
World Class Manufacturing

General Electric USA,

Jack Welch, CEO from 1981-2001, Market Value from 1.2b to 42b

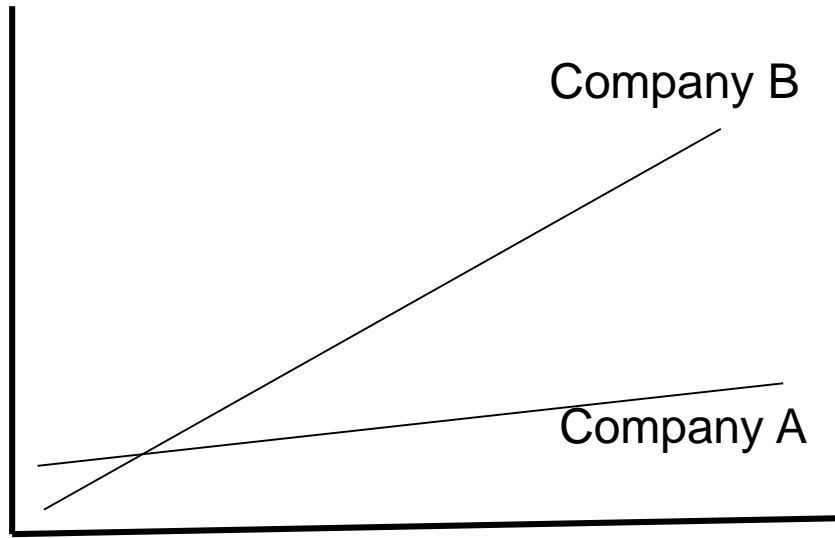
Implemented at all sites, for incredible turnaround, by putting operations first, driven by the operational teams, reaching operational excellence

Implemented at

Interturbine Group of Companies

from 1992: by a team of former GE “managers”

What is the difference between Company A vs. Company B ?



	A	B
Quality	95-98% Yield	99.9999% Yield
Inventory	2-6 turns / yr	20-50 turns / yr
Service	+ 1 week	Just in Time
Lead Times	Months	Days
Productivity	3-6% increase	30-50% increase
Purchases	5% reduction	30-50% reduction
New Parts	Years	Weeks / Months

World Class Manufacturing

Combination of

Social Tech, Factory of the future, Flexible factories

Time Base Manufacturing

Deming / Juran / Crosby

Japanese Manufacturing Concepts

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Kaizen

As new theories are concluded on an ongoing basis, now we would add.....

Lean, QRM, TQM, Scrum, Agile,

What is World Class Manufacturing ?

1. Cellular
2. Empowerment
3. JIT
4. MRP
5. TQM
6. Standardization

ASK YOURSELF

How does this translate
to Paper-trail
organizations
?

1. Cellular: Layout of Equipment to Optimize Material Flow

- Dedicated Area, Equipment, People for each product line
 - Minimize handling and moving of parts
 - Parts move from 1 activity to another
 - Small is better
 - 100% self supporting
 - Cross training of people
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2. Empowerment: One vision, with everyone moving in the same direction

- Goals accepted and shared
 - Decisions and actions by everyone
 - Teamwork vs. Boss
 - Information, Involvement, Responsibility, Accountability
 - Tremendous energy & commitment
 - Problem solving meetings
 - Increasing power of subordinates
 - Develop, Train, Coach, Teach people
 - Replace autocratic with thinking workers
 - Focus on business issues
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3. J.I.T.: Balancing of the work

- 1 order in, 1 order out
 - Even flow
 - One order at the time
 - Pull system
 - FIFO
 - Produce what you need, not what you can
 - Lot size reduction
 - Scheduling made visible
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4. MRP: Master planning tool to load the shop to service the customer.

- Layout to reflect flow of parts
 - Kan-ban's visible
 - Planning boards in the cells
 - Line of balance
 - Adjust the factory to the customer
 - Focus on constraints
 - Scheduling, tracking, evaluation of progress and actions.
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5. T.Q.M.: Focus on the process through reduction of variability.

- Quality of process
 - Total involvement
 - Total company problem
 - Vendor partnership
 - Internal / external customer
 - Trust, Respect
 - Continuous Improvement Process
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6. Standardization: Get control, structure and focus on process through simplification

- Design Concept that is best for All, not for each
 - Part Families
 - Process Families
 - Generic
 - Documentation
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