Process Improvement

Dick Wittman, Wittman Consulting

www.wittmanconsulting.com
What do these have to do with Process Improvement?
IQ Test – What do following have to do with Process Improvement?

- Tractor rollover - flat tire (no fluid); spraying on steep ground; no seat belt; roll bar taken off
- Skidder kills operator - 500’ slope; no seat belt
- Employee gets caught spraying ineligible chemical near creek
- Combine kills grandpa (SK 2010) - grandson kid hits button in cab; 2nd wife sells farm defying sons farm plans
- Fuel spill - employee fueling implement with auto-shutoff nozzle leaves scene; nozzle fails; big MESS!
- Employee talking on cell phone while winging out self-propelled sprayer - hits power lines & fries tires!
- Employee talking on cell phone; tips logging truck over!
Answer...When you have:

No clearly defined company culture for:

- Documenting and following SOPs
- Auditing Process Improvement objectives
- Rewarding/incentivizing improvements

→ Bad things happen!
Identify situations in past 12 months where a process in your operation could have benefited from a more standardized operating procedure …
Case Studies –
#1 – Grain Hauling Efficiency

**Problem:** 7 semis; under-loading trucks 40 bu./trip

**Analysis**
- Opportunity cost = $.15/bu. x 40 bu/trip = $6.00/trip
- 6 loads/day x 45 days @ $6.00/trip x 7 trucks = $11,340/yr
  → 5% cost reduction => 5% reduction in trucking needs
  → **Motivator:** Port of Entry fines → $100-500/overload

**Solution/Options:**
- Grain wagon electronic scale - $3,250 + $1,500 install
  → Payback in ½ season of harvest!!!
- Electronic scales – each truck (ok for commercial hauler)
#2-Convert 40’ Trailer to Grain Trains

**Problem:** combines waiting on trucks; drivers hard to find; new trailers cost prohibitive. How improve efficiency & lower cost?

**Analysis**

- Haul capacity: 40’ trailer = 850 bu; doubles = 1,150 bu
- Increased capacity = 300 bu @ $0.15/bu x 6 trips/day = $270/day savings x 45 days = $12,150/year
- 5 trucks haul what 7 did previously

**Solution/Options:**

- Purchase used trailers $45-50,000
- Sell old trailer $10,000; (optional: **SELL** two power units)
- 3 year net payback, **excluding** sale of excess power units
How did we solve problem?

- Define problem
- Engage team of affected stakeholders
- Map activity
- Analyze cost of inefficiency
- Identify alternative solutions
- Implement optimal solution
- Evaluate results of new process
Agenda

- What is “process management”
- Motivation and rewards for excellence
- Consequences when you are lax
- Models, Applications and Case Studies for putting concepts into practice
100 Yr History of Process Improvement

Resource providers doing it for years...never had a Harvard MBA term for it!

- Scientific Engineering - Frederick Taylor (1911) - summarizes 30 years of study in steel industry
- 1st exposure to term - Cheaper by the Dozens
  - Movie about time and motion studies - Frank Gilbreth
- Total Quality Management (1980’s) → Six Sigma → Business Process Re-engineering → Business Process Re-design...and dozens of other buzzwords
- Bottom Line: deciding what to measure & manage

Process Improvement-Wittman Consulting 2019
Scientific Engineering – Frederick Taylor (1911) written after experimenting with concept in steel industry 1880-1910

Four principles

- Develop “work science” to replace “rule-of-thumb”
- Managers scientifically select, train, develop work standards…workers no longer train themselves
- Management cooperates with workers insuring work is consistent with standards
- Work and responsibilities equally divided between management and the workforce

Principle Management Objective: prosperity for employee coupled with prosperity for employer
Pig Iron Case Study

Principles applied to steel mill workers handling pig iron.

→ Assessed motions, capacity of workers
→ Developed process, picked 1st class handlers

Baseline - workers loaded 12 1/2 tons of steel /day

Results -

- handled 47 T/day – ↑ productivity 400%
- Worker pay ↑ 60% ($1.15 → $1.85/day)
- Cost of production dropped 56% ($0.072 → $0.033/T)
Frank Gilbreth – father of “Time & Motion Studies”

- Studied motions of bricklayers
  - reduced movements from 18 to 5
  - positioned materials, support systems for maximum efficiency

**Results**
- 350 bricks/hour vs. 120 industry average
- Bricklayers selected based on **performance**; given **substantial pay increases**

→ *Gilbreth’s techniques still used today to increase efficiency.*

Trivia? “Calculate savings (time/$) laying 800,000 bricks at college health science bldg (360 man-days)”
Savings – Money & Time

- **800,000 bricks @ 120/hr → 6,667 hrs**
  - 6,667hrs @$15/hr = $100,000
  - 4 person crew 6-10s → 6.5 months

- **800,000 bricks @ 350/hr → 2,286 hrs**
  - 2,286 hrs @$20/hr = $45,700
  - 4 person crew 5-8s → 71 days/3.3 months

Savings

- $54,300 ↓ (54.3% lower cost)
- 49% less time to complete project
Lessons from Gilbreth/Taylor

- One man alone can’t improve when working with team (“soldiering”)
- Takes management working with employees where both benefit:
  - Owners: lower cost production
  - Employees: increased pay; better work conditions (more time off, safer environment)
Modern Applications of Process Improvement Successes

Health care/pharmacy, fast foods, seeding systems, dairy, timber harvesting, crop production
Happy Days Corp
Meet my friend Bruce Finch
Fast Food Vendor *par excellence!*

- Multiple Taco Time outlets
- Observed time from order window to departure ...*not happy!*
- Challenged staff to identify solutions...gave $ incentives
- Sets new records annually for volume, speed, quality
- Exemplifies lifetime commitment to Process Improvement
- **Project:** engaged Time/Motion team to study Cinco de Mayo
Imagine clock like this in your shop, drill or sprayer!
Strategy/Results

Take homes

- **Digital timers** track time from order to handing food out window
- **Tracked** average & best times; employees *continually* worked to BEAT times
- **Incentives** given for efficiency

**RESULTS**
- Doubled taco output over 2 years
- Dropped labor cost per taco 13%

“...to increase efficiency, workers and management must both know performance can be improved. Keeping records of past and present performance very important.” *Bruce Finch, Owner*

---

**CINCO 2009**

<table>
<thead>
<tr>
<th></th>
<th>LTT</th>
<th>CTT</th>
<th>MTT</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>NET SALES</td>
<td></td>
<td></td>
<td></td>
<td>16400</td>
</tr>
<tr>
<td>LABOR</td>
<td>16.71%</td>
<td>16.62%</td>
<td>18.36%</td>
<td></td>
</tr>
<tr>
<td>TACO’S SOLD</td>
<td>6896</td>
<td>6098</td>
<td>3406</td>
<td></td>
</tr>
<tr>
<td>% OF SALES</td>
<td>46.63%</td>
<td>46.51%</td>
<td>43.00%</td>
<td></td>
</tr>
<tr>
<td>BONUS HOURS</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>RECORD HOURS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**CINCO 2011**

