

# Continuous Process Improvement

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# What is Continuous Process Improvement?

- Improvement:
  - Improving the organization's performance — safety, quality, cost, customer satisfaction, etc.
- Process Improvement:
  - By improving the underlying work processes — rather than market positioning
- Continuous Process Improvement (“CPI”):
  - Ongoing — not occasional one-off projects
  - Engages the entire organization
  - Expands everyone's job to include a new task
- CPI is a way to tap the entire staff's insights, creativity, and know-how...for a potentially huge cumulative benefit

# Why do unions get involved in CPI?

- Workers want to be proud of their work, products, and services
- Workers are frustrated when management ignores their improvement ideas
- CPI results can be a “win-win” for workers and employer: may be important in avoiding business failure and job loss
- Union can negotiate employment-security provisions — which eliminates fear that CPI would eliminate jobs
- When the union plays a pro-active role in CPI, it can protect the integrity of collective bargaining, block favoritism, and avoid degeneration of the CPI program

# Case Example: NUMMI

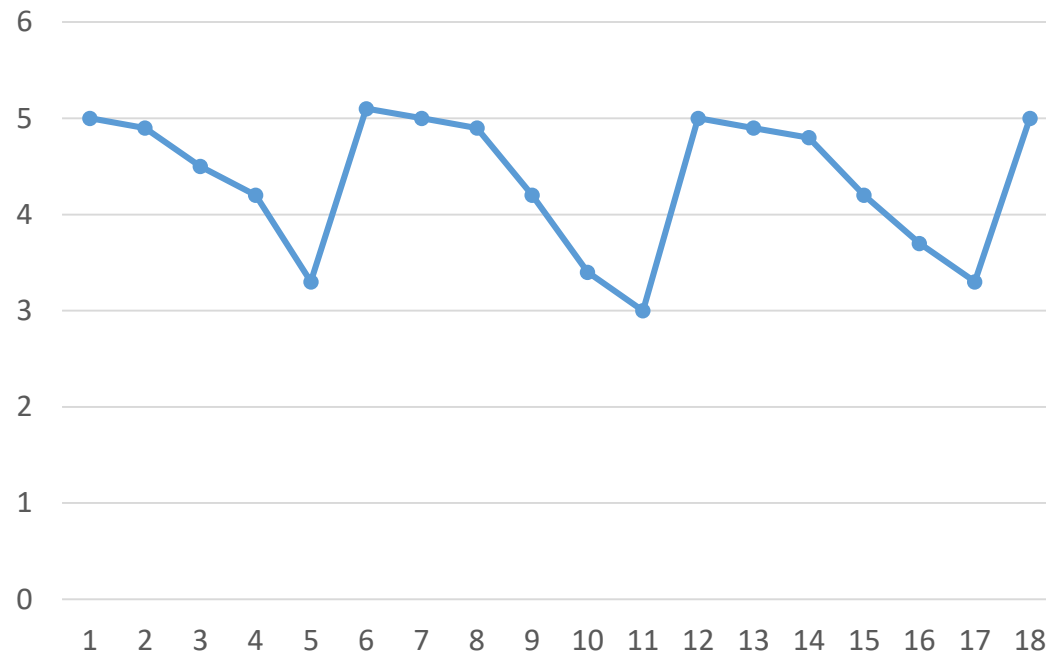
- GM-Fremont closed 1982
  - 5,700 workers laid off
  - quality levels and productivity far below the GM norm
  - unexcused absenteeism over 20%
  - drugs
  - over 4,000 grievances between contracts
- NUMMI created 1984
  - 1983 GM and Toyota sign Letter of Intent
  - agree to recognize UAW
  - production begins in December 1984
  - 85% of workers are GM-Fremont veterans
  - Nova, Prizm, Corolla, Toyota compact pick-up trucks
- Shut down 2010

