



Real Lean vs Pretend Lean

What's the Difference?

Roger Olson
January 10, 2006

Agenda



- History of Real Lean
- What is “Real Lean”
- Where does pretend lean come from? (Case Studies)
- Signs you are doing “pretend lean”



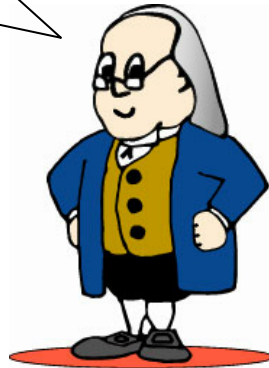
Where Did Lean Come From?

A Brief History of Lean

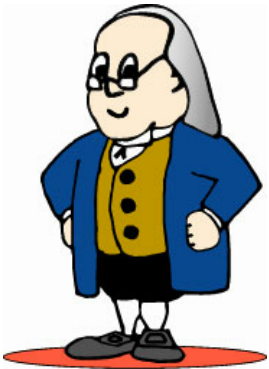
Origins of Lean

Manage
Inventory!

Manage
Your Time!



Benjamin Franklin

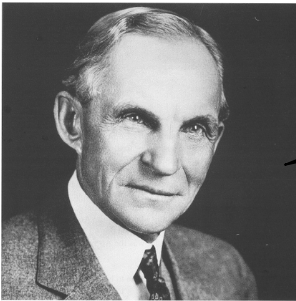


Benjamin Franklin

Influences



Henry Ford



Origins of Lean

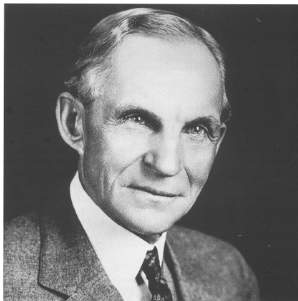
Shorten the production cycle
Eliminate/manage waste
Learn from problems
Value your customers
Value your employees



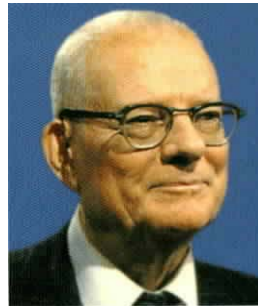
Benjamin Franklin

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Deming



Juran



Post WWII Occupation of Japan (Gen Macarthur)

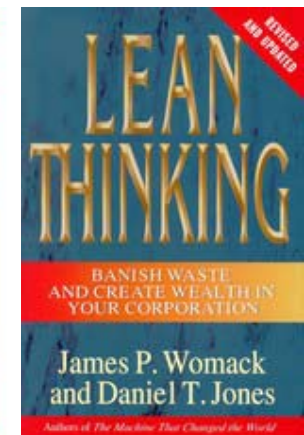
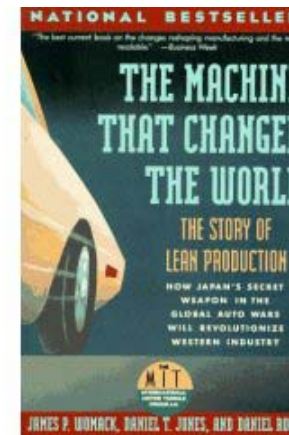
- Training Within Industry
- Management Training Program

Influences

Toyota



Taichi Ohno,
Toyota's Chief Engineer



U.S. Occupation Training for Japanese Companies



Training Within Industry (for lower management)

- Standard work
- Educate workers to solve their own problems
- Rapid Process Improvement (kaizen)
- Training on a just-in-time basis

Management Training Program (for middle management)

- Statistical process control
- Continuous process improvement

These programs continue in existence in Japan today!



What is “Real” Lean?

Best Quality-Lowest Cost-Shortest Lead Time-

through continually shortening the production flow by eliminating waste

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Just-in-time

**Right part,
Right amount
Right time**

- Takt time planning
- Continuous flow
- Pull System
- Quick changeover
- Integrated logistics

People and Teamwork

- Selection
- Common goals
- Ringi decision making
- Cross-trained

Continuous Improvement

Waste Reduction

- Genchi Genbutsu
- 5-Why's
- Eyes for Waste
- Problem Solving

Jidoka

(In-station quality)

Make problems visible

- Automatic stops
- Andon
- Person-machine separation
- Error proofing
- In-station quality control
- Solve root cause of problems (5-Why's)

Leveled Production (heijunka)

Visual Management

Stable and Standardized Processes

Toyota Way Philosophy

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Toyota Way Philosophy

THE TOYOTA WAY

"Toyota is as much a state of
mind as it is a car company."

