



KEEPING TABS

Question: How can Six Sigma improve transparency in supply chain operations?

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The origins of Six Sigma

Six Sigma was first developed as a business management strategy by Motorola in Japan in the 1980s and has since been applied to other processes such as warehousing and distribution. It was popularised in the US by General Electric and in the 1990s two thirds of all Fortune 500 companies were using it. It can be applied to all levels of any business and to any processes that can be measured and defined. It is a method of identifying defects that affect the company's performance and finding a way to correct them. Defects can be defined as anything that lead to customer dissatisfaction.

What is Six Sigma?

It is a quality control process that looks at steps in the manufacturing, warehousing or distribution stages that can be defined, measured, analysed, improved and controlled. There is a focus on achieving measurable and quantifiable financial returns from any Six Sigma project. Decisions are made on quantifiable data rather than assumptions and guesswork. To implement it across the supply chain requires strong leadership from managers in the company and sometimes the business is restructured around Six Sigma. Before, quality control was the responsibility of statisticians but now you have managers who can implement Six Sigma at all levels.

Doing the math

Six Sigma is focused around statistically verifiable information. Before you try and improve something, you must look at the Sigma value of it, or what kind of error rate you are allowed. First you measure and quantify the process. Then you look at whether the mean of that process meets the nearest specification value. If there are six standard deviations from the nearest specification value, then there will practically be no items that meet the specification. If this is the case then you have identified a problem. Your next step is to analyse what could be causing the problem. Then you try and improve the process by using creative tools to find possible solutions. Afterwards you control. That is, you measure what it is like now and whether it has improved from before. If it has then you move on while continuing to monitor the situation. If not then you try to find another solution.

On the ground

Let's take its application in a warehouse as an example. For instance you have one million customer orders and from this one million you have around 25,000 failure rates. This means that your staff pick the wrong item from the warehouse. First you work out what is the Six Sigma value. The Six Sigma value translates as meaning that you are able to make 3.4 failures if you have one million orders. This means that the number of defects you are allowed is hardly anything at all. In terms of your situation now, you currently have 25,000 errors, which means that

you miss the specification completely. After you have identified this as your problem, you analyse why you have such a large deviation. It could be for instance because you need to break bulk – if you need to pick out 600 pieces from a carton containing 1000 pieces. You can ask whether there is a correlation between the high failure rate and picking from this carton. You then alter your processes and see if you still have such a high number of defects afterwards.

“ To implement Six Sigma across the supply chain requires strong leadership from managers and sometimes the business needs to be restructured ”

A systematic approach

There are defects in any businesses and in complex supply chains it is important to have transparency and accountability so that they can be removed. The problem most companies have is that they don't have a systematic approach to solving problems. It is important to look closely at every step of your supply chain and use a systematic approach to find out if there are any defects. Once you know what your defects are you can change them and save the company money. In times of high fuel prices it is more important than ever for companies to remove other losses in the supply chain so as to remain competitive. Aside from Six Sigma there are a variety of other tools you can use to analyse your business. The most important thing is that you have a systematic approach. If you don't have that strict, quantifiable approach in place then more often than not, you depend on gut feelings to find out where the problem lies. This is a hit-and-miss approach and will not bring you reliable results. Six Sigma is more orientated around verifiable data than other approaches. One of the most important things about Six Sigma is that it forces you to look for your own failures and define them. The moment you start identifying what your failures are, the solutions often appear too.