Amazing Power of Daily Management and Its Difficulties

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Abstract

"Daily Management" is defined as "All activities to effectively achieve the objectives with regard to the job that every job unit of the organization is charged with. (JSQC-Std 00-001).Accompanied with "Policy Management", it is one of the most essential elements in TQM. Although "Policy Management" ispaidattention from senior managements because of its dynamic nature, "Daily Management" had not been focused because of its nature as "No hero job".

Now, the author and Mr. Pankaj Kumar of India published a book "Daily Management The TQM way" in 2011, and the English version of JSQC-Std 32-001(E):2014 "Guidelines for Daily Management" had developed, the author would like to share the essences of the methodology.

Actually, there are many successfully implemented practical examples of "Daily Management" as an entire organizationally systematic manner. The author would like to share some cases in order to demonstrate those amazing power.

On the other hand, when an organization starts and continues Daily Management in systematic manner, they should face so many practical difficulties.

The author would like to share those practical difficulties with some practical case studies and would like to discuss solutions for them.

Keywords: Elements of TQM, Policy Management, JSQC Standard, No hero job

1 Amazing power of Daily Management

1.1 Some cases in some processes

Fig. 1.1 shows great improvement that had happened in a production process withinone year. It shows that the average of the XXX Cost had reduced continually, and frequency of sporadic abnormalities had also reduced continually.

It is obvious that this improvement had not done only one countermeasure orone time big investment. Even you can say it happened "only one year" from outsider view point, from the insider view point they needed spend as long as one year continuous bases.

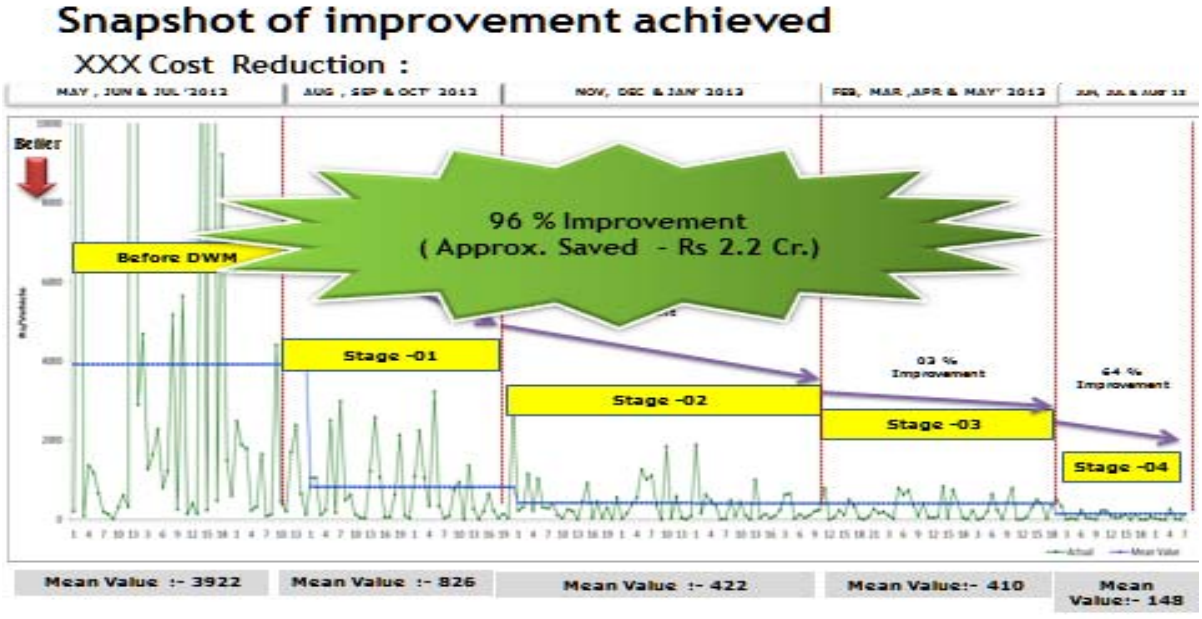


Fig. 1.1 A case to success to reduce their production cost in a production process

In this plant in other production process other continual improvement had happened within 3-4 month and maintained after that. In the mean time they had not invested so much and had not introduced major innovative actions.

