

Horses for Courses

Picking your winners when it comes to continual improvement tools..

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The field



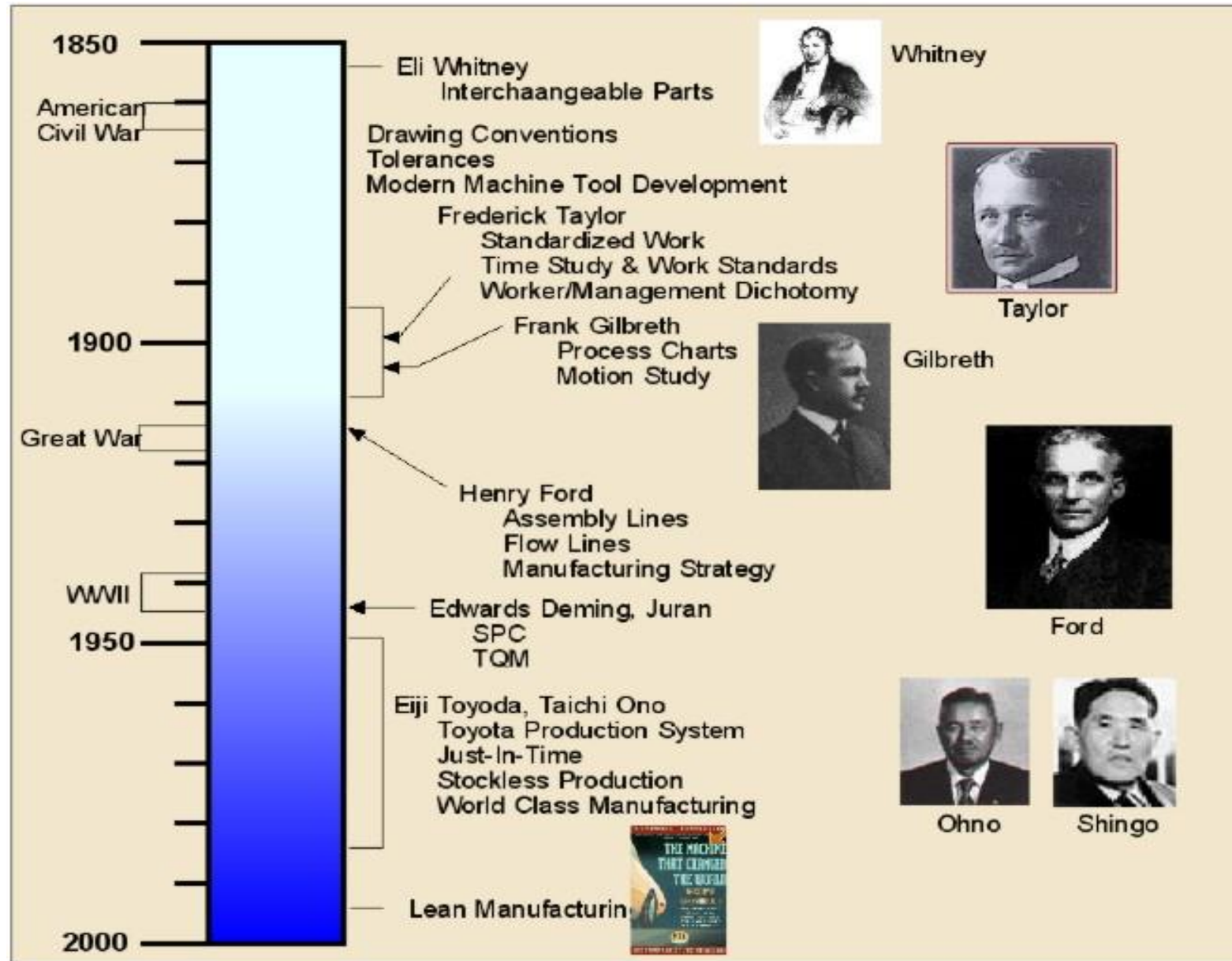
- Lean
- Deming & TQM
- Zero Defects
- Six Sigma
- Investors in people
- ISO 9000
- Baldrige Business Excellence
- *Then we'll show you a hybrid!*

Starting Gate



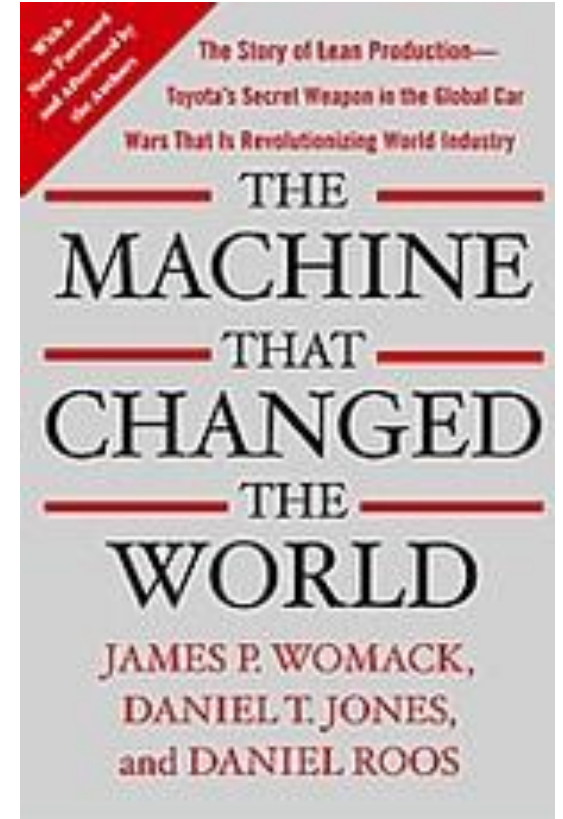
*The QA Handicap, which is your horse?
Stakeholders' expectations in conflict?*

