Lean Leadership

With

Alden B. Davis

Building Our Future

Lean Leadership

Objective

To be knowledgeable in the historical roots of lean and their improvement potential

In a way that you become a champion of the concepts

So that you can be the organization's conscience, change strategist and driver for actual results in the books.

KLMRO

Flight Plan

Everyone is Important Turk

- Plenty of money…no one cares
- Plenty of people/labor…no one cares
- No profit…no one cares
- But…people who DO the work and people who think about HOW to do the work…we care!

Every morning in Africa, a Gazelle wakes up. It knows it must run faster than the fastest lion or it will be killed.

Every morning a Lion wakes up. It knows it must outrun the slowest Gazelle or it will starve to death.

It doesn’t matter whether you are a Lion or a Gazelle…

when the sun comes up, you'd better be running!

Thomas Friedman

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Motivate

Mobilize

Move-out

Being Wasteful Makes Us Less Competitive

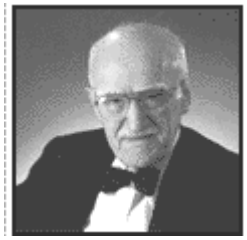
浪费使我们竞争能力减低

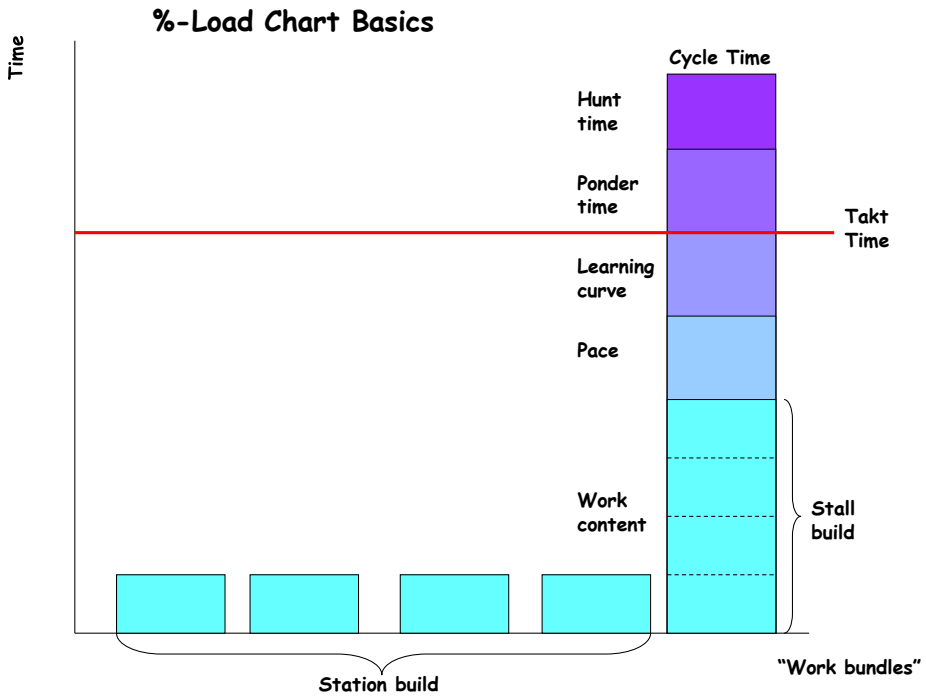
Outcomes

Know founders
Know history
Know philosophy







Know tools
Know destination
Know the money

Test Your Understanding: Lean Leadership

Grading Criteria= Thoughtfulness + Substance + Critical Thinking + Concept Understanding

- Which Lean value is most important and describe why?

- If you chose to be a Lean Leader at work, what would be your first project and why.

- What is the most important message in The ValueTree™ for you to tell your organization?

Encouraged

Enthused

Energized

Enlightened

Equipped

Excited

shuttle

Enlivened

Emboldened

Improvements Possible

Key results to be expected with a soundly implemented and well maintained "kaizen."

Immediately:

• 20% - 30%	Productivity improvement
• 30% - 40%	Increased equipment uptime
• 30% - 50%	Reduction in space rqmts.
• 10% - 20%	Reduction in purchased costs
• 50% - 60%	Improvement in product quality
• 10% - 20%	Reduction in WrkComp Accrual
• 70% - 90%	Reduction in WIP inventory

施行与保持灵活生產而達到的重要效果

Key Results to Be Expected with a Soundly Implemented and Well Maintained Flexible Manufacturing Approach

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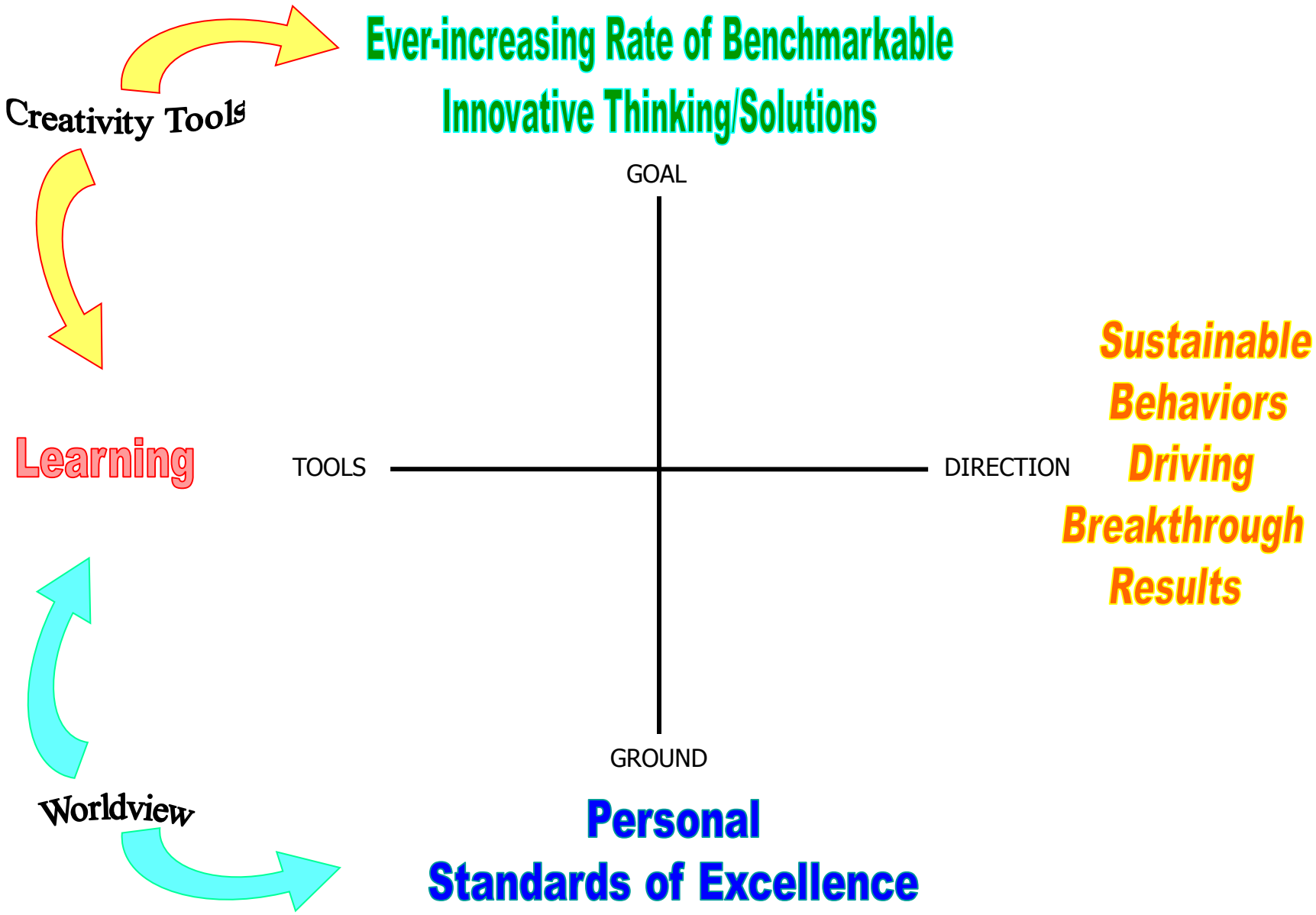
Immediate

■ 20%–30%	改善生產力 Productivity improvement
■ 30%–50%	減低場地需求 Reduction in space requirements
■ 50%–60%	改善產品質量指標 Improvement in product quality indices
■ 70%–90%	減低積壓存倉 Reduction in WIP inventory


Creativity Tools
Ever-increasing Rate of Benchmarkable
Innovative Thinking/Solutions
GOAL
Learning
TOOLS
DIRECTION
Sustainable
Behaviors
Driving
Breakthrough
Results
GROUND
Worldview
Personal
Standards of Excellence

Why might one consider conversation to be the oldest and easiest way to cultivate the conditions for change?

