Actively Reducing the Working Week Hours

Today I want to return to the topic of the reduction of the working hours in Mexico. As you will recall, between now and 2030, all companies will have to reduce the weekly hours worked from 48 hours to 40 hours per person. This means they must decrease 2 hours each year, starting in 2027, to reach 40 hours in 2030. As we had established, this is a 16.6% reduction in the working time available to carry out the productive, administrative, and management activities that are usually performed. If you think about it, it really isn't an overly aggressive goal; even with a reduction of a little more than 5% annually, you would be able to achieve said objective. Obviously, the trick is the "how" to achieve said goal before 2030, since as of January 1st, the new provision will be legally effective.

Typically, this challenge falls to those responsible for Continuous Improvement, Lean Manufacturing, or Operational Excellence; these are some of the titles used for professionals dedicated to optimizing every gear of industry processes. What are the tools they can turn to for this challenge? The range is very wide, and I will try to list the most relevant ones, from my point of view, starting from the simplest (low investment) to the most complicated (high investment), so that you can choose those that best suit your situation.

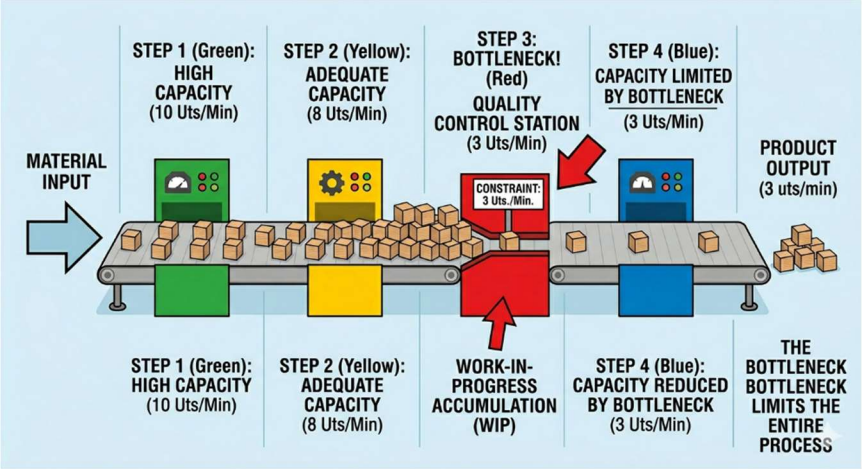
Dismantling the "Hidden Factory"

In all processes, there is a few units that get sorted out as “defective” during the testing stages of the designed process flow. Generally, these units are moved to a rework or repair area, where they are subjected to additional subprocesses (rework) to be able to return to the process flow. These activities do not add value but consume time and resources (labor); this is why they are called the "hidden factory". To eliminate it, we must attack the root causes that created the deviations. This is one of the tasks of the Quality Engineer, who is the natural leader for the efforts to identify and eliminate the causes, thus reducing the number of resources (especially labor) used on the repair/rework areas. Once these areas are put under control, the key is to “connect” them to the process flow, such that, if a given quantity of rejects is reported over a given time, the process is stop immediately (andon) until the cause is identified and eliminated.

Elevate the Bottle Necks

In all manufacturing processes, especially on those of continuous processing, there is a “bottle neck”. This can be defined as the step on the process flow that takes the longest cycle time per produced unit. Therefore, this is the process step that dictates the total output of the production line. Mismanagement of these bottlenecks will likely result in excess labor before and after them. It is important to identify and manage them correctly: a bottleneck

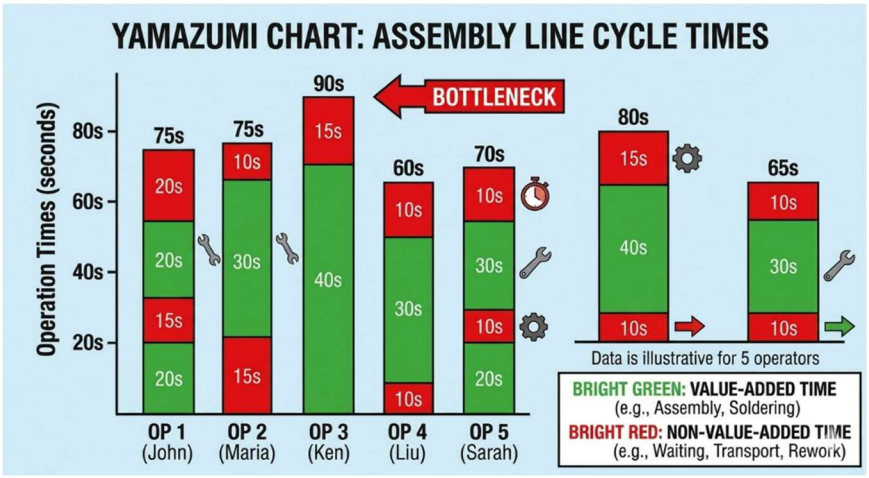
needs to be available 100% of the time and any downtime needs to be a priority for the maintenance, quality and supervision personnel. To get more information about this topic, I do recommend you read their bible: “The Goal” by Eliyahu M. Goldratt. In this book, several scenarios on how to take advantage of bottlenecks is discussed.



Line balancing

This tool is common, yet I believe it is often misused. Such as with bottlenecks, not having the adequate balance on the amount of time used by each operator in a production line can result in wasted labor. To better understand this balance, you can use the “Yamazumi” chart.

In this type of chart, the cycle times of each operator are shown along with the classification if the executed tasks are adding value to the product (Value Added) or not (Non-Value Added). To achieve these representations, you need to invest the effort in the cycle time study for each operator and the time for the analysis of the working elements, to identify correctly the VA/NVA tasks separately.



The Yamazumi chart allows you to identify the tasks distribution amongst the operators and the time consumed on tasks that do not add value. A good analysis on both will allow you to reduce the quantity of operators in the line. Typically, the NVA times can be classified using the concepts of the 7 wastes, created by Taiichi Ohno as part of the Toyota Production System (TPS).

Wait: lost time of the operator for lack of material or instructions

Transportation: unnecessary movement of materials between stations

Overprocessing: work beyond the customer requirements

Typically, this analysis falls to the Industrial Engineer or the line supervisor. This analysis needs to be reviewed regularly to validate the results and after each change implemented in the production process, to confirm that unbalance has not been introduced and, if so, adjust as needed.

Human Factor and Respect for People

Closing this article, I would like to mention that implementing the process improvements, using any of the tools mentioned, can be done from the perspective of Lean Manufacturing efforts, identifying the trouble points as part of the Value Stream Map and applying Kaizen workshops to develop the improvements.

During these workshops, it is of utmost importance to involve the people who are part of the process to be improved (the operators). This is a way of showing respect for people, as we can expose them to the problem and collaborate to find a suitable solution. You will be surprised to know that most of the time, the problem was already known, but administration simply hadn't paid attention to it.

The collaboration between front-line personnel and administrative staff to confirm the identification of the problem, propose improvement options, implement and verify results becomes not only an improvement for the process, but also for the morale of the extended work team. If this experience is repeated a certain number of times, the entire organization will truly enter a cycle of continuous improvement, where the contribution of all members is not only expected, but recognized and valued. This type of *modus operandi* is what distinguishes companies that excel in their search for operational excellence.

In my next article, I will touch on other techniques to reduce labor in processes, specifically automation and artificial intelligence.