Lean *(Six Sigma is different!)*

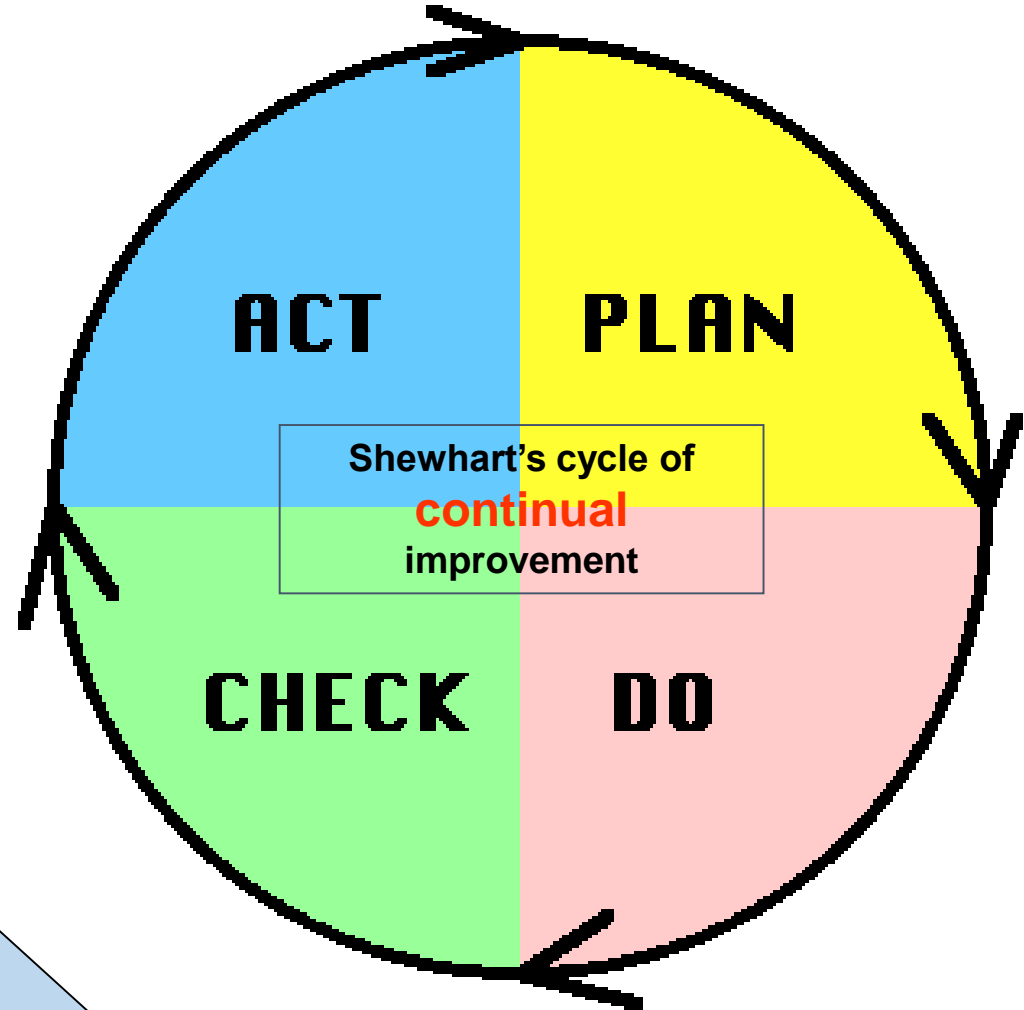
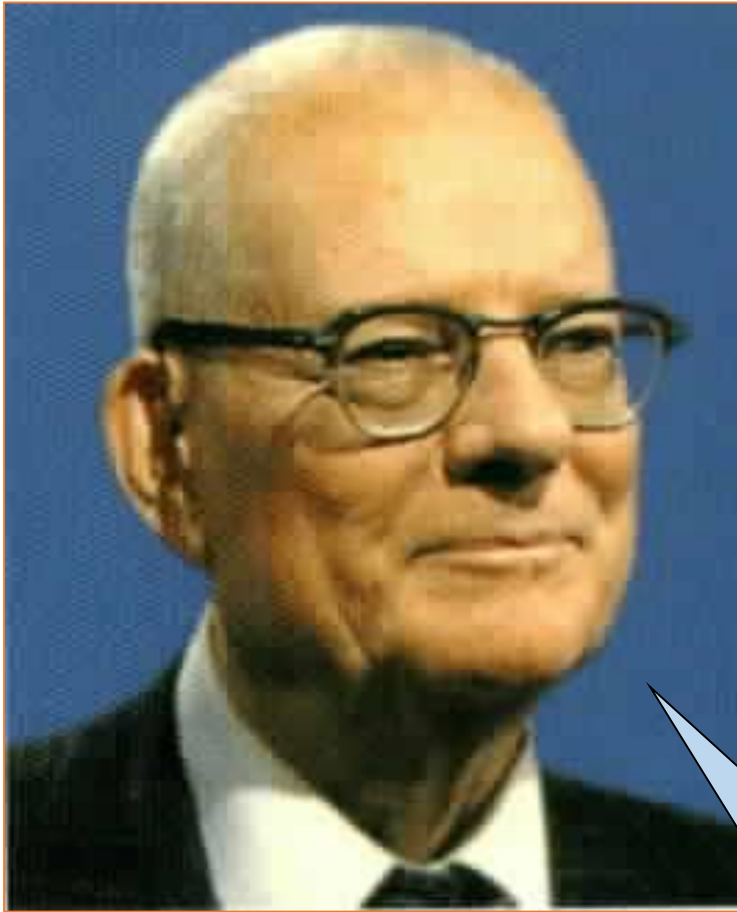


Lean

- In 1990, *Womack, Jones & Roos* wrote a book called "*The Machine That Changed The World*". The book is a history of automobile manufacturing that combines the development in Japanese, American and European assembly plants.
- They coined the phrase Lean Manufacturing to describe processes that optimised efficiency: Cell manufacturing, pull scheduling (Kanban) and 5S (Sort, Shine, Set-in-place, Standardise, Sustain) are among the tools that emerge.
- But they were not new, they hailed from Eichi Toyoda and Taichi Ohno (Toyota Production System), back through Henry Ford, through Frank Gilbreth (process charts and time & motion study), Frederic Wilmslow Taylor (standardised work) back to Eli Whitney in the 1850s and his innovation of interchangeable parts.
 - Some say it stretches back even to ancient Rome...and it's nothing more than common sense.



