

The Wiremold Company

West Hartford, CT

- 108 years old
- Product lines: wire management systems, power & data protection equipment and communications devices
- \$450 million in year 2000 sales
- 12 plant locations in five countries
- Sell to electrical, electronic & telecommunications distributors, DIY and OEM's

Wiremold Before and After Lean

	1990	2000
Assessed Value	\$30 Million	\$770 Million
West Hartford:		
Sales per Employee	\$90K	\$240K
Gross Profit	38%	51%
Throughput Time	4-6 Weeks	2 Hours – 2 Days
Product Dev'l Time	2-3 Years	3-6 Months
# Suppliers	320	43
Inventory Turns	3.4	17.0
Working Cap % Sales*	21.8%	6.7%

* $W/C = A/R + Inv - Trade\ Payables$

LEAN

A Business Strategy

Not

A Manufacturing Tactic

Not

A Cost Reduction Program

A Simple Example

Two Companies in Same Industry Using Same Equipment

Company A

Set Up Takes 1 Hour

Company B

Set Up Takes 1 Minute

- Who Has Lowest Cost?
- Who Can Provide Best Customer Service?

A Small Process Improvement Provides
Enormous Strategic Advantage

Time-Based Strategies

Lead-Time Reduction



Critical for driving improvement to your customers

Why Doesn't Everyone Do "Lean"?

- Easy to Agree With
- Hard To Do

Why Is It So Hard?

WE LOOK FOR “SILVER BULLET” SOLUTIONS

- A New Computer System
- Automated Equipment
- The Latest MRP System
- The Newest Quality System or Label
 - Six Sigma
 - ISO 9000

We Wind Up In A “Program of the Month” World

Most Companies View “Lean” as Some Manufacturing Thing

- Just an Element of Strategy
- Delegate it Down in the Organization - But Don't Remove the Barriers
 - Make the Month
 - Absorption Accounting
 - MRP and Other Computer Systems
 - Inappropriate Performance Measurement

Must Be Company Strategy To Be Successful

But What About Non Manufacturing Companies

All Companies have similar processes

Manufacturing

Develop new products

Take orders

Process orders

Purchase materials

Make products

Payroll

Ship product

Close the books

Accounts receivable

Accounts payable

Hire people

Service

Develop new services

Take orders

Process applications

Purchase supplies

Provide services

Payroll

Perform Service

Close the books

Accounts receivable

Accounts payable

Hire people

OBSTACLES TO CHANGE

- “But, those companies aren’t like ours, we have different problems”
- “We’ll change, but let’s do so very slowly”
- “Our auditors won’t accept that”

Implementing Lean Thinking

It is a Cultural Change
That Requires
Leadership...
Because in the End
It's All About People

CEO's Role

- Learn Lean Thinking
- Out Front - Hands On - Don't Delegate
- Lots of Leaps of Faith
- Set Stretch Goals
- Create an Environment Where it's OK to Fail
- Provide Air Cover for early adopters
- Eliminate Concrete Heads
- Have a “no-layoff” policy
- Organize around Value Streams
- Change compensation systems that don't support Lean
- Change Metrics

“Corporate management accounting systems are inadequate for today’s environment”

Relevance Lost

The Rise and Fall of Management Accounting

H. Thomas Johnson

Robert S. Kaplan

1987

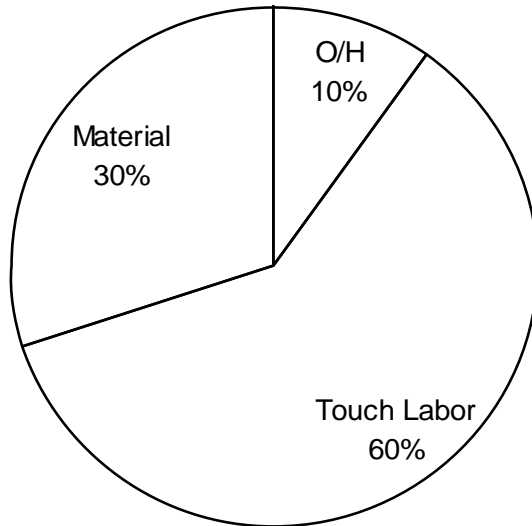
LEAN ACCOUNTING?