<table>
<thead>
<tr>
<th></th>
<th>LTT</th>
<th>CTT</th>
<th>MTT</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>NET SALES</td>
<td></td>
<td></td>
<td></td>
<td>31154</td>
</tr>
<tr>
<td>LABOR</td>
<td>15.71%</td>
<td>16.36%</td>
<td>16.03%</td>
<td></td>
</tr>
<tr>
<td>TACO’S SOLD</td>
<td>13854</td>
<td>12000</td>
<td>5300</td>
<td></td>
</tr>
<tr>
<td>% OF SALES</td>
<td>58.00%</td>
<td>59.10%</td>
<td>46.70%</td>
<td></td>
</tr>
<tr>
<td>BONUS HOURS</td>
<td>7</td>
<td>59.10%</td>
<td>46.70%</td>
<td>24</td>
</tr>
<tr>
<td>RECORD HOURS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Health Care - Robotic Pharmacy

Applications
- Used 1/3 hospital pharmacies
- Dispenses medications in cassettes, envelopes

Benefits
- Filling accuracy 99.9%
- Checking labor ↓ 90%
- Missing meds ↓ 92%
- Inventory ↓ 10-20%
- Medication costs ↓ 54%
Milking Robots
Landry Brothers Dairy, St Albert, Quebec
Source: J D Furrow

“...robots don’t take holidays or call in sick, never get tired, lose focus or have a bad day...and they NEVER FORGET important things about each cow...like how many times a day a cow needs to be massaged!”

Three shifts of workers replaced with 10 robots @ $200,000
• lower mastitis
• less management stress
• more attractive to young workers
• 10% increase in milk production
• better insemination results
Why is PI important?

Don’t Pin This on Robots

If automation were accelerating rapidly, labor productivity and capital investment would also be surging. Instead, they are growing at the slowest pace in decades.

<table>
<thead>
<tr>
<th>Period</th>
<th>Event</th>
<th>Labor productivity</th>
<th>Capital investment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1948-73</td>
<td>Postwar economic boom</td>
<td>3.3%</td>
<td>3.9%</td>
</tr>
<tr>
<td>1974-95</td>
<td>Great productivity slowdown</td>
<td>1.5</td>
<td>3.8</td>
</tr>
<tr>
<td>1996-2002</td>
<td>Technology-led resurgence</td>
<td>3.3</td>
<td>5.1</td>
</tr>
<tr>
<td>2003-07</td>
<td>Pre-recession deceleration</td>
<td>2.2</td>
<td>2.9</td>
</tr>
<tr>
<td>2008-16*</td>
<td>Great Recession and aftermath</td>
<td>1.3</td>
<td>1.7</td>
</tr>
</tbody>
</table>

*Through third quarter.

Source: Economic Policy Institute analysis of data compiled by John Fernald of the Federal Reserve Bank of San Francisco

By The New York Times

“...labor productivity and capital investment...growing at slowest pace in decades

Process Improvement-Wittman
Consulting 2019
Halversons
2012 Top Producer of the Year Award

- 11 state potato operation; major supplier - FritoLay
- Gregg, Eric, John, Leah - two generations TEPAP
- Transitioning to next generation
- Major commitment to GAPs, SOPs, environmental metrics (Triple Bottom Line)
- Use McDonald SOPs as model to improve brand
- Story: JD8400T cost/hour
Agricultural Gains from Process Improvement

- Conversion to NoTill/Direct Seeding
- Harvest operations – combine and trucks
- Hay harvesting/hauling
- Grain transportation – trucks, unit trains
- Self-propelled sprayers
- Timber harvesting
Classic Process Improvement Case Study

Transition from Intensive Tillage to Direct Seeding/NoTill

Benefits: improved **economic** viability and **environmental** sustainability:
- Sequesters CO2 → .5T/acre/yr
- Can ↑ OM 0.1%/Yr.
- Improves air & water quality
- Improves wildlife habitat
- Lowers fossil fuel use
  - ↓ 3.5gal/acre per USDA
- Increases economic viability
- Carbon emission offsets 20-25% ↓
## Costs/Acre* - Conventional Seeding - Spring Peas
*From activity based accounting analysis.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Cost/Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall Plow</td>
<td>$11.00</td>
</tr>
<tr>
<td>Spring Harrow</td>
<td>3.50</td>
</tr>
<tr>
<td>Spring Cultivate</td>
<td>5.00</td>
</tr>
<tr>
<td>Cultivate/Spray Incorporate</td>
<td>5.00</td>
</tr>
<tr>
<td>2nd Incorporation-Cultivator</td>
<td>5.00</td>
</tr>
<tr>
<td>Seed-Conventional Drill</td>
<td>10.00</td>
</tr>
<tr>
<td>Harrow</td>
<td>3.50</td>
</tr>
<tr>
<td>Roller/Packer</td>
<td>3.00</td>
</tr>
</tbody>
</table>

**Total Costs Per Acre**  
$45.50

**Recreational farming at its best!!!**
**Costs/Acre - Direct Seeded Spring Peas**

... saves 3 steps & $10/acre

<table>
<thead>
<tr>
<th>Operation</th>
<th>Cost/ Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall Heavy Harrow</td>
<td>$4.00</td>
</tr>
<tr>
<td>Fall Roundup-Green Bridge</td>
<td>7.00</td>
</tr>
<tr>
<td>Custom Hire-Direct Seed Drill</td>
<td>17.00</td>
</tr>
<tr>
<td>Harrow</td>
<td>3.00</td>
</tr>
<tr>
<td>Roller/Packer</td>
<td>3.00</td>
</tr>
<tr>
<td><strong>Total Costs Per Acre</strong></td>
<td><strong>$35.50</strong></td>
</tr>
</tbody>
</table>

*Qualitative Benefits: less water loss, less compaction, less erosion risk*
A Tale of Two Tillage Systems

<table>
<thead>
<tr>
<th></th>
<th>1998</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATR</td>
<td>.50</td>
<td>1.05</td>
</tr>
<tr>
<td>OPMR</td>
<td>.1275</td>
<td>.1633</td>
</tr>
<tr>
<td>ROA</td>
<td>6.47%</td>
<td>17.14%</td>
</tr>
<tr>
<td>ROE</td>
<td>3.88%</td>
<td>22.61%</td>
</tr>
</tbody>
</table>
Shephards Grain – Food Alliance

- Value added premiums for wheat sourced under Direct Seed cropping system
- Must be Food Alliance certified
  - Certification Costs
  - S. T. Periodic Audits
- $.60/bu premium ➔ 1,200 ac wheat @80 bu/ac = $72,000 bonus!
Process Improvement - Wittman Farms

**Baseline - 1980**
- 6 partners, 2,500 ac farm, 2,500 pasture, BIG crew
- 4 combines; 6 trucks
- Farming implements covered ground 6-8 times/year

**Today**
- 4 partners, 20,000 acres
- 100% Direct Seeded
- Efficiency compared to 1980
  - 1 combine replaces 6
  - 1 semi replaces 4-2T tks
  - Sprayer = “8x” acres/day
Definition – *Process Improvement*

Systematic approach to closing of process or system performance gaps through streamlining and cycle time reduction, and identification and elimination of causes of below specifications quality, process variation, and non-value-adding activities.

