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What Is Six Sigma?

Introduction to 6σ

By : Melanie Brochu

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Who I am

- My name is; Melanie Brochu
- Education; Wood transformation engineer (since 2001)
- Certification; Certified SixSigma Black Belt in 2002

- In 2001 I started to work in the industry
  - ➢ fields of expertise
    - Primary and secondary transformation
    - Forest operation
    - Different species (Softwood, Hardwood, Eastern white cedar)

- In 2012 I started working within FPInnovations organization

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CKCA Presentation

- Mélanie Brochu is based out of Saint John and covers the Atlantic Provinces for FPInnovations. Her main role is to support wood products companies in improving their product quality and process efficiency, as well as transferring the R&D knowledge of FPInnovations to the sector.
- She will be sharing her experience on Six Sigma - what it is, how to implement it, and what are the benefits of doing it.
- Six Sigma is a rigorous and a systematic methodology that utilizes factual information and statistical analysis to measure and improve a company's operational performance, practices and systems. When the principles are implemented, businesses have experienced benefits in reduced manufacturing costs, higher quality and less rework.

What is Six Sigma

- "Six Sigma is a **quality program** that, when all is said and done, **improves your customer's experience, lowers your costs**, and builds better leaders.

Purpose of Six Sigma

- **to increase profits** while making customer happier

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How do we increase profit ?

By making customer happy

How do we make customer happy ?

By reducing variation
By providing consistent products or services
By reducing defect and rework

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Origin of Six Sigma

- It was introduced by Bill Smith while working at Motorola in 1985.

1985 Bill Smith coins the term "Six sigma"

1987 Motorola trademarks the term "Six Sigma"

- the method becomes better known in the 1990s when General Electric decided to apply it.

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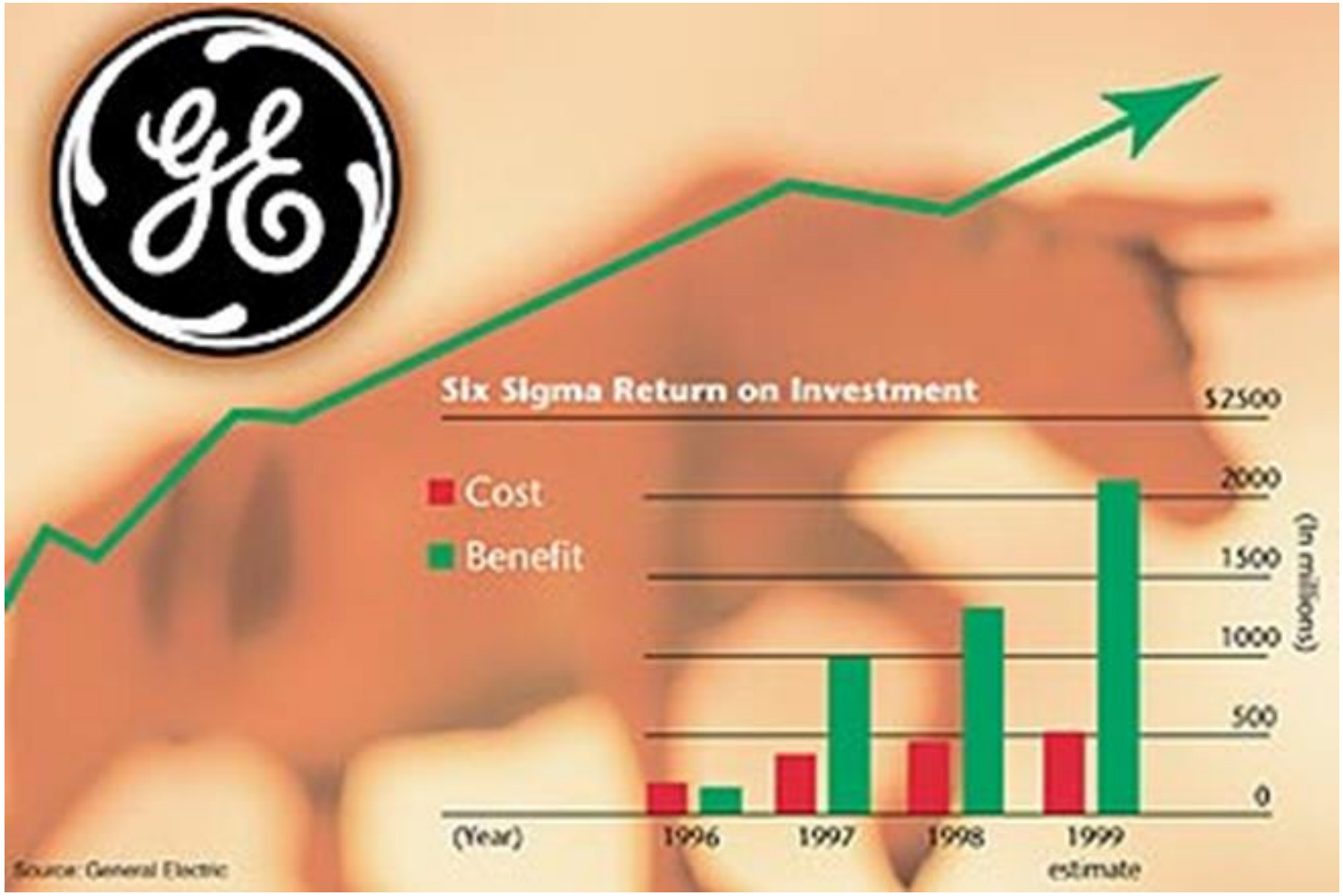
Following several years of steady growth, General Electric announced that its six sigma quality initiative had led the company to the highest quarterly profits in its history.