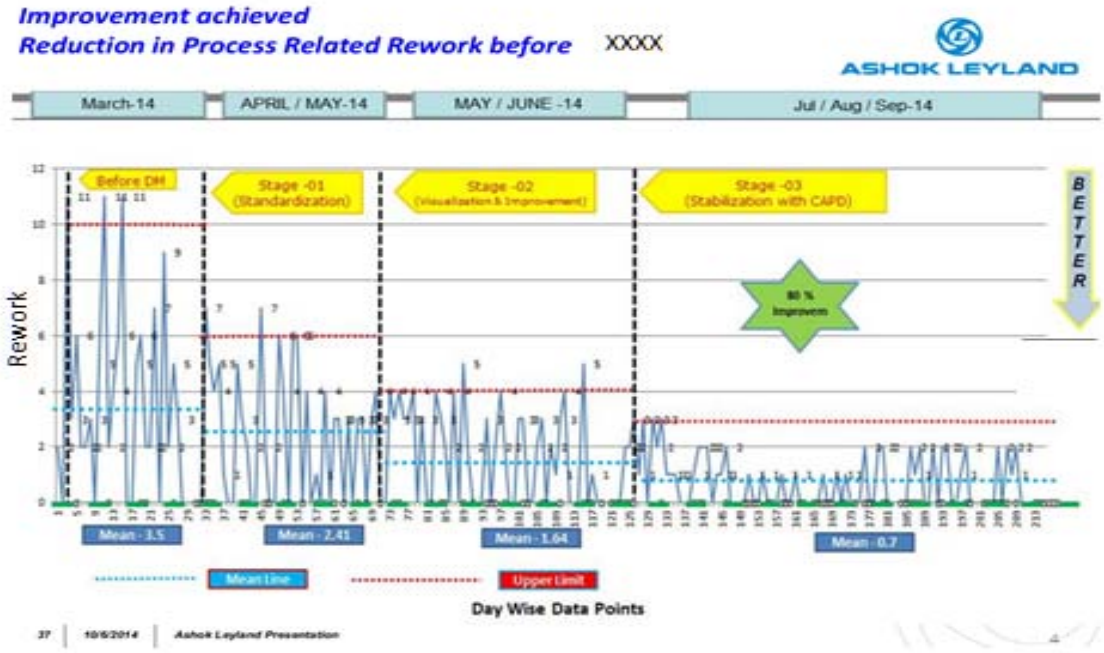


Fig. 1.2 A case to success to reduce rework in a production process

Fig. 1.3 shows continual improvement of productivity in other production process within 9 monthin this plant. Even some sporadic abnormalities are still happening in the last period, the frequency of that had reduced so much.

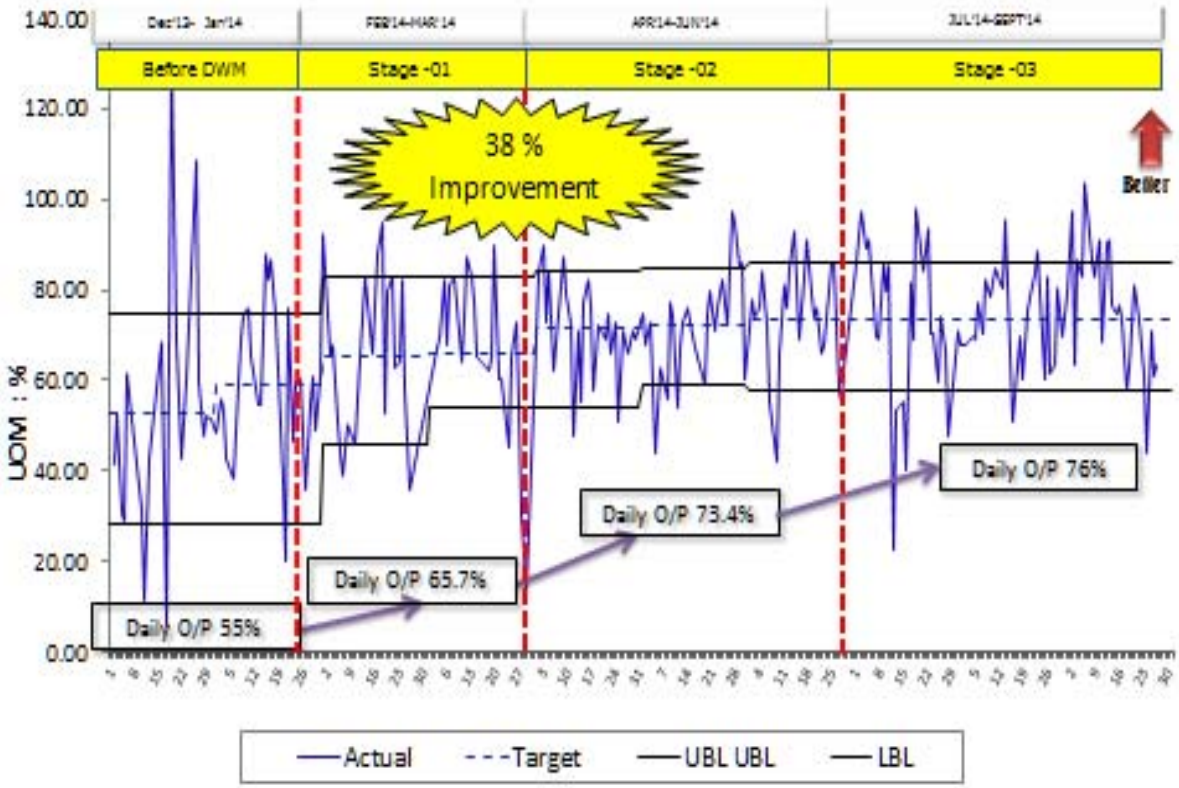


Fig. 1.3 A case to improve productivity in a production process

These are just only 3 cases in many of similar cases those had happened in a plant in a company, Ashok Leyland (India), in a few years after they enhanced "Daily Management" as a total company.

