Western Sydney
Manufacturing Week

The Six Sigma Journey

Presented by

John Yealland

Unbound Business Solutions

Department of State and Regional Development

First for Business

Greater Western Sydney Economic Development Board

National Manufacturing Week

New South Wales Government

Western Sydney
Manufacturing Week

Introduction

- What is Six Sigma?
- Three Principles
- Who uses it?
- What are the Benefits
- The Six Sigma Model
- Pitfalls

Department of State and Regional Development

Greater Western Sydney Economic Development Board

National Manufacturing Week

New South Wales Government

What is Six Sigma?

- Definition
  - A system that uses data analysis to improve an organisation's operating performance.
  - A system that targets the reduction of variation to improve the outcomes of a process.

Three Principles

- Philosophy
  - Customer focus, reduce variation
- Methodology
  - Project management
- Metrics / Measurements
  - Objective data

Who uses it?

- Manufacturing
- Logistics
- Transport
- Finance
- Health
- Public Service
- Local Governments

- Telecommunications
- I.T services

What are the Benefits

- Hard savings
  - Increase sales
  - Reduce headcount
  - Reduce cost
  - Improve profit

Savings typically in the range 1.2% - 4.5% of revenue.

- Soft savings
  - Time
  - Quality improvement
  - Reliability
  - Customer perception

How does it work?

- Project management methodology
- What tools does it use?

Process Flow Diagrams
Root cause analysis
Failure Mode and Effect Analysis
Cause and Effect Diagrams
Pareto charts
Statistical Process Control
Customer surveys

Inferential statistics
Graphical techniques

Western Sydney
Manufacturing Week

The Six Sigma Model

- **D**efine
- **M**easure
- **A**nalyse
- **I**mplement
- **C**ontrol

Department of State and Regional Development

First for Business

Greater Western Sydney Economic Development Board

National Manufacturing Week

New South Wales Government

DMAIC - Define

- Understand the problem
- Identify the customers?
- What do you want to achieve for the customer?
- Voice of Customer (VOC)

Example – Define

Customer – General Manager

VOC – Reduce the wastage of raw materials (plastic parts) to 3% of total.

Our Commitment to the Customer

To develop and implement operational improvements to achieve a wastage rate of plastic parts to 3% of the total consumption per month within a three month period.

DMAIC - Measure

- "If you can't measure it you can't manage it"
- What to measure?
- How to measure?

Example - Measure

- At commencement of project it is known that the total wastage of plastic components is 11% per month
- The quantities attributable to different sources is not yet known
- Data collection is required

DM**A**IC - Analyse

- What does my data mean?
- How much mathematics do I really need?
- What tools can I use?

DMAIC - Improve

- Improve the target process by designing creative solutions to fix or prevent problems.
- Create innovative solutions using technology and discipline
- Develop and deploy implementation plan

DMAIC - Control

- Control the improvements to keep the process on the new course.
- Prevent reverting to the "old way"
- Require the development, documentation and implementation of an ongoing monitoring plan
- Institutionalise the improvements through the modification of systems and structures (staffing, training, incentives)
  - From *GE's DMAIC Approach*, http://www.ge.com/capital/vendor/dmaic.htm

Western Sydney
Manufacturing Week

RDMAICR

- Recognise the need for improvement
- Realise the benefits!!

Department of State and Regional Development

Greater Western Sydney Economic Development Board

National Manufacturing Week

New South Wales Government

Pitfalls

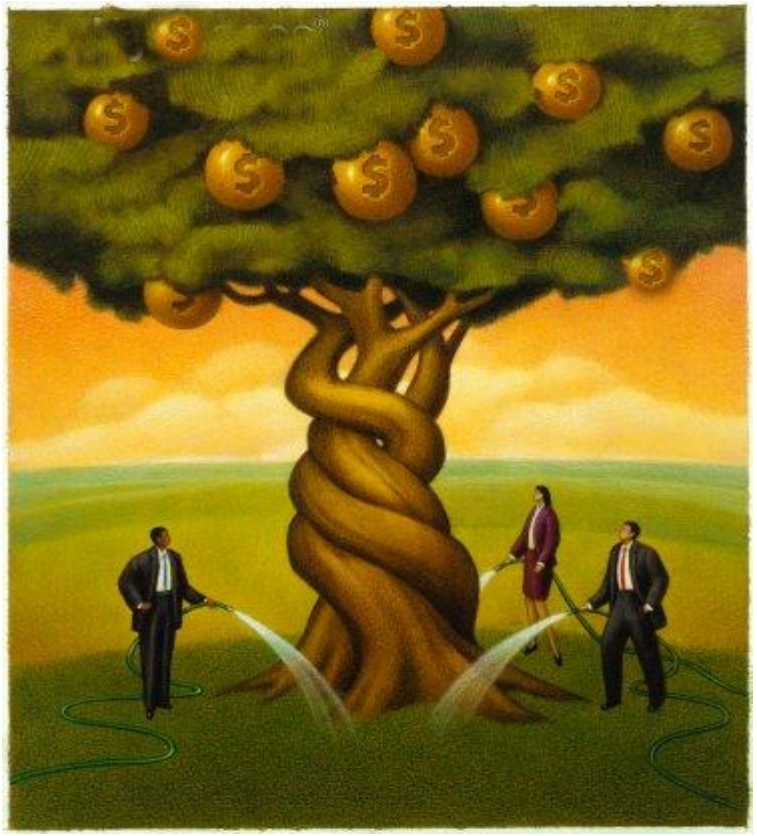
- Leadership commitment
- Not identifying the "customer"
- Not understanding VOC
- Too many projects
- Over-analysis
- Statistics v results
- Poor team selection
- Lack of a mentor
- Additional activities
- Insufficient project monitoring and review
- Organisation's influencers not on board

Unbound business solutions

Two Key Points

- Customer Focus
- Reduce Variation

Conclusions



- Six Sigma is a system that can be used effectively to grab the low hanging fruit as well as that which is harder to reach.

Western Sydney
Manufacturing Week

Unbound business solutions

Thank You

Department of State and Regional Development
First for Business

Greater Western Sydney Economic Development Board

National Manufacturing Week

New South Wales Government