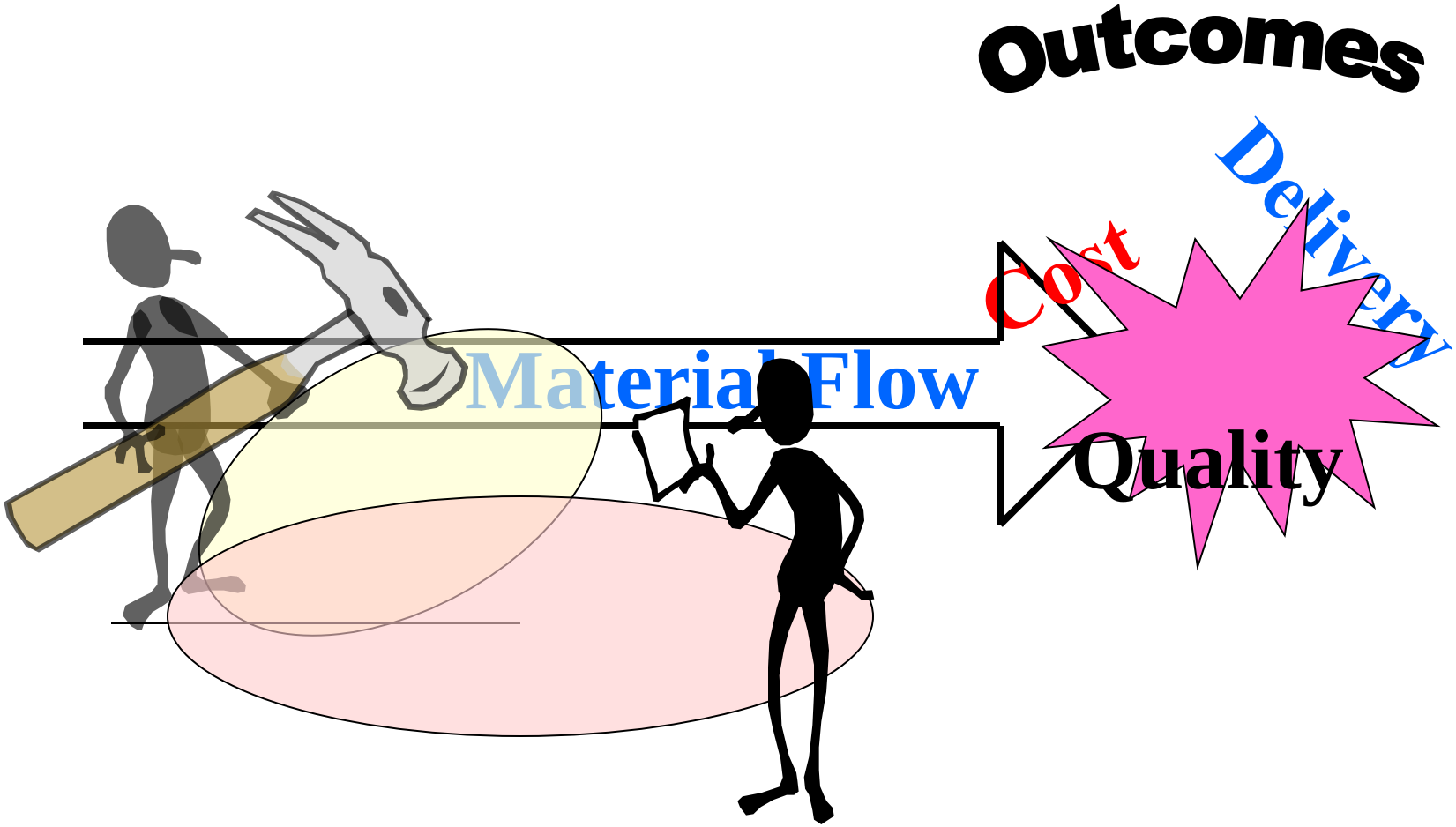
Success Objective

Given an awareness of your personal standards of excellence

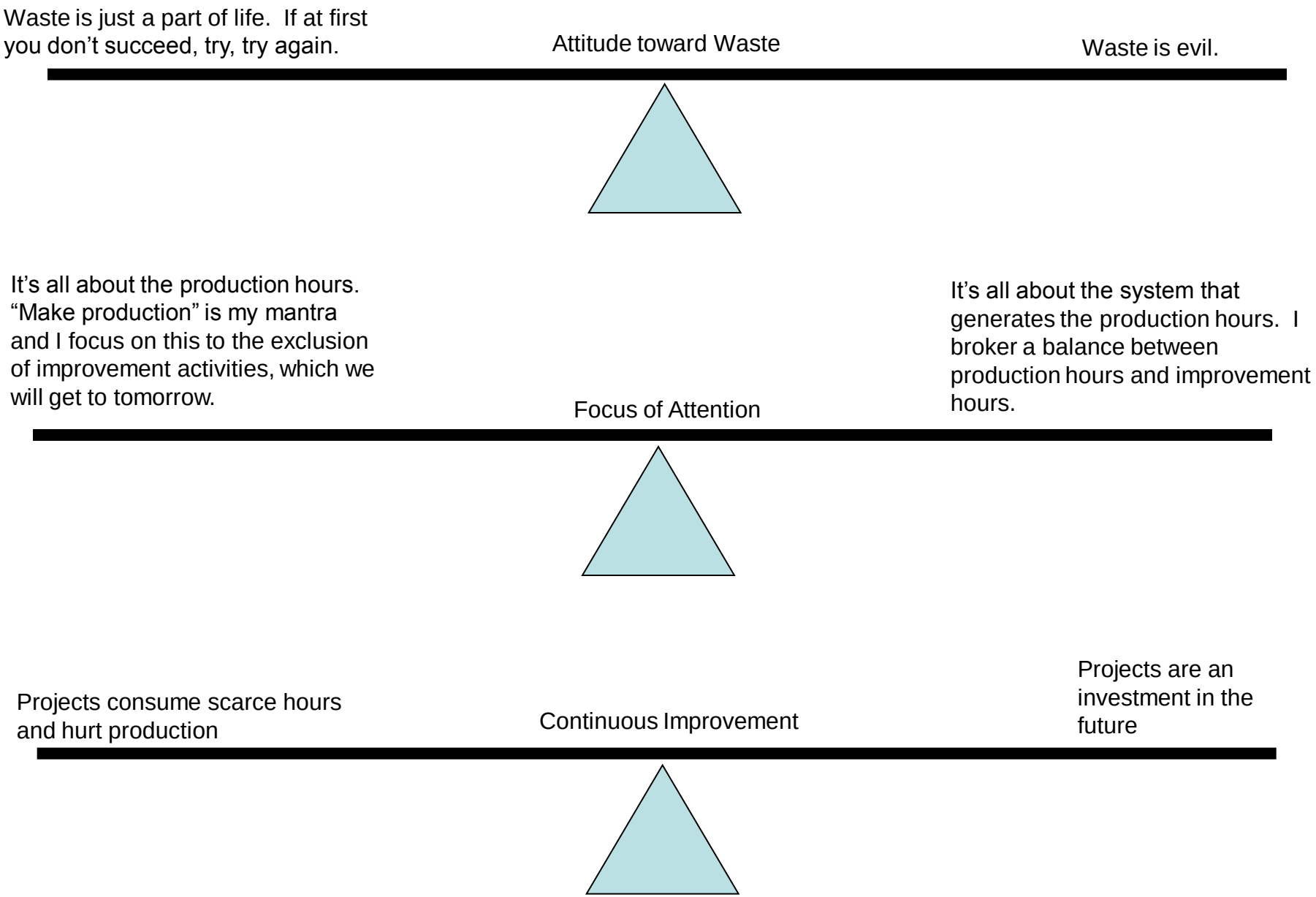
Stand in front of the group and deliver a leadership statement

In a way that the standard is understood, we hear the phases “I believe” or “for me” or “to me,” and the metric of success is clear with the phrase “I will not be happy until…”.

Why is this work Important?



FINDING THE BALANCE

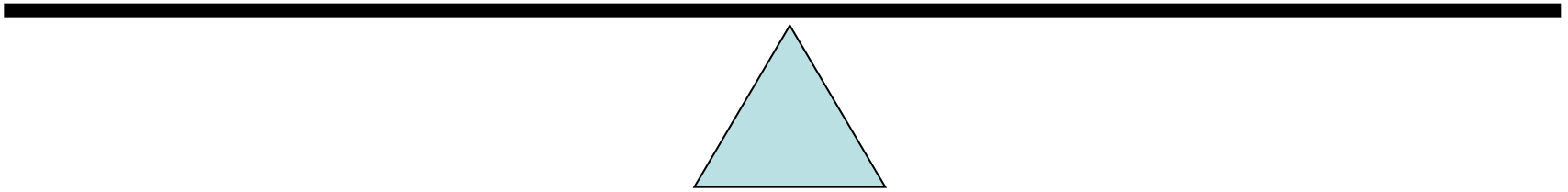


FINDING THE BALANCE

Upper level management tells people what kind of adjustments to make based on their assessment of unsatisfactory variances.

Managing Production

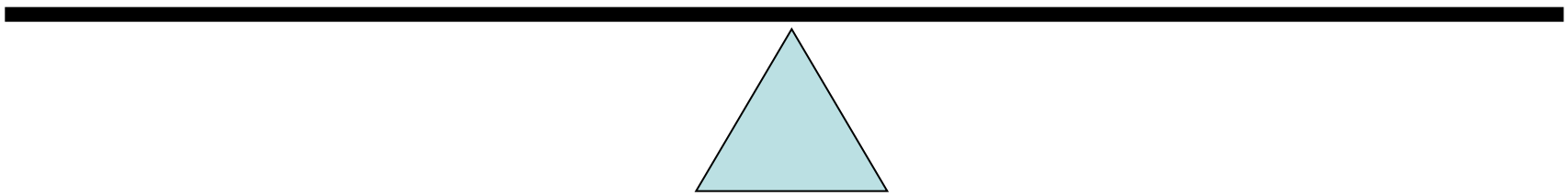
The total organization is dedicated and trained to improve the daily flow of material.