—USA TODAY

THE
COMPANY THAT
INVENTED LEAN
PRODUCTION



14 MANAGEMENT PRINCIPLES
FROM THE WORLD'S GREATEST MANUFACTURER

JEFFREY K. LIKER

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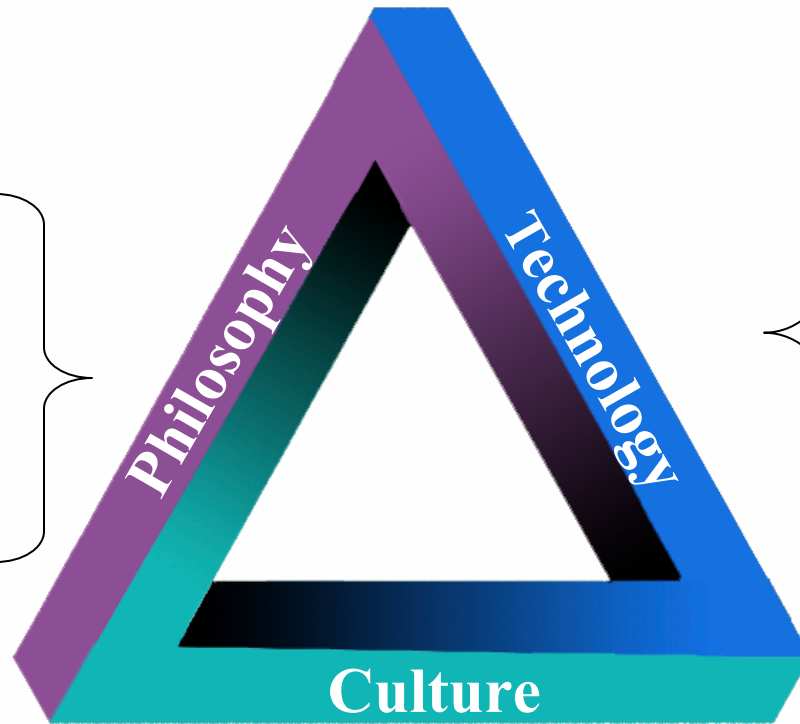
Visual Management

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Toyota Way Philosophy

The Lean Triangle

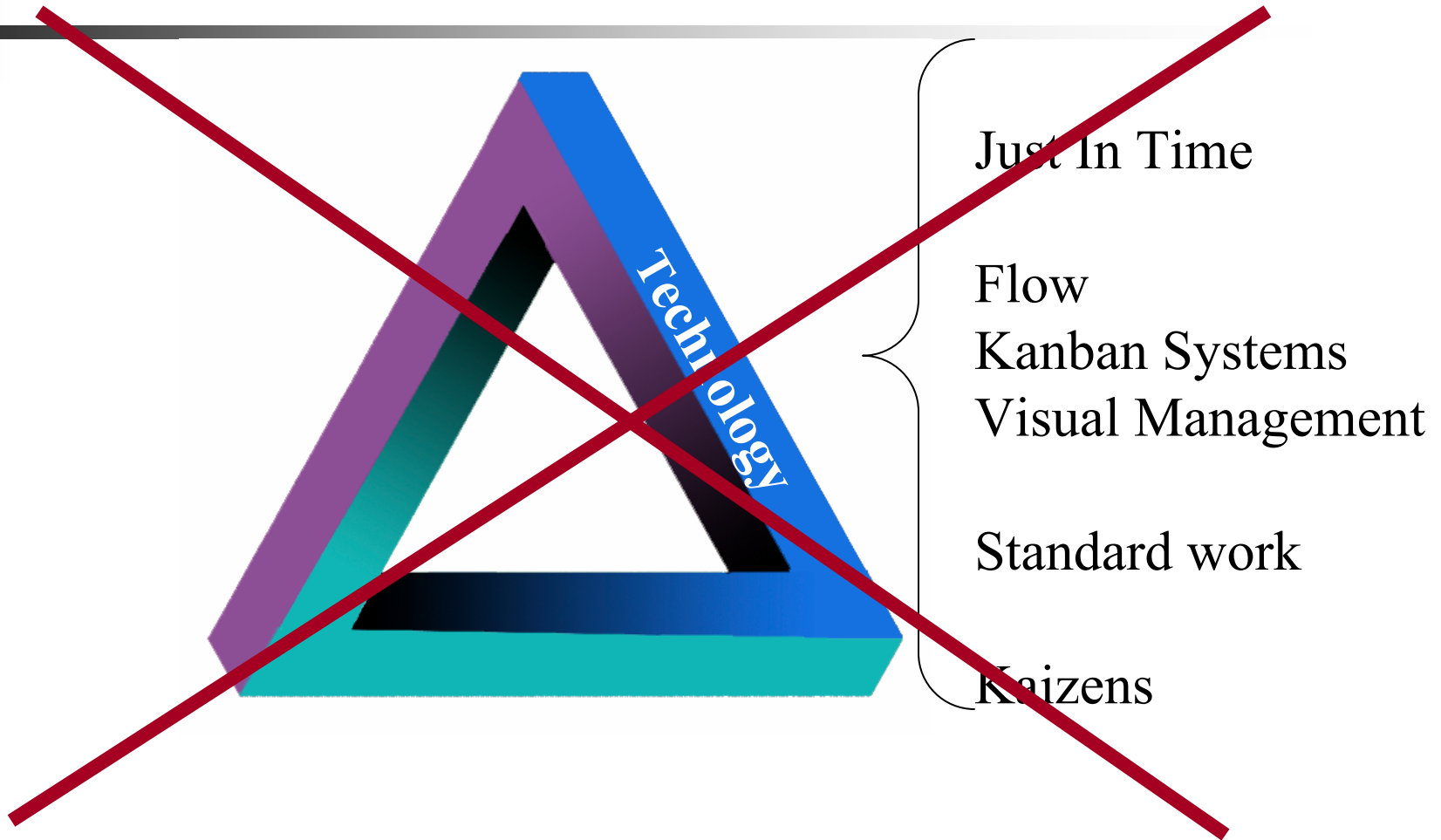
Lean Principles
Seven Wastes
Value vs non
value added