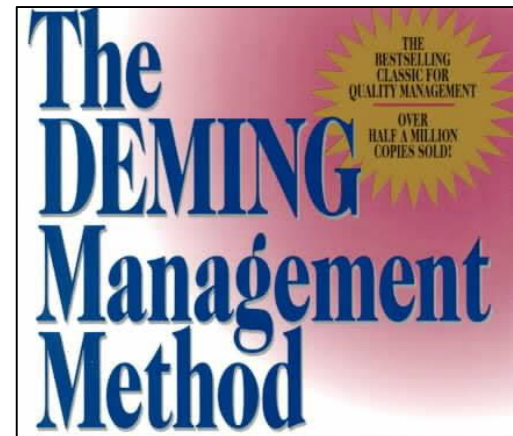
Deming & TQM



If it moves measure it.
Otherwise enjoy your hobby!

Deming & TQM

- Born 1900, became a statistician, worked for US Bureau of Statistics
- 1920s - Worked at Western Electric's Hawthorne Works
- Worked with Dr Walter Shewhart the father of SQC
- 1940 Taught Shewhart methods to US suppliers for WW2 war effort
- 1947 - Went to occupied Japan with Gen MacArthur – taught SQC (*forgotten in the US by then*) as the means to rebuild their decimated manufacturing industry
- 1951 – Japanese set up The Deming Prize, Deming is officially honoured.
- 1979 “If Japan can...why can't we?”
- National outcry, trial by media, Mary Walton publishes The Deming Management Method,
- Deming starts teaching again, using the “Red Bead Experiment” - Ford, GM, Dow, Hughes & mega more get interested
- Deming promotes his 14 Points for the Transformation of Management, the 7 Deadly Diseases, and the Obstacles (& the 7QC tools)
- 1981 GOAL (*Growth Opportunity Alliance of Lawrence*) is formed...(*“The Japanese have been using Deming techniques for 35 years but no-one was interested so none of it is in English” ...Bob King*)
- 1990 The Deming Institute is founded
- Died 1993



The DEMING Management Method

THE BESTSELLING CLASSIC FOR QUALITY MANAGEMENT
OVER HALF A MILLION COPIES SOLD!

W. Edwards Deming, the genius who revitalized Japanese industry, offers his unorthodox system to make “Made in America” a guarantee of quality—again!

“DEMING'S MAIN FORCE BEHIND

DR. DEMING

The American Who Taught the Japanese About Quality



**WHAT EVERY U.S. BUSINESS-
PERSON SHOULD KNOW ABOUT
SUCCESSFUL MANAGEMENT AND
BRINGING QUALITY BACK HOME**

by Rafael Aguayo • Foreword by W. Edwards Deming

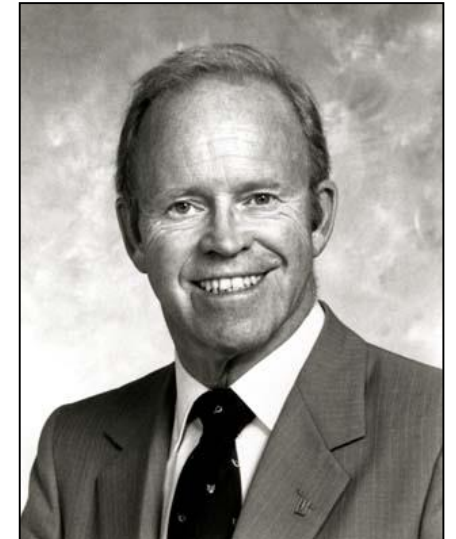
Zero Defects

History

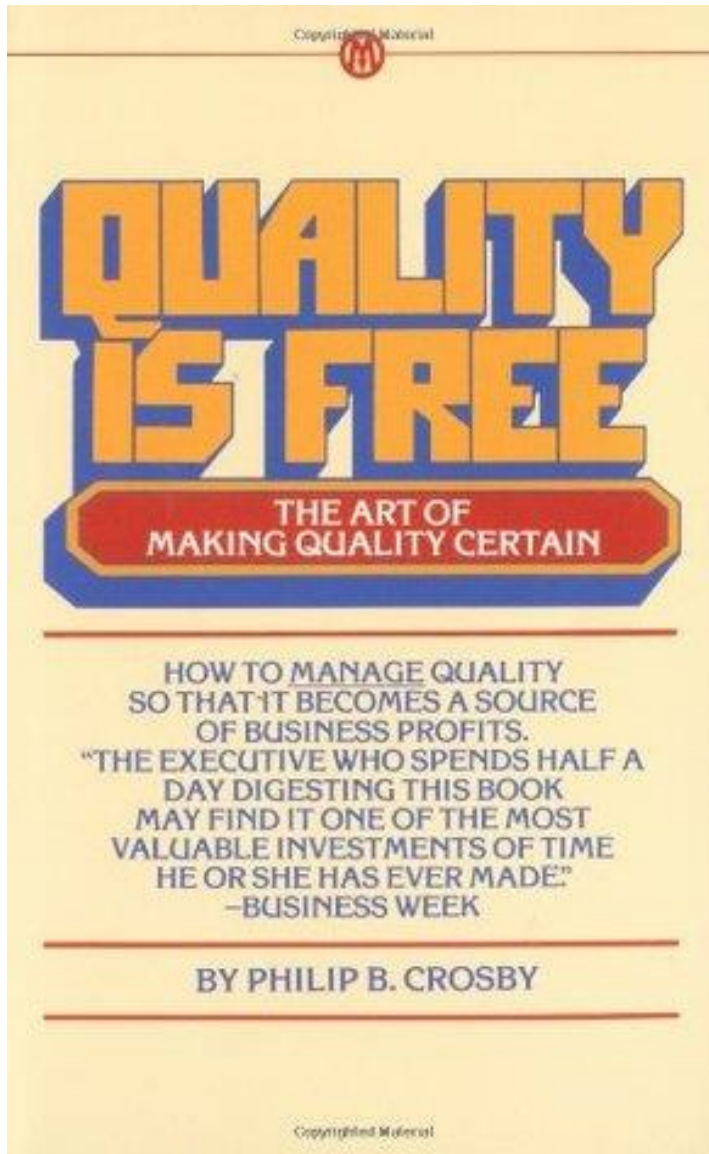
During the 1970s, large companies in the automotive industry tried to cut costs by reducing their quality inspection processes and demanding that their suppliers dramatically improve the quality of their supplies. This eventually resulted in demands for the "Zero Defects" standard. It is implemented all over the world.

