

This webinar will begin momentarily



Strategy Deployment in Action *One Executive's Perspective*

Pascal Dennis
Author
Getting the Right Things Done

David Brule, II
Executive Vice President,
Director, and Co-Owner
Northern Star Industries



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Strategy Deployment in Action

One Executive's Perspective

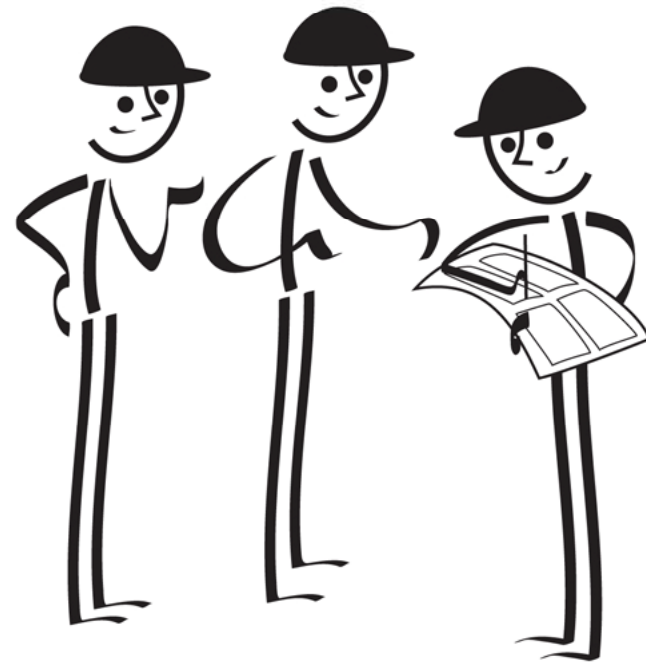
Pascal Dennis

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Webinar “Housekeeping” Tips

Use the volume controls on your computer to adjust sound

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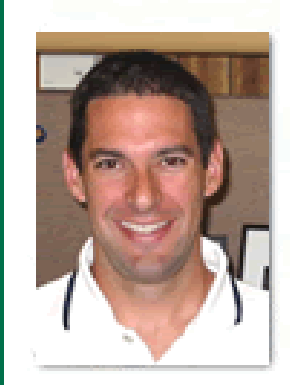




Pascal Dennis

- Professional engineer, author and lean advisor
- Developed lean skills at Toyota Motor Manufacturing Canada (TMMC)
- Manager of operations, finance, human resources, and health, safety and environment
- Focuses his work on strategic planning and execution (strategy deployment), quality, delivery and cost management, health and safety, and business process improvement
- Principal in Lean Pathways Inc.
- Member of the Lean Enterprise Institute faculty.
- Author of *Lean Production Simplified*, *Andy & Me - Crisis and Transformation on the Lean Journey*, and *Getting the Right Things Done – a Leader's Guide to Planning and Execution*, all winners of the Shingo Prize





Dave Brule II

- Northern Star Industries, Iron Mountain, MI, founded in 1959 by Dave's grandfather
- Family-owned manufacturing company with 2 divisions:
 - Boss Snowplow – snowplows & related equipment
 - Systems Control – electrical relay and control panels
- 350,000 sq. feet of mfg. and warehouse space in 3 Iron Mountain facilities
- Over \$140 million in revenue last year employing approximately 400 people.
- Dave joined Northern Star Industries in 1997
- Former Investment Banker and Venture Capitalist
- Started his lean journey at NSI in 1999.
- Since 1999: 500% revenue growth and 60% productivity improvement
- Member of several boards - US National Ski and Snowboard Hall of Fame.
- Resides in Iron Mountain, MI with his wife, Stephanie and their 3 children.
- Former US Ski Team member, active triathlete and Ironman finisher.