1.2 Effects to the total organization Level

If you are a senior management of an organization, you may be interested in how those had effected to your business, and want to know the directions for the future. Fig 1.4 shows the situation of all of the Key Performance Indicators (KPIs) in a department and theirtransitions. This idea of the frame work had come from one of the basic idea of Daily Management that is we should understand the situation of theKPIs not only capability but also Stability. If the capability is not enough, you need appropriate actions to the out puts of the process through inspection and censoring (rework, scrap, or etc.), if the stability is not enough you need take action to the process itself through analysis of the causes.From this simple summary senior management can understand the seriousness of the quality situation as a total organization, transitions of the improvement, and make strategic decisions which KPIs should be improved. In case of Fig. 1.4 that manager could recognize that 22-14 =8 KPIs had improved to "Capability: OK and Stability:OK"quadrant which is the ultimate goal of Daily Management. Also, the manager could recognize that total numbers of KPIs had increased. It means the visibility of the organization had also improved. Also, the manager could identify that still so many KPIs are in the "Capability: Not OK and Stability: Not OK" quadrant. Then, studying each quadrant with their members, the senior manager can set up the next strategic area to be improved.

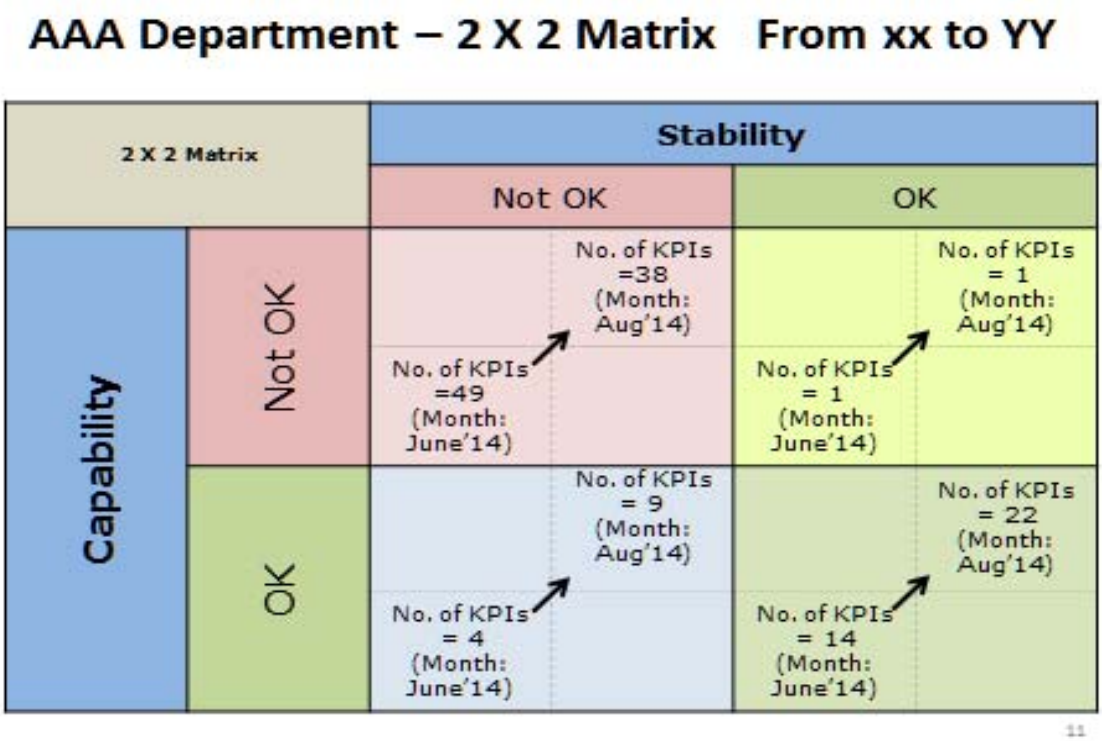
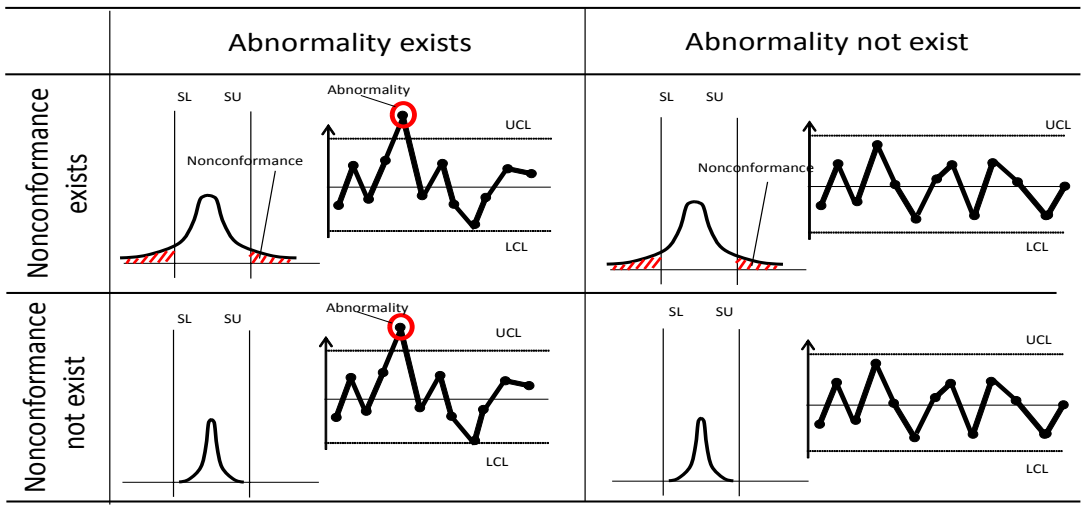


