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Pcdata Logistic Automation



What is Six Sigma ?

Six Sigma is systematic **methodology** that utilizes information (management by facts) and statistical analysis to measure and improve a company's operational performance, practices and systems by identifying and preventing '**DEFECTS**' in business processes.

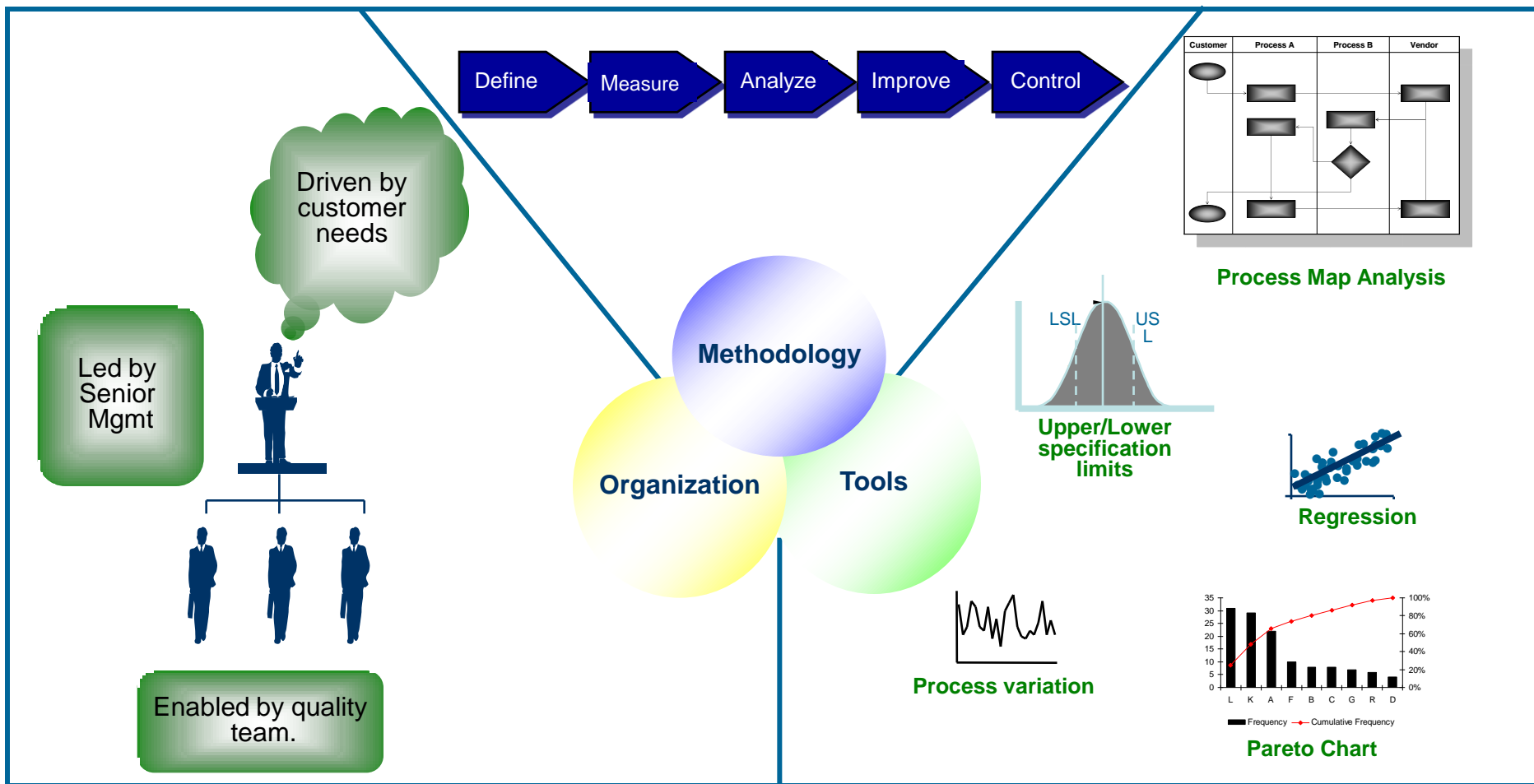
It is a **way of thinking** about processes where the focus is on **proactive control** of process inputs rather than reactive look at process outputs

Six Sigma is not:

- A standard
- A certification
- Another metric like percentage



Six Sigma – Key Dimensions



Six Sigma scale of Defects

Sigma	Defects (per million)	(%)
3	66,807	93.32
4	621	99.379
5	233	99.9767
6	3.4	99.999966

Defects values in the above tables suggests that as sigma level goes up defect rate reduces, which means product quality improves.