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Where does 6σ appellation come from ?

Technically; σ is a letter in the Greek alphabet

Statistically; σ means Standard Deviation

6σ allows only 3,4 defects per million opportunity

Eliminating defect from every product, process and transaction

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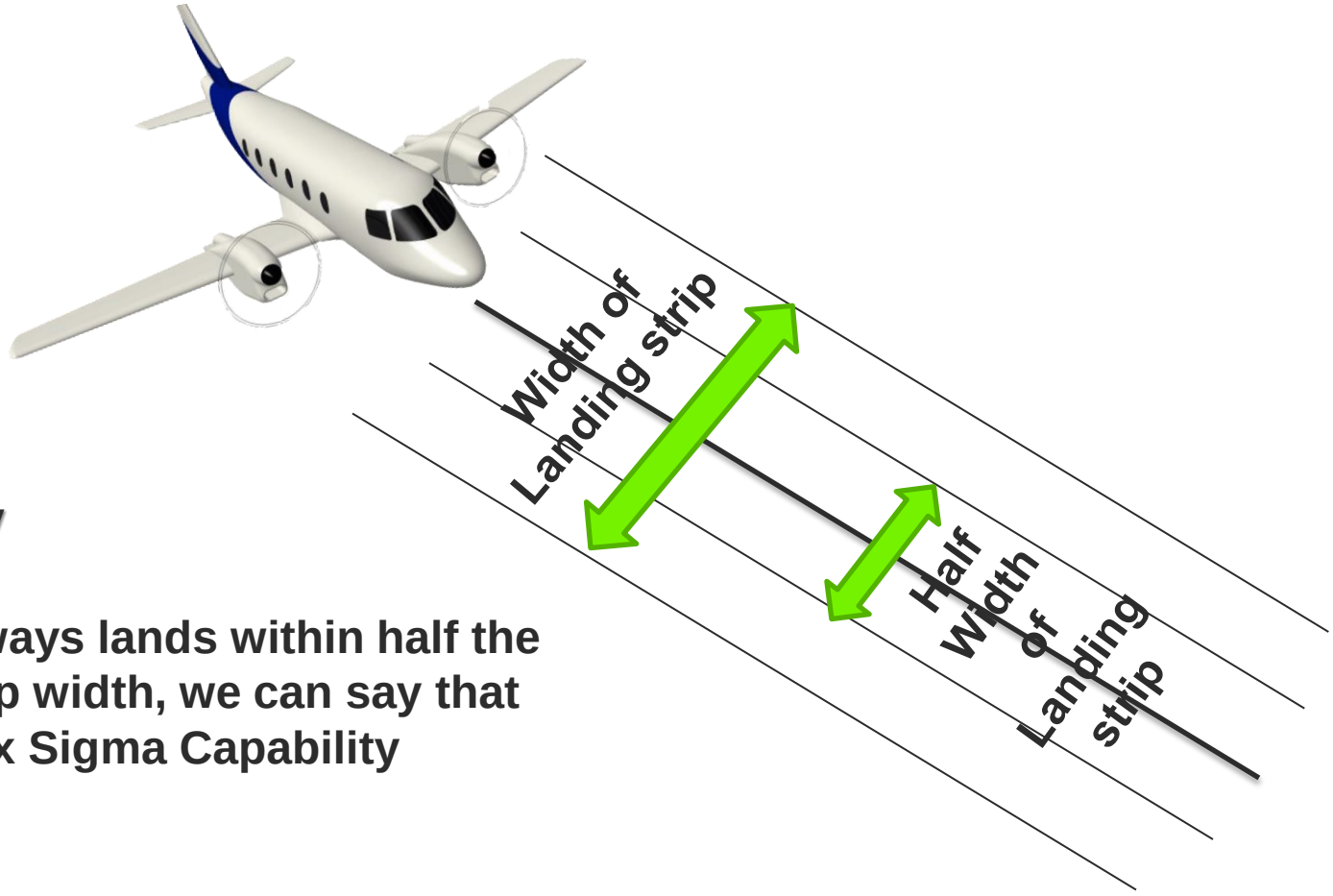
Pilot's Six Sigma performance



We can say

If a pilot always lands within half the landing strip width, we can say that pilot has Six Sigma Capability

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Overview of Six Sigma

It is STATISTICS

Six Sigma processes will produce less than 3,4 defects per million opportunities.

It is a PROCESS

DMAIC approach is used to achieve the higher level of performance
Define, Measure, Analyse, Improve, Control

It is a PHILOSOPHY

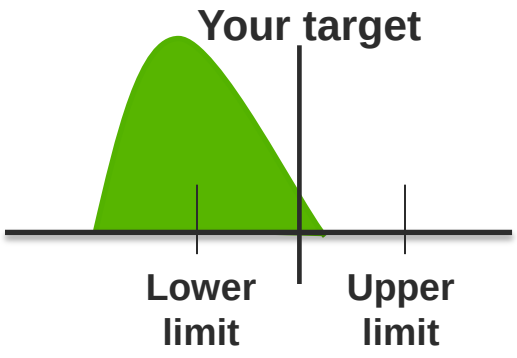
Anything less than ideal is an opportunity for improvement
Defects cost money
Understanding processes and improving them is the most efficient way to achieve lasting results.