Fig. 1.4 Capability X Stability Matrix of KPIs of a department

Note: Differentiation of Capability vs. Stability
JSQC Standard "Guidelines for Daily Management" JSQC-Std. 32-001(E):2014clearlydescribe that Capability and Stability must be differentiated as follows:

Abnormality should be clearly distinguished from nonconformance (events where the result does not meet the determined specifications) (Fig. 6 and Table2). Where the result conforms to the specification but is different from the normal (such as yield higher than the normal), the organization should investigate if the process conditions are different than normal operating conditions because assignable causes may exist that must be addressed in order to achieve stable result. This will result in the improvement of the process and stable and better result.On the other hand, if nonconformance occurs in the stable process, it makes no sense to try to investigate conditions different from normal operating conditions because a nonconformance does not mean the existence of assignable causes. Continuation of this situation, however, is not desirable in terms of the quality assurance and economy. It is important to obtain and analyze data for the relationship between various conditions and results, and improve the current process conditions to achieve better results.



UCL: Upper Control Limit, LCL: Lower Control Limit, SL: Lower Specification, SU: Upper Specification

Fig. 6 Abnormality and nonconformance

Excerpted from "JSQC-Std 32-001(E):2014 Guidelines for Daily Management"

Fig. 1.5 Abnormality and nonconformance in JSQC Std. 32-001(E):2014

1.3 Mental Impacts

Some may misunderstand that if an organization improves Daily Management, people in the organization should become unhappy, because they should be squeezed by lesserflexibility, they must feel controlled strictly, and etc.

However we got following comments from the people there.

Comment from a trainee in a production process:
Work standard improved with respect to quality work. Rework fatigue reduced. Self-confidence related work enhanced. Morale level uplifted.

Comment from a trainee in a quality section:
FTP percentage improved due to less rejection. Reduced non-conformances related to product quality. Chances of defect generation reduced thereby less chances of defect passing to both internal and external customers.

Comment from a front line manager in a production process:
Focus on other activities improved due to less rejection of the products. Better Man-Power utilization. Improved Productivity due to less rejection.

Because of practical empowerment, they can rotate PDCA by themselves. Accordingly, front line workers themselves feel confident and proud of his/her job with understanding the identity of his/her value. Accordingly necessary actions are also taking by the workers themselves, the front line managers become fee from those jobs and spend more time for long-term, strategic and creative jobs.

Through those examples,I would say that
1) practical continual improvement cases have been happening in many of the processes in an organization,
2) those cases have been summarizedvisibly using many KPIs and senior managements can recognize their contribution to their business,
3) people in the all echelon become happier,
are observed in many of the processes as the effects of **"Amazing Power of Daily Management".**

In this chapter, I showed the case in a plant in Ashok Leyland. Actually, we reported similar case happened in Tata Steel in the book "Daily Management The TQM Way" in 2010. I can say these could happen in many of organizations because of **"Amazing Power of Daily Management"**

2 What is Daily Management

2.1 What is Daily Management

JSQC Defined "Daily Management" in their standard (JSQC Std.00-001) as follows:
All activities to effectively achieve the objectives with regard to the job that every job unit of the organization is charged with.

Note 1 Daily Management is not the job itself, but the activities to make the job effective and efficient.

Note 2 Especially in thisstandard, Daily Management means themaintenance-plus-enhancement activities, which set a current or extended level as a target and ensure thatthe job dose not deviate from the target, and when it deviates from the target, the job can bequickly restored and enhanced to achieve higher performance.