Bakery Fact

- The best performing bakeries in Europe score 97 %. (about 1% of the total market)
- The 2nd best performing bakeries score 94 %. (about 10% of the total market)
- The majority scores below 93.32 %. (about 89% of the total market)

What about the MEA

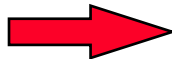
Source: market research 2008/Pcdata 6Sigma

Six Sigma -- Practical Meaning

99% Good (3.8 Sigma)

99.99966% Good (6 Sigma)

20,000 lost articles of mail per hour



7 articles lost per hour

Unsafe drinking water for almost
15 minutes each day



One unsafe minute every seven
months

5,000 incorrect surgical operations
per week



1.7 incorrect operations per week

Two short or long landings at most
major airports each day



One short or long landing every
five years

200,000 wrong drug prescriptions
each year



68 wrong prescriptions per year

No electricity for almost 7 hours
each month



One hour without electricity
every 34 years

What is Cost of Poor Quality?

- In addition to the direct costs associated with finding and fixing defects, “Cost of Poor Quality” also includes:
 - The hidden cost of failing to meet customer expectations the first time
 - The hidden opportunity for increased efficiency
 - The hidden potential for higher profits
 - The hidden loss in market share
 - The hidden increase in production cycle time
 - The hidden labor associated with ordering replacement material
 - The hidden costs associated with disposing of defects
- For most companies today, the cost of poor quality is up to 25 % of sales.
- In almost every company where the COPQ is unknown, the COPQ exceeds the profit margin.

The Approach

I don't make profit or my profit is too low:

My costs are high – Too many people on solving problems- Our production doesn't flow- My equipment supplier overpromised and he doesn't deliver-My customers are badly organized-Inventory is too high-Waste and unaccounted is too high-Cycle times are too long, Headcount increases, the number of Errors increases-My Throughput goes down-Yield goes down-Product quality is unstable-Rework efficiency is bad, Market response is too low -I don't have an optimal Asset utilization-Resources utilization- Accuracy

Practical
Problem

Statistical
Problem

Statistical
Solution

Practical
Solution

Bakery
Fact

Most bakeries in Europe have no complete dashboard of performance data on time.

The data they have is corrupt, or not on time available

More than 90% of the European Bakeries are lacking the right data to manage their business pro actively

They are not able to define the Practical Problem well enough

Source: market research 2008/Pcdata 6Sigma

Methodology



Identify and state the practical problem

Validate the practical problem by collecting data

Convert the practical problem to a statistical one, define statistical goal and identify potential statistical solution

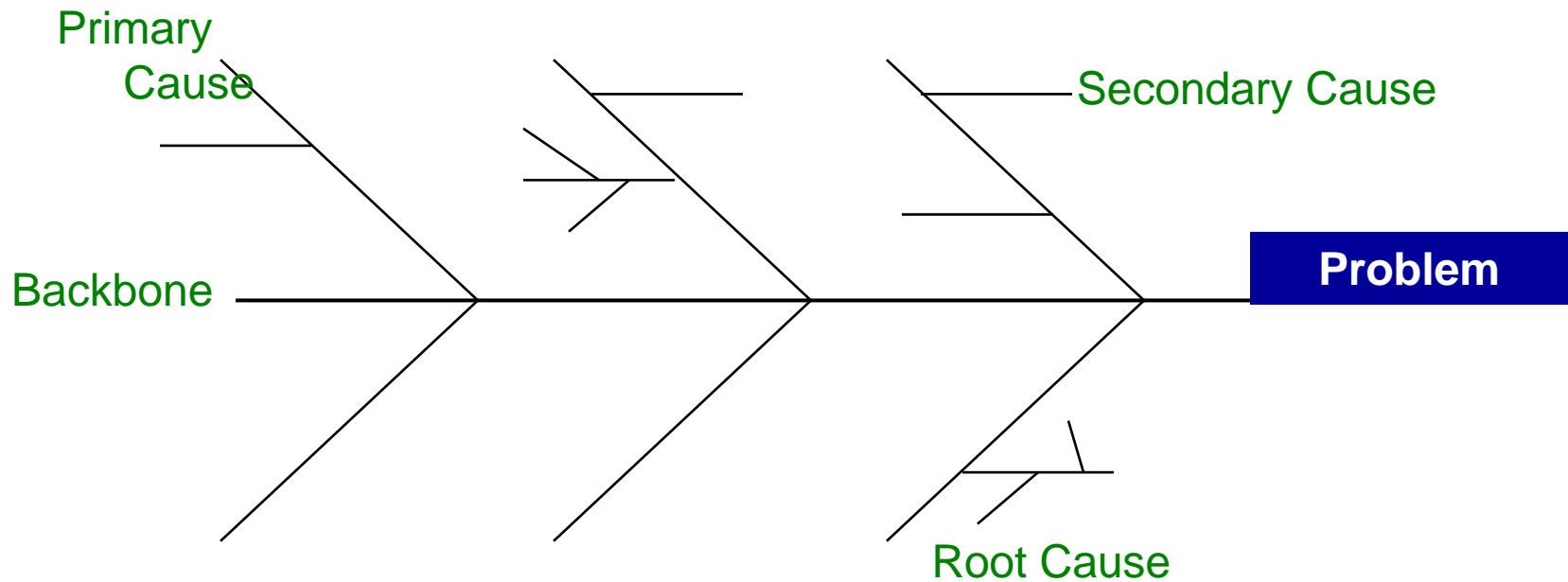
Confirm and test the statistical solution

