and it worked magnificently. This low-tech fixture greatly reduced the strain and repetitive motion risks for the women who had to screw large assemblies together dozens of times each day. It also resulted in more than double the throughput in that area. We could have used pneumatics, hydraulics, or other more expensive and involved methods, but in the end our solution was at least as good, much easier and cheaper to implement.

Our Kaizen Team shortened two large tables and cut holes in the center of each to facilitate the retrieval and disposal of fiber without bending or slowing the process at a pillow manufacturing company. Initially it seemed a conveyor would be needed, but emphasizing creativity before capital we came up with a great low-tech method that worked even better than the high-tech alternative.

Coming up with Low-Tech Lean solutions is a bit like being a surgeon. It's a well-known fact that a medical doctor takes an oath to "Do no harm." Perhaps a lesser known guiding principle is the practice of executing the "least invasive procedure." In other words do as little as you can, but all that is needed, to fix the problem you are having. This is a Lean approach. This includes not spending more than is needed, not building too big of a solution, and any other excess expenditure of time or effort.

Low-Tech Lean Solutions:

- " Actually solve problems
- " Can be implemented quickly and easily usually with items already in-house
- " Maximize R.O.I. both for time and money spent
- " Are as good, nearly as good, or even better than hi-tech or high cost solutions

Sometimes a few pallets, a sheet of plywood, some cardboard, and a couple of 2 x 4's are all you need to have a not so state of the art, but functional, gravity-fed supply rack. Actually, pallets are a Lean building supply of choice in many companies used for temporary work benches, boxing stands, staging areas, and so on. Once again, if you can't spend too much money but need components for your Lean infrastructure this may be the budget conscious solution you were looking for.

Of course generally we prefer welded structures with durable castors for increased mobility and adjustable fixtures that allow for maximum flexibility. One school of thought is to employ Low-Tech Lean to cost justify further investment in solutions with increased functionality. In other words, you've already proven out your solution so additional benefits of higher-tech solutions are easy to demonstrate.

The first time I saw computer monitors hanging above every work station in a hi-tech factory I was very impressed until I saw them in action. What appeared to be a great approach to getting needed info and schematics at the point of use really just turned out to be a very un-Lean practice that generated hours and hours of data search time every day. Simple flipcharts including photos and standardized work instructions replaced the hi-tech solution resulting in much less effort and time wasted finding needed information. Being a fan of computer solutions this was a bit disappointing, but when something works better than something else you have to go with it. It is the Lean way.

The floor, the walls, the shelves, and the ceiling for that matter can be painted or taped with colors that give immediate information as to supply quantity on-hand, finished goods in-stock, and etc. It seems the best Lean enhancements are usually obvious and intuitive and are generally very low-tech.

Clearly there are times when low-tech solutions are not the best answer for your company and we all know sometimes you need to spend some money on high-tech solutions to get the results you seek. The point of this article is to remind and encourage people effecting changes in the name of Lean that throwing money and complexity at problems is not in itself Lean. Most Lean practitioners can appreciate that simpler, even Low-Tech Lean solutions are almost always better.

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