Four Principles of Zero Defects

1. Quality is conformance to requirements
2. Defect prevention is preferable to quality inspection and correction
3. Zero Defects is the quality standard
4. Quality is measured in monetary terms – the Price of Non-conformance (PONC), hence “Quality is Free”, published in 1979.



Phil Crosby



Six Sigma

- Six Sigma was originally developed as a set of practices designed to improve manufacturing processes and eliminate defects, but its application was subsequently extended to other types of business processes as well.
- In Six Sigma, a defect is defined as anything that could lead to customer dissatisfaction.
- The particulars of the methodology were first formulated by Bill Smith at Motorola in 1986.
- Six Sigma was heavily inspired by six preceding decades of quality improvement methodologies such as quality control, TQM, and Zero Defects, based on the work of pioneers such as Shewhart, Deming, Juran, Ishikawa, Feigenbaum, Taguchi and others.

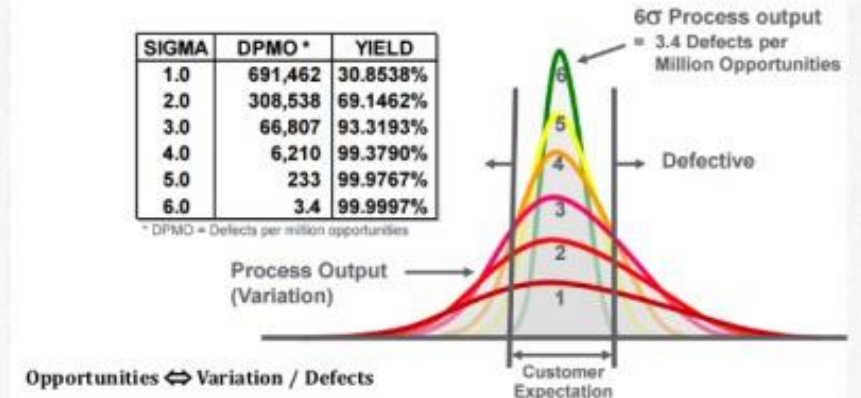


Overview of Six Sigma

What is Six Sigma (6σ)?

SIGMA	DPMO *	YIELD
1.0	691,462	30.8538%
2.0	308,538	69.1462%
3.0	66,807	93.3193%
4.0	6,210	99.3790%
5.0	233	99.9767%
6.0	3.4	99.9997%

* DPMO = Defects per million opportunities



Investors In People



“26 years of people management excellence are encapsulated in the brand, which is proudly displayed by over 10,000 organisations in 78 countries.”

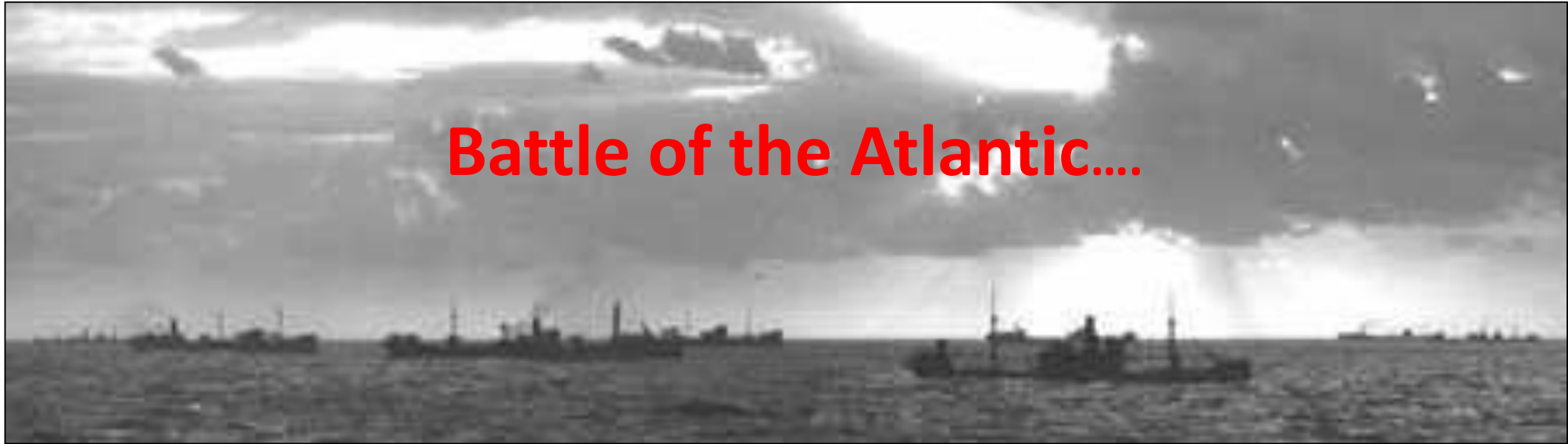
About Investors in People UK

- Investors in People UK was formed in 1991 to take national ownership of the Standard, protect its integrity and ensure its successful promotion and development
- Initially the Standard was administered through a section in the Department for Education and Employment (DfEE).
- As demand for, and interest in, the Standard grew the section became Investors in People UK.
- Although the company is by definition UK based and orientated in its operations, interest from overseas has given the Standard an international dimension, both in terms of protection and development...

Investors In People



ISO 9000



1941

1 Apr, 1941	8 U-boats	10 ships sunk for a total of 51.969 tons
7 May, 1941	4 U-boats	10 ships sunk for a total of 55.347 tons
19 May, 1941	11 U-boats	9 ships sunk for a total of 51.862 tons
24 Jul, 1941	8 U-boats	7 ships sunk for a total of 11.303 tons
17 Aug, 1941	8 U-boats	10 ships sunk for a total of 15.185 tons
9 Sep, 1941	19 U-boats	16 ships sunk for a total of 68.259 tons
19 Sep, 1941	5 U-boats	10 ships sunk for a total of 25.818 tons
15 Oct, 1941	13 U-boats	11 ships sunk for a total of 49.835 tons
16 Dec, 1941	10 U-boats	4 ships sunk for a total of 18.383 tons

ISO 9000

The NATO Policy for Quality and its Assurance

The defence capability of NATO nations depends, to a great extent, on the quality of their weapon systems, therefore, the quality of these weapons systems must be assured well in advance of their delivery from defence contractors.

