

THE BENEFITS THAT THE VISUAL MANAGEMENT CAN BRING FOR THE COMPANIES

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Abstract. To manage a company of efficient form always was a challenge. Since the sprouting of the first companies, passing for the Industrial Revolution, for the age Ford until the Toyota Production System, much effort has excused to manage the production systems successfully. In this context, the visual management has been a tool that comes gaining space in the organizations for becoming the management process less arduous and more efficient. In the contra hand of the trend, this form of management aim to decentralize the information contained in the data bases of the companies and to become them accessible and visual for all. The objective of this article is to show the importance of the visual management and the profits gotten with the use of this new form of management. For this, some examples of management will be presented widely used by the most diverse companies who have adopted the visual management.

Keywords: Visual Management, Kanban.

1. Introduction

As Scarpelli (2001) an industrial process is a set of decisions and action that it aims to transform material resources into products with some value of use for a consumer or market. These actions, called operations, are determined in function of the use or chained purpose of the product. Figure 1 shows an example of industrial processing.

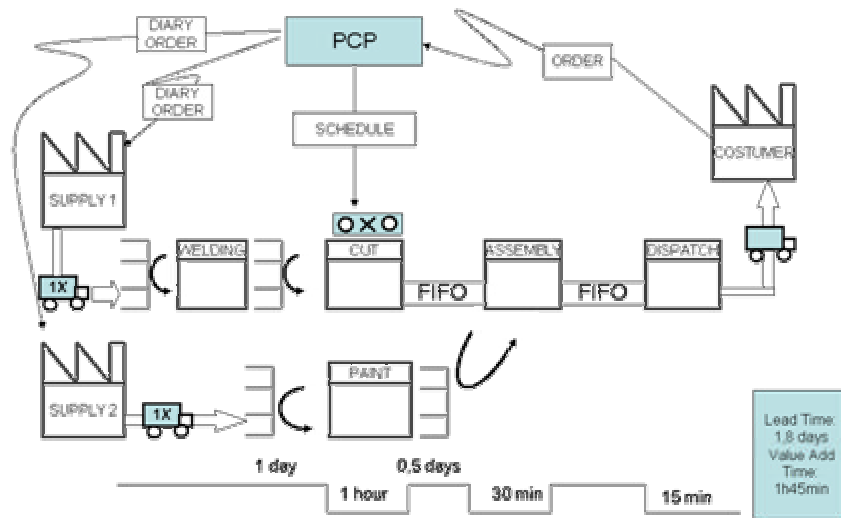


Figure 1. Structure of a system of industrial processing.

During the product's passage through the industrial processes these suffer alterations. Items and components are added to the product conceiving for its final form. It's important to stand out that nor all action that the product suffers, or are played in the plant, add value to the product. According to Slack (1999), 90% of total lead time of production is related with activities that do not add value to the product (NAV). These activities are related, normally, to the movement of parts and components, storage, times of setup, among others. Figure 2 makes a comparison between the time of aggregation of valor (AV) and lead total teams of production.

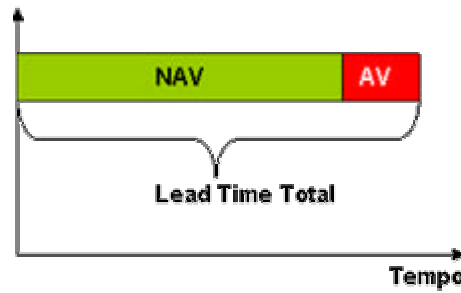


Figure 2. Total Time of production and time of value add aggregation.

The administration of the production involves the good management of all the activities in the shop floor objecting to minimize the activities that do not add value to the product.

According Monks (1987, p.5), the administration of the production is the activity for which the resources, flowing inside of a defined system, are congregated and transformed of a controlled manner, adding value to the product, in accordance with objective enterprise. For Rock (1995) the administration of the production is the part of the administration who commands the process productive, utilizing the administrative proceedings, visualizing rise of the productivity. As Scarpelli (2004) the systems of operations and planning and control are constituted in accordance with the necessities and possibilities of each enterprise. However, its functions are common to any enterprises and can be grouped for study effect. The Figure 3 shows the relation among the management of the activities of Operation, Manufacture and the Manufacture in itself.

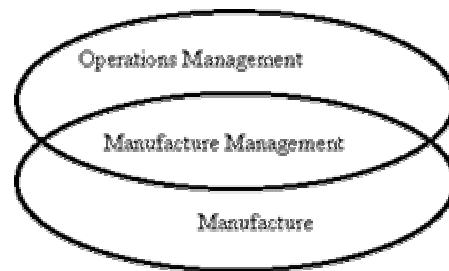


Figure 3. Administration of operations and manufacture (Hopp et. al., 1996).