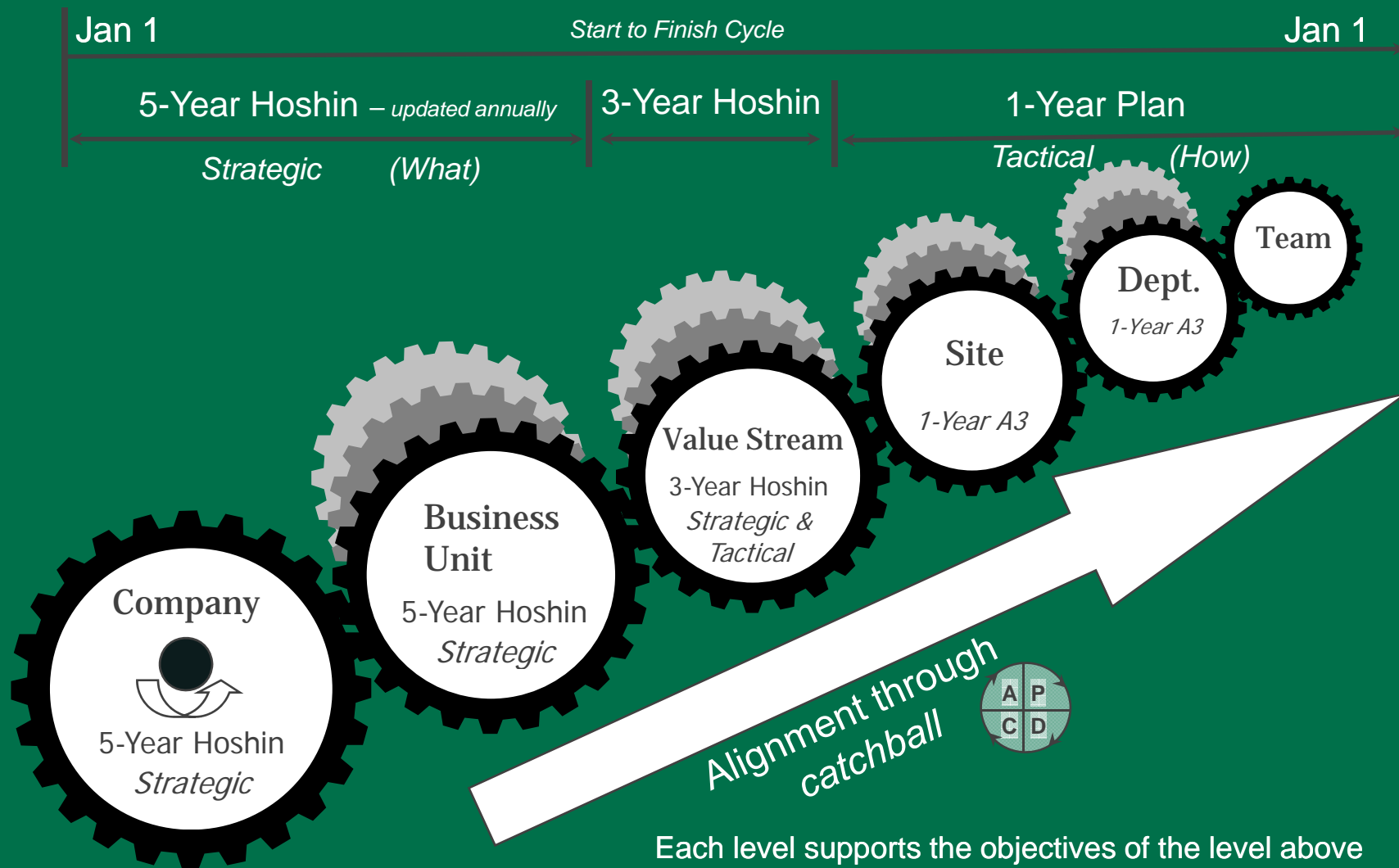
What is Strategy Deployment?

The nervous system of the lean business system...

- Guides planning and action across an organization's total value stream
- Provides a closed circuit between an organization's overriding business needs and day-to-day activities
- Enables all levels of an organization to use the scientific method as the basis for all improvement activities



What is Strategy Deployment?



