



Lean Manufacturing

**Anno Accademico 2016-2017**

LEAN CLUB

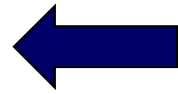
Fabrizio Bianchi



**Toyota Production System, Lean Manufacturing, Total Quality,  
6-Sigma, WCM (World Class Manufacturing)**

LEAN CLUB

- TOYOTA PRODUCTION SYSTEM

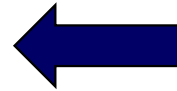


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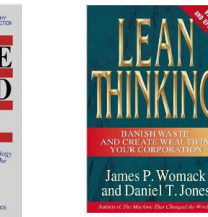
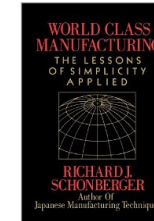
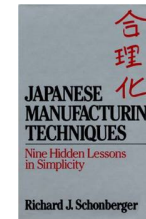


ANNI '70

- WORLD CLASS MANUFACTURING
- JIT

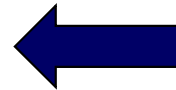


SHONBERGER

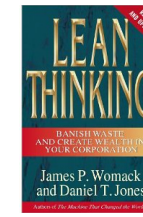
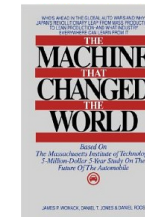


ANNI '80

- LEAN MANUFACTURING/LEAN ENTERPRISE

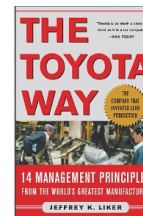
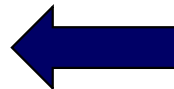


JONES-WOMAK



ANNI '90

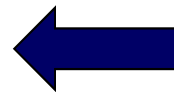
- TOYOTA WAY



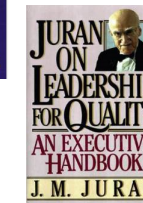
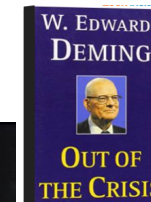
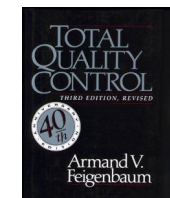
J.K. LIKER

ANNI 2000

- TOTAL QUALITY
- COMPANY WIDE QUALITY CONTROL



TOTAL QUALITY/COMPANY WIDE QUALITY CONTROL  
JURAN - DEMING - FEIGENBAUM



ANNI '50-'60

- 6 SIGMA
- MOTOROLA

ANNI '80

▪ TOYOTA PRODUCTION SYSTEM

TAIICHI OHNO

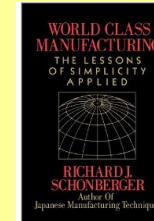
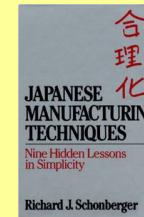
ANNI '70



▪ WORLD CLASS MANUFACTURING  
▪ JIT

SHONBERGER

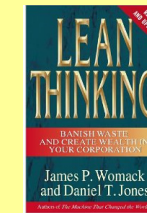
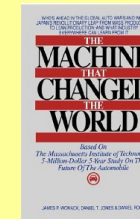
ANNI '80



▪ LEAN MANUFACTURING/LEAN ENTERPRISE

JONES-WOMAK

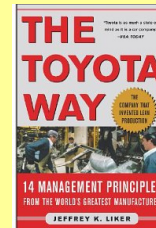
ANNI '90



▪ TOYOTA WAY

J.K. LIKER

ANNI 2000



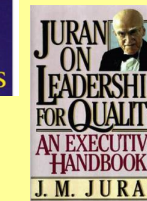
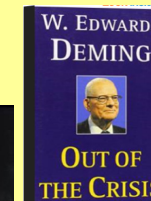
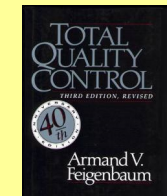
▪ TOTAL QUALITY  
▪ COMPANY WIDE QUALITY CONTROL