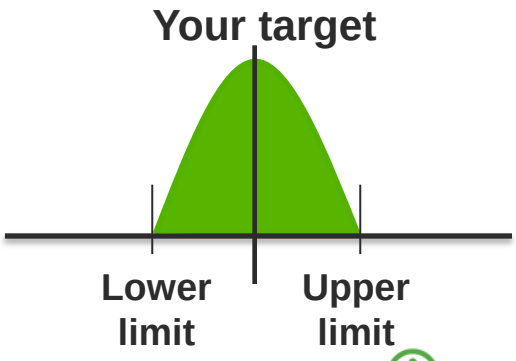
It is STATISTICS

To act effectively on a process …

… by eliminating defects …

… and reducing the scatter





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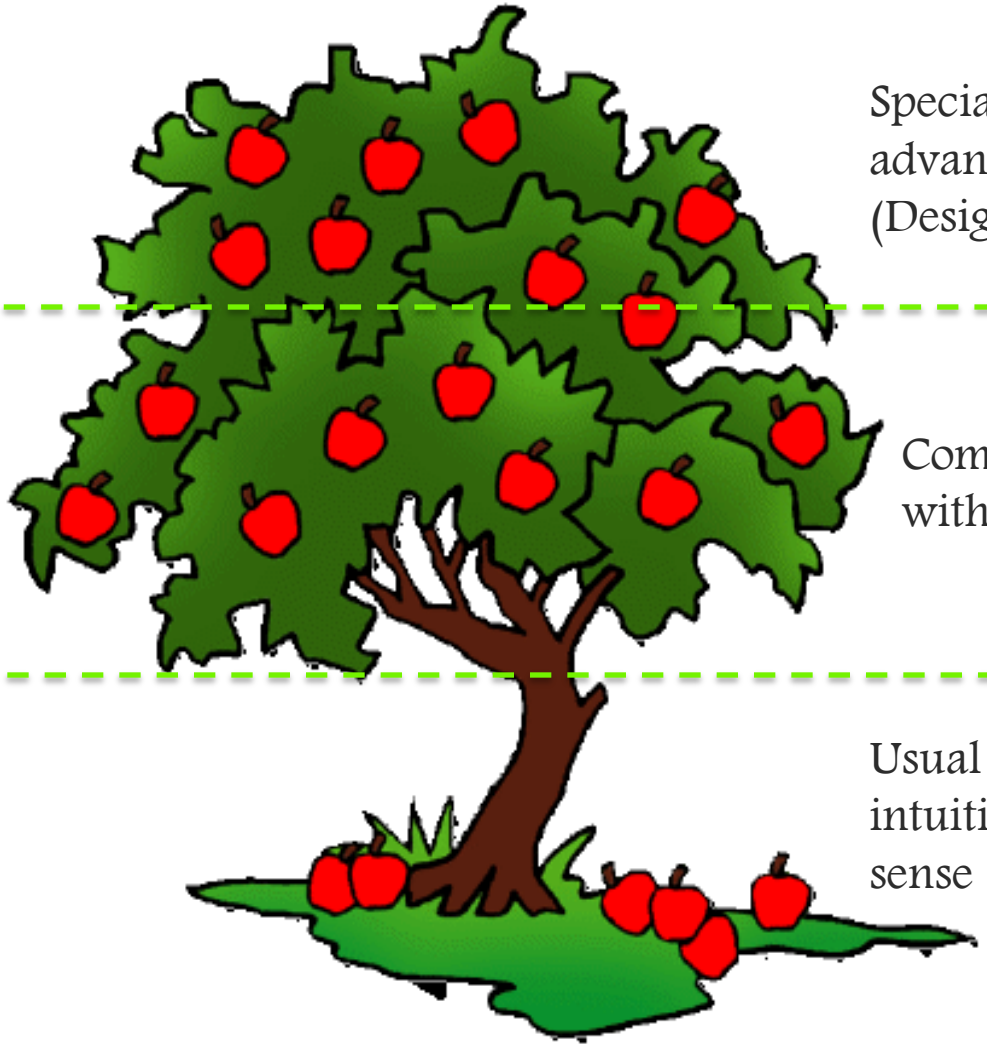
Statistics role in Six Sigma

Sweet fruit

Special causes fixed with advanced analytical tools (Design for Six Sigma)

Low hanging fruit



Common causes fixed with basic analytical tools

Ground fruit

Usual causes fixed with intuition and common sense

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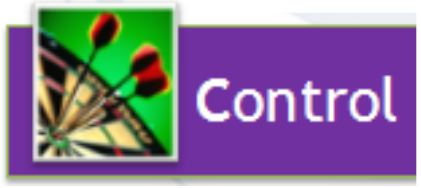
It is a PROCESS

Define the opportunity from both business and customer perspectives

Understand the process and it's performance

Search for the key factors that have the biggest impact on process performance and determine the root causes

Develop improvement solutions



Implement the solution and control plan

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It is a PHILOSOPHY

Know and understand what's Important to the Customers

Reduce defects / Eliminate rework

Get your employees involved

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Defects / Rework costs money

To maintain Customer Satisfaction & Loyalty

There is always a cost associated with manufacturing defects !