*source: google.com*

...*doesn’t this sound exciting!!!*
Definition – *Time & Motion Study*

*(Encyclopedia Britannica):* analysis of time spent in going through the different motions of a job or series of jobs. Time-and-motion studies were first instituted in offices and factories in the United States in the early 20th century. These studies were adopted on a wide scale as a means of improving the methods of work by subdividing the different operations of a job into measurable elements. Such analyses were to standardize work… check the efficiency of people and equipment… and the methodology to achieve results.
Dick’s Definition:

Process Improvement is…

- Identifying jobs that are repetitive
- Documenting how jobs are supposed to be performed (SOP, GAP, BMP)
- Evaluating how to do it better: More Efficient, Safer, More Economical, and Environmentally sustainable
- Auditing how you’re doing & rewarding gains
Where can Process Improvement be applied?

... and how do we put principles into practice?
Where does this topic fit in Management System?
Management System MODEL

Establish Mission, Vision, Core Values

Organize/Divide Responsibility

Plan

Set Policies SOPs, BMPs

Implement Plan

Communicate & Coordinate Efforts

Establish Controls

Measure Performance

Adjust Plan
SOP’s, GAPs*, BMPs*

16% have SOPs in place!

What are they? guidance documents and standards for repetitious or routine jobs

How are they used?

- Training – new hires
- Leverage communication for multiple employees
- Assures jobs done following BMPs, GAPs
- Increases safety & lowers cost of production
- Basis for measuring job performance, auditing
- Accessing markets, value-added premiums

*GAP=Good Agric Practice; BMP=Best Mgmt Practice*
Consequences of Undocumented SOPs

- Inconsistent work
- Accidents
- Inefficient processes
- Food safety hazards → health risks, fines
- Market demand destruction & loss of market access
- Excessive turnover

Process Improvement-Wittman Consulting 2019
Food Quality “Hits”

- Alar Scare - apples
- E coli - leafy greens, ground beef
- Salmonella - peanuts
- Listeria - Colorado & California cantaloupe
- BSE - beef
Applications of SOPs/GAPs

- Office functions
- Harvest operations & servicing
- Crop agronomic practices
- Timber harvest & manufacturing processes
- Fuel and Supply Storage
- Worker safety guidelines
- Food safety practices
- Herd health & stock handling procedures
- Value added market access
Office Management Functions

- Database management
- Computer access protocols
- Internal controls/security
- Data Backups
- Network and internet
- Financial function SOPs
Where would your business be tomorrow if:

- You were hit by bus
- Computer technology expert left country
- Bookkeeper ran off with hired man
- Computer fried itself & the backup system
- NO one else knows your system!

→ How I learned the hard way...
Building Office SOPs

- Define issues needing documentation
- Write down in SOP
- File in accessible location
- Use for training/orientation
- Update when new items needed, or existing items need refinement
Equipment Operations & Servicing

- Maintenance checklists
- Operating instructions – key equipment
- Shop protocols
- Seasonal work flow planning
- Harvest crew orientation
- On farm grain storage protocols
Equipment Operations/Harvest Examples

- Maintenance & Servicing Functions
- Harvest Orientation—protocols for driving, scales, bin dumping, field habits
- Chassis Checklists
  - Book-MBR\Exhibits Files\7.3 Power Unit Chassis Checklist.doc
Imagine fleet of trucks…

How avoid the “…dreaded phone call”

“Are you SURE you checked everything?”
Service Truck – Stocking Checklist

“Why are there two empty hydraulic oil jugs in here ... and NO anti-freeze???”

<table>
<thead>
<tr>
<th>Fluids - Target Inventory</th>
<th>Stocking Checklist</th>
</tr>
</thead>
<tbody>
<tr>
<td>15w-40 engine oil 2 - 2 ½</td>
<td>Jumper cables</td>
</tr>
<tr>
<td>Hytran Hydraulic Oil 2 - 2 ½</td>
<td>Extension Cord</td>
</tr>
<tr>
<td>Tractor Hydraulic Oil 2 - 2 ½</td>
<td>Small grinder</td>
</tr>
<tr>
<td>50/50 Antifreeze 2 - 2 ½</td>
<td>Welding helmet</td>
</tr>
<tr>
<td></td>
<td>Oxy/Acetylene Torch - ck gauges</td>
</tr>
<tr>
<td></td>
<td>Bolt &amp; Fastener Cabinet - ck inventory</td>
</tr>
<tr>
<td></td>
<td>Heavy chain</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Supplies</th>
<th>Rear Center Compartment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue Towels, Rags</td>
<td>Shovel</td>
</tr>
<tr>
<td>Bungee Cords</td>
<td>Heavy bar</td>
</tr>
<tr>
<td>Anti-seize</td>
<td>Blocks</td>
</tr>
<tr>
<td>Window cleaner</td>
<td>Welder/Generator - ck gas level</td>
</tr>
<tr>
<td></td>
<td>Fuel Tank - ck fuel level</td>
</tr>
<tr>
<td></td>
<td>Grease gun filler</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tool Compartment</th>
<th>Top Left – Rear Storage Box</th>
</tr>
</thead>
<tbody>
<tr>
<td>End wrenches, screw drivers, hammers</td>
<td>Welding Cables</td>
</tr>
<tr>
<td>Socket sets – 3/8, ½ &amp; Impact Gun</td>
<td>Hi-Lift Jack</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Left Rear Side Compartment</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Air chucks – blow nozzle, tire chuck &amp; gauge</td>
<td></td>
</tr>
</tbody>
</table>
Modeling Example: Transition from Round Baler to Big Square Baler

- Map process - swath → double rake → bale → load → haul
- Analyze cost of each step - labor, fuel, equipment to bale & haul
- Quantify efficiency savings
  → 42% ↓ ($18.87 → $10.86/T) = $27,500/yr. @2,500T
- Invest in new system!
Fuel & Supply (chem/fert) Storage

- Handling procedures
- Security
- Spill prevention
- Identification/open container policies
- Fueling protocols
Spill Prevention Containment & Countermeasure Plan

- Facility owner, operators & key contacts
- Facility Description
  - Operations
  - Storage - detailed maps of tanks, location, and storage capacity
  - Drainage Pathway & Distance to navigable water
- Spill History
- Potential spill predictions, volumes, rates and controls
- Prevention measures provided
- Record keeping/meetings, inspections

$15,000 price tag... but required to source fuel!
Safety Procedures

- Exposures – too many to list
  - PTO, conveyors, hoists
  - Grain bin deaths
  - “riders”– truck, combine, tractor
  - Equipment rollovers – dozers, skidders, tractors
  - Transport – cargo strapping
  - Runaways–vehicles, implements
  - Story: Partner’s wife & kids driving potato truck

What is your “safety policy”??
Think Proactively

…what’s this?