Value stream maps
Just In Time
Takt Time
Flow
Kanban Systems
Visual Management
Mistake proofing
Standard work
TPM
Kaizens, etc.

Competent, flexible, highly motivated employees operating
in an environment of enlightened experimentation.

Pretend Lean





The Five Lean Principles

James Womack & Daniel Jones Definition
based on the IMVP study of Toyota

- Precisely specify *value* by specific product.
- Identify the *value stream* for each product.
- Make value *flow* without interruptions.
- Let the customer *pull* value from the producer.
- Pursue *perfection*.

1. Precisely specify *value* by specific product



Value

- Specify value from the standpoint of the end customer
- Value is increasingly a solution to the customer's problem -- e.g., a leak free drive train rather than an isolated gasket
- What is the customer willing to pay for?
 - This changes over time!
- **Let the customer define value**

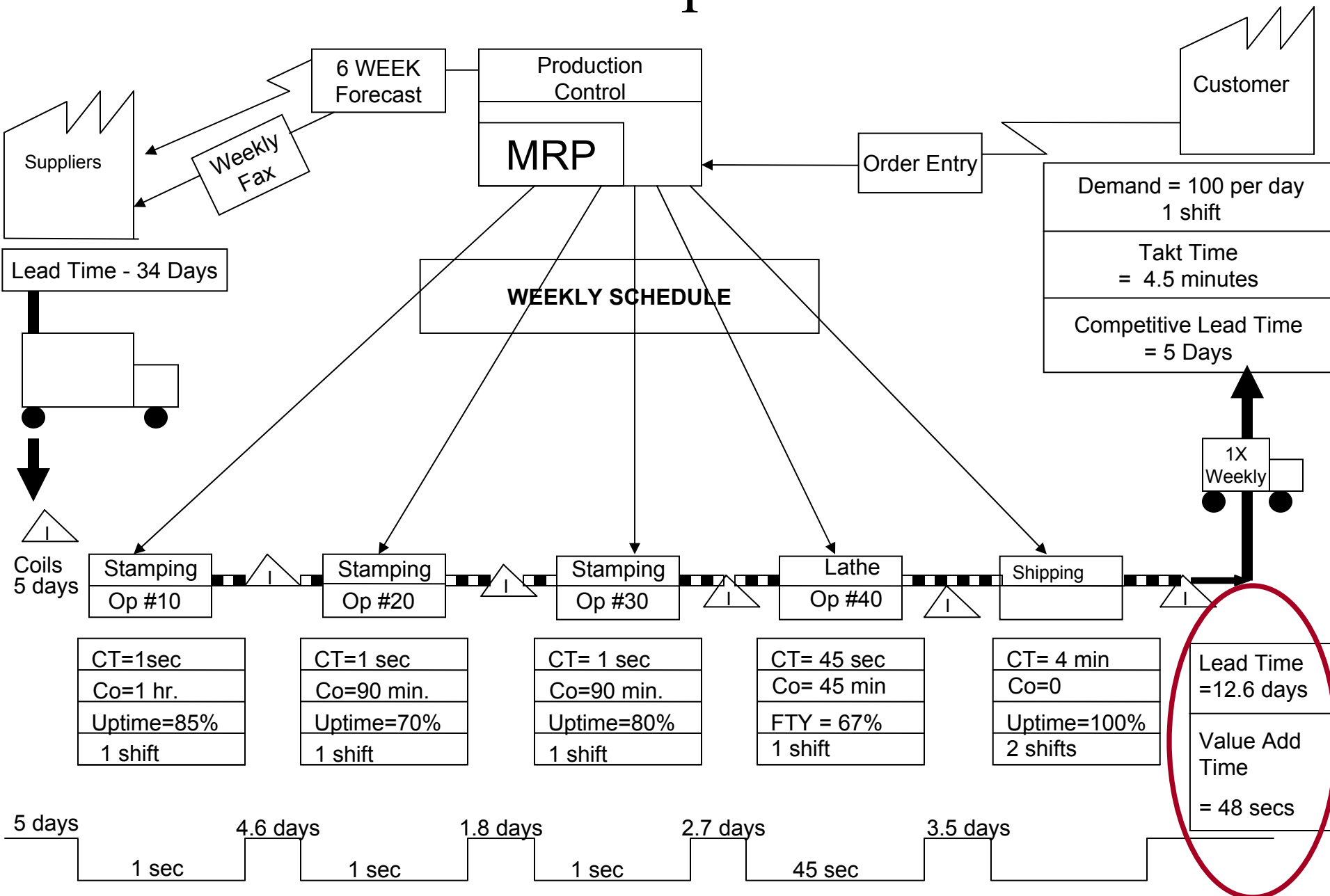


2. Identify the *value stream* for each product

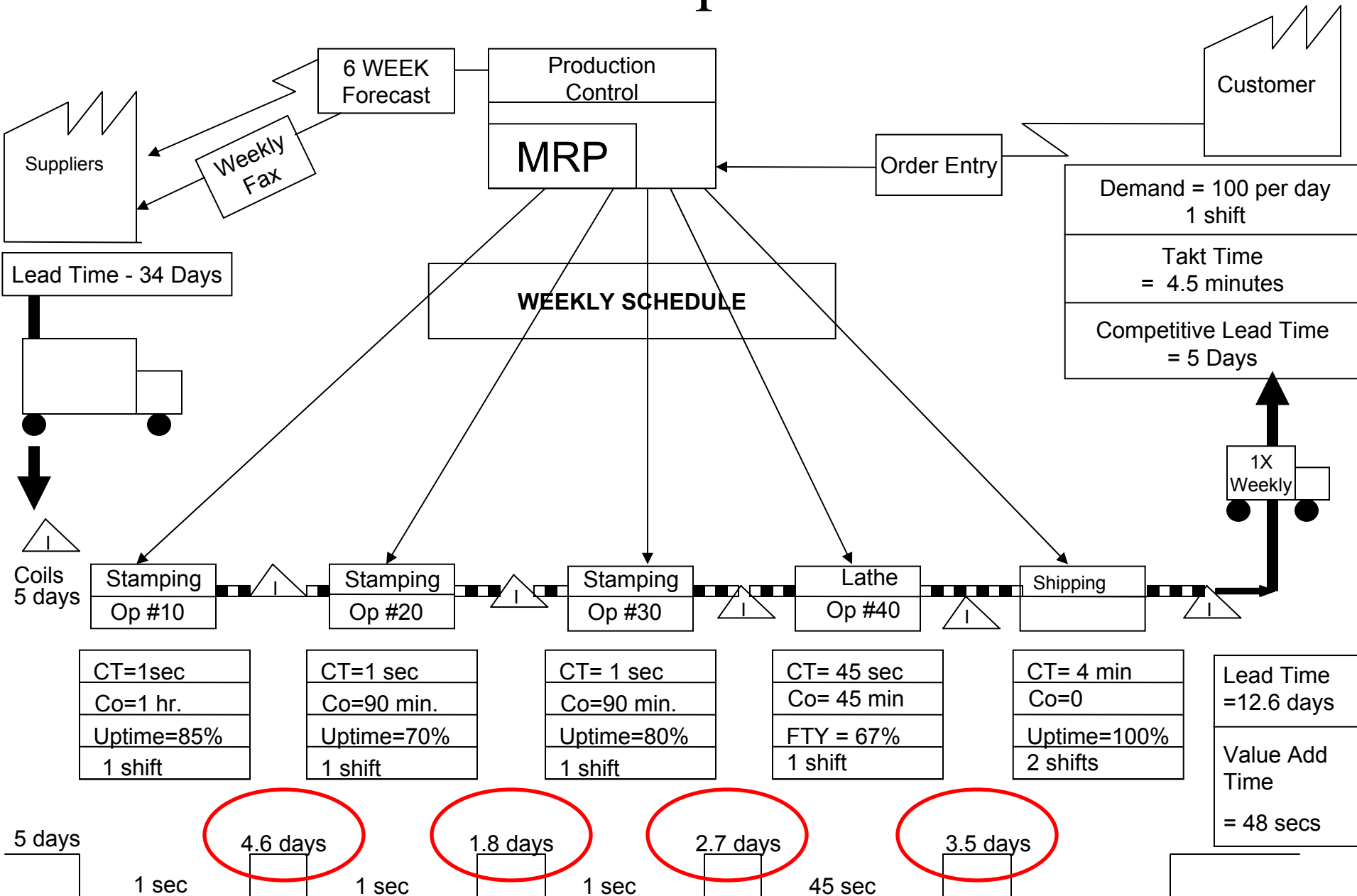
Value Stream Mapping

- Identify all of the steps currently required to create value. (current state map)
- Decide what the future should look like.
Challenge every step: Why is this necessary?
(future state map)
- *Many steps are only necessary because of the way firms are organised and previous decisions about technology. (NOT because the customer wants it)*

Value Stream Map - Current State



Value Stream Map - Current State





The Paradox

Value stream mapping is **the best way** to identify where the high-payoff opportunities are, yet value stream mapping is the lean tool most likely to **not be used** by companies doing pretend lean!