Cost of Poor Quality (COPQ)

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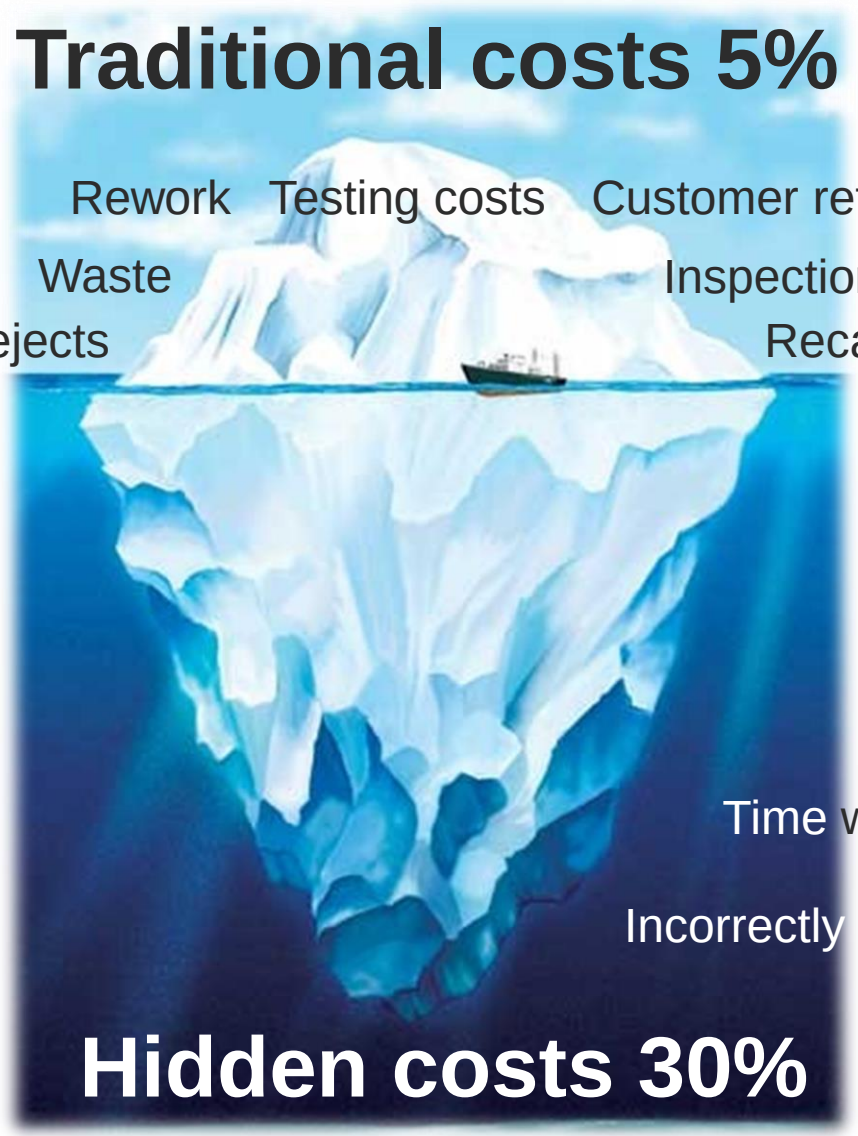
Understand costs of poor quality (COPQ)



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COPQ by functional area

Functional area	Controllable COPQ	Resultant COPQ
Controller COPQ	•Timecard reviews •Capital equipment reviews •Invoicing reviews	•Billing errors •Incorrect accounting entries •Payroll errors
Software COPQ	•Design reviews •Code reviews	•Crashes •corrupted data •Incorrect outputs
Plant administration COPQ	•Security •Facility inspection and testing •Machine maintenance training	•Facilities redesign •Overstaffing/understaffing •Equipment downtime/idle time
Purchasing COPQ	•Vendor reviews •Periodic vendor surveys •Follow-up on delivery dates •Strike built-in costs	•Line-down cost •Excessive inventory due to suppliers •Premium freight cost
Marketing COPQ	•Sales material review •Marketing forecast •Customer surveys	•Overstock •Loss of market share •Incorrect order entry
Personnel COPQ	•Prescreening applications •Appraisal reviews •Attendance tracking	•Absenteeism •Turnover •complaint

Why Companies Choose To Implement Six Sigma

If you own your own business or company, then you surely realize how important it is to stay on top of emerging trends and use whatever tools you can to improve the productivity and efficiency of your operation.

Six Sigma projects are **linked directly** to business metrics and the bottom line.

there are six key advantages that this methodology will offer any company

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#1: Improved Customer Loyalty

What is the real cost of losing customers?

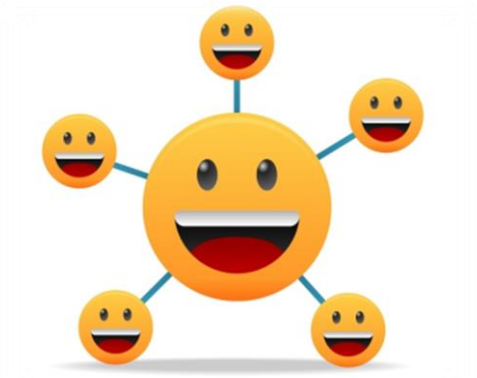
68% Leave because of poor service

95% Don't complain

13% Tell 20 other people

It can cost 5X more to win new customer than keep existing ones

Satisfied customers only tell 5 other people



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#2: Time Management

Happiness makes people more productive at work.

Employing a Six Sigma methodology at your business can help employees manage their time effectively, resulting in a more a efficient business and more productive employees.

A study found that disgruntled employees disengage and cost the American economy up to $350 billion a year in lost productivity.