All of the essentials of modern management accounting were established by 1930 ... without any significant changes since then

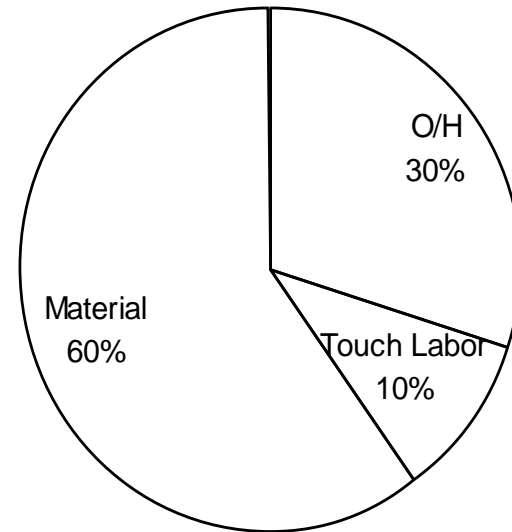
Brian Maskell

TYPICAL COST ELEMENTS

"Yesterday"



"Today"



OBSTACLES TO LEAN ACCOUNTING

- Transaction focus
- Complex systems
- Absorption Accounting
- Emphasis on Variance Analysis
- No Timely Information

All Our Current Processes are built for Batch

- Forecasting Systems
- Factory Layouts and Equipment Base
- Computer Programs/Systems
- Accounting Systems

Accounting and computer systems are biggest hurdles

DIMENSIONS OF LEAN ACCOUNTING

- Performance Measurements
- Accounting Practices
- Investment Management

Why are Metrics Important?

- Metrics send a message to employees as to what management thinks is important
- Employees want to appear to be doing what management wants them to do
- METRICS SHAPE BEHAVIOR

When Should Metrics be Addressed?

AT THE BEGINNING OF THE LEAN TRANSFORMATION

Who are the Principal Users of Metrics

The Workers

How should Management use metrics?

- “Leaders may be judged by the numbers they deliver, but that’s not the way they should run the company”
 - Rowan Gibson
- “The winners will be those companies that focus on their processes, not their results”
 - Art Byrne

We don’t want to be a “make-the-month” company

What is Process Focus

- Focus of a Traditional Company
 - Results, Results, Results
- Focus of a Lean Company
 - Process, Process, Process...and Results
- Lean Companies care about how they get Results in order to make them **Repeatable**

The Seven Sins of Waste

<u>Waste</u>	<u>Manufacturing</u>	<u>Business Process</u>
Defects	Scrap/Re-work	Errors in Documents, missing information
Transportation	Parts Movement	Movement of documents
Over production	Building inventory	Excessive reports
Waiting	Parts not available	Waiting for approvals, system down time
Over processing	Non-valued added steps	Redundant approvals, re-entering data into spreadsheet
Movement	Unnecessary Motion	Searching for files, too many mouse clicks on screens
Inventory	Goods produced to a forecast	Backlog of calls, file drawers full of reports, full in-box

ELIMINATING WASTE REQUIRES A NEW MIND SET

CATEGORIZE WORK INTO:

- Activities that add value
- Activities that don't add value
 - Activities that are required (e.g. ... tax returns)
 - Activities that are not required

Dealing with Policy (“Sacred Cows”)

- Obtain a copy if in writing, otherwise list its key elements
- Determine original intent
- List current results of policy’s interpretation
- List elements of policy that don’t support, or conflict with Lean Strategy
- Identify gaps between:
 - Original intent and current results
 - Current results and Lean requirements
- Change elements of policy to support Lean Strategy