3. Make value *flow* without interruptions

Flow

- Line up all of the steps that truly create value so they occur in a rapid sequence
- Requires that every step in the process be:
 - Capable – right every time.
 - Available – always able to run
 - Adequate – with capacity to avoid bottlenecks
- Accomplished by removing the barriers to flow
 - ALL of the barriers to flow are creating waste!

4. Let the customer *pull* value from the producer

Pull

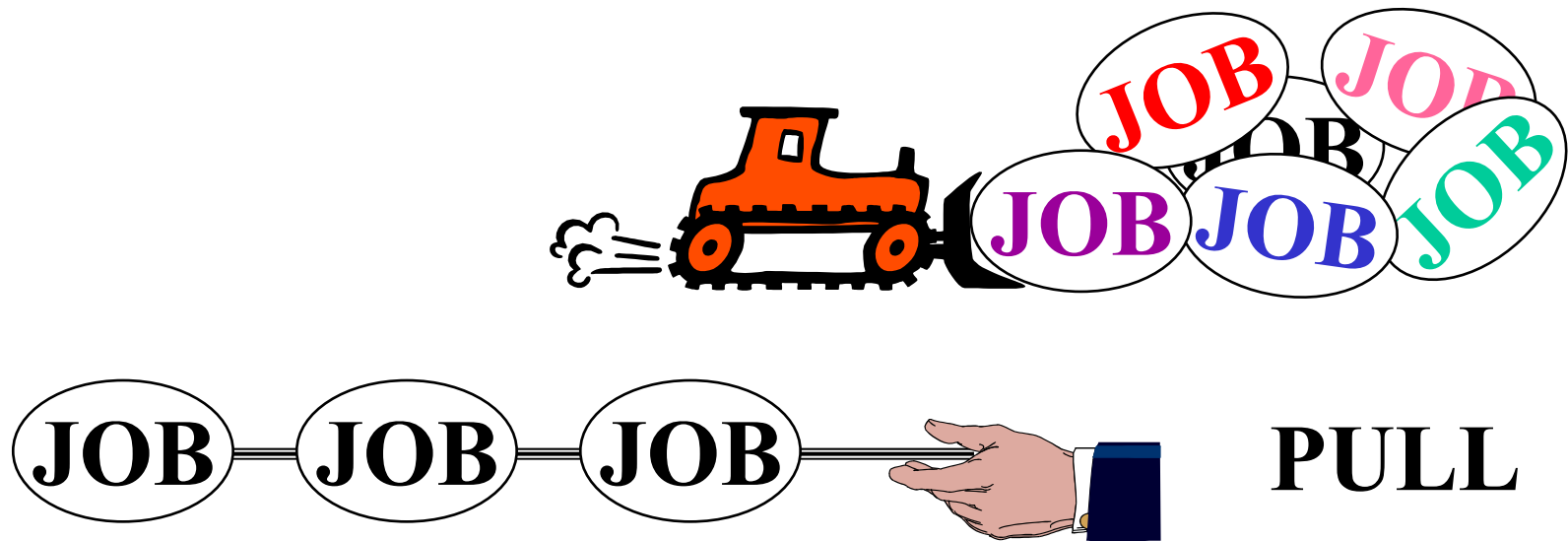
- Through lead time compression and correct value specification let the customer get exactly what's wanted, exactly when it's wanted, in the exact number wanted:
- Make to order with rapid response time internally.
- Don't make it until the customer orders it
- Extend the pull process externally.

Pull Vs Push

Produce only what the customer demands

Pull is driven by the customer

Push is driven by company (creates waste)



5. Pursue *perfection*

- Create a clear vision of *perfection (the future state map)*
 - Constantly work on shortening production cycle
 - Production ideals (quality *and* quantity)
 - Focus on what the customer values
- Make waste visible and evident
 - Get all employees involved
- Problem solving
- Process improvement (Six Sigma)

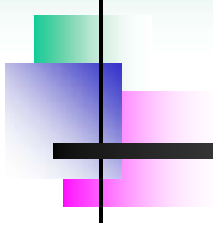
Toyoda on Waste

Waste is “anything other than the *minimum* amount of equipment, materials, parts, space, and worker’s time, which are *absolutely essential* to *add value* to the product.”

— Shoichiro Toyoda
Ex-President, Toyota



© 1995 Corel Corp.



Lean Enterprise: a business organization that delivers value to its stakeholders, with little or no superfluous consumption of resources (materials, human, capital, time, equipment, information, energy, etc) **by minimizing non-value adding activities.**

What is Waste?

An activity or output that *adds cost but does not add value* as perceived by the end-use customer.

If you could explain to your customer what every step of your operation cost, are there any steps your customer would not be willing to pay for?