Why Strategy Deployment at Northern Star?

6 years ago ...

- Lots of lean activities e.g. Kaizen, flow analysis, 5S, etc.
- Lots of good, but unaligned improvement activity
- Needed a consistent top-to-bottom message about focus



Major Lessons Learned

Reflecting on the last 6 years...



Major Lessons Learned

Reflecting on the last 6 years...

- We weren't very good at it
- The Socratic method was key to constantly challenging our own thinking
- Using the A3 was key to helping us clarify our direction
- A3 = "heavy lifting" but made our strategy and actions clear for everyone in the company



Major Lessons Learned

The transition from “command & control”...



Major Lessons Learned

The transition from “command & control”...

- Frustrating for many
- A3 makes it clear that no one person can accomplish a strategy and its deployment
- Growth makes it impossible to rely on a select few “experts” to solve all of the problems connected to a strategy



1. Develop the Plan – Tell Stories

Where are we going?

- Who are we?
- What's important to us?

How do we get there?

- What's our future state look like?
- What are the obstacles?

A3's are “currency” of *SD*

- One-page storyboard on 11” x 17” paper

We call it *A3 thinking*

- The piece of paper is not the point...



1. Developing the Northern Star Plan

Selecting a focus...



1. Developing the Northern Star Plan

Selecting a focus...

- Started with a Strengths, Weaknesses, Opportunities and Threats (SWOT) Analysis
- Identified key obstacles and measurables (safety, quality, delivery, profitability and employee morale/people)
- Developed a strategy A3 for each key business measurable





Strategy Deployment in Action: *One Executive's Perspective*

Lean Enterprise Institute



1. Developing the Northern Star Plan

Developing Strategy Deployment “pacesetters” or “key thinkers” ...