Due to importance of management the production in the company, many tools had been created to try to assist and to optimize the process production management. Systems of information as the MRP had been implanted in innumerable companies in everybody, aiming to become each more effective time the process of administration of the production. As Ciosaki (1999) the MRP's are systems of production's administration, that use computers of medium and great transport, with the objective "to less allow to the fulfillment of the stated periods delivery of the order of customers with minimum formation of supplies, planning the component purchases and production of items so that they occur only at the moments and the necessary amounts, nor more nor less, nor before nor after" (Corrêa and Giansi, 1993, p.104). A problem associated with systems MRP, besides being a pushed system of production, these work by means of demand forecast. As Standard and Davis (1999) the problem is that the forecasts always are missed. One another problem associated with the traditional systems of production's administration is the fact of these to restrict the information to a select number of pertaining people to the plant. Consequently, a departmentalization of the information occurs. This process of departmentalization of information has as symptom the formation of distinct visions inside of the plant on the real problems of the company. As the people start to have access to the part of the information these start to have different perceptions on the problems of the company, see Figure 4.

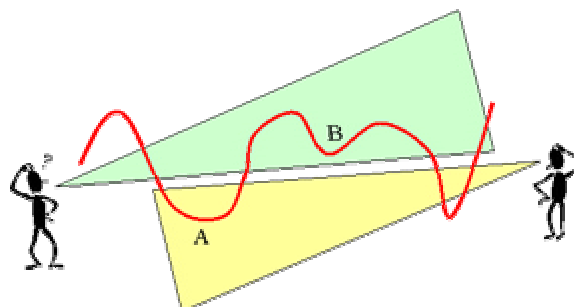


Figure 4. Different visions of one exactly problem (Rentes, 2004).

The Figure 4 above shows like two people can have different visions of a same problem. Considering the peaks lowest of the line as being production restrictions (bottleneck), it can be noticed that the people have different slight knowledge of the productive bottleneck. For the person of the left side of the figure the restrictive point of production is point B. For the other person the restriction it finds in the point A. The System of Visual Management aims to eliminate this and other problems that the systems of Production's Administration, supported in software, present. To follow, a description on the process of visual management, its advantages as well as its limitations will be presented.

2. System of Visual Management

As Ciosaki (1999) the visual management of the production are all the used mechanisms to become visible or apparent the relevant factors for one adjusted administration of the production in the operational level. The system of visual management is based on the use of pictures of programming and information that allows any employee or manager of the company understand everything what is happening during the productive process, of visual form, without the necessity to consult data bases. Systems of Visual Management have as the one of the advantages a standardization of the perceptions of the employees and direction of the problems in the company, see Figure 5. Differently of the previous scene (Figure 4), the use of a management visual system allows that the involved people in the decision process have a compatible vision of the problems. As the information they are shared and they are of easy access (it is necessary to only look at), all can start to have one same vision of the problems and the solutions tend to converge in one same direction.

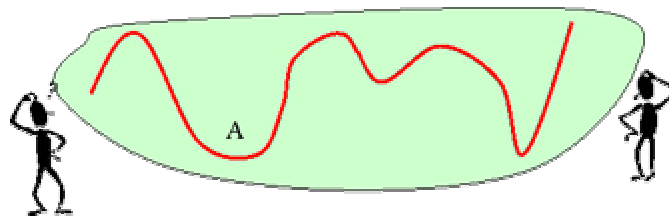


Figure 5. Visions compatible of one exactly problem (Rentes, 2004).

One of the traditional forms of use visual systems is pictures of performance measurement. The visual process of performance measurement exhibit all demonstrative work's station and the general productivity of the company, among others information that will be judged necessary and important to be displayed. Figure 6 shows an example of picture of performance measurement.




ASSEMBLY SECTOR				
CELL	AIM PROD.	N. ASSEMBLY	INDICATOR	CAUSES
CÂMBIO	80	10		Lack of material
EIXO	15	20		Machine out of
MOTOR	50	50		

Figure 6. Picture of Performance Measurement.