- scrap
- rework
- looking for: parts, tools, material, people, etc.
- rescheduling
- expedited shipments
- ?????????

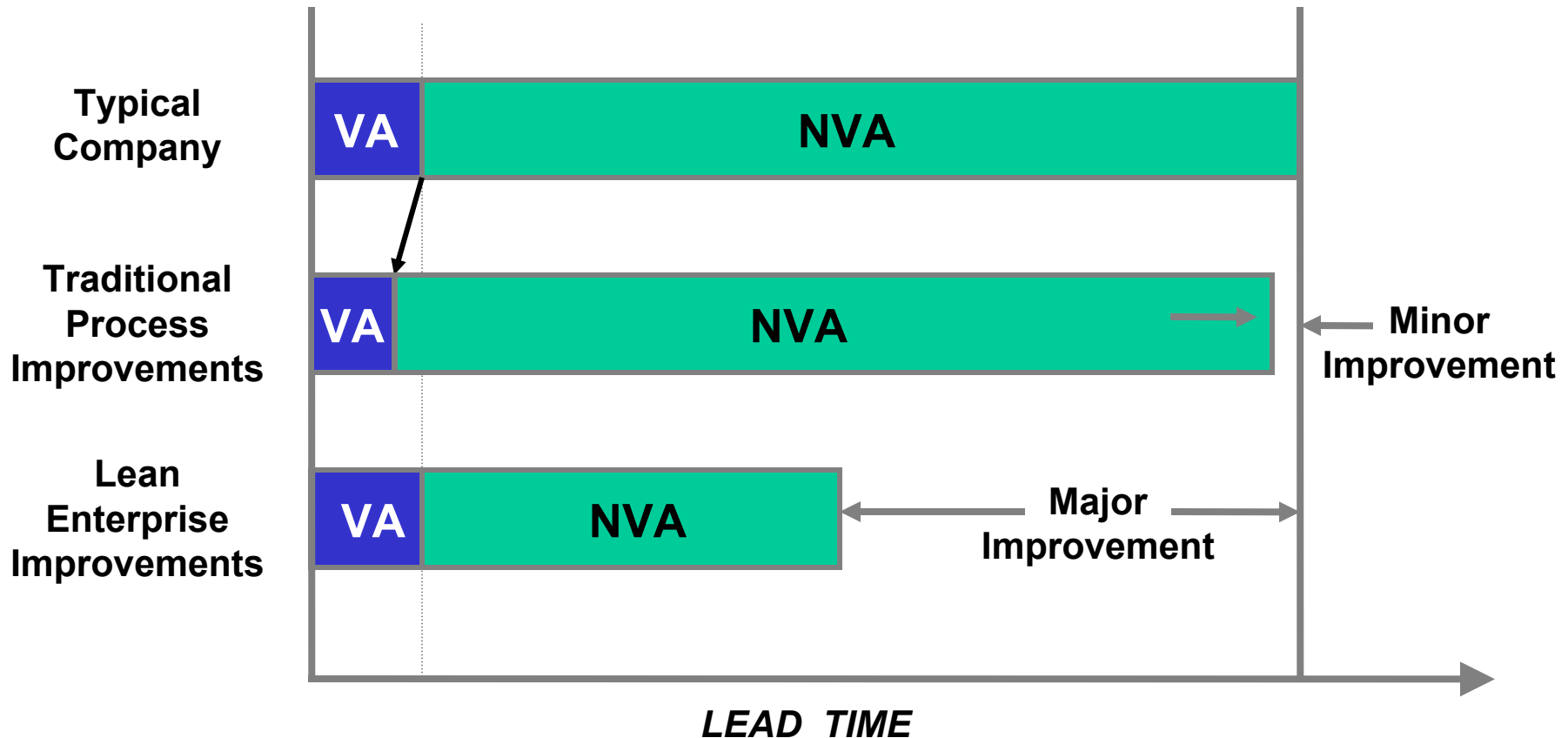
Value vs. Non-Value Adding Activities

Value: When a product or service has been perceived or appraised to fulfill a need or desire...as defined by the ***customer***—the product or service may be said to have value or worth.

Value-Adding: The creation of value through waste-free operations and processes. Any operation or activity that changes, converts, or transforms material or information into a product or service the ***customer is willing to pay for.***

Non-Value-Adding: Any operation or activity that takes time and resources but does not add value to the product or service sold to the ***customer*** (= Waste)

Delivery of “Value” to Your Customer

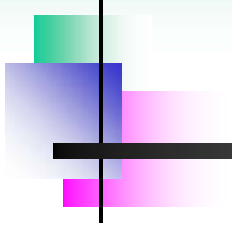


The value adding parts of the process are obvious, so companies mistakenly focus on trying to make them go faster. The waste is not obvious, so it is not addressed. Lean focuses on eliminating the waste.



The Seven Types of Waste

- 1. Overproduction*
- 2. Rework*
- 3. Transportation*
- 4. Inappropriate Processing*
- 5. Unnecessary Inventory*
- 6. Delays/Waiting*
- 7. Unnecessary Motions*



Where Does “Pretend” Lean Come From?