Lee Gilbert, ID St Insurance Division

- Conducts safety audits, on-site training
  - 4-5 hour Safety Training Sessions
  - Supervisor Workshops on Accident Investigations
  - Shop Audits – inspects for potential hazards
- “…supervisor needs to communicate on near misses/close calls”
- For every $ in insurance claim, employer spends $4-5
- Incentives for thinking proactively
  - safe work place
  - Insurance premium modifications
Interesting stats...

1 Disability/death

10 Minor injuries

30 Property damages

600 Near misses/close calls
“Predictable Surprises…” – Mike Mullane, NASA
Astronaut, author of Riding Rockets

- **Success** = doing things well over & over consistently
- **Recipe for success** = managing “processes”
  - Be aware of “normalization of deviance” – human tendency to deviate from standards
  - Take responsibility for adherence to standards
  - Be courageous leader in alerting to deviations
  - Beware of “false feedback” – absence of something bad happening … (it didn’t cause wreck last time!)
  - Listen to people closest to the scene or front line
  - Archive, review and learn from “near misses” and disasters
What is your Cell phone policy?

- Rules on texting or calling while on job
- Technology free zones
- Setting time and place for use
- Consequences for violating policy

→ What’s driving increases in auto insurance

Are you asking for predictable surprise?

Process Improvement-Wittman Consulting 2019
Implementation Strategies for Safety Process Improvement (SOPs)

- Identify hazards unique to farm situation (get examples from peers & fine tune)
- Document SOPs – Include rewards for “quality improvements” and punishments for “violations”
- Defined protocol for employee training, orientation (incl. meeting dates, agenda, participation logs)
- Appoint safety officer
- “Safety audits” (i.e. State Workmen’s Comp)
- Define Zero Tolerance Policy – worksite rules
Hazard Areas - Dairy Dozen

Sept 2014 Successful Farming - OSHA Local Emphasis Program - New York

Collaborative effort: Farm Bureau, NE Dairy Producers, NY Center- Ag Medicine & Health, Cornell University

Dairy Dozen

1. Manure storage facilities/collection structures. Does your plan include warning signs and worker training?
2. Dairy bull and cow behavior/worker positioning. Do you offer animal-handling programs that address physical hazards in barns, pens, holding areas, crowd gates, and parlors? Is Spanish offered?
3. Electrical systems. Have you eliminated open circuits, exposed wiring, improper use of extension cords, debris, and storage close to electrical panels?
4. Skid loaders. Do you hold regular training and inspection of safety mechanisms?
5. Tractor operation. Are all safety mechanisms working properly? What about ROPS?
6. PTO guards. Are PTO drivelines and master shields in place?
7. Power transmission and functional components. Are shields in place for grain dryer, auger, fan, gears, and other moving parts?
8. Lockout and hazard-control procedures. Do you follow these while servicing or maintaining equipment?
9. Chemical safety. Do you conduct on-farm hazard communication training for storage and retrieval of chemicals? Do you fit-test respirators?
10. Confined space safety. Are appropriate worker safety procedures being followed?
11. Horizontal bunker silo safety. What procedures and equipment are needed?
12. Noise/hearing protection. Have you made engineering changes to reduce noise levels and to determine appropriate situations for workers to use hearing protection?
Grain Bin SOPs

- SOPs for storing at proper moisture
- Rules for entry & monitoring
  - Harness, extraction equipment
  - Buddy systems
- Rules for riding in grain boxes and grain transport implements

Grain Entrapment Deaths

- 2009 - 41
- 2010 - 59
- 2011 - 33
- 2012 - 21
- 2013 - 33
- 2014 - 38
- 2015 - 24
- 2016 - 29
- 2017 - 23

Source: Purdue University

Process Improvement-Wittman Consulting 2019
What are your SOPs for entry and working in manure storage facilities?
Job Site Safety SOPs – 
*Think like Seattle, WA contractor*

- Pocket size “little red book” with rules
- No access to jobsite until go thru training & sign-off
- Once on site, hard hat with “sticker” required
- Zero tolerance for violations of rules
- **Lesson to farmers**: is your farm a playground or work site?
- **Challenge**: how maintain our “culture” AND be safe?
Resources – Safety SOPs

- iAuditor – build checklists, conduct inspections, file reports
  - [http://sfty.io/q4Af/LOcHr6VzQx](http://sfty.io/q4Af/LOcHr6VzQx)

- Farm Safety Hazard Checklist
  - [http://fyi.uwex.edu/agsafety/employer-resources/farm-hazard-inspection-checklists/](http://fyi.uwex.edu/agsafety/employer-resources/farm-hazard-inspection-checklists/)

- Great Plains Center for Ag Health
  - 10 health centers focused on farm safety/health
  - [www.cdc.gov/niosh/oep/agctrhom.html](http://www.cdc.gov/niosh/oep/agctrhom.html)
2 New Apps – WA State Department of Labor and Industry

- **Good Observation, Near Miss and Accident Reporting**
  - Documents safety incidents in workplace
  - Uses: training, hazard recognition, risk analysis, process improvement

- **Safe Me (Retail industry focused)**
  - Tool for on-boarding new employees
  - Uses: safety lessons, videos, hazard ID

Break !!!!!

Enjoy the slide show…
Deming’s Law*

A system always gives you 100% of what the system was designed to do...94% of failures come from systems, not PEOPLE.
William Edward Deming

- Raised on Iowa farm
- Developed foundational theories in manufacturing process improvement
- Plan → Do → Measure → Adjust

Framework widely used in manufacturing since adoption by Toyota in 1950s

“If you can’t describe what you are doing as a process, you don’t know what you are doing.”
Example – Deming’s Law

- Pick number between 1 & 9
- Multiply answer times 9
- Add the 2 digits in your answer & subtract 5
- Pick letter in alphabet that matches order (i.e. 5 = E)
- Identify single word country name whose 1st letter = last answer
- U CANNOT use google
- Name a wild exotic animal that starts with last letter of country name?
Countries starting with D

- Denmark
- Djibouti
- Dominica
- Dominican Republic
- Dhekelia
Agronomic Areas of Application

- Nutrient management
- Integrated pest management (IPM)
- Access to conservation revenue incentive programs (CSP, EQIP)
- Input documentation – seed, fertilizer, chemical, field operations
- Precision Farming – Variable Rate Application SOPs
VRA Case Study

Problem: Excessive reliance on technical support 8 hours away

Analysis/Problem:
- Studied process: combine maps $\rightarrow$ creation of VRA .arm files
- Timeliness & quality of yield maps unacceptable
- Poor consistency-soil fertility analysis and yield projections

Solution $\rightarrow$ *in-source process with external consulting support*
- Mapped stages of process; paid consultant to train on process
- Developed 5 page SOP...VRA prescriptions now done in house
- Save thousands $ annually...better process!

