

What is kanban essay sample



**ASSIGN
BUSTER**

Derived from the combination of two Japanese words, kan (“ visual”) and ban (“ card” or “ board”), kanban roughly translates to sign board or signal board. In English it has developed a highly specialized meaning – kanban is a process of manufacturing or work space organization that relies upon visual signals to control inventory. Kanban has become synonymous Just in Time production and “ demand scheduling.” It is a cornerstone of lean manufacturing, just as it relies upon 5s and kaizen, so to do they rely upon kanban for full implementation. Kanban, as a means of manufacturing, was developed by Toyota during the late 1940s and early 1950s.

During that period, the Toyota Corporation studied American supermarkets and their management techniques. Taiichi Ohno, the man credited with developing JIT, saw the relationship between the supermarket and its customer as an efficient means of organizing production, because a supermarket assures future stock while only supplying what the consumer has immediately signaled that he or she needs. The premise behind this organization is a visual signal, a kanban. In the case of a supermarket it might be the level in a bin of oranges dipping below a certain marker.

This visual signal, in turn, tells the supermarket employee to stock more oranges. Ohno saw the possibility to deploy this means of organization in Toyota’s main machine shop, and had done so by 1953. In the 1970s, with the economy worsening, kanban made its way across the Pacific Ocean to the United States. Since 1977 it has become the principle means of implementing Just in Time (JIT) production and is used in all manner of working environments. Benefit of kanban

What Does Kanban Do?

The implementation of a kanban system, as well as other lean manufacturing methods, like 5s, and kaizen, can have significant benefits for almost any type of work. As a system, kanban is faster, more efficient, and saves significant money over most other production models. Kanban is particularly useful for high volume, low cost items, and may be less appropriate for low volume, high cost, long lead time production operations. A kanban system is also far more directly responsive to customer demand, with the consumption level of the customer being the immediate impetus behind production levels. Kanban is a system that visually indicates when production should start and stop. Only what is needed is produced, and this is controlled by a series of kanbans, that indicate when production should begin. Kanban has been known to:

- Reduce Inventory

- o Kanban will reduce inventory, on average, by 25 to 75%. This saves any company significantly in terms of rent, electricity, and storage space.

- o In addition, all of the space freed by the implementation of a kanban system can be used for future expansions or new opportunities

- Improve work flow

- o The visually organized environment ensures all parts are easily found and continually stocked.

o The speed of moving from one task to another is significantly reduced by the creation of clearly marked flow lanes, kanban cards, and clearly marked labels.

- Prevent Overproduction.

Because parts are only created at the visual signal by the kanban label (link), inventory is much less likely to be overproduced. Resulting in significant savings in the holding of stock.

- Improves responsiveness to changes in demand.

Unlike a predictive system, kanban immediately reacts to the environment. By responding to clearly and easily read kanban cards the lag time between a shift in demand and a shift in production is almost non-existent.

- Minimize risk of obsolete inventory, because inventory is only created as it is needed.

How Does Kanban Work?

Imagine a factory that produces widgets. The production of this widget requires two parts being put together at the factory. Let's call them Part A and Part B. The manufacturing process consists of three "stages": The receiving area where parts A and B are received and stored. The "assembly" area where parts A and B are put together to form the widget. And the shipping area, where the widgets are shipped off to various stores. The two parts are stored in separate bins. The completed widgets are placed on

pallets. When a pallet is shipped to a store, an empty pallet is returned to the worker's area. The factory might operate something like this:

The factory worker starts by getting one of Part A and one of Part B from their respective bins. They assemble a widget. The widget is placed on a pallet. When the pallet is full it goes to the shipping area.

When a store needs widgets, the pallet is shipped to the store. The pallet of completed widgets stays in the shipping area until it is shipped. If there is a pallet in the shipping area, the worker knows not to make any more widgets. The kanban in this case is the pallet. If it is empty, more widgets must be made. If it is full, no widgets will be made. Likewise, in the bins for Part A and Part B there is a label. This label informs workers that when the level of parts drops below a certain level, more should be ordered.

Obviously, in a high volume factory there might be 20 widget assembling stations and 30 pallets. Each individual system must be continually modified to find the exact right level for the kanban to signal that a action is required. Kanban, while incredibly efficient, and requiring less predictive modeling than many other organizational techniques like MRP, requires a firm commitment to continual improvement. This method is known as kaizen. It is another crucial element to becoming leaner and more efficient.

Kanban & Pull Production

Kanban is a " pull" type of production system. This means that customer demand " pulls" production through the system. If a production line makes widgets, the number of widgets made, and when they are made, depends on

customer demand. Customer demand might be indicated by there being no widgets in the shipping area. This signals that production should begin to produce more widgets. The demand from the shipping dock, called a kanban signal, starts and stops the production of widgets. Almost anything can be a kanban signal. An empty pallet, a bucket, a shelf... even golf balls.

The Response To A Kanban Signal In a kanban system the method of handling supplies and components is highly flexible, capable of meeting and responding to the specific working environment and customer needs. For example, customer demand, signaled by empty pallets on the shipping dock, trigger the assembly of new widgets. This creates a demand for the components used to make widgets and that demand “ pulls” production of widget components such that more components are produced. Thus kanban is a “ pull production” system in which demand signals the need to produce more.

Just In Time and Continual Improvement

In the U. S., kanban goes hand in hand with Just in Time (JIT) production. Kanban, however, is more than just another means of implementing JIT. Kanban is a philosophy, one part of a larger system that will make almost any workplace more efficient, safe, and lean. “ Just In Time” means to have the materials and labor needed to make something, be available where it is needed, just at the time when it is needed. Kanban is a technique that enables JIT. Kanban by itself is just the visual use of signs to indicate work flow. But, when used as part of the larger philosophies of kaizen, 5s or even six sigma methodologies, kanban will make work safer, faster, leaner, and

more environmentally responsible. By eliminating overproduction and obsolete materials, working environments are made safer and waste is drastically reduced.