Case Studies

Company “P”



- ~ 400 employees
- High volume (300,000/day), low cost products
- 1999, profit of \$1.2MM on \$42MM (2.8%)
- New parent company is not happy, demands action! Suggests looking into Lean.
- Solution: Company “P” hires consultants *to do Lean for them*

Company “P”

- 1999: low profits (\$1.2MM)
- 2000: spend ~ \$550K on consultants over 6 months (3 consultants onsite for 6 months)
- End of 2000: profits up to \$1.8MM (▲)
- End of 2001: profits of \$2.8MM (▲▲)
- End of 2002: profits of \$3.0MM (↑)
- End of 2003: profits of \$2.4MM (↓)
- End of 2004: profits of \$1.8MM (▼)

Company “P”

Parent Company is not happy any more!

What went wrong?

- Consultants did it all
- No training, no understanding of value vs. non-value added activities
- No transfer of “Why things have been changed”

March 2005 Company “P” was closed down by parent company

Company “D”



- 80 employees
- Low volume (30-40/day), expensive products
- Company making OK profits
- 2001, major customer wants to train Company “D” on “Lean” so customer can get JIT deliveries, Customer provides 40 hours of “Lean” training, requires a Lean project
- Results?



Company “D”

- In 2003 largest customer wants Company “D” to participate in their Lean training program
 - Needed lead time improvement (wanted at least 50% reduction in lead time)
 - Wanted to set up Kanban arrangement for deliveries



Company “D”

Company “D’s” response?

- “We Have ***Done*** Lean”
- “We sat through 40 hours of *their* class”
- “We made that shadow box thing”
- “We did Lean, it didn’t help, and we don’t need any more help!”
- (Their lead time was 28 weeks for a product with 2 parts to it, and a value-adding time of 25 hours)

Company “D”



- In early 2005, their largest customer (was ~30% of sales) found another supplier who could deliver in 12 weeks instead of 28
- Company “D” laid off 20 employees by end of 2005
- A quote from owner of Company “D”:
“Lean Manufacturing did nothing for us, we don’t recommend it”,

Company “D”



What went wrong?

- Their training focused only on a few tools
- Their training never mentioned “waste”, value vs non-value adding activities
- Their training failed to mention that Lean is ongoing, there is no end to the search for waste!
- Their training involved three out of 80 employees, and it never went beyond that

Company “C”



- 180 employees
- Moderate volume (400/day), moderate price (~\$300-\$500/each) products
- Lead time in 2001 was 8 weeks,
- Largest customer came in and value-stream mapped for them, determined value adding time to be ~8 days, and then demanded serious improvement in lead time

Company “C”

Solution: Hire someone from a company doing lean!

Results:

- Some 5S activities (more like 2S though)
- Some visual management
- Several low yield Kaizen events
- Lead time reduced by 3 days at end of a year (37 working days, down from 40)

Company “C”

Early 2003, the largest customer asked owner of Company “C”, when are you going to start working on reducing lead time?”

Owner decided Lean was not the answer to reducing lead time and that he needed to invest in automation

By end of 2005, after spending over \$1.5MM on automation, lead time had gone from 7.2 weeks, to 9.1 weeks! (Any guesses why?)

Company “C”

What went wrong?

- Lean was a one-man show
- Focus was on tools only
- No concept of a transformation
- No focus on eliminating waste
- No understanding of value vs non-value adding activities

An Observation



- Companies “P”, “D” and “C” all thought they had done Lean
- Companies “P” thought Lean was great for a few years, then wondered “Where did the Lean go?”
- Companies “D” and “C” **thought they did Lean**, and that it was a waste of time.

Where Does Pretend Lean Come From?



- Consultants (Company “P”)
- “Well Intentioned” customers (Company “D”)
- Employees hired because they worked somewhere that was doing “lean” (Company “C”)

(Management seeking a “magic bullet”)