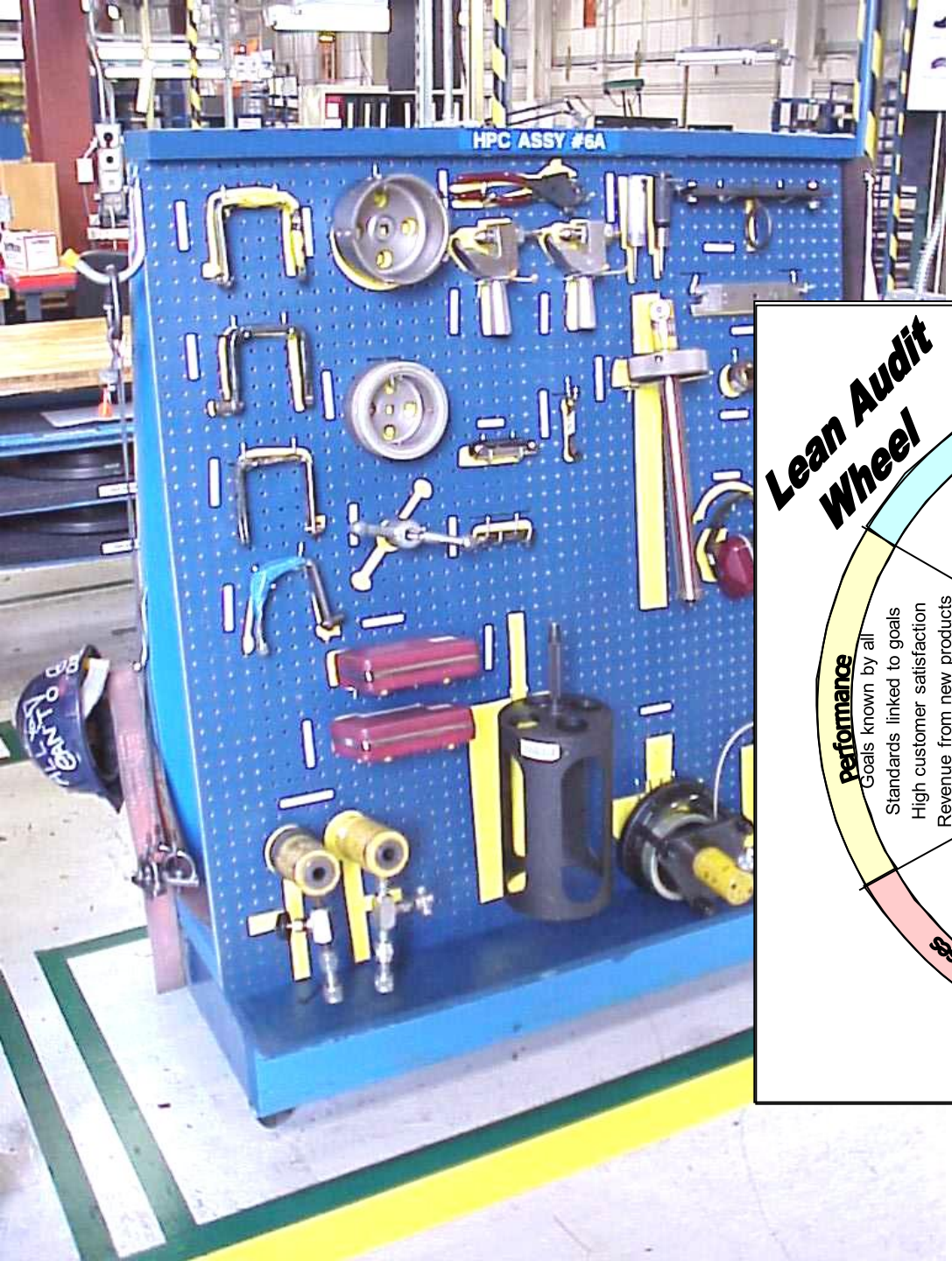


Pay people based on seniority and completion of technical training for a particular job.

Pay

Pay people based on levels of skills successfully applied to operating, maintaining and improving a process.

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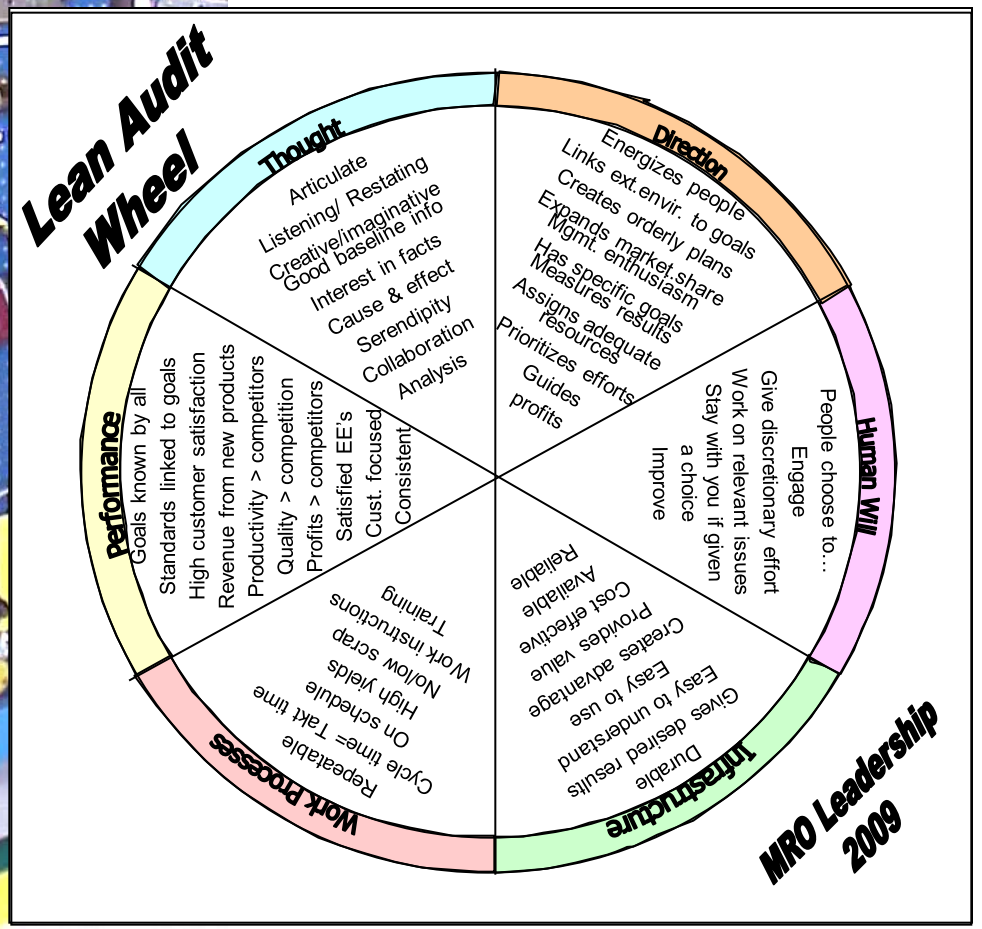
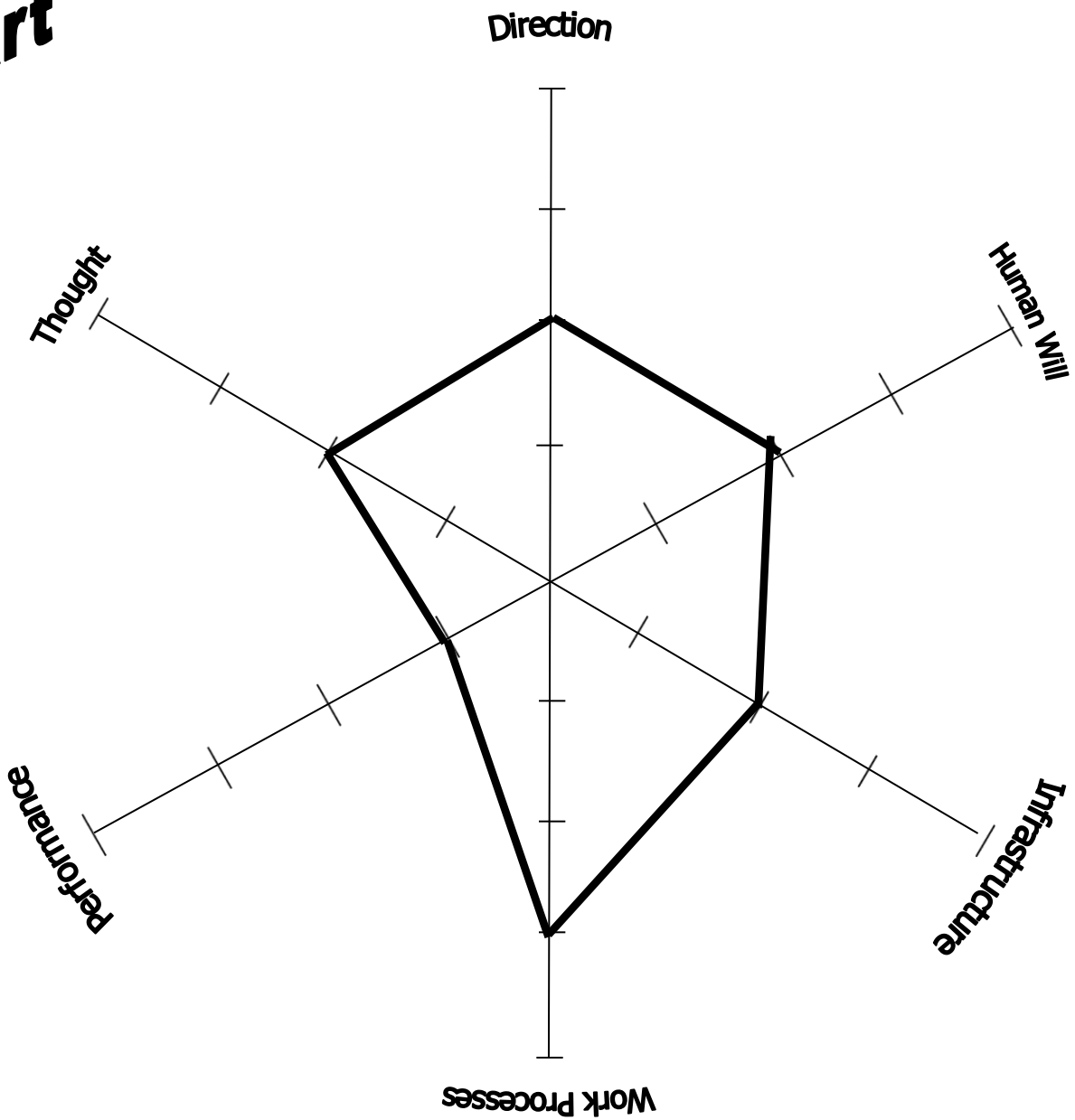
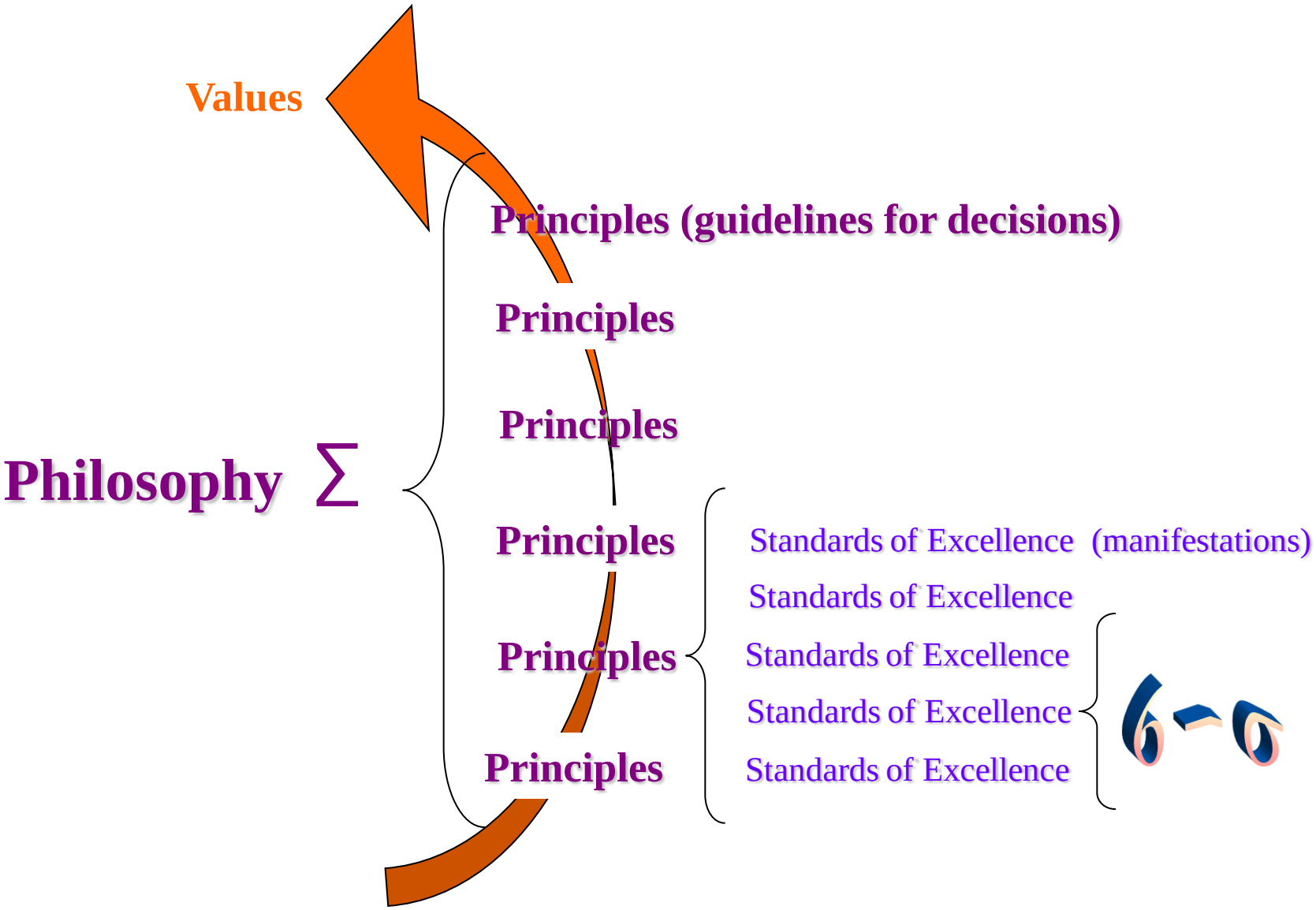