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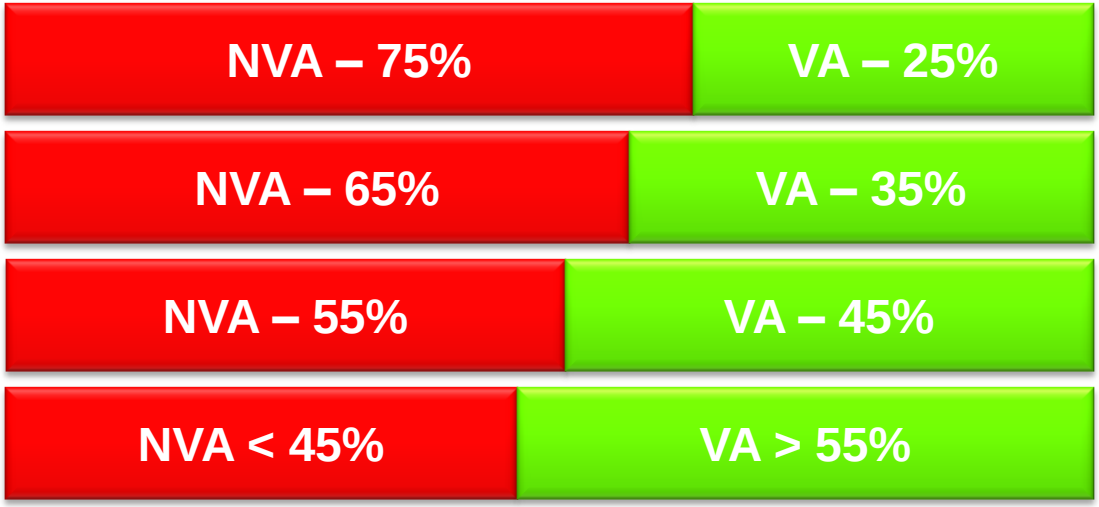
#3: Reduced Cycle Time

Cycle time Reduced by up to 30%.

Six Sigma allows businesses to create shorter cycle times for projects and stick to those schedules, with many firms reporting reductions in cycle times of up to 30 per cent.

Ratio of Value Added (VA) and Non Value added (NVA) activity.



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Value Added VS Non Value Added

- Non-Value-Added activities are activities that do NOT change the form, fit or function of the part and activities the customer does not want to pay for.

- Value-Added activities are activities that change the form, fit or function of the part and the customer is willing to pay for them

Non Value Added activities

- Defects
- Waiting
- Motion / Movement
- Transportation
- Inventories
- Over-processing
- Under-utilization

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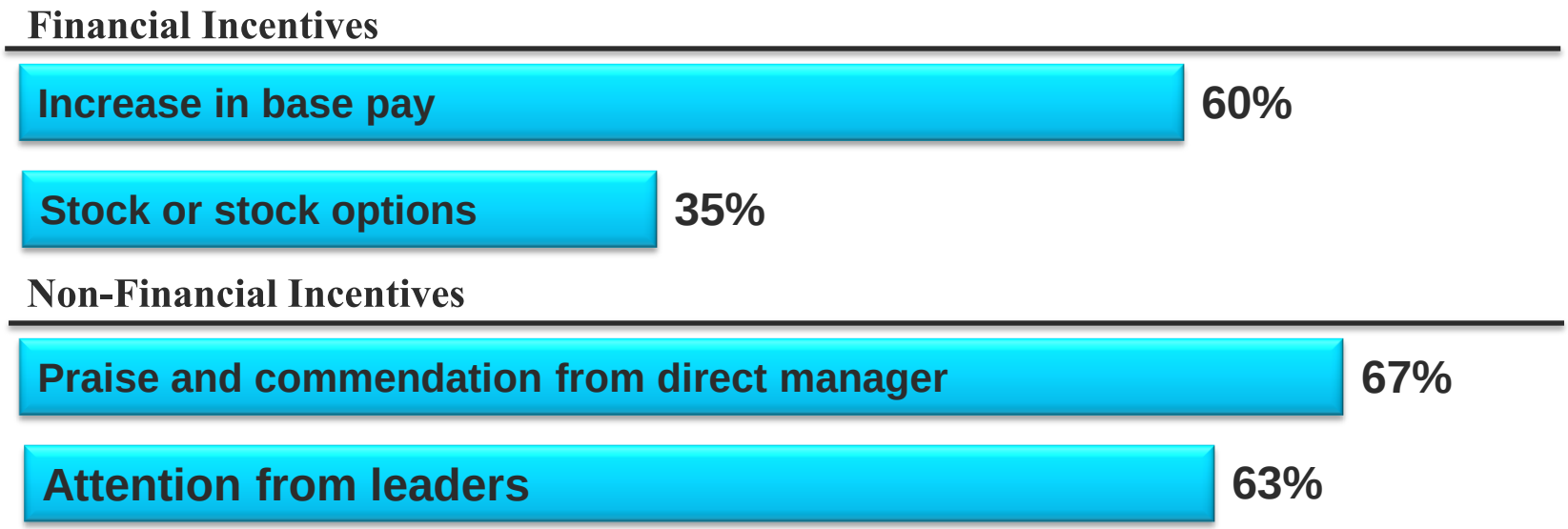
#4: Employee Motivation

Every business, needs its employees to act in the right way

Sharing Six Sigma problem solving tools and techniques will allow for employee development and help create a climate and systems for employee motivation.

According to a survey, noncash motivators, including praise and leadership attention are critical to motivate and engage employees.



