SOME ASPECTS REGARDING THE IMPLEMENTATION OF STATISTICAL PROCESS CONTROL PLAN

BY

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Abstract. It is well known that in order to obtain products with high quality permanent control is needed in production. This paper will develop a plan for implementing statistical control that can be used in production to keep control of both process and product quality, and effective communication between departments. Statistical techniques help to analyze a process or its output to determine any variation from a benchmark and to take appropriate action to restore statistical control, if required.

Key words: statistical process control, implementation plan, improve quality and communication.

1. Introduction

In automotive, customer and quality standards requirements are increasingly requesting their suppliers tracking and stabilization processes, as among others to meet the requirements related to the current technical condition to obtain high quality products. An easy and straightforward technique to ensure the quality of products and processes is the implementation of statistical process control. Thus we can understand the importance of interpretation of changes in behavior and reactions necessary process parameters by using a suite of statistical methods, particularly control charts. It is also useful for anticipating any issues and problems that might surface in the implementation of the process.

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In this paper we will create a plan for the implementation of statistical control that can help improve products and processes and communication between different departments of a company.

2. Background Implementation Plans

Over time it has been developed plans for implementing statistical control. As has been said they are used for anticipating any issues and problems in the production area. (Kumar & Motwani, 1996) present an example of a SPC Implementation plan very comprehensive, see Fig.1. They explain how to use the statistical process control in a production area and how to react if problems appear.
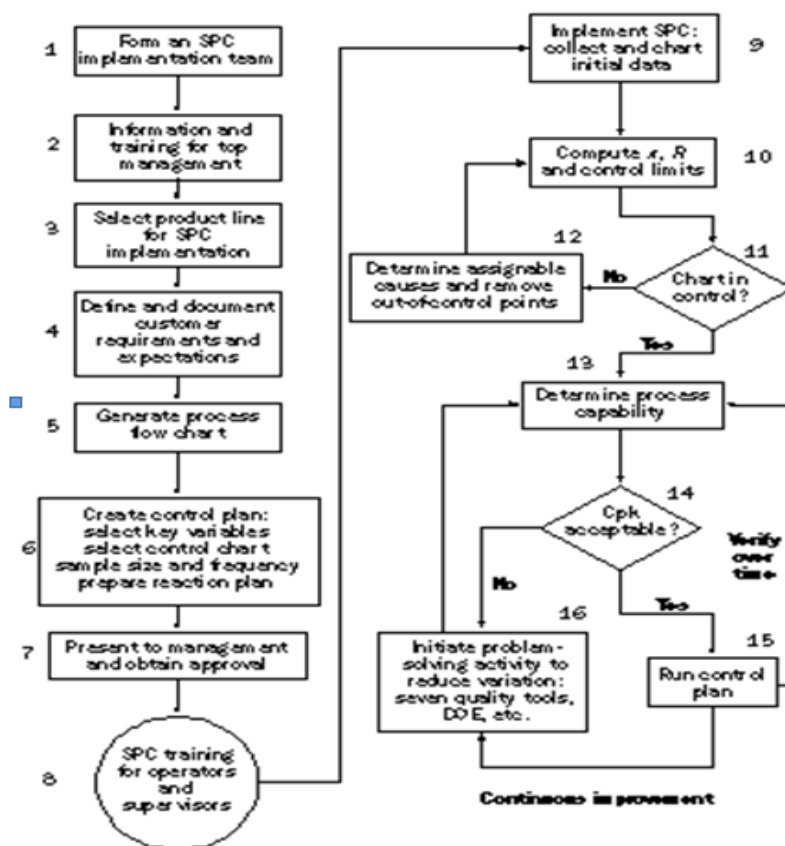

Fig. 1 − SPC Implementation Plan A.

