

Asian workflow essay sample



**ASSIGN
BUSTER**

To be successful in an expanding world market, Shuzworld must be innovative in addressing challenges using sound management principles and decision analysis to determine the best options for operations. Asian

Workflow

Workflow improvement in the Chinese factories has been identified as an area of opportunity for Shuzworld in Shanghai. After meeting with Alistair Wu, Production Manager—who is responsible for all three Shuzworld facilities in China, the assembly line process was reviewed for efficiency of the production of the Rugged Work Wear® boot product. Since these boots are steel-tipped, production is more complex and take longer to produce than other standard Shuzworld products. Catherine Pang, Line Manager, provided an existing Rugged Work Wear® boot assembly schedule (precedence diagram) denoting times at each station and a layout of the production line.

Justification

Line balancing is the methodology of equalizing the amount of work at each workstation. The principles of line balancing are needed to improve the efficiency of the production of the boots at each station. Jobs are broken down into the smallest work elements so that they can be performed by more than one worker at a single workstation. Since there is an order in which the boot construction is performed, there are precedence requirements that place restrictions on the sequence of production.

(<http://wps.prenhall.com/wps/media/objects>)

Catherine Pang provided the assembly schedule which denotes cycle time which is the maximum amount of time the boot is allowed to spend at each

workstation. Upon initial inspection of the workflow, it is noted that a “bottleneck” is noted due to a variance between stations B and C (with a three minute difference) and stations E and F (with one minute difference). Both variances in sequential steps cause delay or inefficiency in production for the awaiting work stations before and after stations B/C and D/E.

Justification Output

Shuzworld Shanghai Rugged Wear Work® boot product is budgeted to produce six boots an hour with a 40 hour workweek. To calculate the cycle time and workstations is based on the following calculations:

Cycle Time

= Production time available per day

Units required per day

= 480 minutes per day

6 boots/hr. x 8 hrs. (= 48 boots)

= 10 minutes/boot

Minimum number of Workstations

n

= \sum time for task

Cycle Time

= 46 minutes / 10 minutes/boot

= 4.6 or 5 stations

Work Flow Analysis Tool

Workflow analysis involves assessment of all processes of production or business to identify weaknesses or deficiencies. Once identified, improvements can be recommended to objectively ensure Shuzworld must adopt an improved workflow layout strategy for the assembly line process. There are multiple tools available to determine the best option for optimizing manufacturing output with equal time at each workstation. After reviewing the workflow and interviewing key stakeholders in production, implementing a product-oriented layout tool at Shuzworld ensures that work flow “ seeks the best personnel and machine utilization found in repetitive or continuous production.” (<http://wpscms.pearsoncmg.com/wps/media/objects/page=341>)

Upon analysis of the data provided and review of work flow, dividing the assembly line into five stations (with the following tasks at each station) will allow for balancing of the line assembly process. Each worker (or work group) for each station will be tasked with moving the product to the next station in 8-10 minutes depending upon the task to maintain an entire cycle time of no more than 46 minutes to optimize efficiency.

Station 1 Station 2 Station 3 Station 4 Station 5

The projected efficiency of the proposed workstation would be calculated as:

Efficiency = $\frac{\sum \text{Task Times}}{\text{Actual number of work stations} \times \text{(longest cycle time)}}$

= 46 minutes

(5 stations) x (10 minutes)

= 92% efficiency

Using these calculations to determine the number of stations and efficiency of the projected workstation changes allows Shuzworld leadership to evaluate the impact of the change and implement the concept in other assembly lines.

New Product Line Development

Cost Analysis

Shuzworld is developing a new line for sales in California and southwest United States. Although it is projected that there will be significant demand once created, Shuzworld must first determine whether or not the new Maui Sandal line will be profitable to the company prior to production.

After meeting with Alistair Wu and the Shanghai line management team, it has been determined that the Maui Sandal will possibly be the newest project for Shuzworld. Hetty Tarbox was present to present market research data and associated metrics. The goal is to set up for batches of 10, 000 units in the Shanghai factories.

Catherine Pang presented her estimates on the new service line. She predicts that the first batch will take 1, 000 labor hours to produce the first units of the Maui Sandal with labor costing an average \$1. 08 (US dollars). Based on previous product launches, production employees have had an 80% learning curve. There are many uses for establishing a learning curve for Shuzworld.

Impact

The impact of costs on the decision to produce a new line must be considered by Shuzworld leadership prior to implementation to make sure that the return on this significant investment will be worthwhile for the company. Labor forecasting, scheduling, budgeting, costs, supply chain negotiations, industry performance, as well as cost and pricing must be evaluated before initiation of a new model. One of the most important evaluations is the impact on Shuzworld which can be determined through reviewing new product line learning curve evaluation.

Learning curves are based on the concept that workers and companies become more efficient and productive as tasks are learned and repeated to a stable production rate to determine costs and profits for the company. However, the initial implementation of a new product line may have several consequences for the company such as down time prior to full production causing shortages and possibly customer loss. Also, companies may struggle to work through process improvements during the learning curve process in fear of prolonging the learning curve (and potentially increasing significant start-up costs) rather than the possibility of shortening the curve. Managing the initial processing of the Maui Sandal production must take into consideration the estimated four month learning curve, as well as all pitfalls that may affect the company's bottom line during the learning curve process—such as production design issues, labor education costs, and equipment replacement/modification of existing manufacturing sites.

Shuzworld must be willing to follow aggressive plans to monitor labor costs, manufacturing costs, pricing policies for the new line, and determining how to keep capacity at (or above demand) during the Maui Sandal line roll-out.