Process Improvement-Wittman Consulting 2019
Mapping & Documenting VRA Process

Pre-harvest yield monitor calibration → in-field validation → download data to field record software → create raw yield maps → clean up yield data → build variability zones →

Review zone maps with agronomy manager for nutrient level recommendations → integrate soil tests with zone variance & assign rates by zone → enter revised rates & create VRA application files (.arm) → download .arm files to drill control computer → go home and have a beer!
Food Safety, GAPs, BMPs

- Dual drivers pushing growers for implementation
  - Defensive (food safety, water quality, etc.)
  - Offensive (market access, premiums)
- Process for putting GAPs in place
- Resources available to minimize cost and avoid “re-inventing” wheel
Certification/Branding Programs – significant factor in market access & value added premiums

- ISO standards – CODEX International Standards
- Food Alliance – PNW certifier
- PNW Direct Seed Assn – Farm Smart Program
- Oregon Country Beef – natural beef markets
- Carbon Crediting – standards to access carbon offset markets
- USDA Conserv. Security Prgm. (CSP) – conservation practices
- SFI – branding of Forestry Practices to access markets
- IMI Global – Source & Age verification – beef
- Walmart – Sustainability Index

Who certifies value added milk producers?

Foundation for certification = SOPs, BMPs, GAPs, Protocols, Audits
Major Driver – *Food Safety Modernization Act 2010 (FSMA)*

**Key provisions:**
- FDA authority for recall
- Shift from *detention* to *prevention*
- Standards for production & harvest
- Focus on traceability
- Compensation for growers injured by erroneous recall
- Registered facilities require HACCP plan

**Other Provisions**
- Potatoes now covered ("thrown under the bus" by other veggie groups)
- Small operations (<$500,000) & grains exempt

**Recommendation:** Study Act and learn how provisions impact your commodity
Terms we need to better understand

- HACCP – Hazard Analysis Critical Control Points
- ISO – CODEX World Health (see list of ISO categories)
International Standards

- ISO 14001 – Environmental impacts
- ISO 9001 – Product Quality
- ISO 22001 – Food Safety
- ISO 65 – Humane Animal treatment
- OHS 18001 – Occupation Health & Safety
Questions to Address

♦ What processes require documentation?
  ■ Depends on your commodity
  ■ Check law and regulation applicable to you

♦ How map SOPs?
  ■ Learn from peers who’ve DONE IT already

♦ Where can I get help…and NOT reinvent the wheel? (Hint: go to Google.com)
  ■ STORY: Premium Fresh client engagement
GAP Elements - Potato farm selling fresh potatoes to wholesale processor

Plan 12 pages long
- Traceability procedures
- Worker health/hygiene training
- Clothing & jewelry policy
- Hand-washing techniques
- Policy on taking breaks
- Manure
- Composting Practices

- Harvesting tools, containers
- Vehicles in production fields
- Plant & Storage warehouse
- Loading delivery trucks
- Washing line
- Storage bins
- Rodent & Pest Control

Farm manager, “All visitors must sign in & wash hands... all SOPs must be recorded & available to inspectors & buyers.”

Process Improvement-Wittman Consulting 2019
Nationally Recognized Organizations in Fruit and Vegetable Industry promoting GAPs

- Western Growers – CA based; fresh fruit, nuts and veggies
  - http://www.wga.com
- United Fresh Produce Association – Southeast focus; Wash DC headquarters
- Produce Safety Alliance – Cornell Univ, FDA, USDA
- Center for Produce Safety – UC Davis
  - www.cps.ucdavis.edu
Glades Crop Care, Inc. (GCC) is proud to offer an important service: Food Safety Education and Audits. Our Food Safety Service was developed for our fruit and vegetable clients to meet the stringent Food Safety requirements set by the buyers of their produce. Our complete service is geared so your operation can proactively satisfy buyers’ requirements through safe practices and documentation of the growing, harvesting, and packing programs.

Our service provides for a step by step, efficient, and painless implementation throughout the farming organization. Complete policies, procedures, and record-keeping documents are provided. All necessary training is covered. We produce both pre- and post-educational audits.

Our third party auditing staff, certified by Primus Labs, conducts audits of:

1. harvest crews
2. farms (ranches) (organic and conventional)
3. packinghouses
4. cooling facilities
5. distribution centers

We also provide HACCP training, HACCP audits, EurepGap training, and EurepGap audits.

As part of our Food Safety Education program, we have developed training videos that are available in both English and Spanish for documenting food safety training of harvest workers and packinghouse workers. These are available in either VCR or DVD format.
Herd Health/Stock Handling

Areas of application
- Stock handling
- Animal identification/traceback
- Herd Health (BQA - Beef Quality Assurance)
- Confined Animal Feeding Operations (CAFO)
- Waste Management

Resources
Herd Health SOPs

What happens when don’t exist?
- Inconsistent procedures
- Duplicative or unnecessary costs
- Health problems, losses
- Jeopardize access to premium markets

Sample –
..\FARM\Management System Components\Beef\Herd Health SOP.doc
# Wittman Farms
## Beef Herd Health Protocol
Revised 11/30/11