Of course, other authors wished to make contributions to this plan for developing control schemes and its implementation, Figs. 2 and 3.
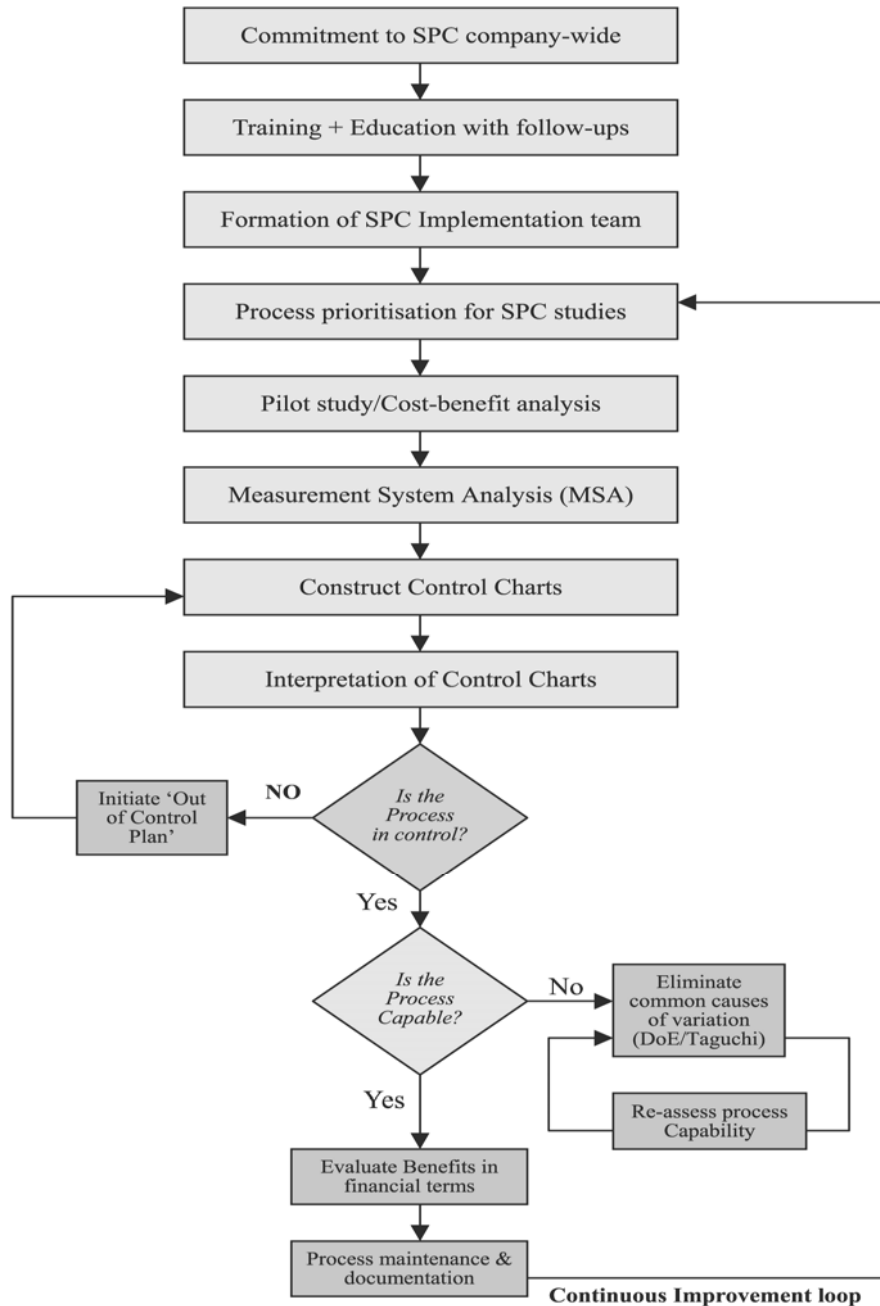

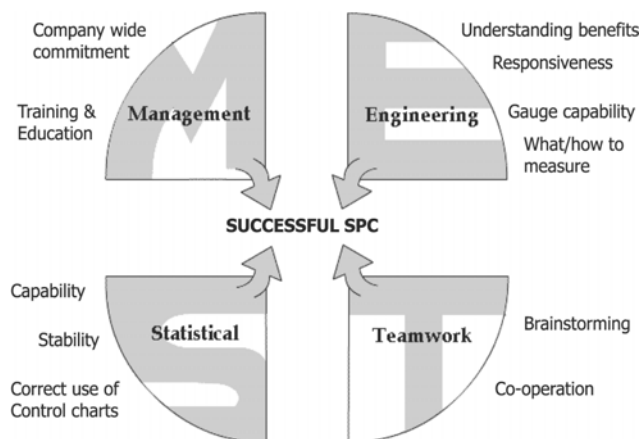Fig. 2 − SPC Implementation Plan B.
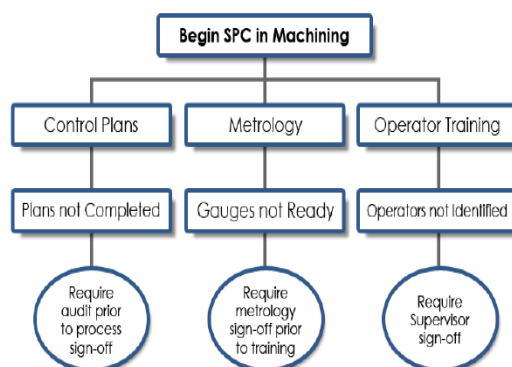
Fig. 3 − SPC Implementation Plan C.