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Employee Involvement the key to Success

Pull VS Push Strategy

Resistance

Push strategy

Pull strategy

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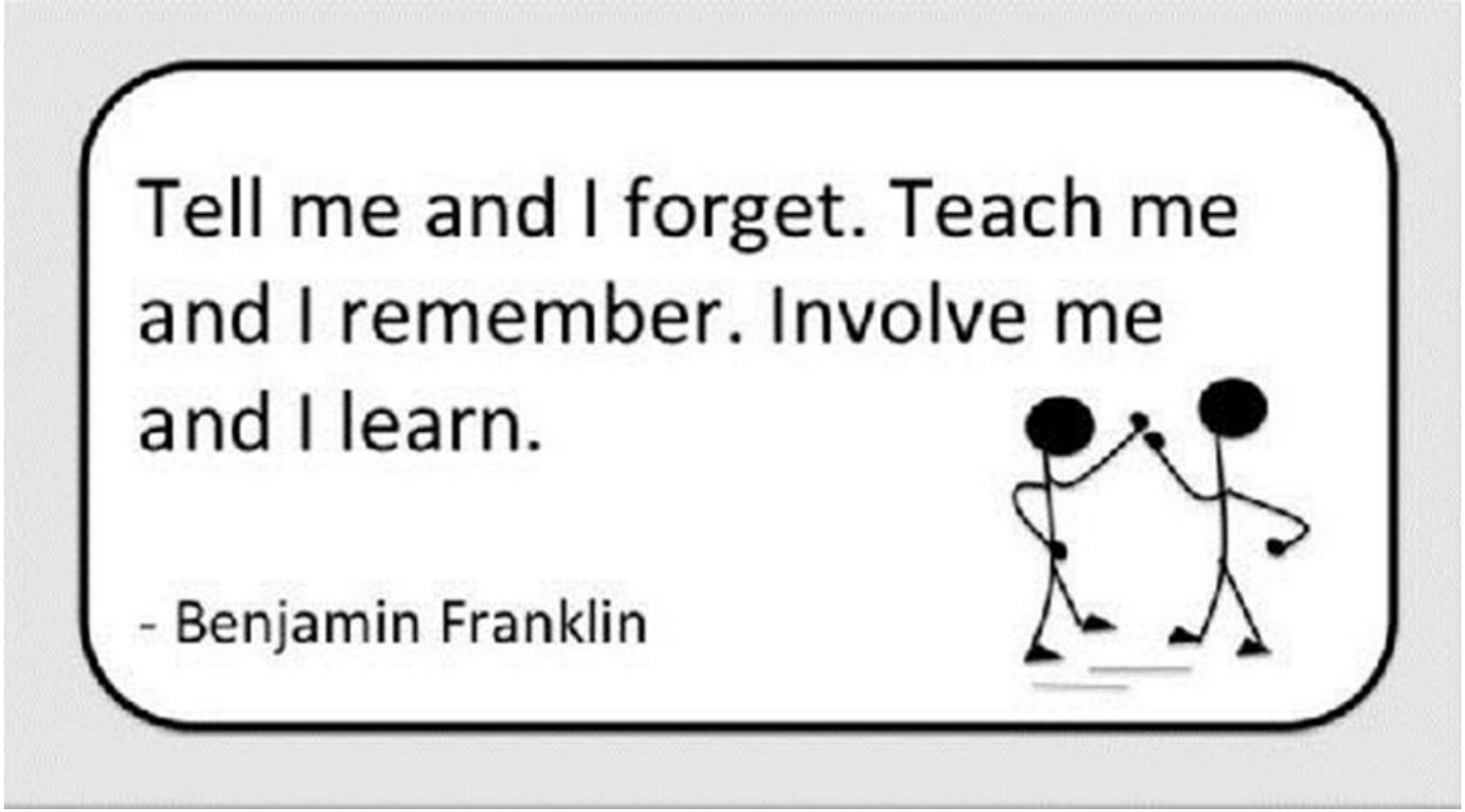
Employee Involvement

Don’t Forget !



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#5: Strategic Planning

Six Sigma can play an integral part in any strategic vision

Six Sigma can be used to improve internal processes, increase yields, eliminate unnecessary complexity and gain or maintain lowest cost supplier agreements.