The time and costs involved in the development of modern and complex weapon systems demand that the purchaser is given the right to have the fullest view of the design as well as the production activities of their contractors in order to gain confidence in the resultant weapon systems.

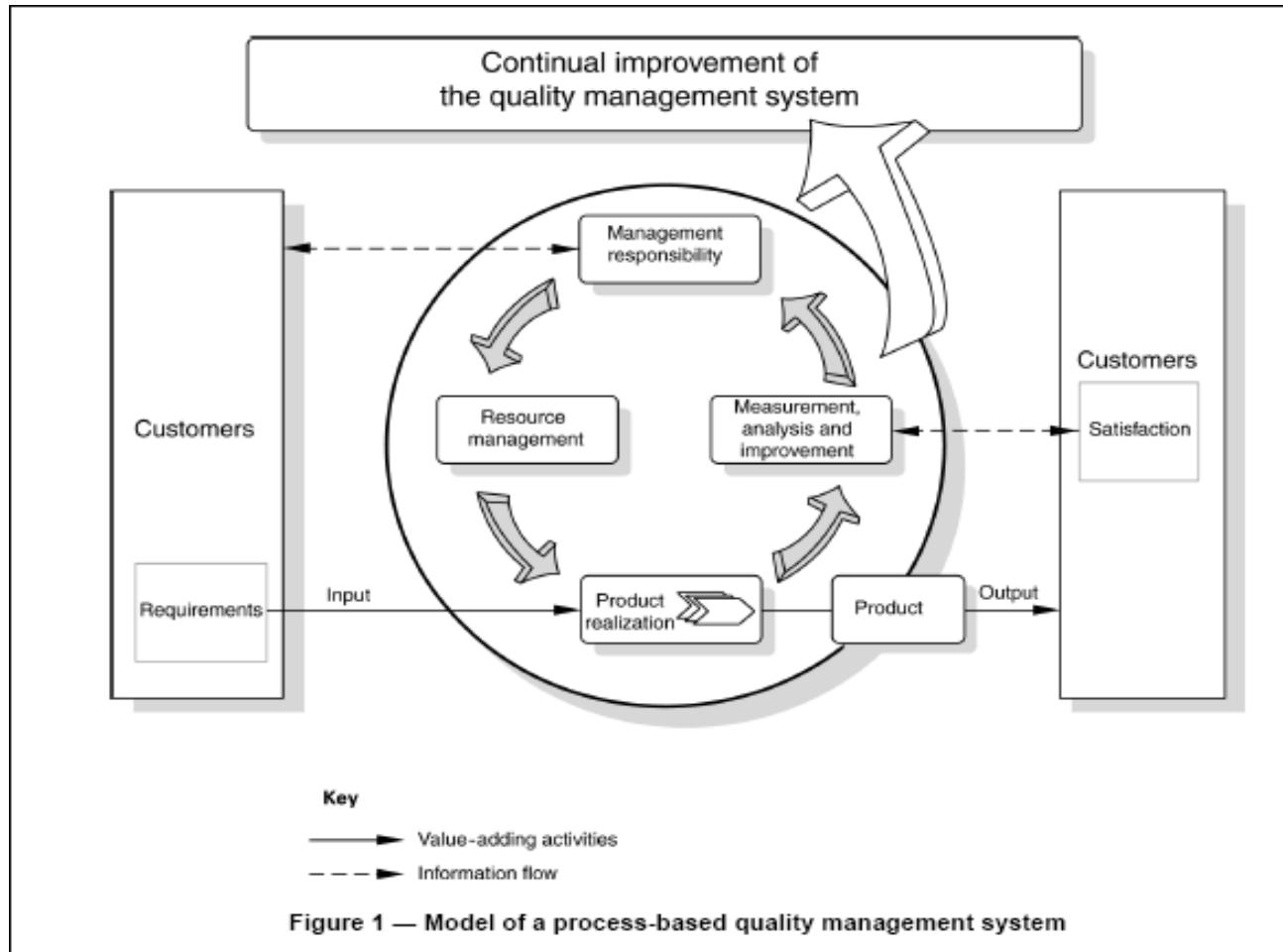


ISO 9000

- Battle of The Atlantic (1939 – 1945)
- 1955 - NATO Committee AC 250 (Experts on Quality Assurance")
- Apollo, Concorde, QE2, Euro Nuclear Programme etc
- 1969 - Allied Quality Assurance Procedures – AQAPs
- 1972 - DEFSTAN-05 series – UK MoD retrain its product inspectors to become quality systems assessors,
- Rear Admiral Derek Spickernell, DGDQA-MoDPE, retires from the Royal Navy to become DG of BSI,
- 1979 – BS 5750 Pt 1, Pt 2 & Pt 3, Quality Management Systems standards, (QMSs) (copy of the DEFSTANs),
- 1984 – UK National Quality Campaign – “White Paper” – sets up government sponsored BS 5750 certification as a panacea to improve the quality of British exports...sets up the first accreditation body to manage Conflict of Interest as consultants AND certifiers were reimbursed by the sponsorship (~ 40k companies in ~ 6 years...),
- BSI heads ISO Committee TC 176 – QMSs
- 1987 – First edition of ISO 9000 family (9000, 9001, 9002, 9003, 9004)
- 5 year cycle – most successful standard world has ever seen
- ISO 9000-1994 minor amendments
- ISO 9000:2000 new approach...*enter PDCA....(was there all the time, of course!)*
- ISO 9001:2008, minor amendments
- ISO 9001:2015, ISO imposes high level structure, Risk Based Thinking replaces Preventive Action, more emphasis on use for business improvement, significant reduction in auditable features.

ISO 9000 (*9001 to be precise*)

Quality Assurance is about improvement, right?