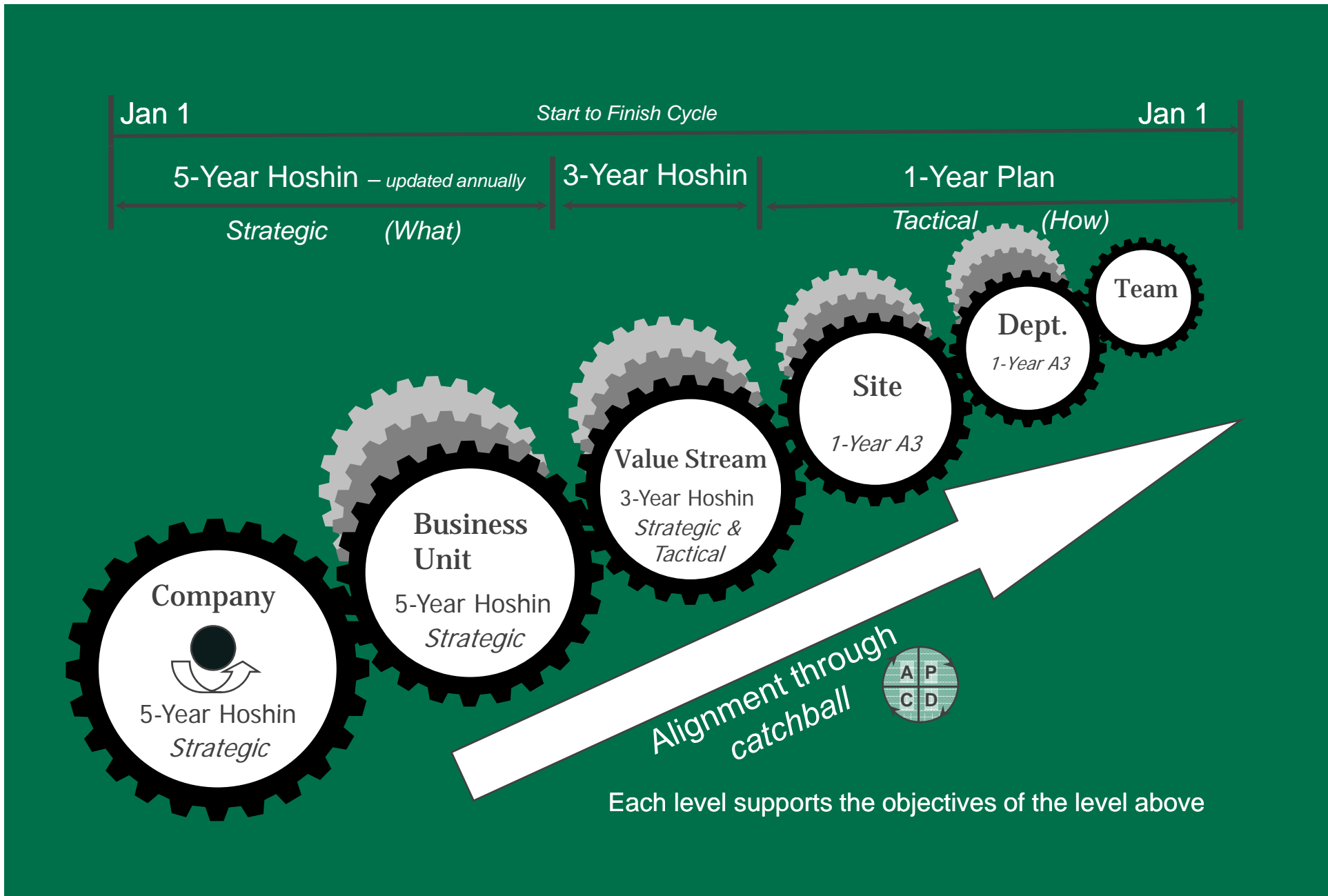


1. Developing the Northern Star Plan

Developing Strategy Deployment “pacesetters” or “key thinkers” ...

- Look for “naturals” within mainstream lean activities
- Identify a key “deployment officer”, but... this does NOT diminish the need for buy-in from the senior executive team for Lean and the Strategy Deployment process





2. Deploy the Plan



Source: *The Toyota Way*
by Liker & Meier

2. Deploying the Northern Star Plan

Choosing a critical area for strategic kaizen focus...

- Quality A3 showed the customer demanding dramatically better paint
- In the core snowplow business paint quality is critically important for product performance and durability...and therefore, market share.



Goal: Improved paint quality

Boss Powder System Upgrade

Dept. Powder Paint

Problem Description

- 1) The competition is selling their corrosion protection (1600hrs) as superior to "BOSS" (800hrs). Salt spray results (measure of corrosion protection) can be related to rusting in the field.
- 2) Laser cut edges have inadequate coverage causing a decrease in corrosion protection. Laser cut edges have been an issue with our customers for some time. Sales has promised a "fix".
- 3) Powder coating in deep pockets and corners is difficult. Aerosol touch-up is ugly and serves only as a temporary cosmetic solution.

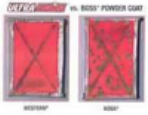
Desired Condition/Target

- 1) Salt spray results above 1600 hours.
- 2) Components must have adequate paint coverage on all edges and surfaces.
- 3) Minimize the need for aerosol touch-up.

Problem Analysis

- 1) Powder on steel is limited to less than 2000 hours salt spray. Pre-treatment, film thickness, cure, and powder chemistry all have a major effect on salt spray results.

Competition has improved pre-treatment (blast & wash) and increased film thickness (the two most costly options). A total of \$3 Million was invested.



Salt Spray Test at 1600 Hours
Sheet 4-13-03

Not all zinc flakelets covered, but thickness is adequate.


Flakelets are not covered on the leading edges.

Lead flakelets are not covered on the leading edges.


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Lead flakelets are not covered on the leading edges.
- 2) Thin paint on sharp lasered edges is due to the high flow rates associated with high gloss powder.

This condition decreases corrosion protection and provides an opportunity for failure.