PERFORMANCE MEASURES THAT INHIBIT IMPROVEMENT

<u>Measurement</u>	<u>Behavior</u>	<u>Results</u>
Purchase Price variance	Negotiate based on price & “quantity breaks”	Excess inventory and carrying costs; supplier with best quality and cost may be overlooked
Machine Utilization	Run in excess of current requirements to maximize utilization ratio	Excess inventory; wrong inventory
Setup in Standards	Encourages high run quantities	Excess inventory
Scrap factor built into standard	No action if no variance	Inflated standard; scrap allowed to exist

PERFORMANCE MEASURES THAT INHIBIT IMPROVEMENT (cont.)

<u>Measurement</u>	<u>Behavior</u>	<u>Results</u>
Direct/Indirect Labor Ratio	Encourages inaccurate labor reporting to maintain “acceptable” ratio	Total costs not in control Lack of integrity
Direct Labor Efficiency	Encourages standards that are easy to achieve	Improvement opportunities overlooked
Earned Labor Dollars	Maximize earned labor-keep workers busy	Excess inventory; Wrong inventory
Overhead Rates	Focus on manipulating allocation methods	Move work to lower overhead work centers to “reduce costs”

PERFORMANCE MEASUREMENT

- Support the Strategy
- Not too many
- Mostly non-financial
- Motivate the right behavior (i.e., eliminate waste)
- Simple, easy to understand
- Measure the process, not the people
- Measure Actual vs. Goals
- Don't use Ratios ... they're too confusing
- Don't combine measures of different things into a single index
- Must be timely ... hourly, daily, weekly ...
- Must be visual and tracked over time to show trends

WIREMOLD HIGH LEVEL MEASUREMENTS

- 100% Customer Service
- 20% Annual Productivity Gain
- 20x Inventory Turns
- 50% Annual Reduction in Defects
- 20% Profit Sharing
- 5 S's and Degree of Visual Management

Customer Service Issues

- Manufacturing:

- Measure Customer Request or Promise Date?
- Measure Shipment or Delivery?
- Measure Order or Line Item Complete?

- Service:

- Measure RFTOT (Right the First Time On Time)?

Productivity Issues

**Understand the difference between
Efficiency and Productivity**

PRODUCTIVITY = WEALTH

Arthur P. Byrne

CEO-The Wiremold Company

1991-2002

Productivity Is The Relationship Between Quantity of Output vs. Quantity of Resources Consumed

- Sales \$ = Quantity x Price
- Material \$ = Quantity x Price
- Labor \$ = Quantity x Price
- O/H \$ = Quantity x Price

Changing the “Q’s” Requires Physical
Change -- It’s Not a Financial Thing

IMPROVEMENT REQUIRES PHYSICAL CHANGE

- Physically group production by product families
- Physically change process layout to facilitate one piece flow
- Physically eliminate central parts storage - store at the point of use
- Physically reduce set up time 95%+
- Co-locate people:
 - Marketing & Product Development Engineers
 - Purchasing, Production Control and Operations
 - Credit and Customer Service

EFFICIENCY

The Relationship Between Two Inputs:
Standard Labor Hours vs. Actual Labor
Hours

**It Presumes That The Standards Are
Right**

How are Standard Costs Calculated?

