

## Six Sigma Processes

There are three key processes in Six Sigma: Focus, Improve, & Sustain (a.k.a. DMAIC)

### Laser Focus (Define and Measure)

Purpose: To focus the effort in ways that achieve breakthrough improvements in speed, quality, and cost. Develop a "Balanced Scorecard" and a "Master Improvement Story" that links and aligns multiple teams and improvement efforts to achieve quantum leaps in performance improvement.

### Improve Speed & Quality (Analyze & Improve)

Purpose: To improve customer satisfaction by identifying and eliminating the root causes of problems involving time, defects, or cost. This process uses data to analyze problems and eliminate their root causes. With laser-focus you can fix the 4% of your business that generates over 50% of the waste and rework.

### Sustain the Improvement (Control)

Purpose: To define and stabilize any process. Also known as SPC-statistical process control, this process uses data to evaluate the ability of any business process to predictably and consistently meet the customer's requirements. It serves as a basis to systematically improve any process and maintain the gains from your improvements.

### Design for Six Sigma (DFSS)

Purpose: To design products and services so that they can be delivered, from the start, with Six Sigma quality.

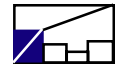
## Key Tools



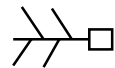
**Tree Diagram:** Systematically link ideas, targets, objectives, goals, or activities in greater and greater detail. It shows key goals, sub goals, measures, and tasks required to accomplish an objective.



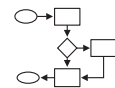
**Line Graph:** Show data trends over time. The Y-axis (left) shows the defects, time, cost and the X-axis (bottom) shows time (minute, hour, day, week, etc.).



**Pareto Chart:** Focus the improvement effort by identifying the 20% (vital few) of the contributors that create 80% of the time delay, defects, or costs in any process.



**Cause-Effect:** Systematically analyze the root causes of problems. It begins with major causes and works backward to root causes.



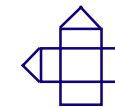
**Flowchart:** Show the flow of work through a process including all activities, decisions, and measurement points.



**Control Chart:** Help analyze, sustain, and monitor the current levels of process stability and to identify key issues for problem solving or root cause analysis.



**Histogram:** Determine the capability (i.e., the level of performance the customers can consistently expect) of the process and the distribution of measurable data.

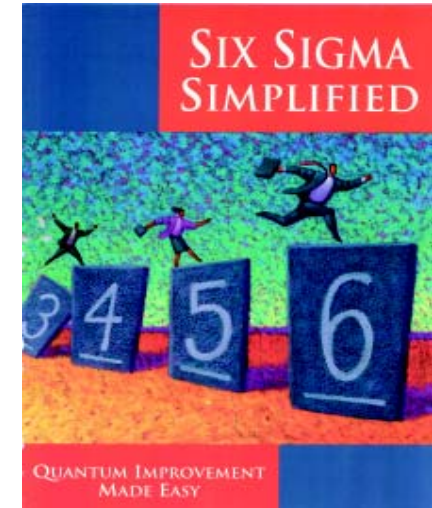


**QFD House of Quality:** Systematically explores and links customer requirements to design, parts, and production characteristics.

**Design of Experiments:** Determine optimal design with minimum trials.

# Six Sigma Simplified

## How to Fire Up Your Profits!



## Quick Reference Card

\$3.00

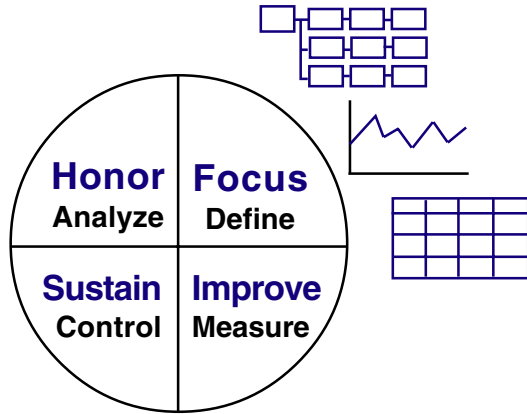
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## Laser Focus



**Purpose:** Focus the improvement effort to avoid wasting valuable time and money. Focus on mission- and profit-critical processes and issues first!

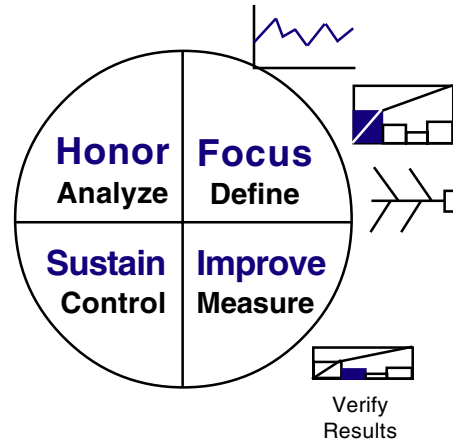
### Key Tools

- Tree diagram (Balanced Scorecard)
- Line graph
- Voice of the Customer Matrix

### Process

FISH	Step	Activity
<b>Focus</b>	1	Use the Voice of the Customer to develop a Master Improvement Story.
	2	Identify and track the indicators.
	3	Set targets for improvement.

## Improve Speed, Quality, Cost



**Purpose:** Make breakthrough improvements in speed and quality that cut costs and boost profits. 4% of any business process will produce over 50% of defects and delay.

### Key Tools

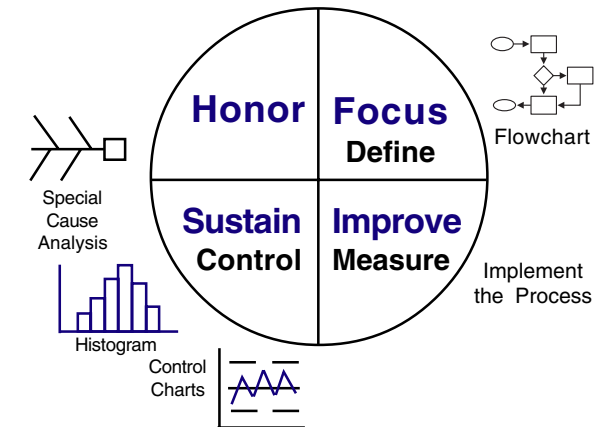
- Line graph (high-level focus)
- Pareto Chart (laser focus)
- Ishikawa (i.e., Fishbone) Diagram

### Process

FISH	Step	Activity
<b>Focus</b>	1	Define the problem: Reduce delay, defects, or cost
<b>Measure</b>	2	Analyze the problem <ul style="list-style-type: none"> <li>• Root Cause for Defects</li> <li>• Value-Analysis for Delay</li> </ul>
<b>Improve</b>	3	Implement the countermeasures
	4	Verify results meet target

To automate these charts, get the QI Macros for Excel. Download a FREE 30 day trial at [www.qimacros.com/freestuff.html](http://www.qimacros.com/freestuff.html)

## Sustain the Improvement



**Purpose:** Sustain the Improvement (Control)

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### Key Tools

- Flow Chart
- Control Chart (stability)
- Histogram (capability)

### Process

FISH	Step	Activity
<b>Focus</b>	1	Refine the process
	2	Identify the critical to quality (CTQ) and "process" indicators
<b>Improve</b>	3	Implement the indicators
<b>Sustain</b>	4	Check the process for stability (control charts) and capability (histogram, Cp, Cpk)
<b>Honor</b>	5	Review, recognize, and refocus Continue Improvement!

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