- 3) The "faraday cage effect" is unique to powder application. Deep corners are difficult to paint without heavy buildup on other surfaces.

This effect is exaggerated during touch-up after automatic guns have "charged" the part.



| Countermeasures | | | | |
|---|--------------------------------------|--|---------|--------------------|
| Activity <i>What</i> | Rationale <i>Why</i> | Expected Effect | When | Capital Investment |
| - Powder RI event - standard work for painters | - maximize coverage | - less aerosol touch-up | Nov 03' | |
| - Spray 100% of parts with zinc powder primer before topcoat. | - increased performance and coverage | - 4000 hrs salt spray - excellent edge coverage | Feb 04' | \$400,000 |
| Equipment Required | | | | |
| - In-line powder booth | \$225,000 | | | |
| - new dry-off oven | \$75,000 | | | |
| - Environmental room | \$75,000 | | | |
| - conveyor addition | \$25,000 | | | |

| 2003-2004 Action Plan | | Schedule | | | | | | | | | | | |
|--|---|----------|---|---|---|---|---|---|---|---|---|---|---|
| 2003-2004 Actions | 2003-2004 Activities | S | O | N | D | J | F | M | A | M | J | J | A |
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| - Budget approvals for zinc primer application equipment | 1) Project budget approval | | X | | | | | | | | | | |
| - Major equipment selection | 1) Off-site equipment evaluations 2) Receive final equipment proposals 3) Award purchase orders | X | | | | | | | | | | | |
| - Sub Contracts | 1) Receive sub-contract quotes 2) Award purchase orders 3) Complete sub contract work | | X | X | X | X | | | | | | | |
| - Equipment Installation | 1) Powder booth installation and start-up 2) Cure oven installation and start-up 3) Conveyor work and tie-in to existing system | | | | | | | X | X | X | | | |

Follow-up/Unresolved Issues

- Used powder equipment is available.
- Regular salt spray testing to verify results.
- BOSS surface finish standard needs to be developed and adhered to.
- Labor and material cost increase of \$7.92 per plow. (Based on 15,000 plows / year)
- Robotic painting could offset increase in applied cost. (\$150,000 robot would reduce painters by 2)
- Electric, natural gas, and compressed air capacity investigation. (Elec. And gas complete, air ongoing)
- Laser edge prep RI event to be scheduled.



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Desired Conditions

- 1) Salt spray results are better than ours.
- 2) Corrosion protection on laser cut edges is adequate.
- 3) Minimum aerosol touch-up is used.

Problems

- 1) Powder coating is limited to less than 2000 hours salt spray. Pre-treatment, film thickness, cure, and powder chemistry all have a major effect on salt spray results.

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Salt Spray Test at 1600 Hours Done 4-10-03

- Test done using Spectral Corrosion Test Chamber.
- ASTM B117 standard used.
- Exposure times are based on hours in the salt fog solution.
- Cross-section specimens are "X" marked marking areas to expose bare metal.
- Specimens rated based on the amount of coating (rings) from the original number. Blistering indicates the rating.

The end result: Improved pre-treatment and uniform coverage makes ULTRAFINISH™, now applied to all MITSUBISHI pieces, the industry's best protection against wear and rust.



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2. Deploying the Northern Star Plan

Staying focused on the real problem, NOT possible countermeasures...

- Leaders have to ask tough questions like: How do we know we're going to be successful?
- Use the A3 to stay focused on the facts – what we know from data
- It takes discipline to keep digging. Paint case took 4 months of experiments on a problem that needed to be solved yesterday



Goal: Improved paint quality

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2. Deploying the Northern Star Plan

Use all of your resources to better understand root causes and targets...

- Draw on supplier knowledge
- Set targets based on facts, not perception
- It's management's job to help those responsible for solving a strategic problem to agree on the scale and scope of the improvement needed



2. Deploying the Northern Star Plan

Motivating the team...



2. Deploying the Northern Star Plan

Motivating the team...