The picture presented in the figure above presents, in real time, the status of the cells of an assembly sector. The picture supplies information as:

1. Cells of Production: the picture details which is the production cells where they are being made and evaluated to the measures of performance.
2. Aim Production: it is the number of sets that must be mounted in each cell of work. This numbers are dimensioned, previously, in accordance with capacity productive of each cell and factors as takt time (rhythm that the customer consumes the products), TPT (demanded time to produce all the types of products) among others.
3. Number Assembly: it is the number of sets assembled in each cell of production. This number must be equal to the number Production Goal. To produce below of the number goal can be symptoms of lack of legal capacity, lack of parts to mount, etc. To produce above of the capacity indicates a overproduction wastefulness (to see Shingo (1996), seven wastefulness detected in the Toyota System of Production).

4. Pointer: The use of symbols becomes more easy the visualization of the information. For example, the “red symbol” indicates that the amount produced per that station of work is very different of the established goal.
5. Causes: It indicates the causes that had hindered the workers them cells to reach its daily pay-established goals of production.

Beyond pictures of measurement of performance some systems of control of the production they are based on the concept of visual management. An example is the system kanban widely used in the control of the production. This tool better is detailed following.

3. Kanban

“Kanban is the Japanese term that means card. This card acts like a trigger of the production (or movement) on the part of productive centers gifts in the process, coordinating the production of all items in accordance of the final demands” (Gianesi and Corrêa, 1996). Still according to Voss and Clutterbuck (1989), Kanban is a pulled system of material movement control, which understands a mechanism that goes off the movement material of an operation for the following one. Kanban promotes improvements in the productive system of the company permitting the continuous process of reduction of inventory. As Barbosa (1999) Lean Production has as main goal the continuous improvement of the productive processes. In this point, the gradual reduction of the inventories allows the exposition of the problems, such as the discontinuities of processes, the low levels of quality, the lack of equipment trustworthiness, the high times of line and preparation of the equipment and the bad use of the productive resources. The reduction of the inventory, therefore, is configured as the basic principle in the resolution of the problems, allowing the visibility and the consequent elimination of inefficiencies and wastefulness through intent and prioritized efforts of the direct and indirect man power. Moreover, according to Shingo (1996), the elimination of inventories approximately reduces the costs of man power in 40%.

Kanban is a visual system of control of the production. Through this the workstation can only produce what it is consumed in the subsequent operation. With kanban the concept of internal customer is used really, with each operation only producing what he is requested. Figure 7 shows an example of kanban picture. The colors green, yellow and red indicate production priorities. The cards kanban affixed on the red must be restituted with bigger urgency. Through the picture of kanban each workstation knows the amount that need to be produce and the sequence of operation. Moreover, the system allows to control visually what each workstation are producing and if exists some delay of production. Through this system, managers of production, they do not need to excuse to great part of its time consulting data base to know the course of the production. They start to dispense most part of their time in processes of improvement and not in process control as generally it occurs.



Figure 7. Picture of Kanban

As a system of visual management the picture of kanban allows that the information is accessible to all and easy understanding. These are some advantages of a visual control system that has stimulated the companies to adopt the Visual Management. Figure 8 shows a picture of kanban for production of males in a Casting. Because the time of production of males is very bigger than the time of molding parts a kanban was implanted.



Figure 8. Picture of kanban and example of part.

As it can be observed in Figure 8 does not have necessity of programming the workstation on the basis of the forecast of demand or through the unfolding of the demand of the customer. The laborers of this sector only need to reconstitute the parts in accordance with the cards that are in the picture. In this example, in particular, the company was at a time of low demand, therefore the reason of the picture of kanban to be full of cards. It was a strategy of the company not to reconstitute items consumed because the demand was very low. Beyond pictures of measurement of performance and pictures of kanban, pictures of qualification of the employees can also be used. These pictures show to which the period of training of qualification of each operator in the shop floor. One of the advantages in use these pictures, for example, is in the absence of an employee. In that case, is only necessary to look at pictures and selected the employee with the same function and to dislocate for the sector to substitute the missing person.

4. Conclusions

The competition became a constant between companies. The opening of the borders due to the globalization process launched the companies in a race for the constant improvement of its productive system. To manage of correct form has been one of the challenges to be surpassed. Among the tools of management improvement comes earning has detached the system of Visual Management. Through this the organizations have eliminated many of management problems of the company. Much even so software's is important in the collection and analysis of data these many times restricts the information to a select number of people in the plant. With this, for example, the implantation of improvements in the plant can be harmed, therefore nor all have the same vision of the process. Each one will have a vision in accordance with the number of available information. The process of Visual Management comes in the contra hand of the restriction of information. This tool aim to become explicit, and of easy understanding, the real situation of each station of work, each operator and all the plant. The diffusion of the information of simple and practical form for all in the company is the basic pillar of the Visual Management.

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