




ORACLE®

Lean Six Sigma Conference

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E&O Hotel, Penang, Malaysia



**Lean or Six Sigma?
Which One First?**



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Speaker:

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Topic:

Lean or Six Sigma?

Which One First?

Two most recognized productivity improvement platforms...

by world class companies around the world...

LEAN

SIX SIGMA

Billions Dollars Club

LEAN

SIX SIGMA

TOYOTA

Wiremold

Lantech

Boeing

Solectron

MOTOROLA

GE

DuPont

Honeywell

Kodak

more to the lists...

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Key Points Summary

1

Lean

Lean Benefits
Key Tools
Success Factors
Challenges

2

Six Sigma

6 Sigma Benefits
Key Tools
Success Factors
Challenges

3

Lean Sigma

LeanSigma
LSS X-plan
LSS Speed Loop
Benefits

LEAN BENEFITS:

- Deploying effective ways to eliminate **WASTE** (Non Value Added) with the goal of
 - reducing **process cycle times**
 - improving **delivery performance**
 - reducing **cost of operation**

LEAN BENEFITS:

Space Saving
Productivity Improved
WIP Reduction
Lead Time Reduction
Quality Improvement



Cost Reduction
Shorten Delivery

2004 Shingo Prize Winners

DELNASA 5&6 - DELPHI

- 41% productivity improvement
- 70% inventory turn improvement
- 40% improvement on 1st time quality
- 200% participation in employee suggestion
- 22 million work-hour without a lost day

LEAN TOOLS

5S Workplace

Value Stream Mapping

Kaizen

Work Standardization

Demand/Load Leveling

Visual Management

Employee Involvement

One Piece Flow

Cellular Production

Pull Production

Poka-Yoke

Quick Changeover

Total Productive Maintenance

Supply Chain Management

not complete list

LEAN SUCCESS

lies in

finding the *Effective Ways*
to eliminate wastes

5Q that influence success

5S Workplace

Cellular Production

Value Stream Mapping

Pull Production

Poka-Yoke

Quick Changeover

Demand/Load Leveling

Visual Management

Employee Involvement

Total Productive Maintenance

Which one to use?

How to use?

How often?

Partial or full impact?

Who is leading?

LEAN CHALLENGES

- Process Incapability and Instability
- Demand Fluctuation
- People Issues

SIX SIGMA BENEFITS

- Using statistical techniques to understand, measure and reduce process **VARIATION** with primary goal of
 - reducing **process variation**
 - reducing **defects**
 - reducing **cost of poor quality**

SIX SIGMA BENEFITS:

Critical Process Stability
Simplified Process
Reliability & Stability
Defect Reduction
Yield Improvement



Cost Saving
Customer Satisfaction

Bank Of America

report at ISSP Conference 2003

- Reduction in DPMO from 4500 to 1000
- 25% reduction in check sorter

Raytheon Aircraft's IT Department

reported in CIO magazine

improvement in claims processing
resulting USD13million savings

SIX SIGMA Tools

Process Mapping

SIPOC

CTQ

SPC

FMEA

DOE

QFD

DFSS

Cost of Quality

ANOVA

Multi-Variance

Hypothesis Testing

Regression

Statistical Tools

MSA Gauge RR

Root Cause Analysis

Not complete list

SIX SIGMA SUCCESS

lies in

Expert application of
Statistical Tools

to eliminate process variation

5Q that determine success

Process Mapping

SIPOC

SPC

FMEA

DOE

QFD

MSA Gauge RR

ANOVA

Multi-Var and Hypothesis

Regression

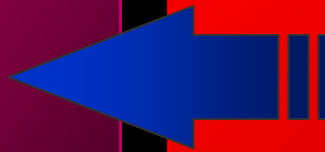
Which one to use?

How to use?

How often?

Partial or full impact?

Who is leading?



