

Using Takt Time to meet customer expectations

When you're first introduced to Lean, one of the things that can be slightly confusing is the many ways in which 'time' is mentioned.

We all understand that time elapses and that any given moment is a specific time, but suddenly in Lean we hear phrases like:

- Cycle Time
- Lead Time
- Work Content Time
- Elapsed Time
- Down Time

In theory, all of these have different definitions and when used in the right context can be very useful, in practice, they also get mixed up from one practitioner to another, which can be confusing for anyone trying to learn how and when they apply.

One 'time' which is universally agreed and understood in Lean though is Takt Time

The lean theory is littered with words that don't look very English, but these are usually Japanese. Takt is actually a German word, thought to have been introduced to Lean theory via German engineers working in Japan in the 1930s.

In German, it means 'rhythm' or 'drumbeat' and in Lean application, Takt Time is a measure of the required rhythm of your process.

So why does your process need a rhythm? And why would you want to know about it?

To understand that, we need to first look at how Takt Time is calculated.

To establish Takt Time you simply divide the customer demand by the time available to meet that demand. I say simply, but both of those things may require some further investigation.



Firstly, you need to know what your customer demand is, so if this is not immediately apparent then other Lean tools such as Voice of the Customer analysis may be required.

As far as the available time is concerned, it's important to note we are not looking at man-hours or how long something takes to produce, we are simply talking about how much time is available. For example, if your company's working hours are from 8 am to 5 pm with an hour for breaks, the available time is 7 hours – this does not need to be complicated.

For the sake of example, let's say the customer demand for our process is 42 units per day, and we work a 7-hour day, which is 420 minutes, which gives us a Takt Time of 10 minutes.

Regardless of what our process is and how many different steps are involved, we need to be completing one unit every 10 minutes in order to meet customer demand.

It helps to visualise this

We should be able to stand at the end of our production line (metaphorical or not, depending on your industry) and see one unit dropping off it every 10 minutes.

If we measure 15 minutes between two units, we know that unless we subsequently measure 5 minutes between 2 more, we are at risk of letting down the customer.

That is powerful information

When used in the management of an existing process, it gives us the chance to know the customer may become unhappy, and therefore the opportunity to rectify the problem, before they are impacted.

Takt Time really comes into its own in planning new processes

I once spent some time with a manufacturer bidding for a major piece of work with one of the big Aerospace companies. The extensive bid requirements included the need for them to demonstrate they had the space available to produce the parts, and they had recently acquired a new building.

The layout was several different rooms though, and they were not clear themselves if this was suitable, whether some walls would need to be removed, and how to demonstrate what they had was good enough.

I trained some of the engineers there in Takt time. As you would expect, the tender documentation had included the expected demand; and as they intended to work a five-day, two-shift system, they could establish their available time, and then calculate the Takt Time.

Applying the amount of time, the process would take to this gave them a very important piece of information – how many people they needed.

What happens if we know for a fact it takes a full hour to make one unit?

Let's go back to our example where customer demand is 42 and the available time is 420 minutes, this gave us a 10-minute Takt Time.

So, we need a unit every 10 minutes, but it takes us 60 minutes to make one, are we going to have a very unhappy customer? No, we're simply going to need six people at each step in the process.

Now we know this, we also know we're going to need space for six people. Once we've established how much space one person in this process needs for their workbench, any in-process inventory, etc, we can then start to design a workspace that we know will meet the customer requirement.

This isn't complicated, but the amount of companies that take on work and hope for the best is amazing. The big Aerospace companies know the risks of this approach all too well, which is why they force potential suppliers to think about it beforehand.

As well as understanding the requirements of space and hardware like furniture, Takt time can also help with an understanding how much equipment, raw materials, and consumables will be needed, which can then inform the creation of a KanBan system for storage, ensuring that we won't run out of anything and enabling us to get a detailed understanding of the costs involved in setting this process up.



Conclusion

Of course, while I encouraged visualising standing at the end of the production line happily watching one unit appear every 10 minutes, this was just because it aids understanding.

There is nothing about Takt Time which makes it specific to manufacturing, it is equally applicable to processes in all industries and all work environments.

Your process exists for a reason, to achieve something for someone. Once you know how much they require and how much time you have to achieve it, you are well on your way to establishing a system that carries far less risk of letting your customer down. Whatever you do and whoever you do it for, we all want happy customers.

If you have a question about developing leadership skills, or if you're looking for support with a specific situation call us on 01926 633333 alternatively you can email us at info@bourton.co.uk.