Lean Audit Wheel
Thought
Articulate
Listening/ Restating
Creative/imaginative
Good baseline info
Interest in facts
Cause & effect
Serendipity
Collaboration
Analysis
Direction
Energizes people
Links ext.envir. to goals
Creates orderly plans
Expands market share
Mgmt. enthusiasm
Has specific goals
Measures results
Assigns adequate resources
Prioritizes efforts
Guides profits
Human Will
People choose to...
Engage
Give discretionary effort
Work on relevant issues
Stay with you if given a choice
Improve
Infrastructure
Durable
Gives desired results
Easy to understand
Easy to use
Creates advantage
Provides value
Cost effective
Available
Reliable
Work Process
Repeatable
Cycle time= Takt time
On schedule
High yields
No/low scrap
Work instructions
Training
Performance
Goals known by all
Standards linked to goals
High customer satisfaction
Revenue from new products
Productivity > competitors
Quality > competition
Profits > competitors
Satisfied EE's
Cust. focused
Consistent
MRO Leadership 2009

Lean Audit Radar Chart




Values
Principles (guidelines for decisions)
Principles
Principles
Philosophy ∑
Principles
Standards of Excellence (manifestations)
Standards of Excellence
Principles
Standards of Excellence
Standards of Excellence
Principles
Standards of Excellence
6 - 6

七項生產浪費

The Seven Wastes in Manufacturing

1. **Shipping Defective Parts** 裝運疵貨
2. **Processing** 進程
3. **Delays or Waiting for Processing** 延遲或等候处理
4. **Motion** 動移
5. **Transportation** 運輸
6. **Overproduction** 超量生產
7. **Excess Inventory** 过剩存倉

shi shang ben wu lu, zou de ren duo le bian cheng le lu

- By **Lu Xun** Famous Author in China


6=6

1900 - Frederick Taylor (1856-1915): Taylor was American engineer known for his invention of Scientific Management. He believed work could be broken down into components to determine the optimal time and motion.

1910 - Henry Ford (1863-1947): Ford was the founder of the Ford Motor Company and father of the modern assembly line manufacturing and mass production. He advocated for improved work standards, merit incentives to encourage and retain the best mechanics, and aggressive cost management for his well-known automobile industry.

1920 - Walter Shewhart (1891-1967): Shewhart used information (SPC) to control processes and create profitable situations for both businesses and consumers.

1930 – W. Edwards Deming (1900-1990): Deming was an American statistician and founding father of the quality movement. 14 Points, a management guideline. Believes that management controls 85% of what makes a worker successful. Expounded Shewhart's PDS(study)A cycle.

1934 - Joseph Juran (1904-present): Juran believed that people were key to quality and shaped Total Quality Management philosophy. The primary tenets included management involvement, Pareto, training, and project approach. He defined quality as "fitness for use".

1941 - Shigeo Shingo (1909-1990): Shingo believed that good engineering can design out defects; transcend SPC and stop the process when defects occur. He is known for Poka-Yoke, SMED, Zero Quality Control.

1945 - Kaoru Ishikawa (1915-1989): Ishikawa created fishbone diagram to allow bottoms-up approach to root-cause analysis. He believed in company-wide quality control throughout a products total life cycle.

1955 - Genichi Taguchi (1924-present): Taguchi equated quality with cost (and lost revenue). He devised set of tools to identify and prioritize "noise" in the work process.

1958 - Philip Crosby (1926-2001): Crosby simplified the language and concepts for a broader audience. He is known for "quality is free" and "zero defects." He believed that if conformance requirements are set, the process will have zero defects.

1995 - Alden B. Davis (1956-present): Davis simplified business finances into the ValueTree which links all improvement activities to business value. He believes people are most effective in business when given line-of-sight from activity to dollar flows.

Taylor

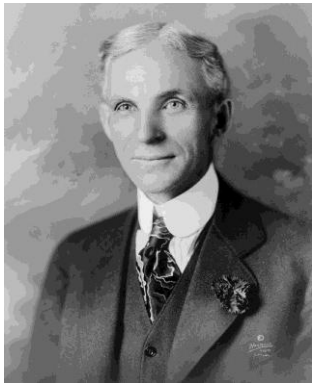
Shewhart

Juran

Ishikawa

Crosby

1900 1910 1920 1930 1940 1950 1960 1970 1980 1990 2000



Ford

Deming

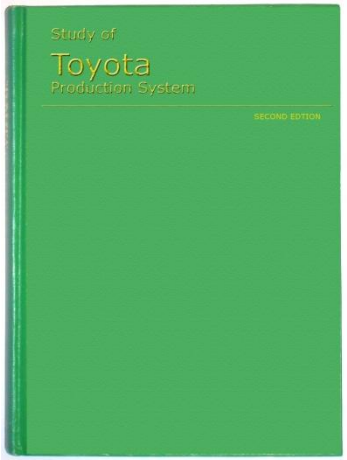
Shingo

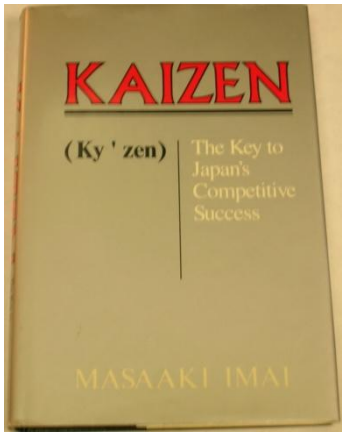
Taguchi

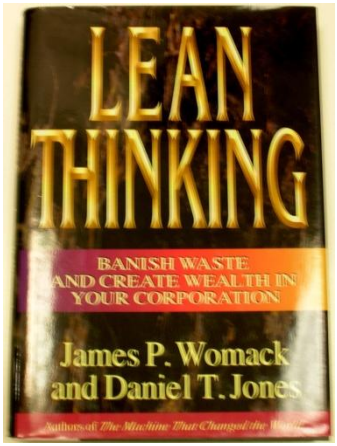
Davis

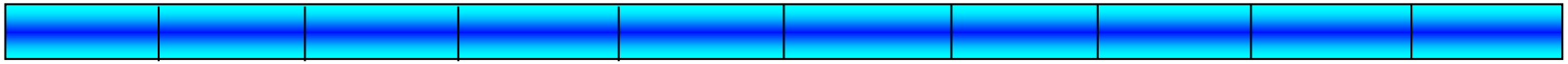
LEAN – HISTORICAL FIGURES

The history of lean spans decades and has launched a myriad of books and publications, academics and practitioners. “Doing” lean does not guarantee results. Are you ready to create financially-based visions of excellence? Test yourself with these questions.