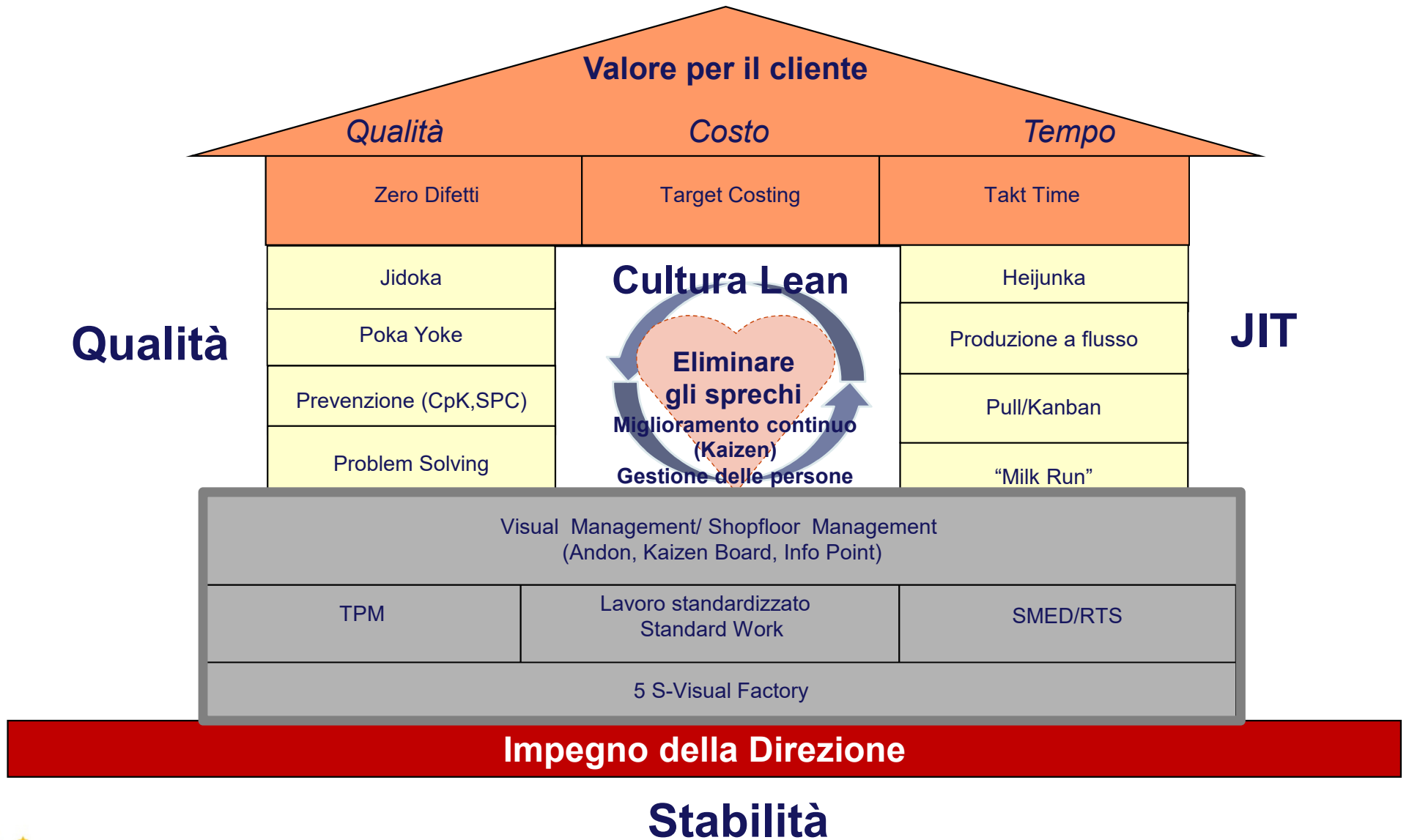
ANNI '50-'60

▪ 6 SIGMA  
MOTOROLA

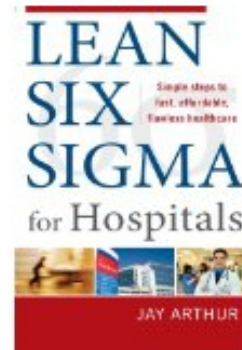
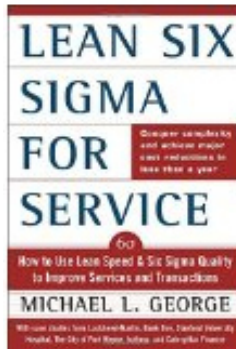
TOTAL QUALITY/COMPANY WIDE QUALITY CONTROL  
JURAN - DEMING - FEIGENBAUM

ANNI '80





## Lean 6-Sigma



La novità del Six Sigma è stata quella di sistematizzare l'uso di strumenti statistici, già noti, per una più approfondita analisi dei dati, la cui raccolta diventa fondamentale nella conoscenza dei processi.