Convert the statistical solution to a practical solution

Analyze – Identify Drivers of Variation

Root Cause Analysis (fish bone)

- A brainstorming tool that helps define and display major causes, sub causes, and root causes that influence a process
- Visualize the potential relationship between causes which may be creating problems or defects



Analyze – Identify Drivers of Variation

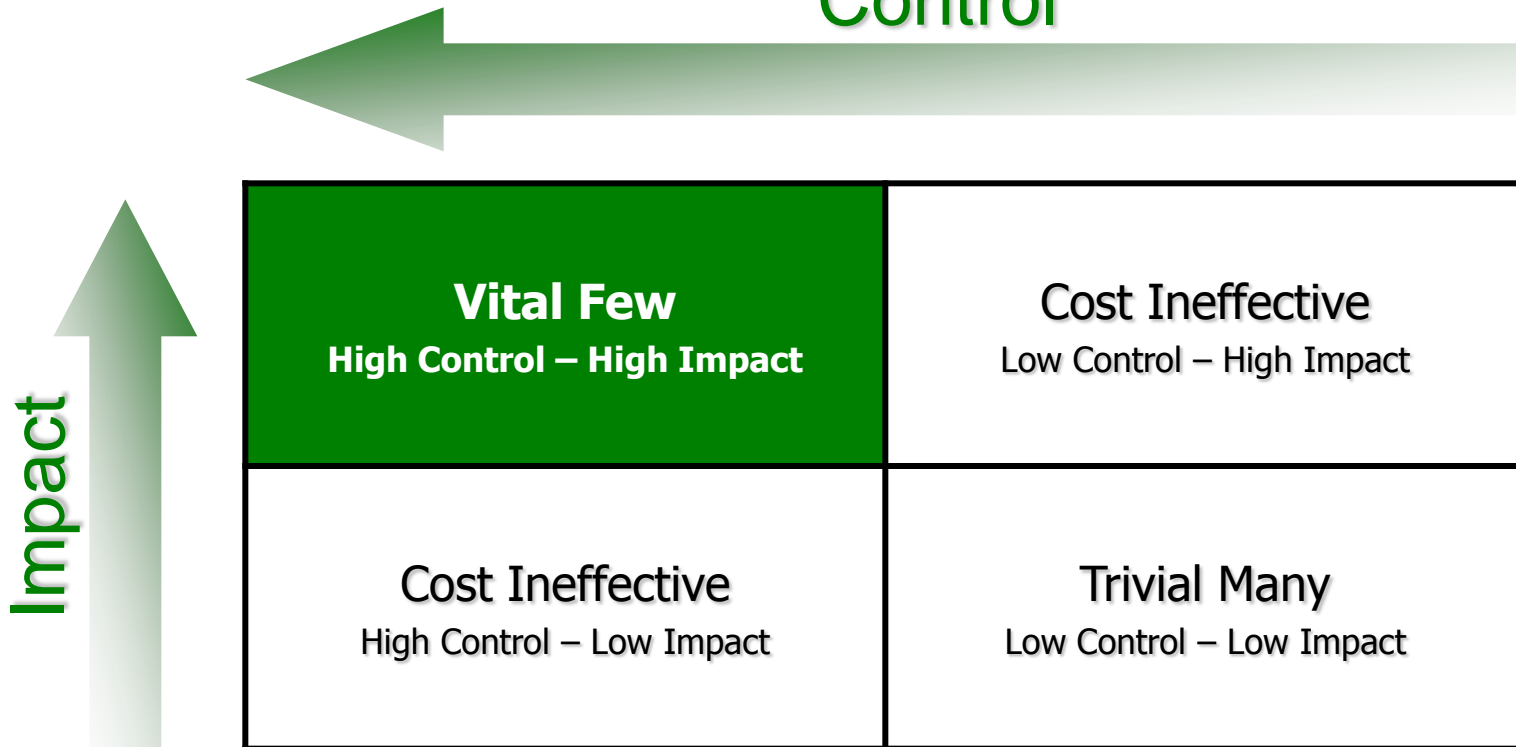
A visual tool that helps in separating the vital few from the trivial many

Bakery Fact

95% of the bakery managers were convinced that they know and are in control of the “low hanging fruits”.

Source: market research 2008/Pcdata 6Sigma

Control



Why do companies Implement Six Sigma?

- Profit
- Quality Improvement
- Improved Process Flow
- Employee Skills
- Improve Market Shares
- Earnings and Profitability
- Customer Satisfaction
- We have customers today who “think” Six Sigma

Do the right things and do these right

“If this or any initiative is to be successful, it has to start with the best”
– Jack Welch

- Leadership Involvement
- Clearly Defined Strategy
- Accountability
- Resource Allocation
- Organizational adoption