Fig. 4 − Implementation Plan D.

These figures explain the implementation of statistical control, seen by each of the authors in his conception. It can be seen that one of them **(**Kumar, 1996**)** provides only an implementation plan without offering solutions to what could become a problem in production. To highlight a positive side of the implementation plan C, we can say that the authors **(**Jiju, 2003**)**, included teamwork, which plans A, B and D did not (Vassilakis &Besseris, 2010). Next we will show a statistical control implementation plan that includes two concepts: reaction to problems and teamwork.

3. SPC Implementation Plan Construction

To start the procedure for implementing statistical control on production line has to know the steps to start to get to have the control "under control". One chooses to begin with a pilot production line. We will do this

because it takes experience to understand what is happening on a small scale in order to then react and solve large-scale problems. After that there will be a check of the machine - here comes already carefully teamwork because that will handle the practical implementation will not know how the car works and will need help production engineers and quality (Fig. 4).
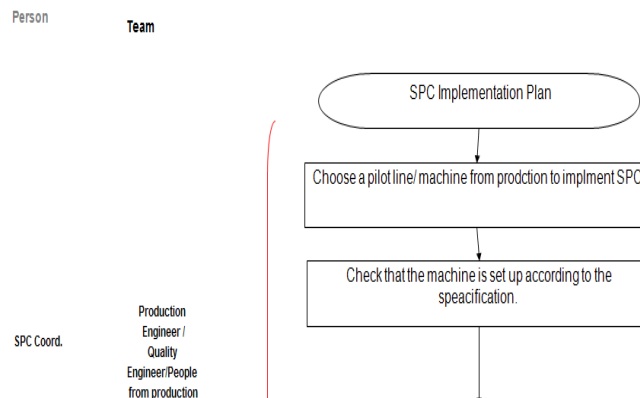

Fig. 5 − First steps to implementation plan

To move to the next phase of implementation requires calibration verification tools, training staff in using statistical control charts and collecting information/ measurements that will be listed on the diagram.

Staff/operators training are very important at this stage because it will be a basis in statistical control and help implement further corrective decision-making processes and improvement.
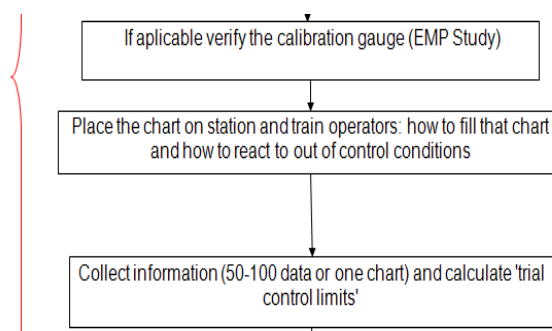

Fig. 6 − Next steps to implementation.

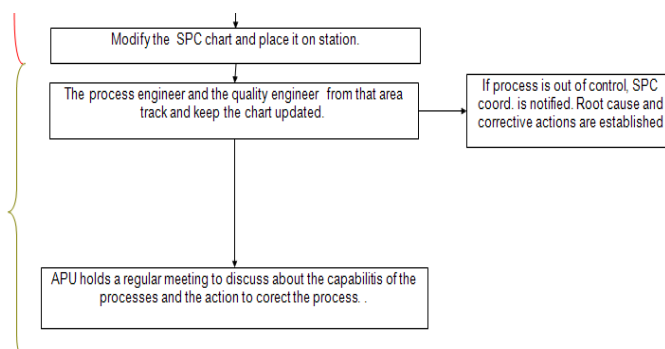The last steps to implement SPC are illustrated in Fig. 7:

Fig. 7 − The last steps of implementation.

4. Conclusions

As a conclusion we can say that in order to have control over the processes in a factory requires: first of all the choice of pilot lines for implementing statistical control, a step by step implementation of statistical process control on the lines, along with a team of people from related departments and management and identify and move looking forward root causes that led to deviations or anomalies in processes.

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ASPECTE PRIVIND IMPLEMENTAREA
CONTROLULUI STATISTIC AL PROCESELOR

(Rezumat)

Este bine cunoscut faptul că, pentru a obtine produse de înaltă calitate este necesar un control permanent în producție. Lucrarea de față dezvoltă un plan pentru punerea în aplicare a controlului statistic, care poate fi utilizat în producție pentru a menține controlul atât a procesului, cat si a calității produsului, precum și o comunicare eficientă între departamente.Tehnicile statistice ajută la analiza unui proces sau a iesirilor acestuia, pentru a determina orice variație și pentru a lua măsurile adecvate restabilirii controlului statistic, dacă este necesar.