<table>
<thead>
<tr>
<th>Date</th>
<th>Action</th>
<th>Purpose/Detail</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Cows</td>
<td></td>
</tr>
<tr>
<td>January</td>
<td>Ck Identification tags – Pre Calving</td>
<td>All ear tags should match shoulder brands</td>
<td></td>
</tr>
<tr>
<td>April</td>
<td>Pre-Breeding Visual</td>
<td>Ck eyes, teeth, feet, legs, udders</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bulls</td>
<td></td>
</tr>
<tr>
<td>Late January</td>
<td>Breeding Soundness Examination</td>
<td>Check eyes, teeth, feet and legs, semen test</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Leptospirosis</td>
<td>Prevent abortions</td>
<td>StayBred VL5</td>
</tr>
<tr>
<td></td>
<td>Redwater/Blackleg</td>
<td>Prevents spore-forming bacteria</td>
<td>Vision 8+Somnus</td>
</tr>
<tr>
<td></td>
<td>Pinkeye</td>
<td>Prevent eye redness &amp; inflammation</td>
<td>Piliguard</td>
</tr>
<tr>
<td></td>
<td>Vibriosis and/or Trichomoniasis</td>
<td>Prevent infertility &amp; abortions</td>
<td>Vibrin</td>
</tr>
<tr>
<td></td>
<td>IBR, BVD, PI3, BRSV virus vaccines</td>
<td>Prevent shipping fever</td>
<td>CattleMaster Gold</td>
</tr>
<tr>
<td></td>
<td>External parasite control</td>
<td>Lice and grub control in fall, fly control in summer</td>
<td>Cydectin (summer) Dectomax (fall)</td>
</tr>
<tr>
<td>January - April</td>
<td>Calving (calves @ birth)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Identify</td>
<td>Ear tag should match mother’s</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disinfect navel</td>
<td>Prevent naval disease/ill</td>
<td>H2O &amp; Bedadine solution</td>
</tr>
<tr>
<td></td>
<td>Castrate (band) bull calves</td>
<td></td>
<td>Bands</td>
</tr>
<tr>
<td></td>
<td>Vitamin A &amp; D injection</td>
<td></td>
<td>Vedco A&amp;D</td>
</tr>
</tbody>
</table>
Processing Map
Cattle Treatments

- Keeps crew organized at chute
- Permanent record of treatment
- Verification for feedlot to avoid duplicate input
- Verification to market outlet
CAFO Elements -
Dairy Spreading Manure in Chesapeake Bay drainage

Plan is 6” thick!
- Farmstead plan-map, water quality plan
- Field plan-solid mgmt, maps, attributes, soil mgmt plans
- Fertility mgmt-nutrients, leaching index, soil tests
- Manure/Waste utilization - annual prodn, analysis, application planning

Must have “certified planner”
- Plan required before you can apply manure to “CAFO compliant field”
- Annual review mandatory to renew annual permits
- Plans sets minimum standards on barnyard run-off, lagoons, silage leach

“We are mandated to have GAP, SPCC, CAFO in place...CAFO most complicated regulation on farm.”
Strategic Plan

“How we do it”

Operating Plan

“What We Do”

In-source? Out-source?

Value-Added

Strategic Alliances

Technology Adoption

Tillage System

Growth

Diversification

Environmental Stewardship

Budget

Crop Rotation

Genetics

Process Improvement

Why farmers are paid big bucks!

Process Improvement Wittman Consulting 2019

WF Version-Mike Boehlje Strategic Thinking Model
Emtman Case Study - Insource or Outsource Herdsman Role?

Problem
- Needed cattle to maximize resource use
- No one in “genetic pool” good at cattle
- Unable to retain stable hired herdsman
- Poor conception rates
- Poor weaning %
- Distraction from core strength - farming

Solution
- Outsourced management to cousins
- Compensated based on $/live calf weaned
- Still furnished herd base and paid all inputs

Results
- Significant ↑ weaning %
- Comparable costs to in-sourcing labor
- “farmers” much happier!
Stock Handling

Quiz: Name recent incidents that gave meat industry black eye?

→ Answers: downer cows; chicken cages; ...

What is your “animal treatment” culture?

Do you have an animal care policy & SOPs?

Food Safety protocols “up to snuff”?
Animal Care – vs. “Agendas”

- Who won this one?
- Aired 20-20
- U-tube hits galore
- Are “good guys” safe?
Do you have an animal care statement?

At Aurora Ridge Dairy we strive to provide each animal with the very best individual care possible. All of our actions will be based on this goal. Because of this:

- We will handle all animals in a calm and relaxed manner.
- We will do everything possible to prevent injury, illness and undue stress.
- We will give sick animals immediate and thorough care.
- We will provide all injured or down animals with adequate food, water, bedding and veterinary care.
- We will use all animal-handling equipment like the crowd gate and prod in a reserved and respectful manner.
- We will give appropriate assistance to a freshening cow, treating her as a mother giving birth should be treated.
- We will give newborn calves complete care as soon after birth as possible, following protocols established for their care.

- We will practice clean and calm milking procedures established by the dairy management team.
- We will build facilities with animal comfort and care as the first priority.
- We will employ people who are responsible and who enjoy working with animals.

―Meg Gaige

Source: May 2006, Dairy Today, Meg Gaige – Aurora Ridge Dairy

“Never use a gun to herd cattle!” Temple Grandin

Process Improvement-Wittman Consulting 2019
Beef Quality Assurance Assessment

- 3 tier program—higher tier, more consumer friendly
- Online certification programs – state specific
- Be aware of “wannabe” programs
  - Global Animal Partnership – 5-step Animal Welfare Rate Standard
  - Board weighted to animal rights extremists
  - Major markets like Whole Foods rely on them!!

“It’s a process of figuring out what could go wrong, planning to avoid it—then validating & documenting what you’ve done…just part of good business.” NE BQA veterinarian, Dee Griffin
Livestock Resources

  - Beef, dairy training manuals and resources
  - Transportation, animal care/handling, use of antibiotic use, etc.

- **Dairy**
  - National Dairy BQA Manual
  - DairyWorks, Tom Fuhrman

- **AgTexas FCS** – Allan Watson, COO
  - process improvement programs
  - Client incentive program-1/3 of 1st year savings

- **Animal Care** - FARM Evaluation guide
  - Temple Grandin - CSU - stock handling systems
Variance Analysis – Key Component of Process Improvement

- Do you see a problem?
- What is company policy re: following SOPs?
- What are variance concerns if:
  - Cattle foreman?
  - Dairy feed manager?
  - Sprayer operator?
  - Timber harvester?
  - French fry plant?
Analyzing Variances & Impacts

Statistical Process Control/Influence Diagrams

Causes

- Normal deviations (“noise”)
- Out-of-bounds: procedural or system process weakness

Impacts

- Cost over-runs
- Crop damage
- Product quality damage
Variance Case Study - Sprayer

- **Situation**: Goal is to spray @ specific target/acre
- **Problem**: chemical being over-applied based on acreage
- **Consequences**: 10% cost over-run; crop damage; envir. issues

**Analysis/Potential Causes of Problem**
- Overlap
- Nozzle wear
- Flow meter calibration

**Quiz**: (1) What is biggest factor leading to Precision Ag? (2) What Preventive Maintenance strategies could be implemented to avoid this problem?
### Sprayer analysis summary section

#### Analysis highlights:

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sprayer purchase price</td>
<td>$150,000</td>
</tr>
<tr>
<td>Sprayer age when purchased</td>
<td>1</td>
</tr>
<tr>
<td>Hours on sprayer when purchased</td>
<td>300</td>
</tr>
<tr>
<td>Total acres covered per year</td>
<td>16,000</td>
</tr>
<tr>
<td>Hours used per year</td>
<td>118.79</td>
</tr>
<tr>
<td>Number of years sprayer is used</td>
<td>7</td>
</tr>
</tbody>
</table>