SIX SIGMA CHALLENGES

- Dedicated Black Belt Program
- Long Project Duration
- Candidate Issues

LEAN

or

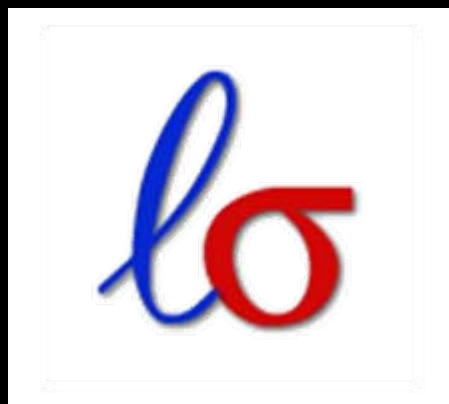
SIX SIGMA

Which one is for you?

COMPARISON

	Lean	Six Sigma
Theme of Reduction	Waste	Variation
Key Justification	Speed	3.4 DPMO
Saving from	OpCost	CoPQ
Enhance Value	Delivery	Quality
Phase 1 Learning Curve	Short	Long
Technicality	Moderate	High
Project Leadership	Kaizen	Black Belt

Seeking a suitable
IMPROVEMENT
PLATFORM



Integrating Lean and Six Sigma

Lean Sigma

Lean
Speed + **combine** 6 Sigma
Quality

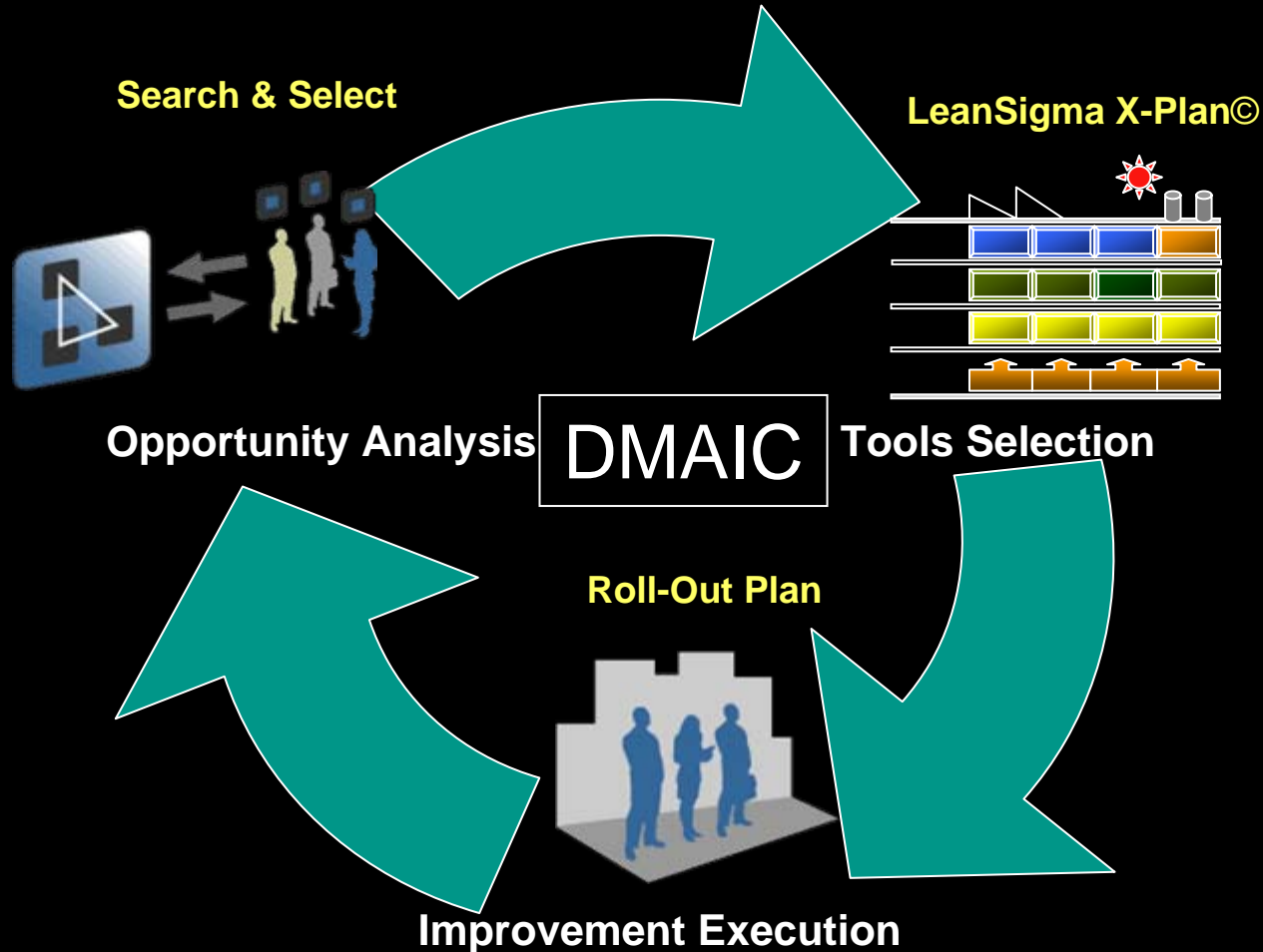
D I F F E R E N C E

LEAN SIGMA *via Pareto Principle*

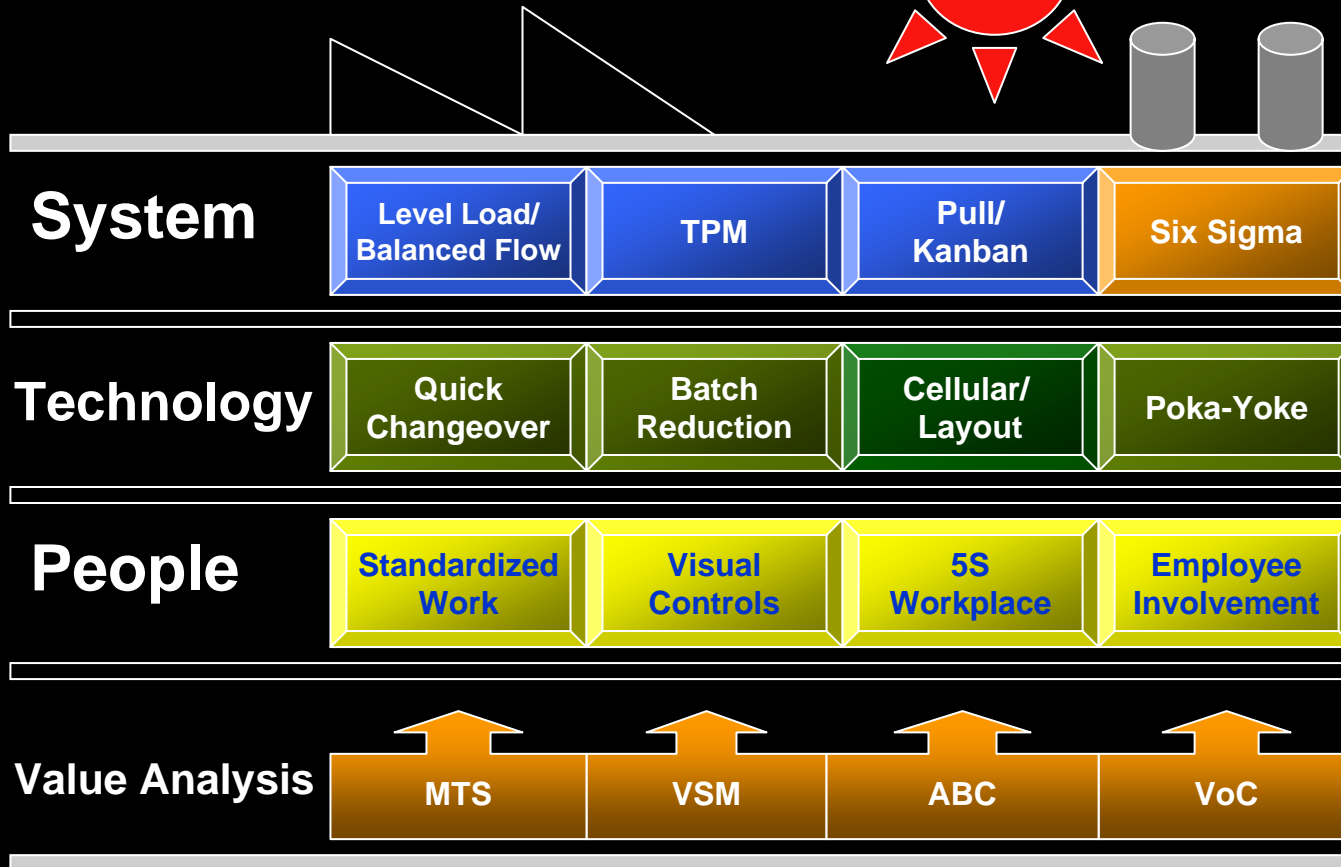
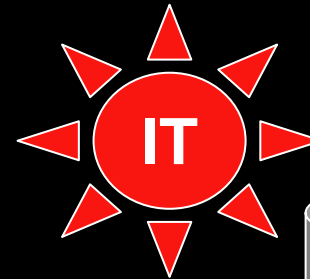
80% of problems come from 20% of the causes