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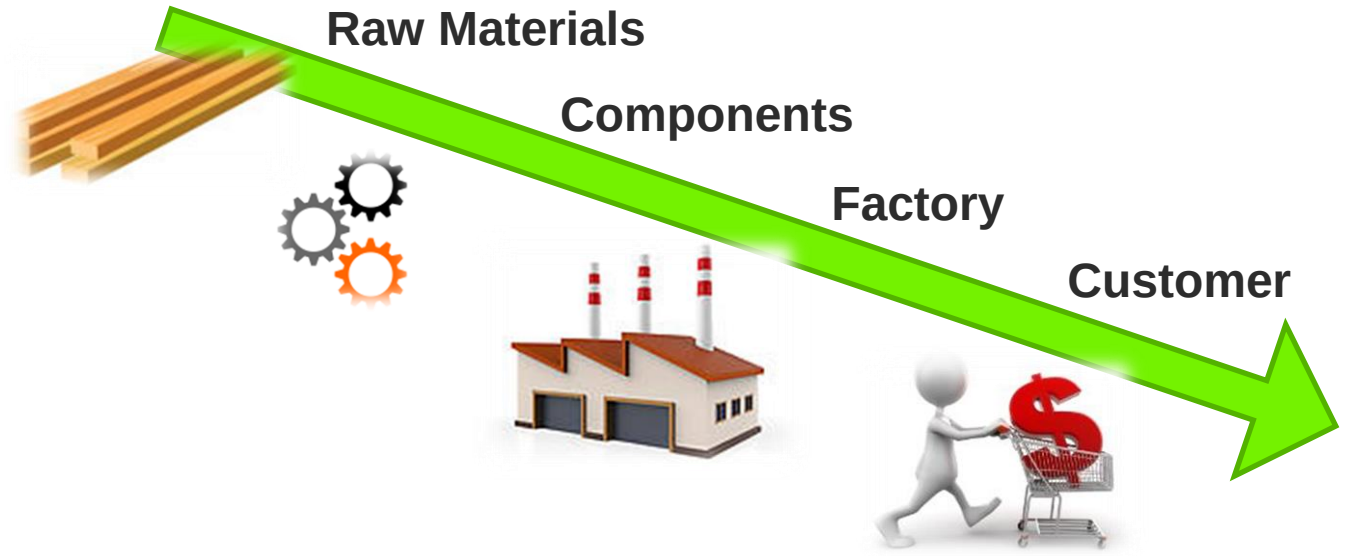
#6: Supply Chain Management

The most successful firms drive their Six Sigma improvements as far up the supply chain as possible.

One of the possible ways to reduce the risk of defect is to use Six Sigma to drive down the number of suppliers your business has, as this in turn reduces the risk of defects.



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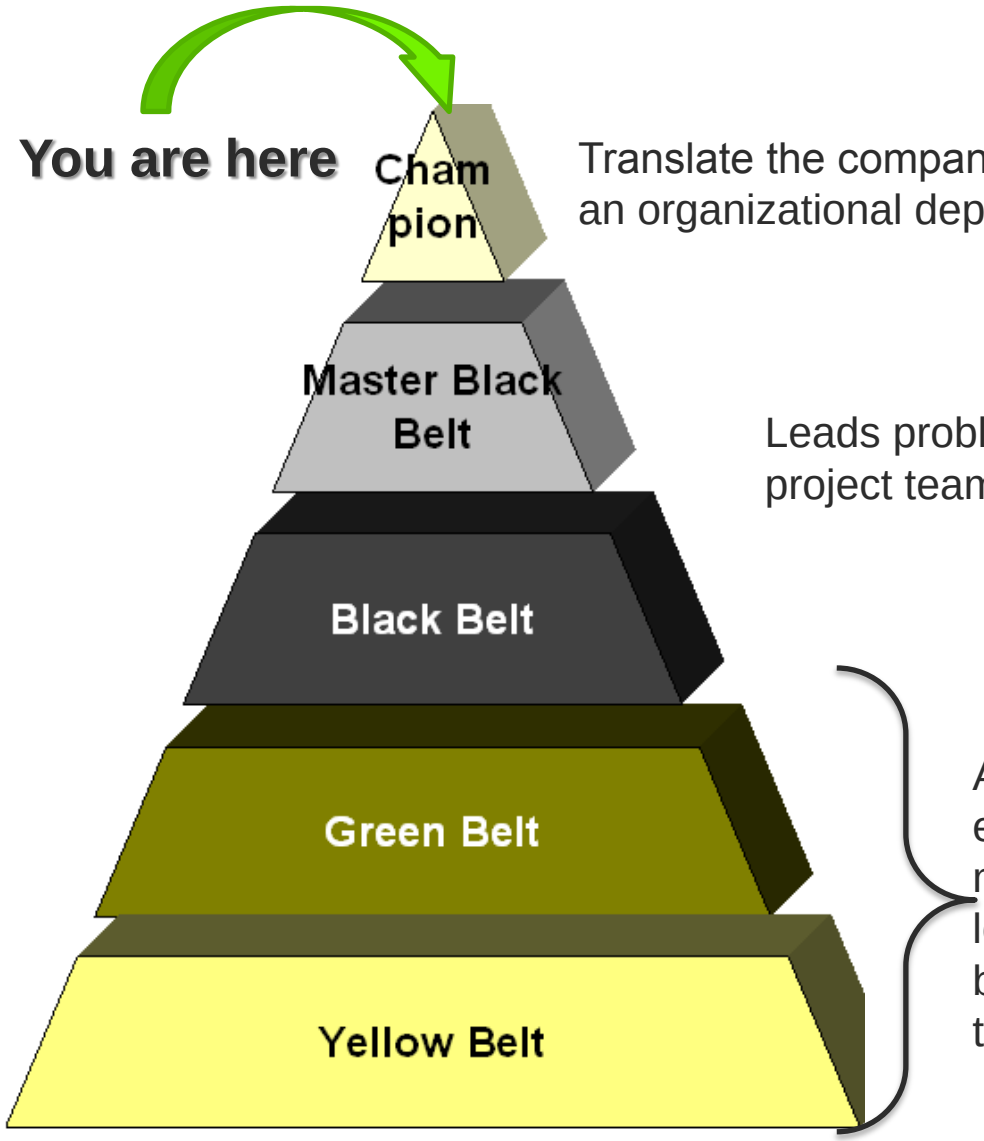
Six Sigma hierarchy



Translate the company's vision, mission, goals and metrics to create an organizational deployment plan and identify individual projects.

Leads problem-solving projects. Trains and coaches project teams.