- Coach, not control
- Build on the natural desire to win
- Respect their results



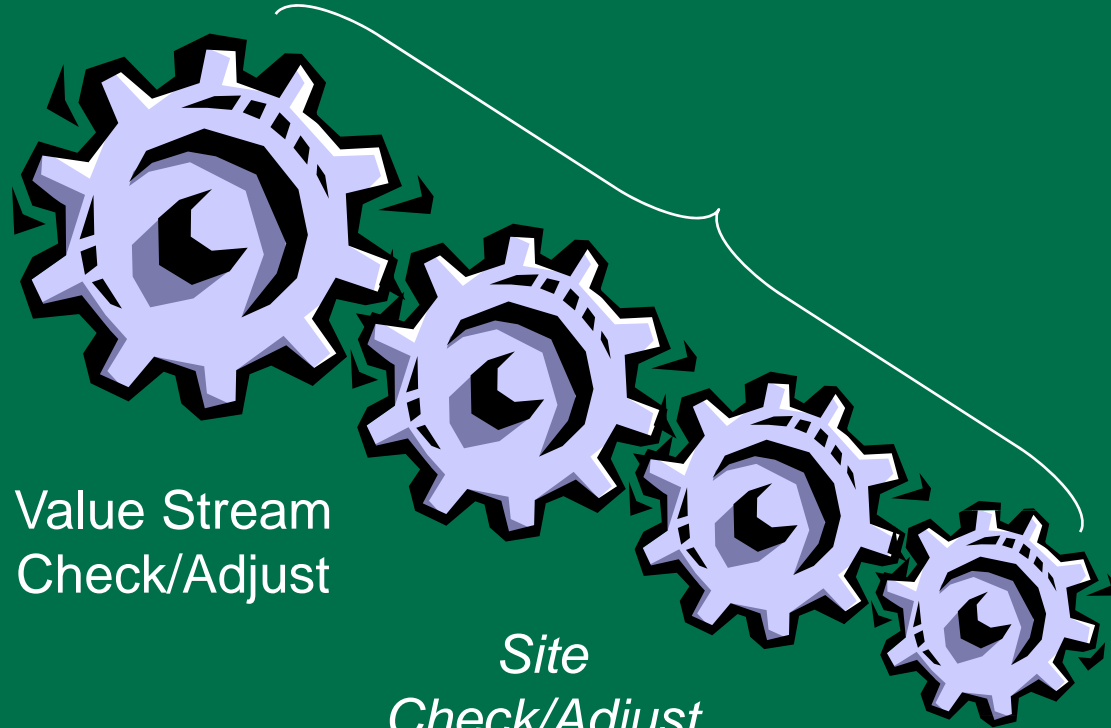
3. Monitor the Plan

Business Unit
Check/Adjust

Value Stream
Check/Adjust

Site
Check/Adjust

Team
Check/Adjust







Strategy Deployment in Action: *One Executive's Perspective*

Lean Enterprise Institute





3. Monitoring the Northern Star Plan

The changing role of leadership and information flow...