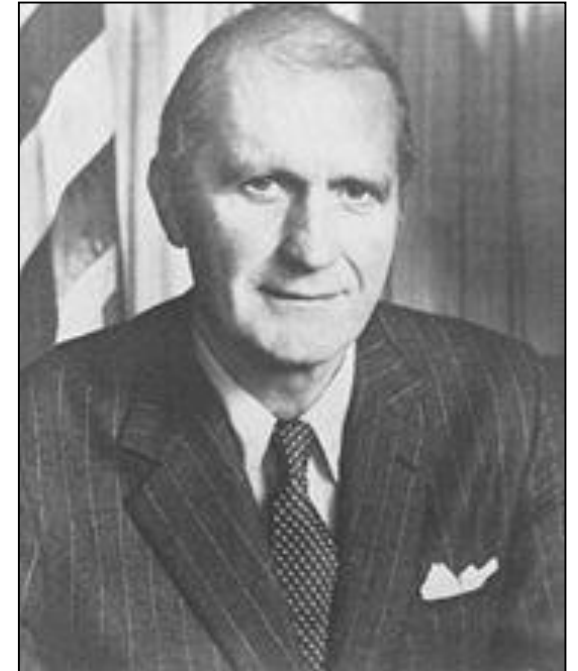


...only about customers & doesn't give much help on how to do it...

Baldrige

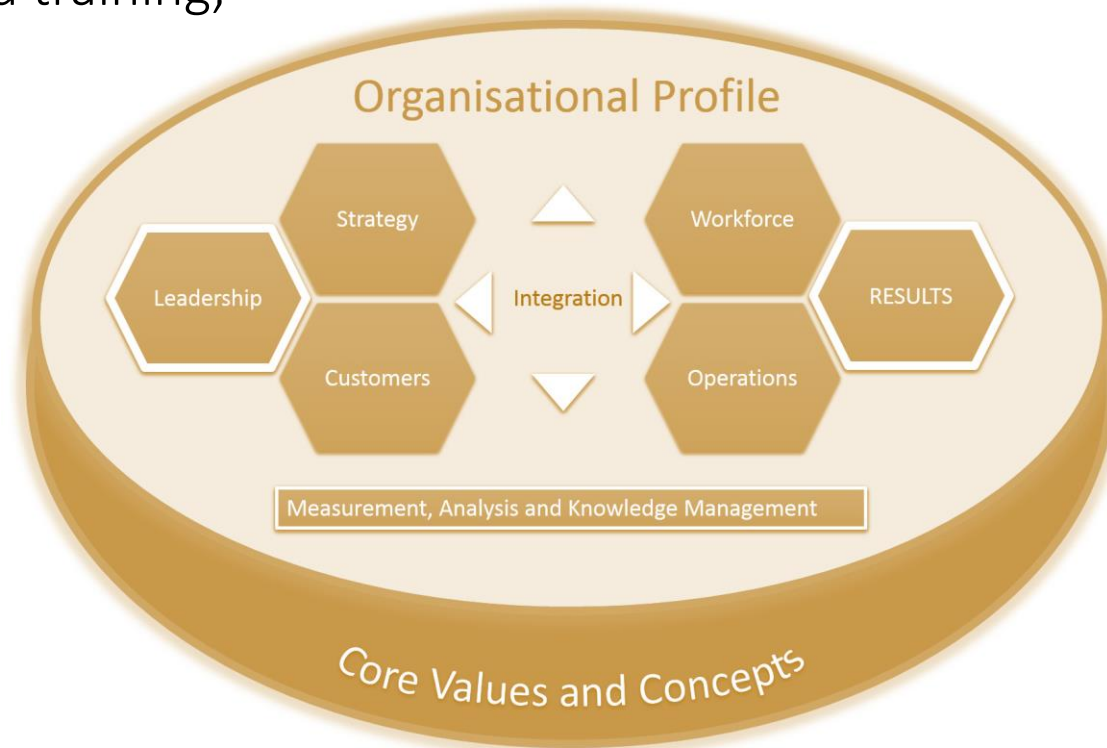
Howard Malcolm Baldrige

- Malcolm Baldrige died July 25, 1987 in a rodeo accident in California at the age of 64.
- His service as Secretary of Commerce was one of the longest in history. He is said to have been possibly the most colourful Secretary of Commerce and one of the most beloved.
- Baldrige was a proponent of quality management as a key to this country's prosperity and long-term strength.
- He took a personal interest in the legislation that became the **Quality Improvement Act of 1987** and helped draft one of the early versions.
- In recognition of his contributions, Congress named the annual award for product quality in his honour.

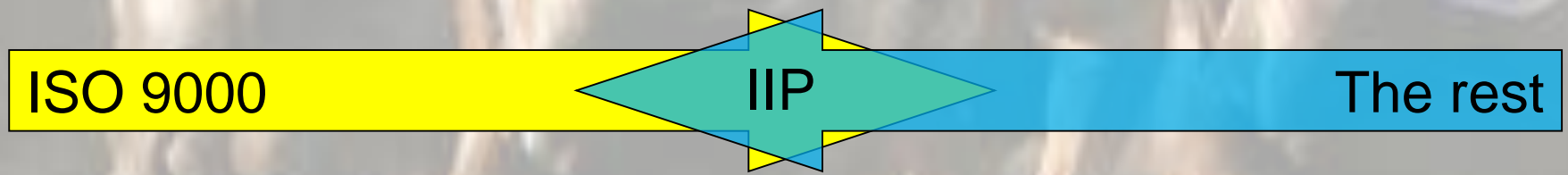
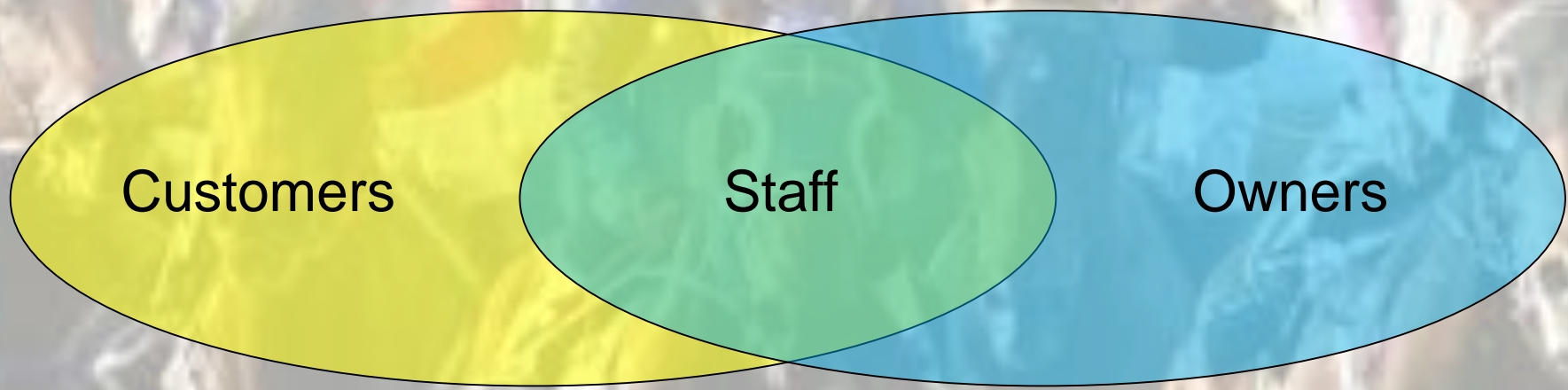