As your Six Sigma quality program evolves, employees will begin to include the Six Sigma methodology in their daily activities and it will no longer become a percentage of their time – it will be the way their work is accomplished 100% of the time.

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What CEOs of small and mid-sized businesses Should Expect of Six Sigma ?

- You should know that a quality improvement program such as Six Sigma can improve any business – even a successful one.
- Six Sigma can help grow any company by giving it the all-important competitive edge.

the only thing that holds CEOs back from seriously exploring Six Sigma is:

Not knowing how to get started

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What Does the CEO Do to Get Started?

1. the CEO must be totally committed to the idea of Six Sigma.

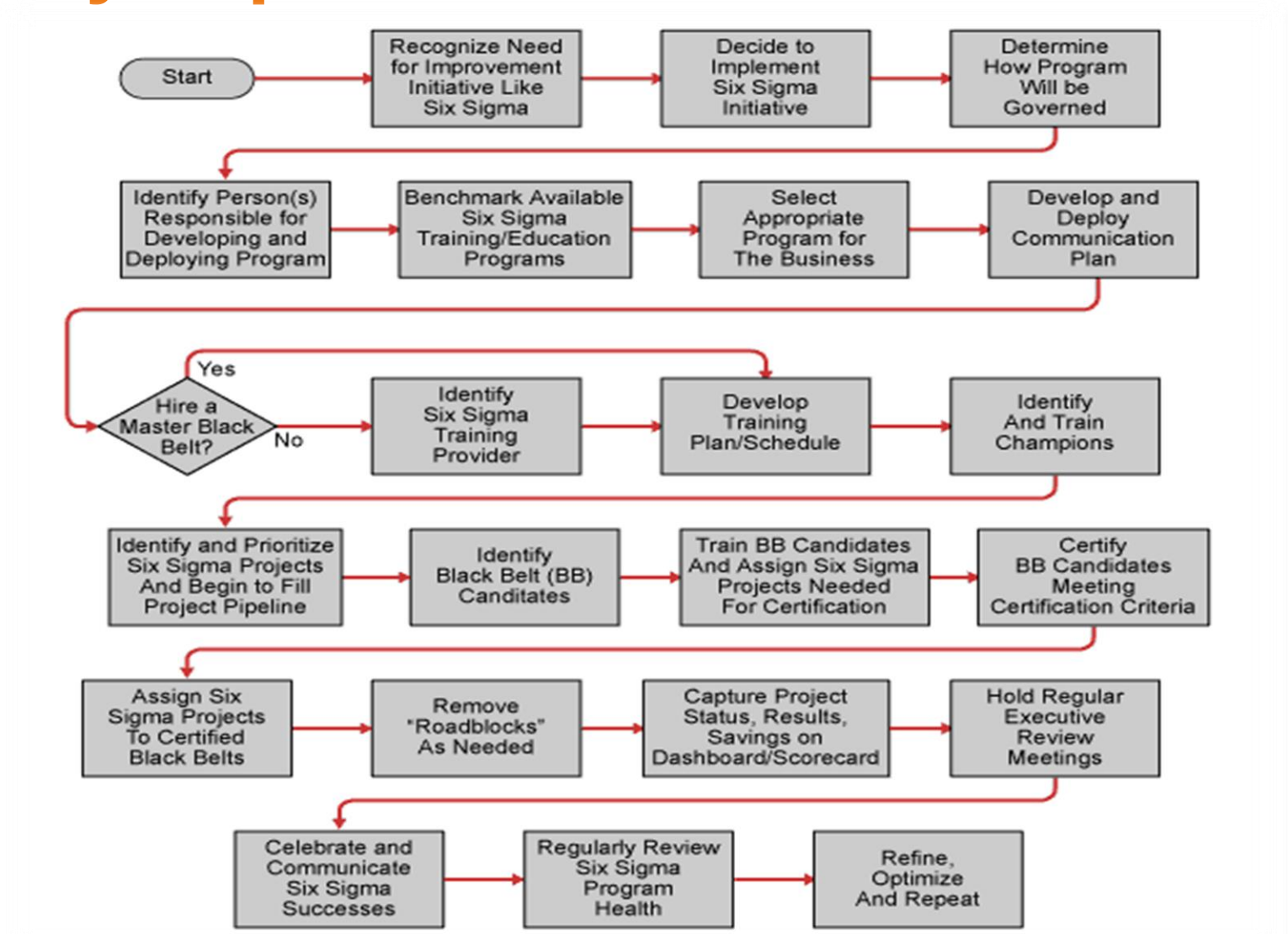
2. Once the decision has been made to implement a Six Sigma quality improvement strategy, a CEO should determine how authority and control (governance) of the Six Sigma program will be addressed.

3. The CEO should establish the ground rules for how the Six Sigma program will operate.

4. Communication plans should be developed and deployed so that all employees are aware of the quality improvement effort and understand why it is being implemented and institutionalized.

5. Candidates for Six Sigma Black Belt training need to be identified, trained and certified. Many of the organizations and consulting companies that provide Black Belt training also provide certification, which is known as independent third-party certification.

process flow for deploying a Six Sigma quality improvement initiative.



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Contact Information

Mélanie Brochu, ing. en transformation du bois, SixSigma Ceinture Noire
Wood transformation Engineer, SixSigma Black Belt
Conseillère industrielle, Est du Canada
Industrial Advisor, Eastern Canada

319, rue Franquet, Québec (QC)
G1P 4R4
☎ 506 608 4116
melanie.brochu@fpinnovations.ca

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Merci / Thank you

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