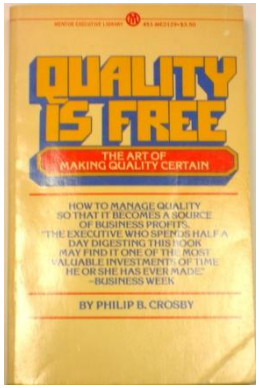


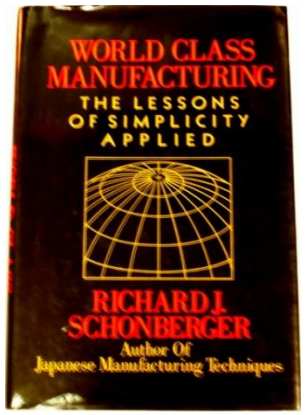






1900 1910 1920 1930 1940 1950 1960 1970 1980 1990 2000





LEAN TEXTS

- Are you willing to bet your future on Six-sigma, Continuous Improvement projects delivering results on their own?

- These web links are good resources to continue your journey:

- www.GoalQPC.com
  - Strong concentration on quality

- www.ProductivityPress.com
  - One of the most comprehensive collections of publications on lean improvement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$hifting Performance with the *Value Tree*

Opening Questionnaire

1. Most of our workforce can personally connect their daily work and associated expenses to an Income Statement and Balance Sheet. T F

2. Our financial people understand the impact of “lean” so well that they are tough negotiators when setting budget expectations for our lean projects. T F

3. Our organization shares a common understanding of the word “value.” T F

4. Our lean-leaders have personal vision/understanding of value creation. T F

5. “Value” is realized when a lean project has been completed. T F

6. Pursuing lean projects make business sense because they are the right thing to do. T F

7. Shared understanding of the business and its finances increases peoples’ ability to “do.” T F

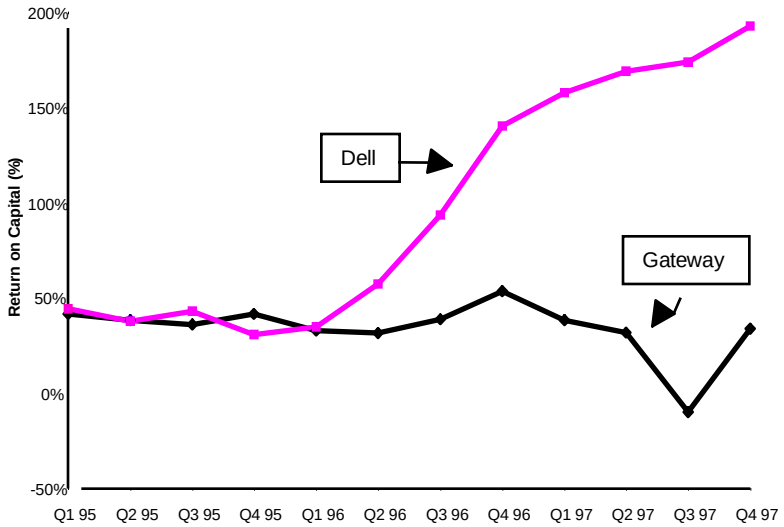
What is the Value Tree?

- Financial model of the business on one page
  - Visually oriented
  - Interactive
  - Easily understood by people
- Financial tool for developing business context
  - Interrelationships of various dollar flows
  - Drivers of business decisions
- Financial “range-finder”
  - Target identification
  - Target selection
- Financial-world de-mystifier
- Financial guidepost helping answer the essence question...“Is the institution increasing its value (how much its worth) or destroying its value?”

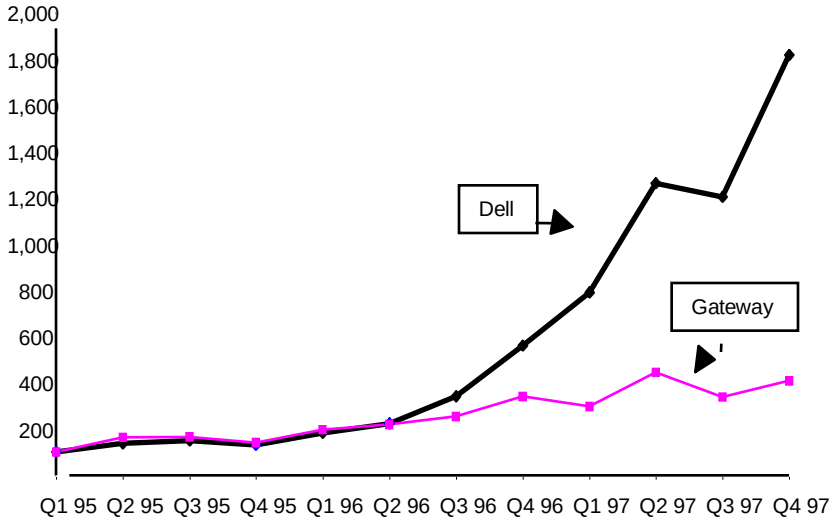
What determines a firm's worth?

The same relationship seems to exist at Dell and Gateway; strong ROIC, strong stock price.