Baldrige

- NZ Business Excellence Foundation here, in New Zealand,
- Nearly 100 countries participate,
- Not a certification programme,
- All about improving your score against the 7 criteria in the model,
- Includes support and training,



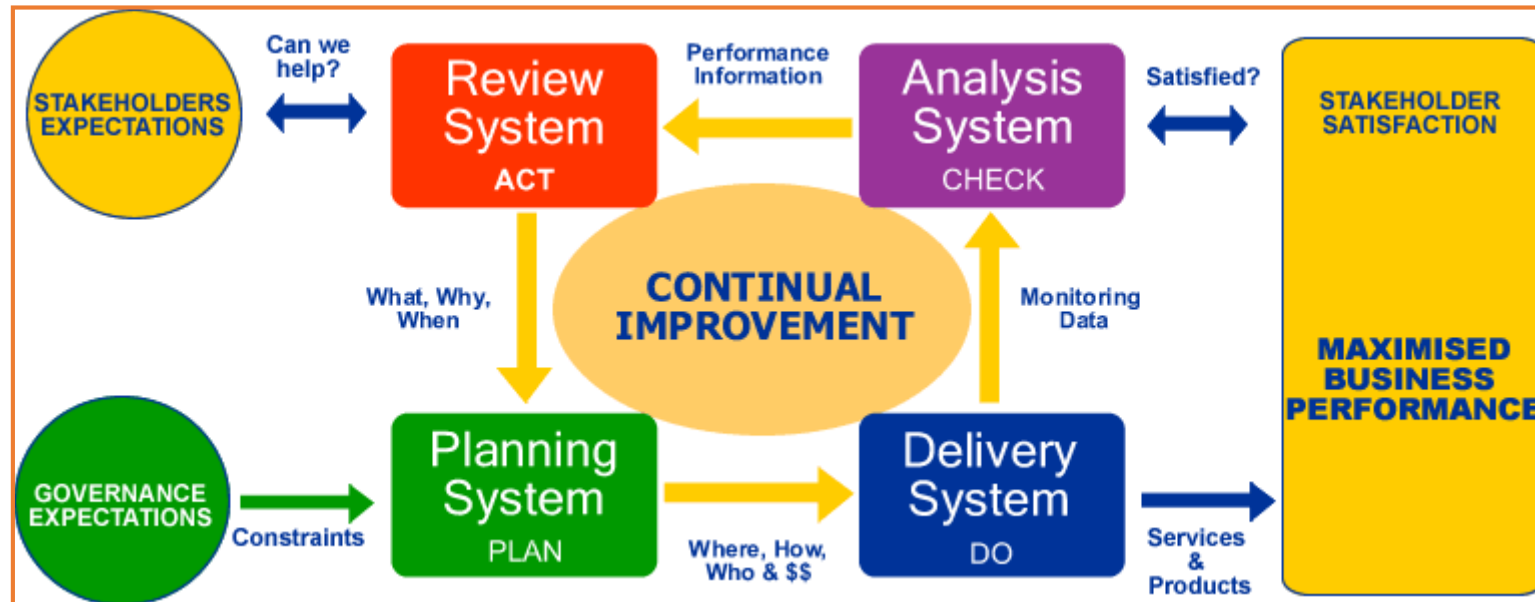
The Finish....



Ian's excellence framework

Using TQM, ISO 9001 and a dash of Baldrige to get from
Top Left to Bottom Right, and
Bottom Left to Top Right!

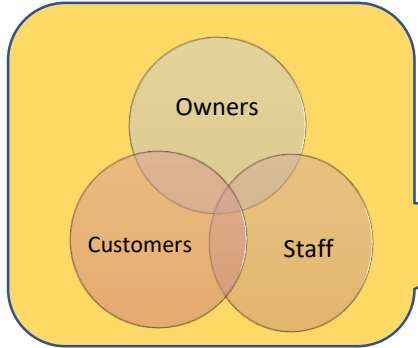
A How-to example



We are what we repeatedly do. Excellence is not an act but a habit. Aristotle

Ian's Navigator (22 Tools in MJ 2)