#### Cost breakdown (total cost can be compared to custom rates):

<table>
<thead>
<tr>
<th>Item</th>
<th>$/year</th>
<th>$/hour</th>
<th>$/acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opportunity interest</td>
<td>8,426</td>
<td>72.77</td>
<td>0.53</td>
</tr>
<tr>
<td>Market depreciation</td>
<td>8,654</td>
<td>74.74</td>
<td>0.54</td>
</tr>
<tr>
<td>Repair and maintenance</td>
<td>1,460</td>
<td>12.61</td>
<td>0.09</td>
</tr>
<tr>
<td>Labor</td>
<td>3,618</td>
<td>31.25</td>
<td>0.23</td>
</tr>
<tr>
<td>Fuel and lubrication</td>
<td>2,140</td>
<td>18.48</td>
<td>0.13</td>
</tr>
<tr>
<td>Tax, insurance, &amp; shelter (TIS)</td>
<td>843</td>
<td>7.28</td>
<td>0.06</td>
</tr>
<tr>
<td>Tendering cost</td>
<td>17,158</td>
<td>148.18</td>
<td>1.07</td>
</tr>
<tr>
<td><strong>Total for sprayer only</strong></td>
<td><strong>25,140</strong></td>
<td><strong>217.12</strong></td>
<td><strong>1.57</strong></td>
</tr>
<tr>
<td><strong>Tendering cost</strong></td>
<td><strong>17,158</strong></td>
<td><strong>148.18</strong></td>
<td><strong>1.07</strong></td>
</tr>
<tr>
<td><strong>Total for sprayer and tendering</strong></td>
<td><strong>42,298</strong></td>
<td><strong>365.30</strong></td>
<td><strong>2.64</strong></td>
</tr>
</tbody>
</table>

**Date of analysis:** 1/21/07

How does efficiency drive cost /acre?
## Sprayer Analysis Summary Section

### Analysis Highlights:
- **Sprayer Purchase Price:** $360,000
- **Sprayer Age When Purchased:** 0
- **Hours on Sprayer When Purchased:** 0
- **Total Acres Covered per Year:** 20,000
- **Hours Used per Year:** 229
- **Number of Years Sprayer is Used:** 10

### Cost Breakdown (Total Cost can be compared to custom rates):

<table>
<thead>
<tr>
<th>Item</th>
<th>$/Year</th>
<th>$/Hour</th>
<th>$/Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opportunity Interest</td>
<td>8,952</td>
<td>39.06</td>
<td>0.45</td>
</tr>
<tr>
<td>Market Depreciation</td>
<td>15,619</td>
<td>68.16</td>
<td>0.78</td>
</tr>
<tr>
<td>Repair and Maintenance</td>
<td>9,059</td>
<td>39.53</td>
<td>0.45</td>
</tr>
<tr>
<td>Labor</td>
<td>7,161</td>
<td>31.25</td>
<td>0.36</td>
</tr>
<tr>
<td>Fuel and Lubrication</td>
<td>5,672</td>
<td>24.75</td>
<td>0.28</td>
</tr>
<tr>
<td>Tax, Insurance, &amp; Shelter (TIS)</td>
<td>1,679</td>
<td>7.32</td>
<td>0.08</td>
</tr>
<tr>
<td><strong>Total for Sprayer Only</strong></td>
<td>48,142</td>
<td>210.08</td>
<td>2.41</td>
</tr>
<tr>
<td>Tendering Cost</td>
<td>29,729</td>
<td>129.73</td>
<td>1.49</td>
</tr>
<tr>
<td><strong>Total for Sprayer and Tendering</strong></td>
<td>77,872</td>
<td>339.80</td>
<td>3.89</td>
</tr>
</tbody>
</table>

### Date of Analysis: 2/19/17

- **16,000ac → $4.03/ac**
- **25,000ac → $3.83/ac**

Process Improvement Wittman Consulting 2019
## U. S. Top Dairies Peer Data

<table>
<thead>
<tr>
<th></th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income/Cwt</td>
<td>$23.79</td>
<td>$16.98</td>
<td>$14.89</td>
</tr>
<tr>
<td>Tot Cost/Cwt</td>
<td>$16.27</td>
<td>$15.17</td>
<td>$13.71</td>
</tr>
<tr>
<td>Feed Cost/Cwt</td>
<td>$ 9.22</td>
<td>$ 7.71</td>
<td>$ 8.37</td>
</tr>
<tr>
<td>Feed as % Tot Cost</td>
<td>56.7%</td>
<td>50.8%</td>
<td>61.1%</td>
</tr>
</tbody>
</table>
Impact of 5% over-run

**Assume** – breakeven situation
- Total milk cost/cwt = $16.00
- Feed is 58% of total cost → $9.28/cwt

**Impact of process improvement**
- 5% cut feed costs → .05 × $9.28 = $.46
- Operating Profit Margin (OPM) increases from 0% to 2.9%
Variance Analysis – Quality Control

Timber Applications

- Timber harvest SOPs
  - Limbing, bucking, trim specifications
  - Defect management
- Manufacturing and Processing
  - Milling tolerances
  - Quality Control audits
- Other applications ??
Environmental Audits

- Mandated by many value added programs to get certified
- Great way to “…clean us messes”
  - “people do what is inspected…not expected!”
- Cost $2,500-5,000
What is your governance culture?

“All organizations are hierarchical. At each level people serve under those above them. An organization is therefore a structured institution. If it is not, it is a MOB. Mobs do not get things done, they destroy things.”

Theodore Leavitt – Management for Business Growth
Human Resource SOPs

- Job announcement, application, interview
- 20 Interview Questions
- Job descriptions, training & orientation
- Safety Guidelines
- Performance Reviews
- Compensation Policy and Payroll Procedures
- Employee benefits, vacation, sick leave
  ➔ Are these ALL addressed in Employee Handbook/Management System & Governance Manual?
Are Policies Written Down? ...Common “Land Mines”

- Housing
- Company vehicles
- Room and board
- Expense accounts
- Setting compensation
- Withdrawals of capital
- Insider/inter-entity transactions

- Family Employment Policy
- Medical benefits
- Retirement plans/pensions
- Business benefit continuation
- Workdays and holidays
- Vacations, sick, business leave
- Buyout Understandings
- Outside activities

36% do!
Social Media Policy & SOPs

Is your company using Twitter, Facebook, etc?