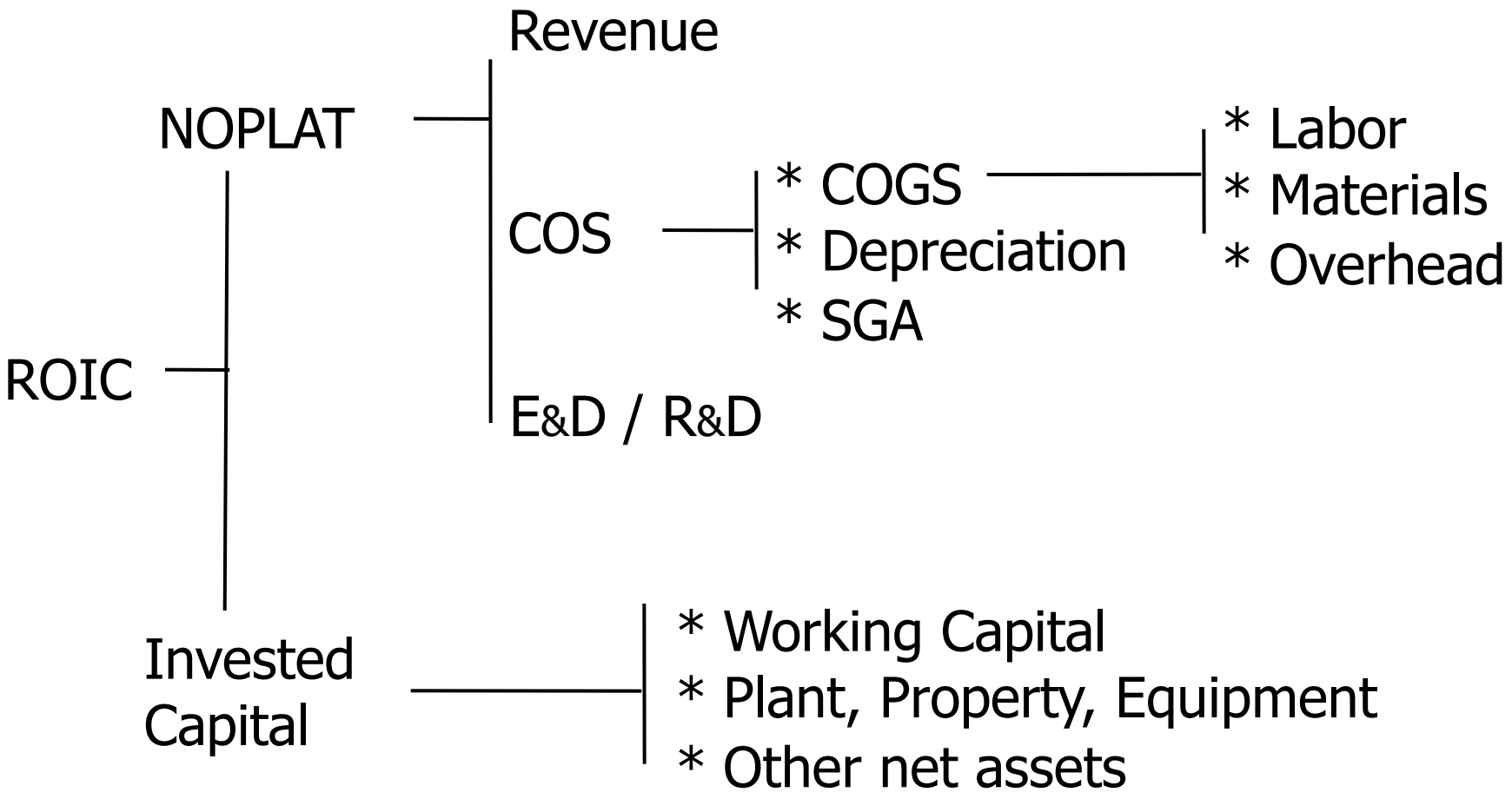
Return On Invested Capital

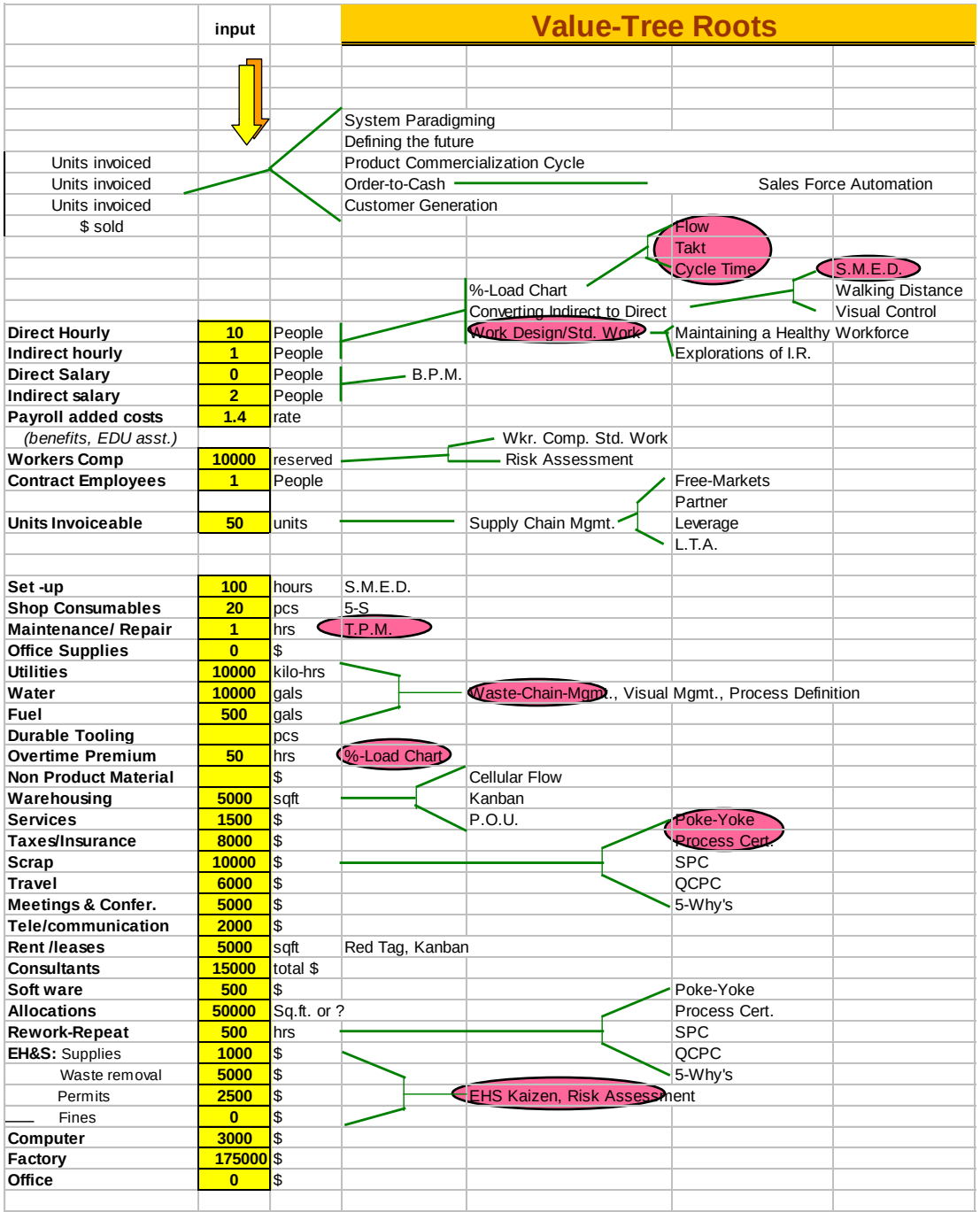


Stock Price

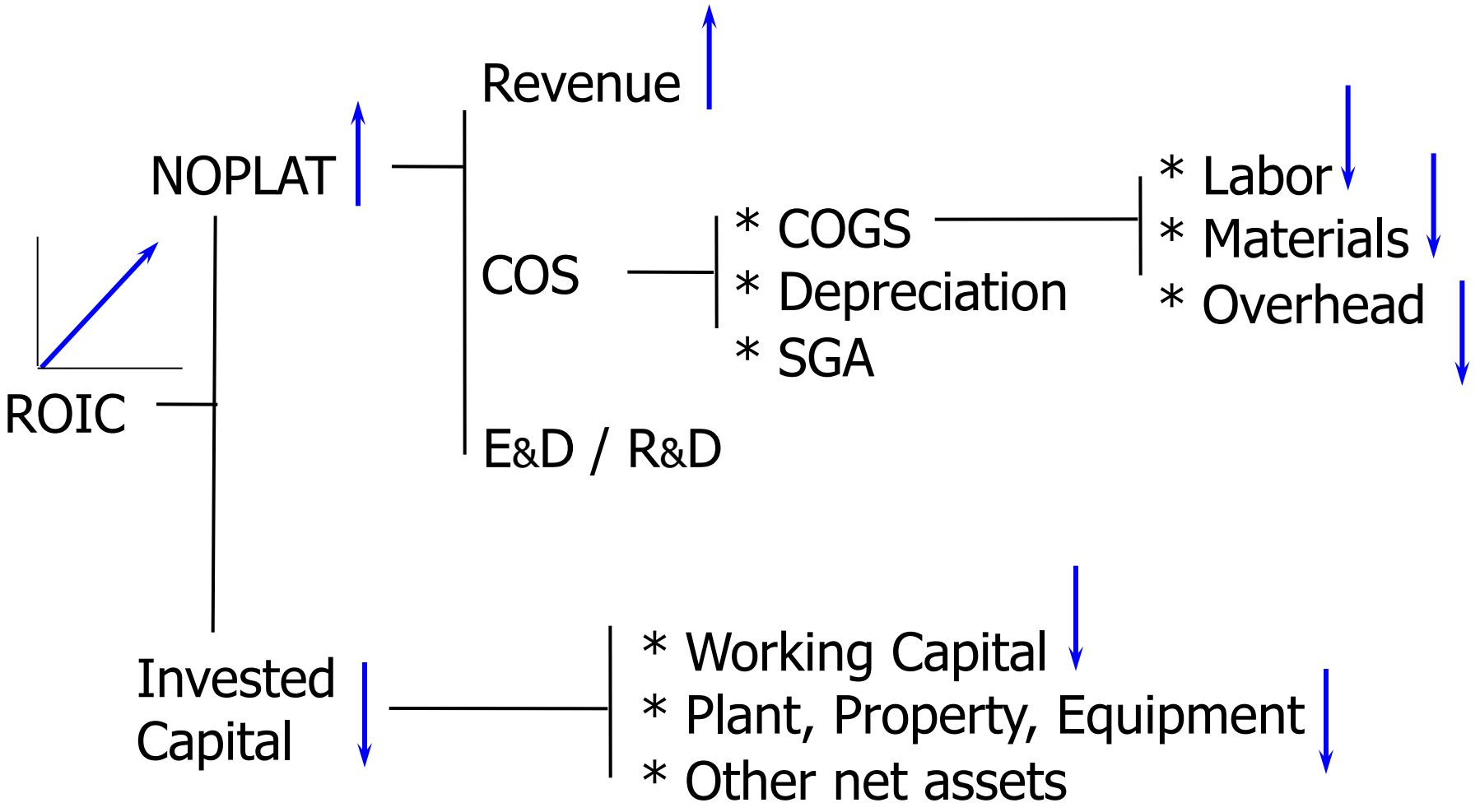


The Value Tree Exercise




input
Value-Tree Roots
System Paradigming
Defining the future
Units invoiced
Product Commercialization Cycle
Units invoiced
Order-to-Cash
Sales Force Automation
Units invoiced
Customer Generation
$ sold
Flow
Takt
Cycle Time
S.M.E.D.
%-Load Chart
Walking Distance
Converting Indirect to Direct
Visual Control
Direct Hourly 10 People
Work Design/Std. Work
Maintaining a Healthy Workforce
Indirect hourly 1 People
Explorations of I.R.
Direct Salary 0 People
B.P.M.
Indirect salary 2 People
Payroll added costs 1.4 rate
(benefits, EDU asst.)
Wkr. Comp. Std. Work
Workers Comp 10000 reserved
Risk Assessment
Contract Employees 1 People
Free-Markets
Partner
Units Invoiceable 50 units
Supply Chain Mgmt.
Leverage
L.T.A.
Set -up 100 hours
S.M.E.D.
Shop Consumables 20 pcs
5-S
Maintenance/ Repair 1 hrs
T.P.M.
Office Supplies 0 $
Utilities 10000 kilo-hrs
Water 10000 gals
Waste-Chain-Mgmt., Visual Mgmt., Process Definition
Fuel 500 gals
Durable Tooling pcs
Overtime Premium 50 hrs
%-Load Chart
Non Product Material $
Cellular Flow
Warehousing 5000 sqft
Kanban
Services 1500 $
P.O.U.
Poke-Yoke
Taxes/Insurance 8000 $
Process Cert.
Scrap 10000 $
SPC
Travel 6000 $
QCPC
Meetings & Confer. 5000 $
5-Why's
Tele/communication 2000 $
Rent /leases 5000 sqft
Red Tag, Kanban
Consultants 15000 total $
Soft ware 500 $
Poke-Yoke
Allocations 50000 Sq.ft. or ?
Process Cert.
Rework-Repeat 500 hrs
SPC
EH&S: Supplies 1000 $
QCPC
Waste removal 5000 $
5-Why's
Permits 2500 $
EHS Kaizen, Risk Assessment
Fines 0 $
Computer 3000 $
Factory 175000 $
Office 0 $

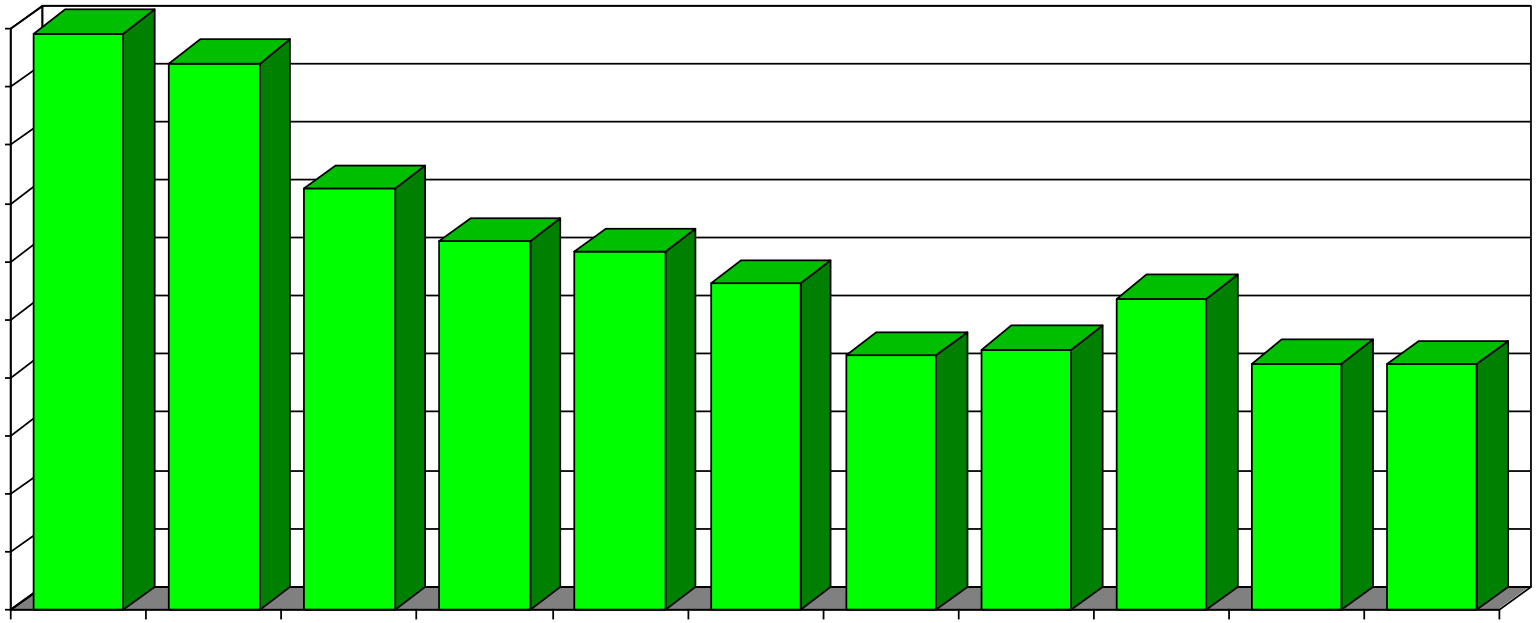
The Value Tree Exercise



Actual results from a large manufacturing facility when the lean principles were implemented with the social principles. 10 years of continuous improvement were delivered with a 36% overall reduction in cost per delivered hour of product.