7 Management & Planning tools



2. Interrelationship Digraph

1. Affinity diagram

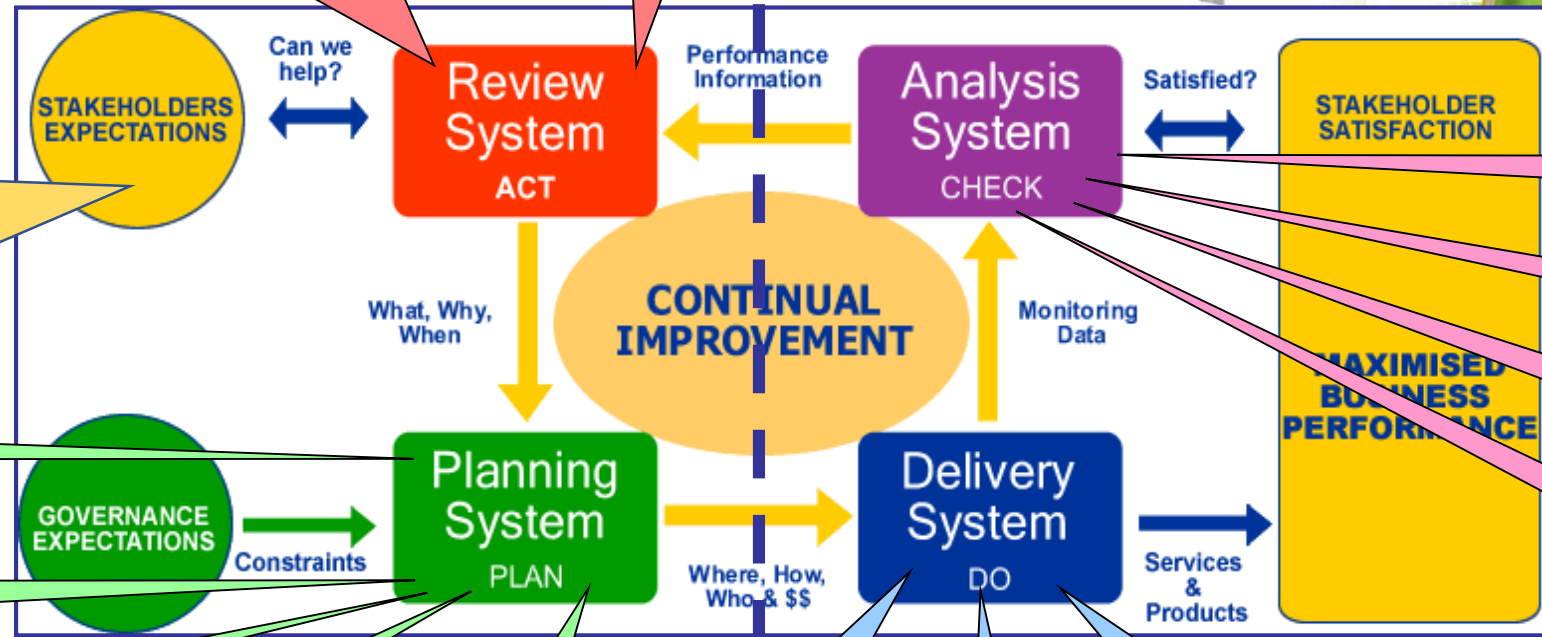
3. Tree diagram

4. Prioritisation Matrices

5. Matrix Diagram

6. Process decision program chart

7. Activity Network Diagram



7 Quality Control tools

Force field
(Know-Don't know)

Radar diagram

Process capability

G. Cause & effect diagram

F. Pareto diagram

E. Scatter diagram

D. Histogram

Brainstorming
Nominal group technique
Team rules
Team tools

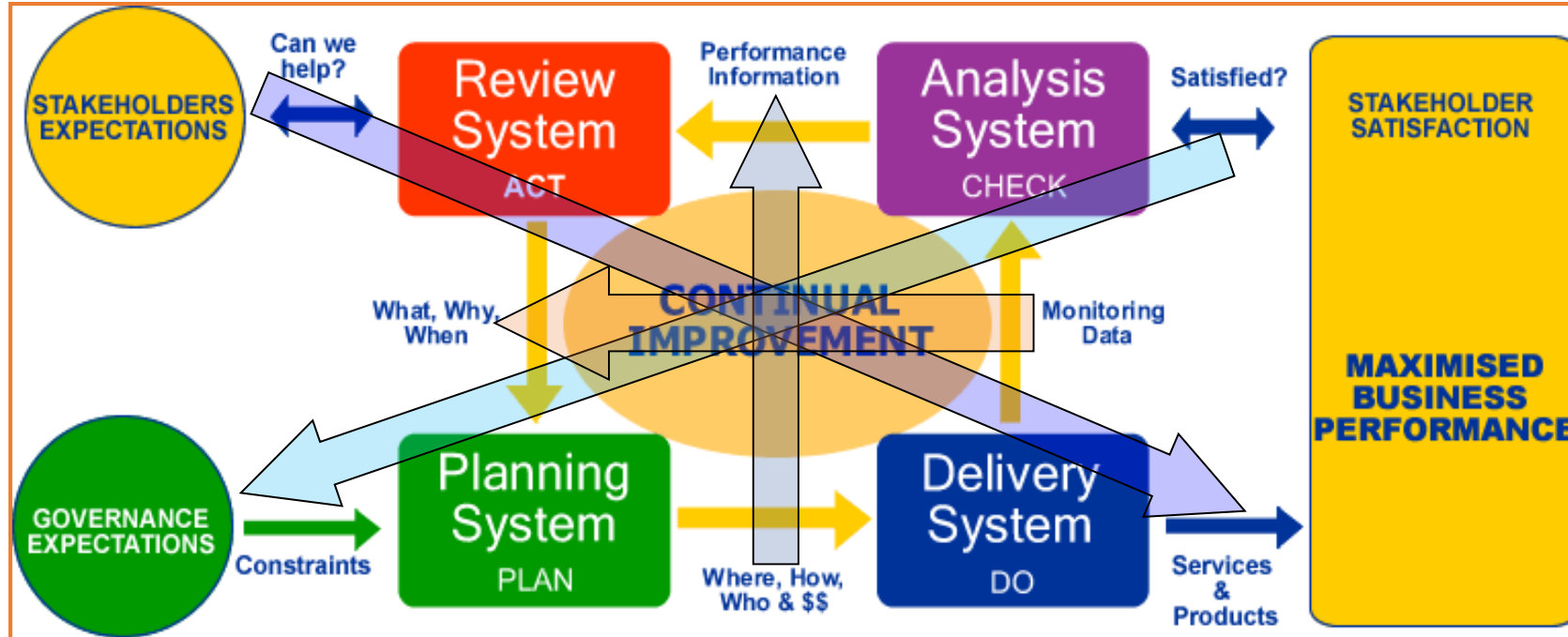
A. Flow charts

B. Run Charts

C. Control Charts

Checksheets

What do you need to measure?



You only get what you measure (YOGWYM), but...what you measure is what you get (WYMIWYG)

Clear lines of sight providing assurance (basis for metrics & internal auditing)

Now you can go train your winners....

Click the logo for the Horses for Courses article on LinkedIn



Thank You...and good luck!

Questions?