3. Monitoring the Northern Star Plan

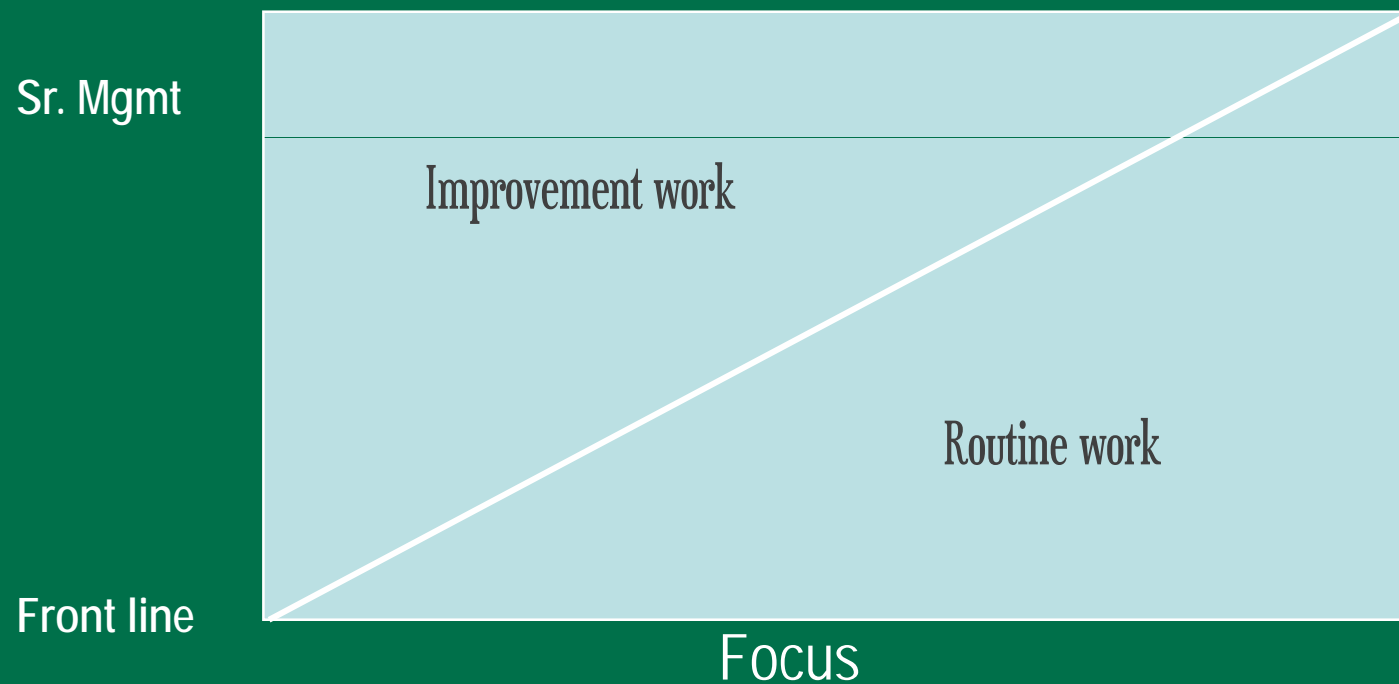
The changing role of leadership and information flow...

- Establish a new routine of management standard work
- Discipline of daily, weekly and monthly checks on deployed plans
- Dashboards define what's needed from IT (creates "pull") rather than searching through all available data for meaningful information
- IT becomes more integrated into the heart of the business



4. Improve the System

Each level applies scientific method



4. Improving the Northern Star Management System

Primary impact of SD on the improvement system ...



4. Improving the Northern Star Management System

Primary impact of SD on the improvement system ...

- Drives the cadence and focus of rapid kaizen events
- Most events now planned for the entire year, with a couple occurring each month at a predictable pace
- Every event is connected to a deployed strategy, focusing every kaizen on the heart of the business



4. Improving the Northern Star Management System

Developing new skills...



4. Improving the Northern Star Management System

Developing new skills...

- Socratic questioning is the most critical and difficult skill to develop at all levels
- Extensive training at all levels in problem solving, visual management and the SD process itself
- Commitment to developing skills to support SD is a critical way to communicate that SD is as important as everyone's "routine" daily work



4. Improving the Northern Star Management System

Maintaining momentum...



4. Improving the Northern Star Management System

Maintaining momentum...