- Materials = Quantity x Unit Costs
 - Material Quantity based on engineering design, *modified for yield*
 - Material Unit Costs based on *quotes, current average or ???*
- Labor = Hours x Hourly Rate
 - Labor Hours based on engineering *studies*
 - Labor Rates based on *average rate*
- Overhead = Labor Hours x Overhead Rate
 - Overhead Rate based on *Budgeted Overhead* divided by *Budgeted Hours*

Variance = Actual – Standard (estimates in *Red*)

Productivity Issues

- At Cell Level use Units of Input and Output
 - E.g. units per labor hour
- At Business Level use Dollars of Output and Units of Input
 - E.g. Sales per employee (recognize effect of price changes)

Inventory Turn Issues

- Includes All Inventory, including Consigned Inventory
- Expressed as Turns or Days On Hand

Defect Reduction Issues

- Measure defects in absolute terms, not relative terms:
 - Numbers of defects, not PPM (parts per million)

Profit Sharing Issues

- Plan to answer the question “What’s in it for me”
- A good profit sharing plan grows is based on the conviction that people count and having a sincere desire to have employees share in the company’s success

Attributes of a Good Profit Sharing Plan

- Integrity- The Plan **MUST BE** Trusted
- Include Everyone
- Simplicity
- Unlimited Payout Potential
- Not a Substitute for Fair Wages
- Predetermined Sharing Method
- Economically Meaningful
- Pay it Currently
- Base the Plan on Profits
- Communicate, Communicate, Communicate

Wiremold's Profit Sharing Formula

1) Profit Sharing % = 15% x Pre-Tax Profit
Divided by Straight Time Wages

2) Paid Quarterly, In Cash

5 S & Visual Control Issues

- Use “formal” 5S program with scores and rewards
- Every area needs visual control...factory and office

Other Wiremold Metrics

Manufacturing

- Quality
 - Defect Reduction
- Cost
 - Units/Hr
 - Work to Cycle Time
 - Scrap
 - Overtime
- Delivery
 - Work to TT
 - On Time Delivery
 - Unplanned Downtime
- Safety
 - Number of Accidents
 - 5 S

Other Wiremold Metrics

Customer Service

- Number of order entry errors
- Hold time on calls
- Abandoned calls
- Number of calls to resolve a request or issue
- Lead time to quote special order, send submittal drawings, get approval

Other Wiremold Metrics

Marketing

- Sales price index
- Price attainment: Realized price vs. book price by product
- Sales mix by market/channel/product
- Lead time to product marketing material
- Consumer products: Sales per square foot

Other Wiremold Metrics

Sales

- Sales per FTE
- Sales mix per territory
- Price attainment: Realized price vs. book price by territory
- Lost bids

Other Wiremold Metrics Engineering

- Time to market – concept to launch
- Innovation:
 - % of Sales from products introduced in last five years
 - Innovation points per year:
 - Breakthrough product = 9 points
 - New platform = 3 points
 - Derivative product = 1 point

Other Wiremold Metrics Information Technology

- Help desk response time
- System response time
- System up time

Other Wiremold Metrics

Human Resources

- Survey scores
- Number of accidents
- % injured brought back on light duty assignments
- Absenteeism

Other Wiremold Metrics Accounting

- Number of Accounts Payable Errors
- Number of Customer Cash Deductions
- Number of Payroll Errors
- Number of Correcting Journal Entries
- Number of Days to Close the Books

One Company's New “Lean Performance Metric”

Value Added Sales (Total Sales Minus Raw Materials, Sub-Contracting and Components),
divided by Shop Floor Rate per Hour,
divided by the Number of Hourly Shop Floor Personnel, divided by 2.

As an employee what can you do to make this metric get better?

Final Thoughts on Metrics

Every associate should be able to answer these questions:

- 1) Do you know what you are suppose to do?
- 2) Do you know what the target is?
- 3) Do you know why the performance chart goes up or down?

Ask yourself:

Are you a Lean Organization or
an Organization Doing Lean
Stuff?

Summary

According to Jim Womack: The Ages of Lean

- 1935 to 1977: Invention and Innovation
- 1977 to 1990: Discovery
- 1990 to Present: Diffusion out of auto industry
- 1990 to 2006: The Lean “tool” age
- 2007 → : The Lean Management Age

“It is not the strongest species that survives, or the most intelligent but the most responsive to change”

-Charles Darwin

“It is not necessary to change...survival is not mandatory”

-W. Edwards Deming