2.2 Fundamentals of Daily Management

Fundamental procedure of Daily Management is summarized in Figure 5 of*SQC-Std 32-001(E):2014*. In other words, just rotate SDCA cycle in each job. Here "S" stands for "Standardize".

There are no magic or secret. On the other hand there are also no shining stories. In order to enhance such activities, all the members must commit continuously, long term.

Used to be, an U.S. guy call this nature as **"No Hero Job!"**

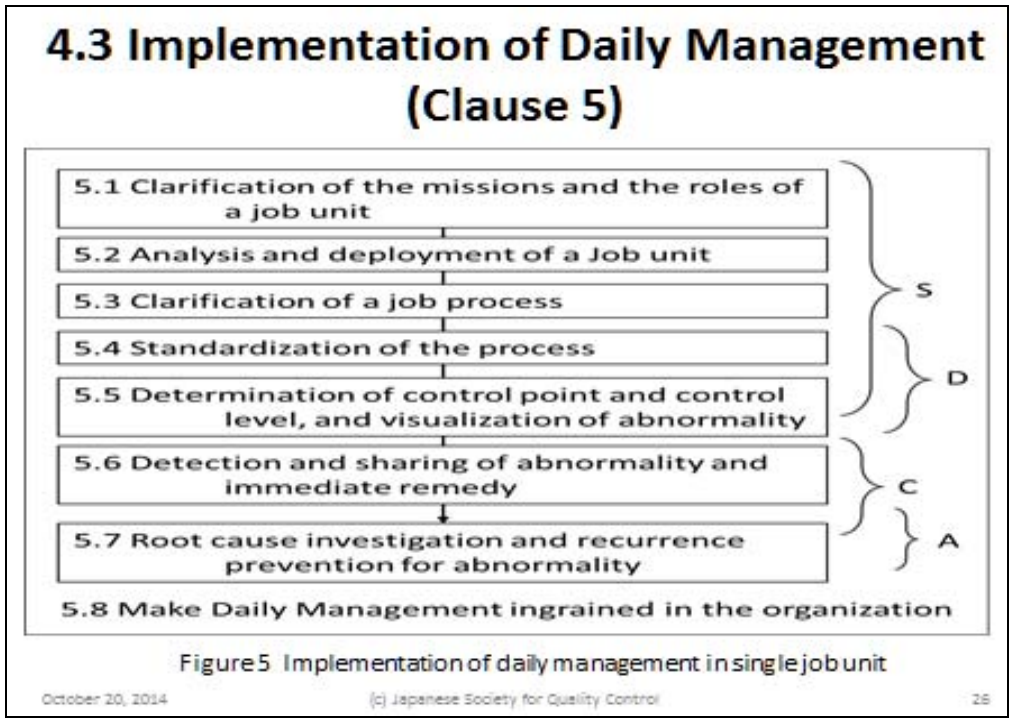


Fig. 2.1 Implementation of Daily Management in a single job unit by JSQC Std. 32-001(E):2014

3 Difficulties in Daily Management

3.1 Stages of Daily Management Promotion

Fig. 3.1 illustrates typical history of Daily Management promotion in an organization.

In the earlier stages, as if you get water from wet towel, p

rocesses become better and better relatively easier, so that many managers and many people involved with relatively easier efforts. However, after sometime, as if the towel had dried, process had stabilized, in other words stagnant. Then, without strong leadership and disciple of the people, **Stage 4'** situation in Figure 3.1 should start.