I dati, pertanto, diventano il punto di partenza per la comprensione ed il miglioramento dell'azienda. *“I numeri governano il mondo, ciò che non si misura non si conosce e ciò che non si conosce non si governa” (Mikel Harry).*

**I dati, pertanto, diventano il punto di partenza per la comprensione ed il miglioramento dell'azienda.**

Novità???

*"I numeri governano il mondo, ciò che non si misura non si conosce e ciò che non si conosce non si governa" (Mikel Harry)*



*"In God we trust; all others must bring data."*

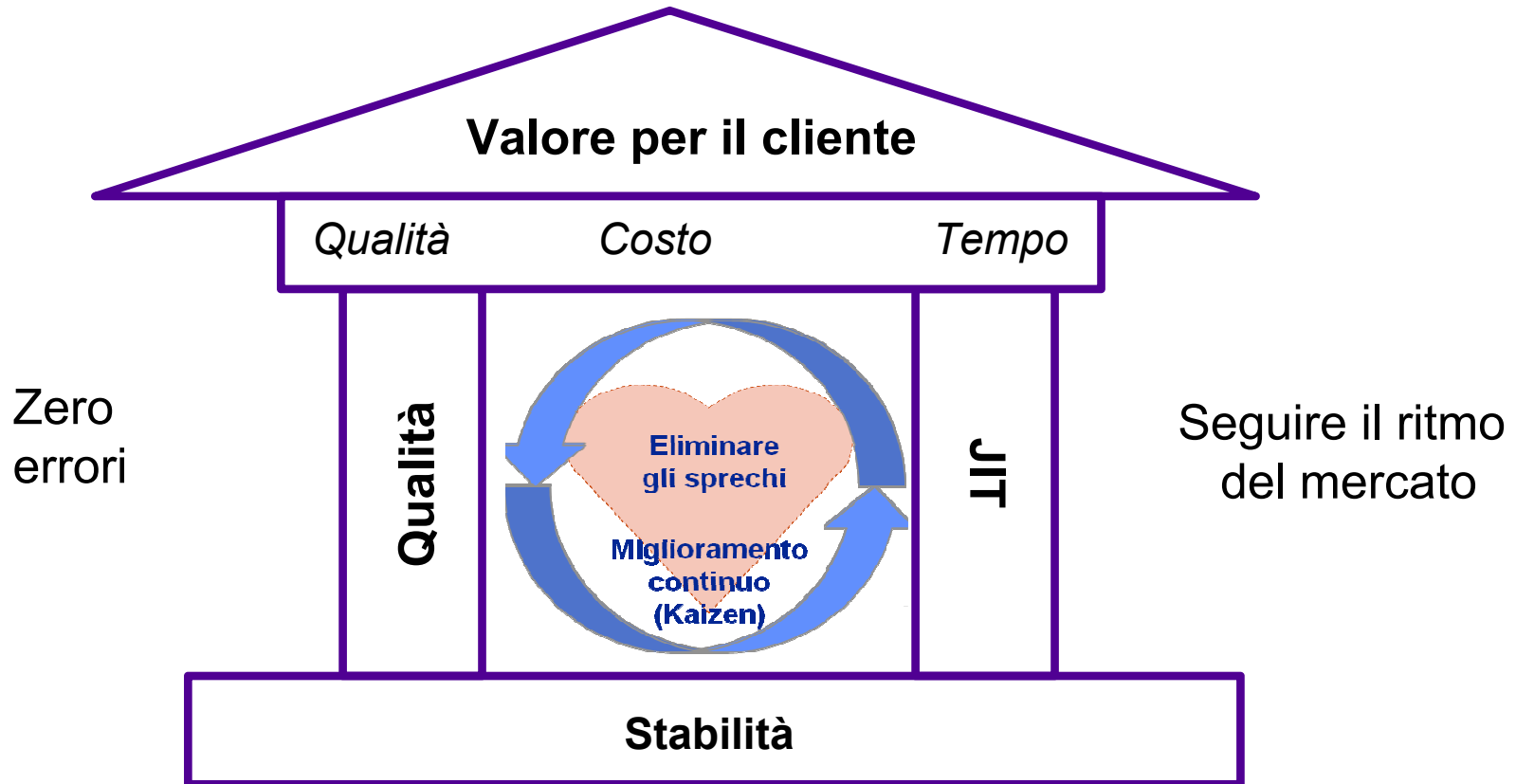
**W. Edwards Deming**

*" Si fa così da anni"*  
è la confessione che  
il sistema non  
funziona"

**W. Edwards Deming**







Standard, eliminazione dei vincoli, livellamento il lavoro