Signs You're Doing Pretend Lean

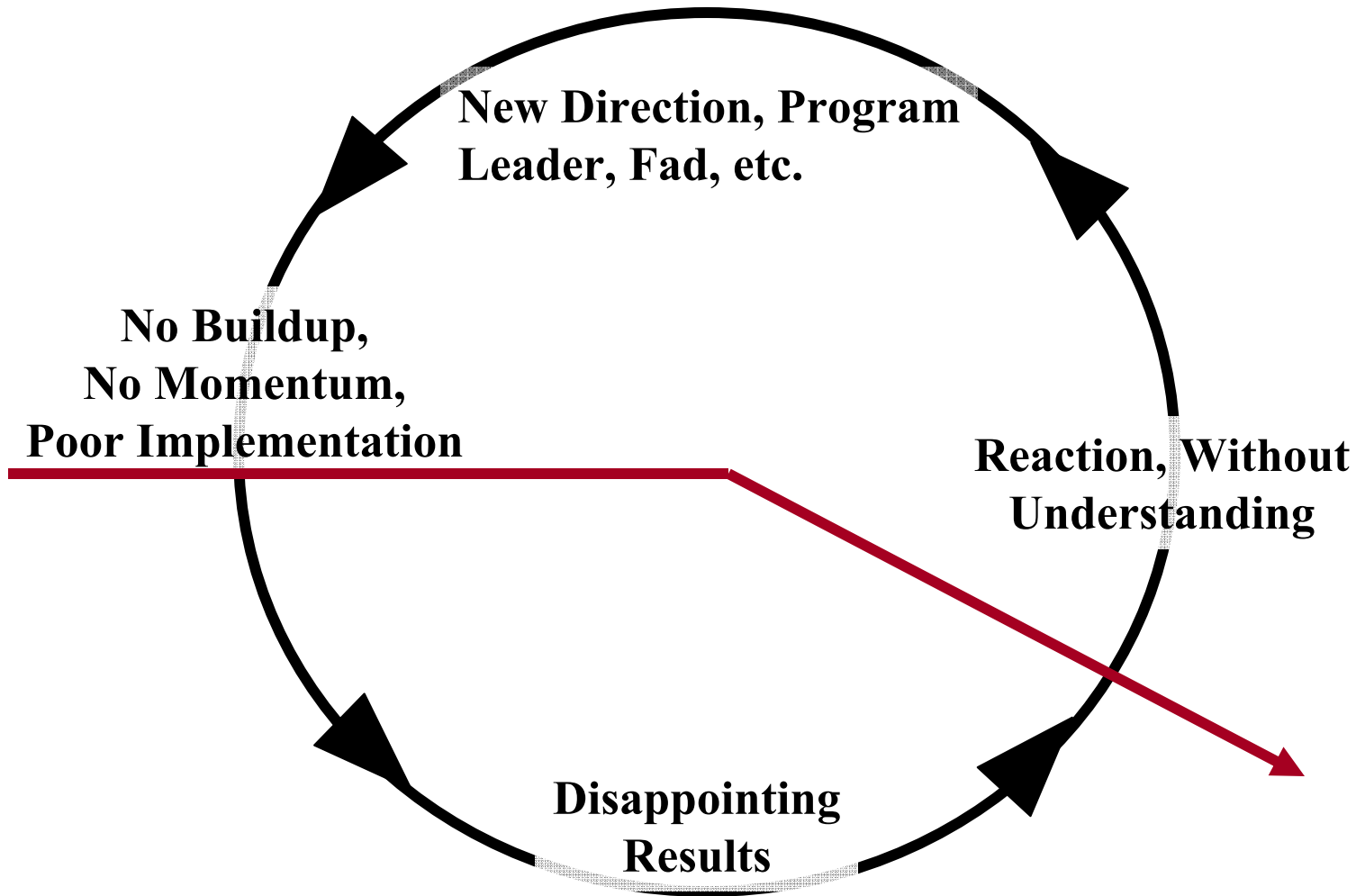
- Won't call "waste" "waste" (hurts people's feelings!)
- Focus just on a couple of Lean tools
- Ignoring the value stream
- "Drive-By" Kaizen Events
- No change in culture
- Just a few people involved

Signs You're Doing Pretend Lean



- Little or no management support/involvement
- No pain or frustration (transforming to Lean is hard, painful work)
- Not setting goals for reducing lead time and working towards them
- Not setting goals for reducing non-value adding times and working towards them

The Doom Loop





Real Lean

Focus on product value - a keen focus on product value to the consumer and identifying value added activities thereby exposing non-value added activities

Elimination of waste - activities that utilize resources but do not create value must be eliminated. This is an ongoing hunt! Ideally it will involve all employees.



Real Lean

Driven By Customer Needs - all activities are driven by customer needs without artificial boundaries such as minimum re-order points, quality control checks, clerical data entry, management approval procedures and “meeting the monthly numbers.”

Real Lean



Continuous Improvement And Standardization -

ongoing tenacity towards perfection and elimination of process variation in all aspects of the company utilizing such tools as Six Sigma, Kaizen, Poka-Yoke, etc.

Culture Of Change - the development of a culture which embraces continuous change with “can do” attitudes is the most important aspect of the Lean Environment



Real Lean

A lean environment is not an inventory control methodology or a special manufacturing method - it is a culture that embraces the above five attributes that must be used in the office as well as the shop floor.



Real Lean

- Is not a project
- Transforms how the company operates and how employees think about their work
- Constantly looking for, and eliminating waste
- Has no end (there is no “done”)
- **Will last, pretend lean will not.**

Some Final Thoughts



Toyota in 2004 had more money in the bank than G.M., Ford, Daimler/Chrysler and VW combined.

Toyota in 2004 made more profits than G.M., Ford, Daimler/Chrysler and VW combined.

Toyota has been working on eliminating waste for **50** years.

They believe they still have a ways to go!



Questions



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