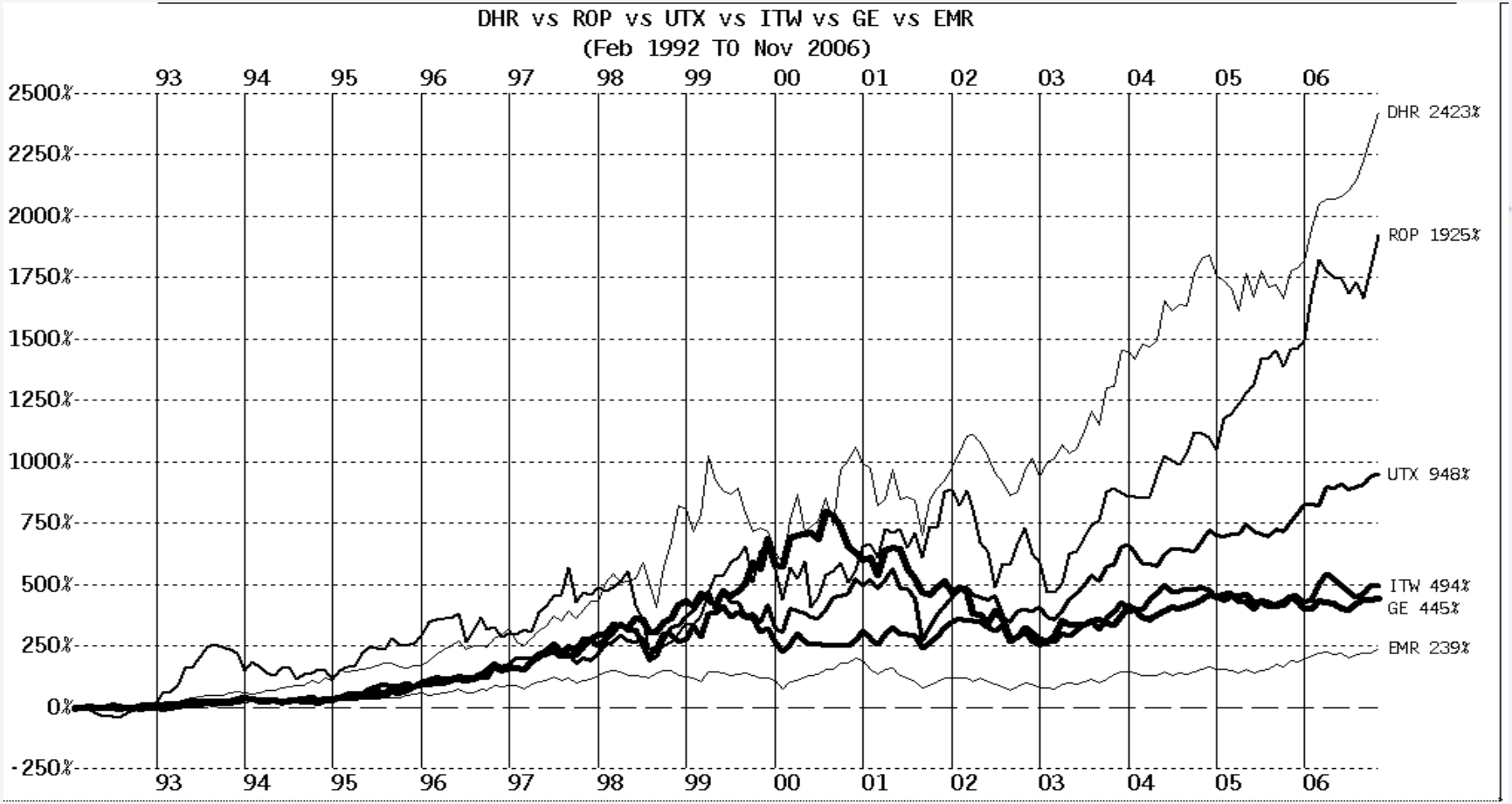
1994 – 2004 YTD (Sept.) Cost Trend - Cost Per Hour

2003 Stds.



Op. Exp. (M)											
Del. Hrs. (000's)	**724**	**759**	**1,025**	**1 ,235**	**1,167**	**1,066**	**978**	**956**	**916**	**937**	**790**
CPH% from 1994	**-**	**-3.2%**	**-16.8%**	**-22.5%**	**-23.6%**	**-27.0%**	**-34.8%**	**-34.2%**	**-28.7%**	**-35.7%**	**-35.7%**

Benchmark Only Against World Class!



Lean Leadership Summit

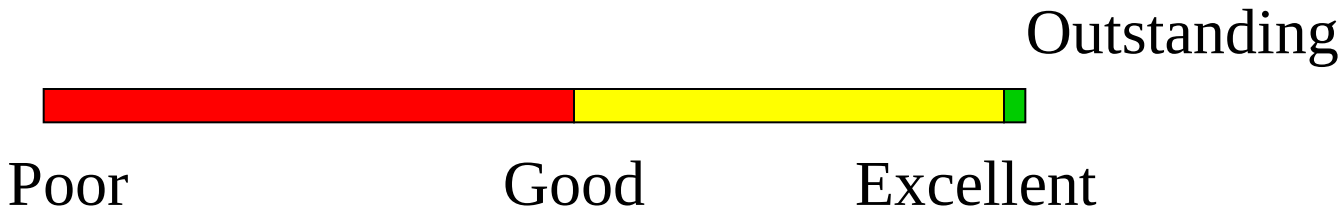
Our Choice

Poor standards deliver Ugly **results/rewards**

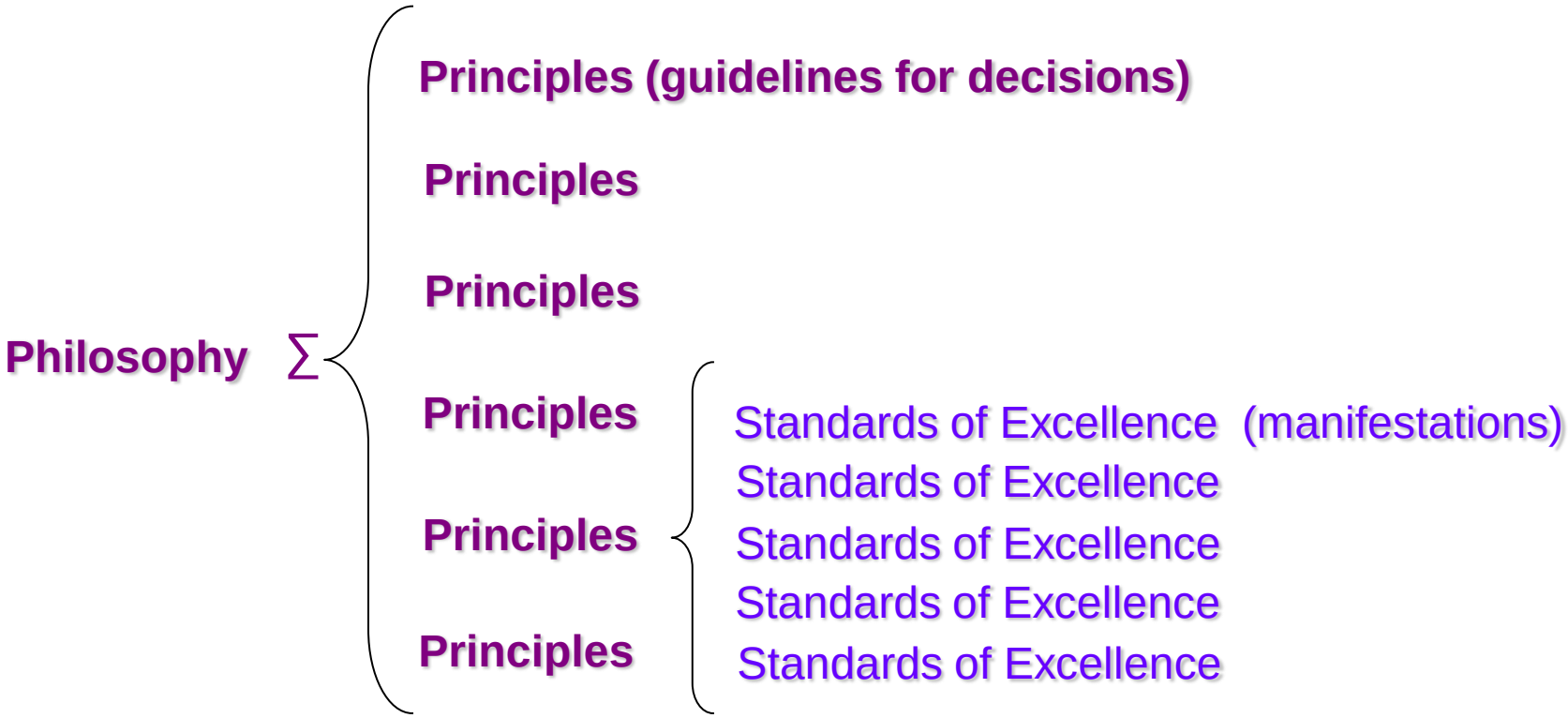
Good standards deliver Poor **results/rewards**