- By employing the Pareto's 80/20 rules
- 80% of benefits can be derived via application of 20% of the tools at one time

LEAN SIGMA Speed Loop

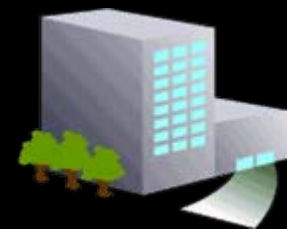


LeanSigma X-Plan[®]



LEAN SIGMA unique features

- **Rapid Deployment**
- **Clear Targets**
- **Higher Improvement Yield**
- **Higher Improvement Pace**



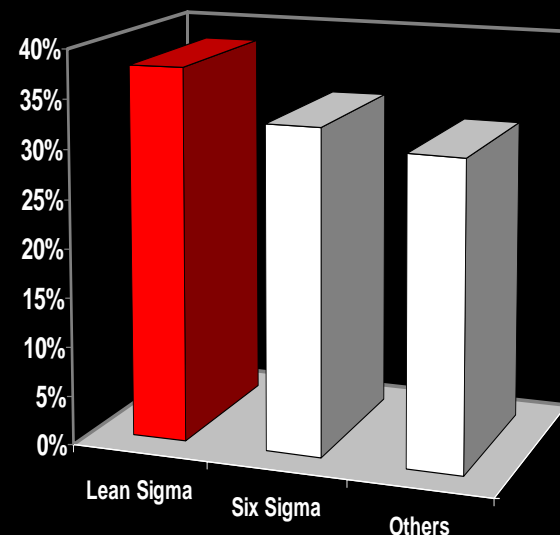
Benchmark Result

84 companies across 23 industries

38% Preferred Lean Sigma

29% Pursuing Six Sigma

33% Other Approaches



Source : *Best Practice Ilc*

“Insights for implementing Lean and Six Sigma and other productivity platform” Survey authorized by Global Benchmarking Council. August 2003

www3.best-in-class.com/dr97.htm

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WHO IS PURSUING LEAN SIGMA ?



The End
Thank You

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A large, stylized logo in the background consisting of a grey 'Q', a red ampersand '&', and a grey 'A'. The text 'QUESTIONS' and 'ANSWERS' is overlaid on this logo.

QUESTIONS
ANSWERS