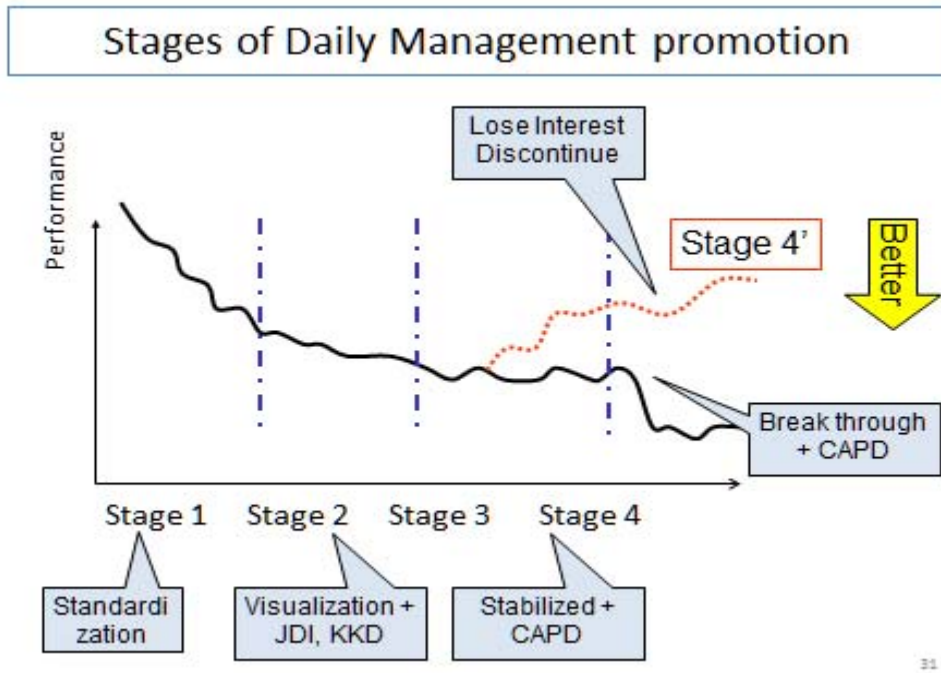


Fig. 3.1 Stages of Daily Management Promotion

3.2 Difficulties in Daily Management

In order to prevent from **Stage 4**', we need to identify the causes of them and need to take care in appropriate manner. I summarized typical difficulties as follows based on the discussions with TQM promoters in Tata Steel:

A: Mental Reasons

(1) Just bored
(2) Lose attention from their boss.
(3) People pay attention to "Hero Jobs" only.
(4) Changed the people: No successes. New comers cannot understand the importance.
(5) Standards are only prepared as documents. Nobody read Data, SOPs carefully, no education & training, nobody follow standards.

B: Technical Reason

(1) Scopes/objectives of the job are not suitable.
(2) Standards are not prepared because of technical reasons.
(3) Control Points are not appropriate.
(4) Control Methods are not suitable for the control point.
   a) Apply too simple graph to "Inherently non-flat", "non-normal distributed process", "Adjusted Process" and etc...
   b) Small numbers and large variety process.
   c) Non-manufacturing process: e.g. Maintenance, Planning, Services.
(5) Too many abnormalities to analyze the root causes.

Following sections in this chapter, I describe some of the items in "Technical Reason"more in the detail and propose some idea to overcome.

3.3 Apply too simple graph to "Inherently non-flat", "Non-normally distributed process", "Adjusted Process" and etc.

1) Back ground case 1: Inherently on stable process

Basic model of SDCA in a production process can illustrate as the first line of Fig. 3.2: inputsshould be stable, processes should be maintained stably, and then the outputsare managed as stable.

However, in reality, it often happen, the inputs come from non-stable process inherently (e.g. steel making processes), process itself should have many and huge impact from uncontrollableenvironments, outputs themselves must be variated based on the requirements of the next process.

In those processes, "Adjustment" is must activity. Then, without considering those adjustments, and just monitoring the out puts as their KPIs, wecannot manage the process.

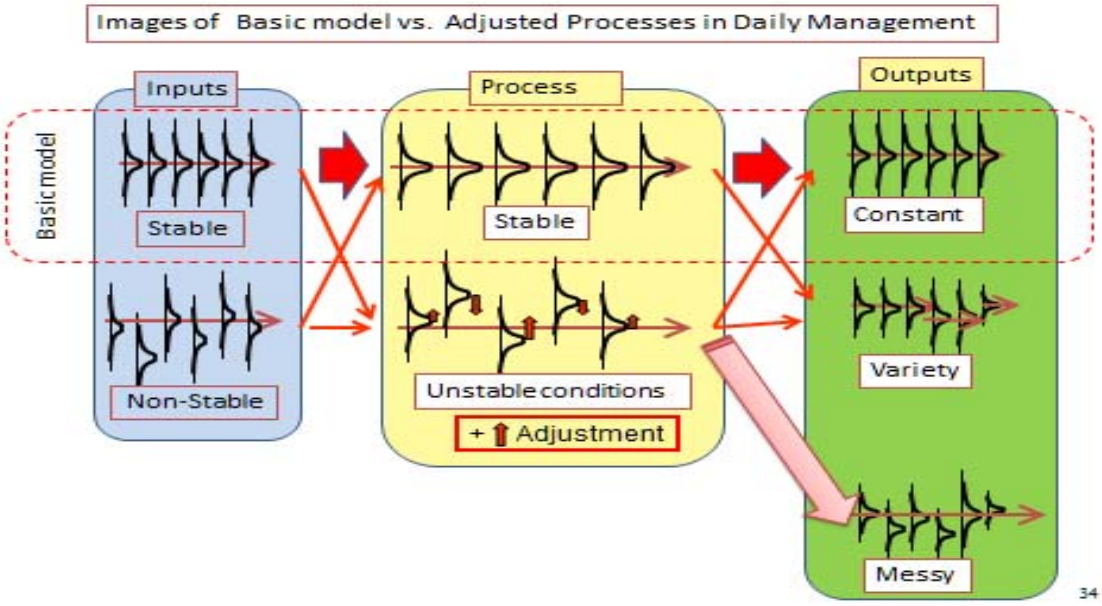


Fig. 3.2 An images of Basic model vs. adjusted process in Daily Management

2) Back ground case 2 : Adjusted process

In some of machining process or so, where they are using grinding tools, inherently the tools are deteriorating inherently. Accordingly, some of the outputs are also following to the deterioration. As it is well known already by the peoples in the process, the process needs to change or adjust the tools time to time. In this type of the process, outputs can inherently follow to the distribution as shown in Fig. 3.3. Then, without considering those tendencies and if you just plot the data, control charts should show "abnormal tendency" even they are well managed.