- As long as SD deals with key competitive issues/obstacles, and competitors are constantly raising the bar, there should be a natural momentum
- SD provides a system for big wins in the market and on the plant floor
- Success and satisfaction from identifying and solving tough issues is contagious



Strategy Deployment: An Alternative to Command & Control

- Command & control leadership appears to work, especially in the short term
- Tough economic times often push people and organizations towards short term thinking
- SD is about building the capability of people and organizations for the long haul
- Organizations using SD can both better deal with these tough economic times and be stronger when the economy recovers



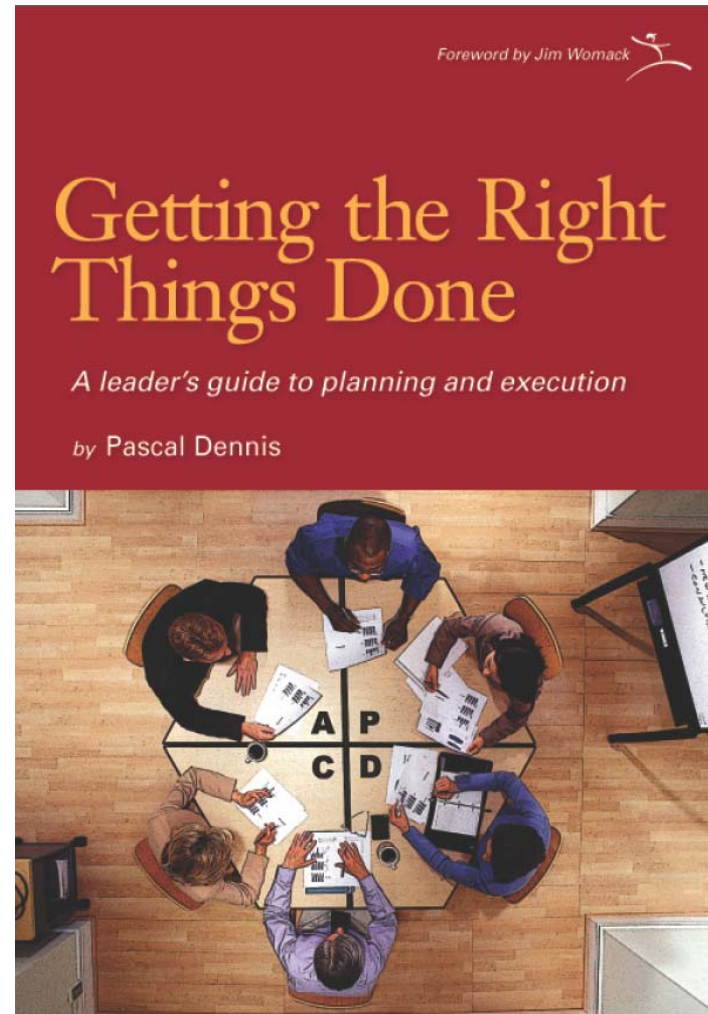
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Questions & Answers

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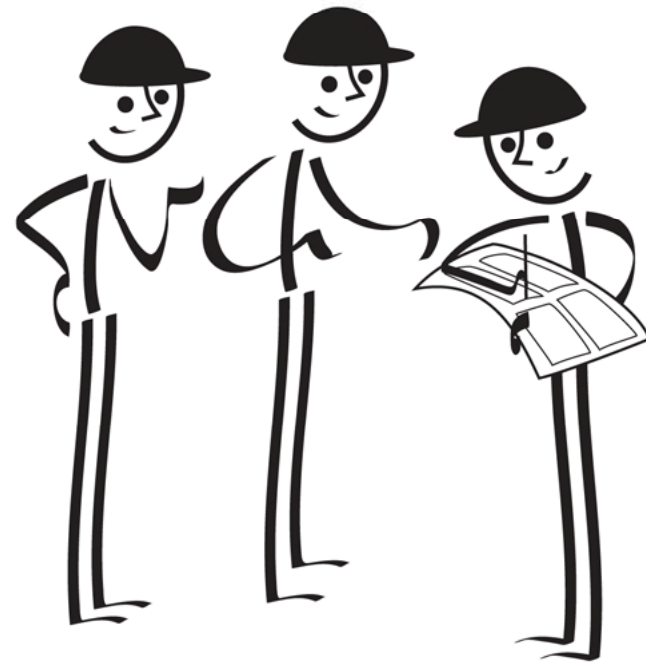
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