Excellent standards deliver Good **results/rewards**

Outstanding standards **Take** **all the rewards**



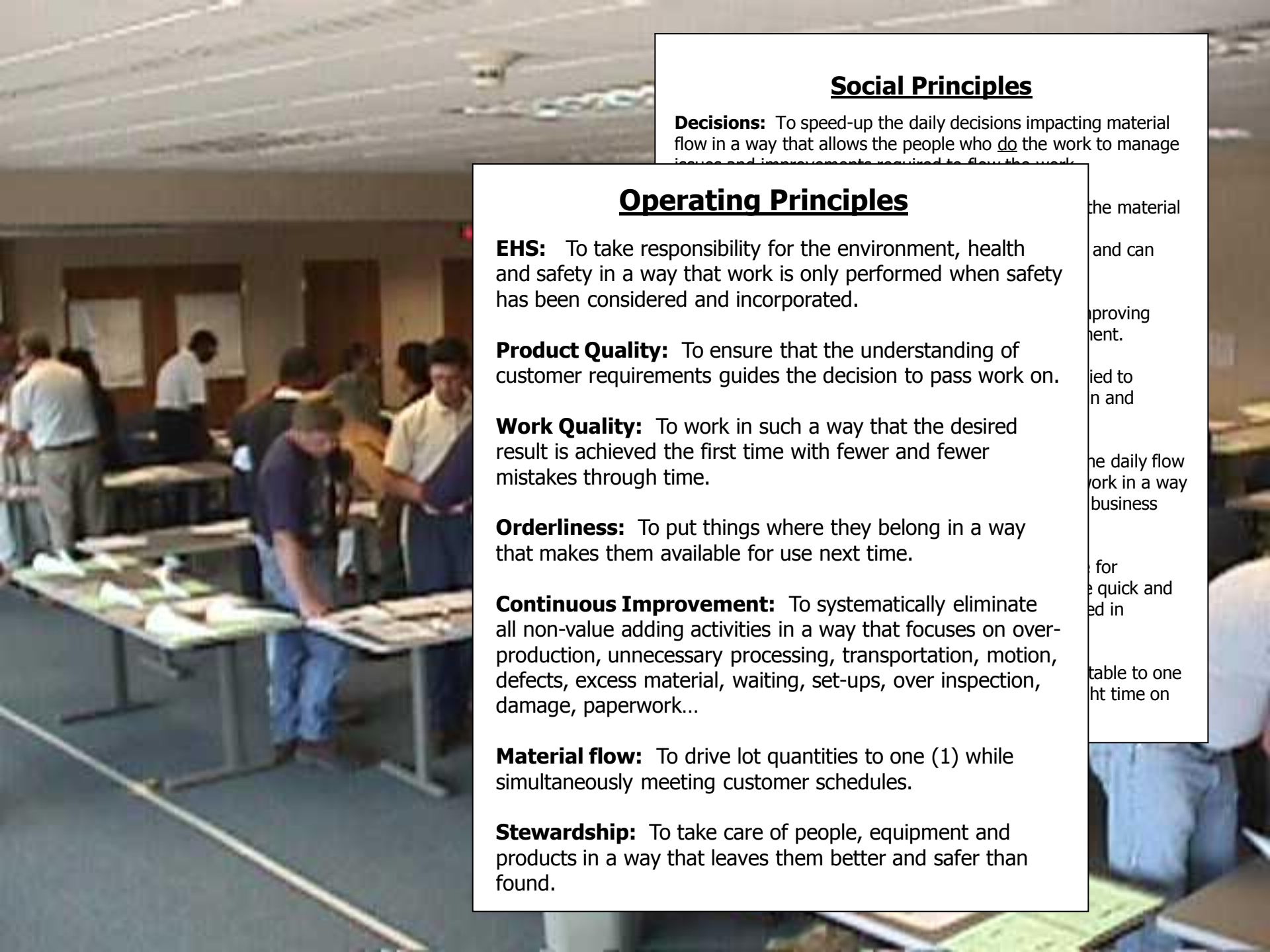
- People know my lean philosophy through the decisions I make and what my standards do and do not allow. Are your behaviors true to a lean philosophy?



LEAN PHILOSOPHY

- The decisions coming out of my lean philosophy are driven by my personal passion for the following:
  - Engineering
  - Synchronicity
  - Lean
  - Stewardship
  - Human spirit
  - Perfection
  - Integrity


Syncronicity
Perfection
Integrity
Values Driving
Lean Leaders
Curiosity
Lean
- Takt
- Pull
- Flow
Engineering
Stewardship
Human Spirit



Social Principles

Decisions: To speed-up the daily decisions impacting material flow in a way that allows the people who do the work to manage

Operating Principles

EHS: To take responsibility for the environment, health and safety in a way that work is only performed when safety has been considered and incorporated.

Product Quality: To ensure that the understanding of customer requirements guides the decision to pass work on.

Work Quality: To work in such a way that the desired result is achieved the first time with fewer and fewer mistakes through time.

Orderliness: To put things where they belong in a way that makes them available for use next time.

Continuous Improvement: To systematically eliminate all non-value adding activities in a way that focuses on over-production, unnecessary processing, transportation, motion, defects, excess material, waiting, set-ups, over inspection, damage, paperwork…

Material flow: To drive lot quantities to one (1) while simultaneously meeting customer schedules.

Stewardship: To take care of people, equipment and products in a way that leaves them better and safer than found.

You never know where the journey will lead when you put it all out there.

THE W

VOL. CCXXVIII NO. 125 ★★★

The Party's Over
Dutch Show Neighbors Some Ways to Attack Their Economic Woes

They Hold Down Pay Raises, Reduce Social Spending, Foster Entrepreneurship

Labor Market Remains Rigid

What's

Business and Finance

Dodging Doom
How a Creaky Factory Got Off the Hit List, Won Respect at Last

Pratt & Whitney's Maine Site Ties Pay to Skills, Offers 'Results-Sharing' Bonuses

Survival of a Plant Manager

By Joseph B. White

NORTH BERWICK, Maine — The old Maine factory is a dinosaur that ought to be shut down, some Pratt & Whitney executives were saying back in 1993. Today the same plant is adding jobs, and the aerospace giant holds it up as a model. What happened?

Maine's largest factory was hauled back from the brink with the help of plant manager Robert Ponchak, a 31-year Pratt veteran who won over his dubious bosses at parent United Technologies Corp. in Hartford, Conn., and saved his own job in the bargain.

Robert Ponchak

The renaissance of this marked-for-death nonunion factory, at a time when Pratt was shedding 10,000 jobs, holds lessons for other aging plants. It also illustrates two broader management trends now rippling through the aerospace business and beyond.

Pratt's first smart move was to use financial carrots rather than just sticks to persuade employees to adopt cost-saving new work techniques at the jet-engine parts plant. The second was to borrow from another industry, using lean production methods born in Japan's auto plants and adopted by Detroit.

For Mr. Ponchak, 54 years old, survival meant learning to take risks. He also had to work with a young pup sent from the headquarters to be his No. 2 man. Against long odds, amid dispiriting waves of layoffs, his 17-year-old plant slashed the time it takes to set up metal-grinding machines. It broadened job descriptions, so today 18

T JOURNAL.

Business Bulletin

A Special Background Report On Trends in Industry And Finance

Dodging Do
How a Creaky
Got Off the H
Won Respect
Pratt & Whitney's
Ties Pay to Sk
'Results-Sharin
Survival of a Plan

Success created by applying world-class concepts in a 1,700 person, $350M aero-business.

Cost per hour down 38%

Productivity up 51%

Indirect labor down 62%

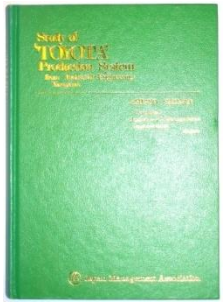
Visionless

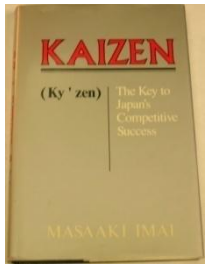
Favorless

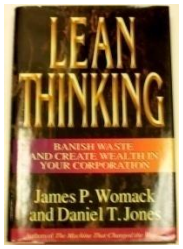
Co-dependent

AAAAAAAAAA!!!!

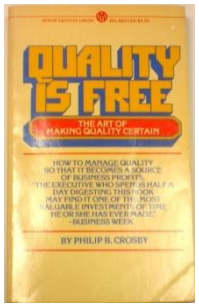
...your co-workers will put up **Roadblocks!!!**

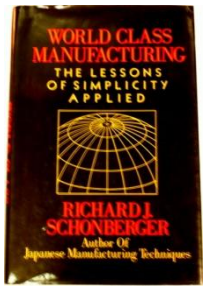






1980 2000 2008 2020





Tutorial: World-Class Operating Concepts

Takt

Pull

Flow

Tutorial: Flow

Assignment #1

Describe

Spaghetti vs. co-located

- Begin Kaizen-

Mapping exercise

- 1 person walks the flow and gathers symbols
  - Table group creates the spaghetti chart
- Sequence the symbols on your table for a picture of flow; this is your flow map

Match cycle-times to flow map for graphical representation of flow…gray side up

Tutorial: Takt Time

Assignment #2

Define

Available Time ÷ Customer Demand

- Base on 1-shift operation (8 hours)
- 480 cars per day, historical data

Auto emissions takt time: 1min /car

Construct a %-loading chart

Tutorial: Pull

Assignment #3

System of replenishment

Impact on layout

- Possible designs to facilitate flow
- Share with group

Total through-put time required for a driver to wait

Tutorial: Work Design

Assignment #4

Process for defining the interaction between a person and the material flow

Current job descriptions

- Data entry
- Greet-it and Beat-it
- Inspector
- Tester
- Tester Assistant

Color code the %-Loading chart for a current picture of staffing implications (pivotal picture)

Enjoy the journey and be happy!