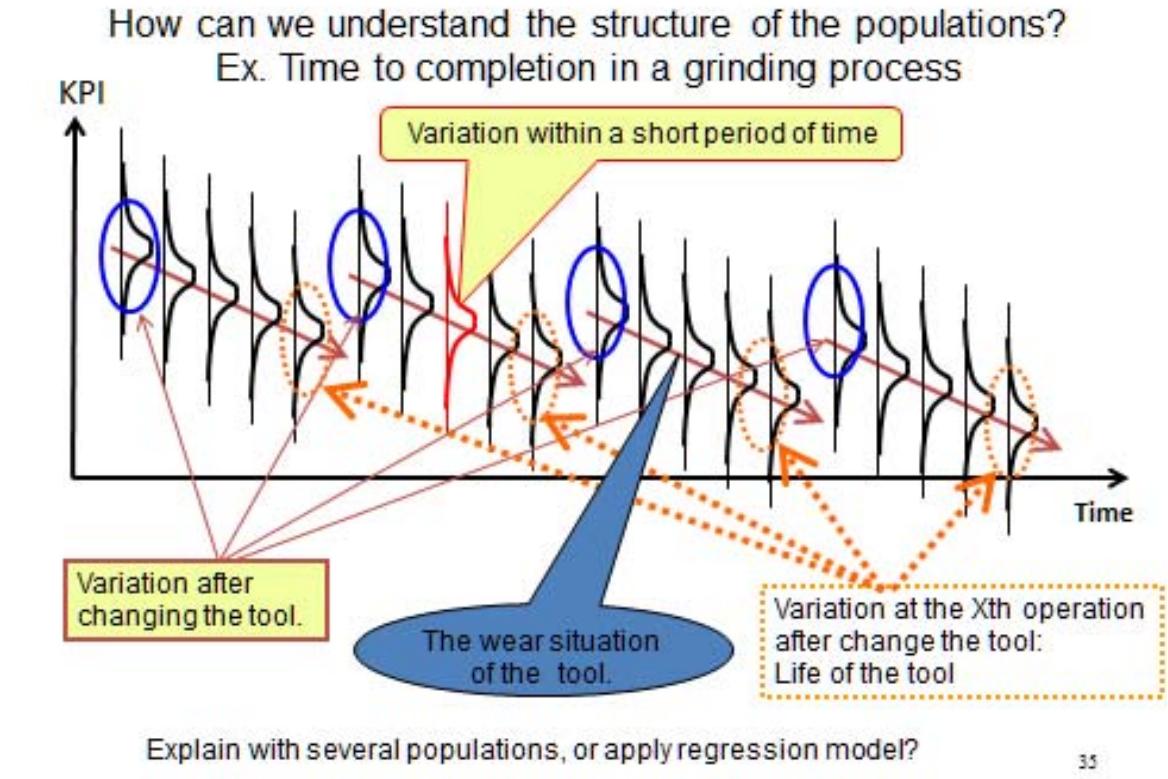


Fig. 3.3 Adjusted Processes

3) “Residuals” to be used as the KPI

There are many case studies had reported to use “Residuals” to be used as their KPI. In other words we should understand the “population” as the total system including appropriate adjustments. Of course in order to have useful residuals, we need to understand the mechanisms of the process from engineering viewpoints as well as statistical viewpoints.