Develop policy and SOPs for:

- What to include on sites
- Who’s in charge of updating and/or answering inquiries
- When posts are “personal views” vs “business views”
What does your organizational structure look like?
Does structure reflect authority & accountability flows?
Board → Management → Responsibility Center Mgrs

The Missing Pieces

Advisory Board*

Board of Directors
Policy, Management Direction, Owner ROE & Financial Control

Pres/ Gen Mgr
Finance, Mktg

Office Staff

Peer Group

Cattle & Hunting Manager

Crops Production Manager

Specialty Enterprises Manager

Equipment Support Manager

Seasonal Pool:
Tom, Dick, Suzie
Harry, Sam & Glenda

Asst Mgr
Bldg Improvements and Rentals

*Advisory Board
Insurance Agent          Investment Advisor
Loan Officer            Marketing Advisor
Crop Scout               Accountant
Attorney               Cattle Breeding Advisor
Forester               Wildlife Expert
Peer Board- Clearwater Direct Seeders

Process Improvement-Wittman Consulting 2019
Responsibilities - Finance (CFO) and Marketing

- Budget preparation and progress review
- Maintain records and circulate to management team
- Arrange loans for operating and capital purposes
- Banking responsibilities
- Capital investment analysis; negotiate purchases
- Market grain commodities
- Preparation of tax returns
- Manage insurance programs
- Liaison with attorney on legal matters
- Supervise investments for pension plan
Sample Job Description –
Precision Ag & Safety Manager

Precision Ag & Agronomy Responsibilities – 7 duty areas

Administrative/Field Staff Support – 4 duty areas

Shop Operations & Safety Responsibilities
- Primary backup to Service Manager in planning, coordination and direction of shop operations
- Assist Equipment Support Manager and other shop personnel in maintaining equipment
- Develop and maintain maintenance logs for service scheduling and safety compliance
- Oversee farm safety program: establish SOPs, stock safety supplies, monitor compliance and ensure training and consistent implementation throughout workforce
- Oversee environmental compliance and waste disposition
- Monitor fuel and lube inventories, and coordinate restocking
- Prepare quarterly fuel and road tax return
- Audit and stock shop supply inventory to perform maintenance and repair activities
- Oversee winterization of equipment and headquarters facilities
Impact of Personality Styles on Attitudes Toward Safety

**DISC Styles**

- **D’s (Dominance)** – run the bus; focus on results; impatient with safety SOPs
- **I’s (Influence)** – cheerleaders; team focused; like the idea...not the discipline of implementation
- **S’s (Steadiness)** - concerned for others; will support safety
- **C’s (Conscientiousness)** – like structure, accuracy and implement methodically

**Which personality style is best for a Safety Officer?**
This process doesn’t have to insult our intelligence!

“Now! ... That should clear up a few things around here!”
How avoid “creating concrete”?

“Negatives” of SOPs
- Inflexible, tends to create robots
- Discourages exercise of judgment & common sense

How do you balance micro-managing vs. focus on efficiency and consistency (fence building example...)?

Should we focus on goal or tactics?

Rewarding consistency vs. creativity... How encourage innovative thinking?

Process Improvement-Wittman Consulting 2019
What incentives are you using?

“...avoiding concrete”

- Rewards for clean inspections
- Share in premiums gained over market
- Gift/bonus for attending safety meeting
- Bonuses for days without accidents
- Recognition for developing more efficient or safe process
- Other incentives?
Remember the “3rd stakeholder”…the Consumer (excerpts from Taylor’s Scientific Engineering)

“…is it fair workers get 60% wage hike while employer gets 3.6x efficiency?

“Consumers pay for the profits of both the employee and employer...they must share in the gain with increased quality and lower cost.

“Greatest impact of P.I. has been introduction of machinery to replace people. Consumers have been greatest beneficiaries.”

→ No better place than agriculture to make this point!!
Case Study Introduction

FDA Warning Letter...Sparboe

Inspections, Compliance, Enforcement, and Criminal Investigations

Sparboe Farms / Prairie Complex 11/16/11

Public Health Service
Food and Drug Administration
Minneapolis District Office
Central Region
250 Marquette Avenue, Suite 600
Minneapolis, MN 55401
Telephone
(612) 334-4100
Fax
(612) 334-4142

November 16, 2011

Via UPS Overnight

WARNING LETTER

Refer to MIN 12 - 09

Beth Sparboe Schnell
Owner
Sparboe Farms, Inc. / Prairie Complex
23677 MN Highway 22
Litchfield, Minnesota 55355

Process Improvement-Wittman Consulting 2019
Final IQ Test
Sparboe Case

- What happened?
- Where was breakdown in org chart?
- How could it have been prevented?
- What effect did it have on company?
- What was company response and how will this impact future SOPs
  ... at Sparboe? ... other competitors?
5 Steps to Survive Undercover Video

Jeanne Bernick – March 2014 Top Producer

- Prepare – assume someone taping you
- Develop solid track records – animal care
- Accept responsibility – *immediately*; don’t blame others
- Increase transparency – welcome review by customers, experts, media
- Demonstrate and communicate ethical obligation to provide for animal well-being

*Other Resources: www.AgWeb.com/agriculture_challenge*
Where to Start - Implementation Strategy

- Form in-house team with outside facilitator
- Review legislation, regulatory requirements; attend training conferences – food safety
- Research peers who have implemented GAPs, SOPs, BMPs...define scope you need to codify
- Research audit/certifying organizations
- Consider engaging auditor/certifier to do “test drive”
- Develop strategy for getting documentation in place
  - Do your own, outsource
- Put SOPs where staff can FIND them!
Time to wrap up…

Have you taken inventory of your Process Improvement elements?

---

**Process Improvement Audit Checklist**

This worksheet is designed to assist you in identifying areas in your business where it may be appropriate to standardize process and document SOPs, GAPs, or BMPs. Inventory which of these apply to your business, place an “X” in columns that apply, and note which organizational unit in your business has lead responsibility to initiate and/or administrate the topical area.

<table>
<thead>
<tr>
<th>Process Improvement Area: (Place an “X” in the columns that apply.)</th>
<th>Applies to Us</th>
<th>Have it in place</th>
<th>Organization Unit or Person with Lead Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management System</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mission, Vision and Core Values</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farm History</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Goals and Objectives-updating process</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strategic Planning Process</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organization Chart/Job descriptions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Policy Handbook</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Critical agreements documentation (buyout agreements, estate plans &amp; wills, lease arrangements)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human Resource Mgmt</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job Announcement, application &amp; interview processes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job Descriptions, org. charts &amp; Performance Standards</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training and orientation</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Summary – “Good is the enemy of great!”

- Ag business → LOTS of MOVING PARTS
- Must excel at **process mapping** and **costing**
- Promote culture of **100% buy-in** for SOP implementation
  - Will you be “proactive” or “reactive”?
  - Assign “lead role” to accountable party – *Process Improvement Coordinator*
  - Remember – Checking box not the same as living it!
  - Audit for compliance, punish and reward strategically
...don’t forget to apply Process Improvement to all spokes!
Resources

- Guidebook aids clients in working through implementation process
- DVD allows participants to “take story home”

For free resource downloads, articles & Guidebook/DVD order forms, see: www.wittmanconsulting.com