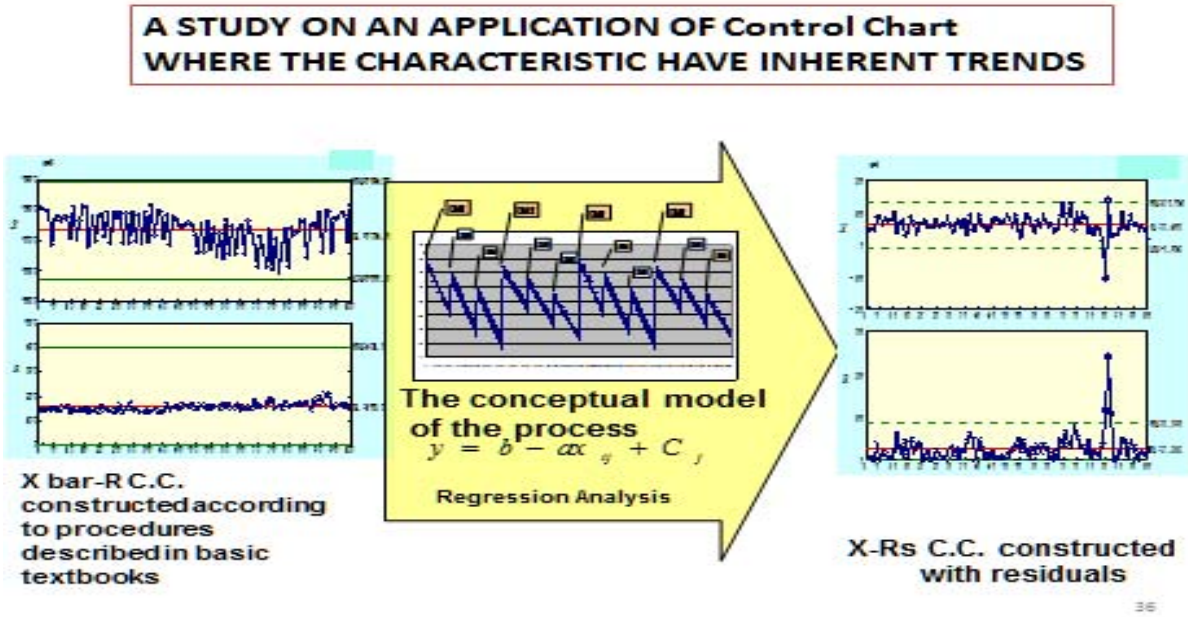


Fig. 3.4 Control Chart using residuals based on regression Analysis

3.4 Non-manufacturing process: e.g. Maintenance, Planning, Services.

1) Background of the difficulties

In order to understand the total picture of an organization, KPI mapusingCapability X Stability Matrix should cover all of the important KPIsof the organization. As the original idea come from control chart, it is relatively easier to be applied this idea in the front line in manufacturing processes. However, in other area such as Maintenance, Planning, Services, and Managements levels(even in manufacturing processes) many of the KPIs are not follow to the normal distributions inherently, more over some of them must be increased/decreased or such. If you try to apply 3 sigma lines as their control limits, they cannotwork as useful criteria, or even worse case,managers try to ignore such important KPIs from their KPIs map.

2) Proposal to introduce **U.X.L/L.X.L** instead of U.C.L/L.C.L.

Basic idea to differentiate“Capability vs. Stability” is very important and useful in Daily Management even in those areas, I like to propose to introduce U.X.L/L.X.L instead of U.C.L/L.C.L. Here, in X, you can use an abbreviation according to your culture. Some company use B as an abbreviation of “Barbaric”. It means, using the sense of control limits in statistical control chart, the manager in charge of the process decide the limits with his/her “Barbaric Spirit”.

3.5 Too many abnormalities to analyze the root causes

1) Background of the difficulties

Basically, in the SDCA cycle, when you identify an abnormality, you should analyses the root causes and take “Recurrence Prevention” as well as immediate remedy. Originally, “root cause” is a kind of magic word. If you try to repeat why 5 times in order to digging out root cause, your boss will ask you one more why. Without stop asking why again and again, job work load should increase infinitely. Also, in reality, if you face too many abnormalities, analysis for the abnormalities become superficial or

even worse case they becomes just documentation jobs. Even, you can pass some audit; you cannot improve your process.

2) Proposal to introduce “Put Aside system”

In order to work the total system effectively and efficiently, I would propose to “put aside system” for the abnormality handling. Depends on the seriousness and available resources, manager in charge of the process should decide to stop the analysis and put aside the issue. Those items can just keep records, and based on periodical Pareto Analysis they should start to study again. There cannot be clear criteria whether the manager can put aside or not. Basically it should be depends on the sense of the manager. Senior manager should guide the criteria time to time with considering the resourceallocations.

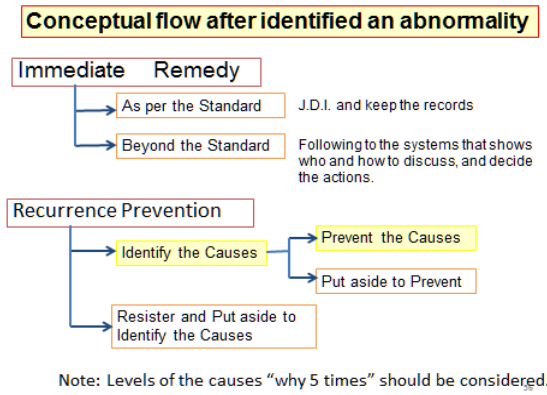


Fig. 3. 5 Conceptual flows after identified an abnormality

4. Summary

Daily Management guideline had standardized by JSQC. If you start to follow the standardized procedure, it can demonstrate amazing power in relatively short period of time without major investment. However, in order to sustain those stable situationsthere can be many difficulties. Those difficulties can be typically categorized. If you can identify the types of the difficulties, there can be some solutions.

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