# Case Example: NUMMI

- Goals: cost, quality, safety
- “Kaizen” as source of competitive advantage

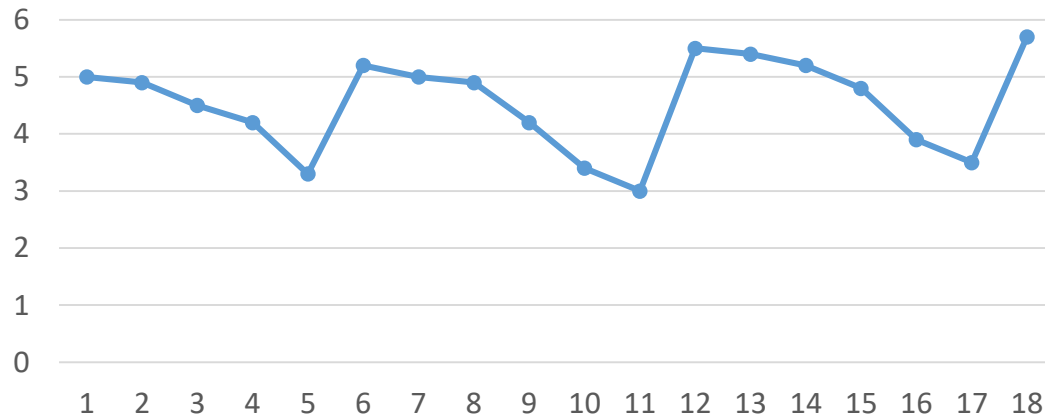
# The Power of CPI

Performance at GM

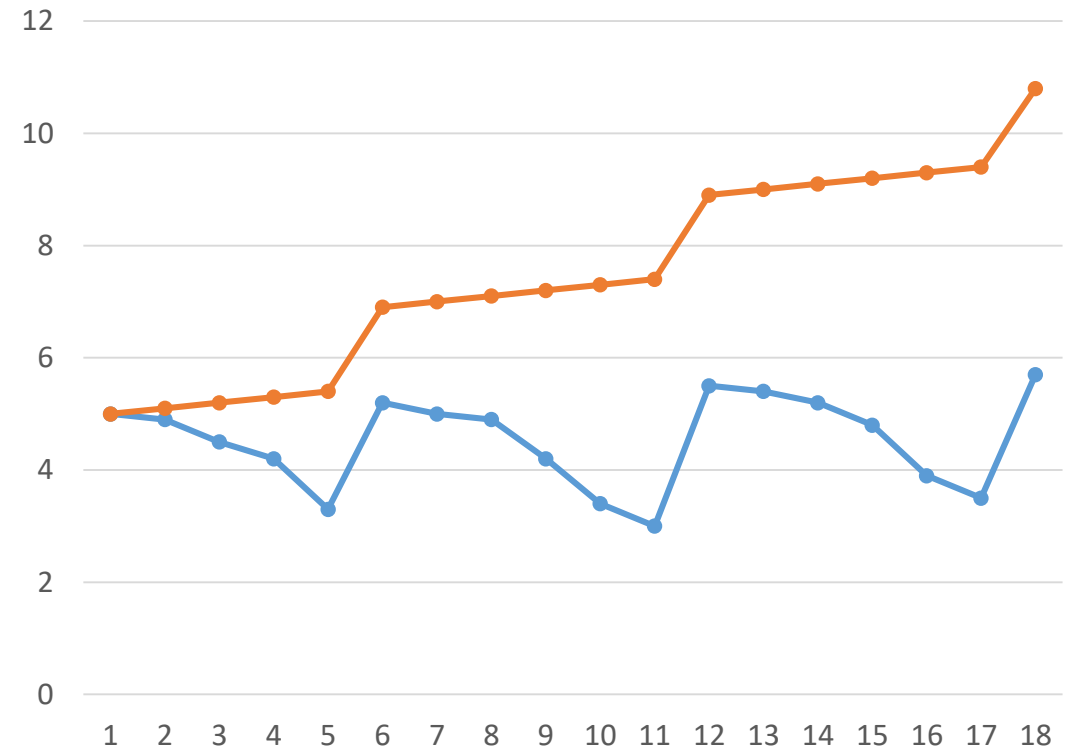


# The Power of CPI

Performance at GM



Performance at NUMMI



# Case Example: NUMMI

- Goals: cost, quality, safety
- “Kaizen” as source of competitive advantage
- Everyone is trained in Toyota Production System and in kaizen techniques
- Union’s role: supportive
- Work teams:
  - Each work-team (5-7 people) responsible for improving their own processes
  - Re-do standardized work analysis with every line-speed change
  - Everyone encouraged to suggest proposals
    - Very modest financial rewards but lots of celebration
    - Managers evaluated on % of people in their unit who participate
    - About 80% of workers contributed at least one idea each year
    - Workers each contributed an average of about 3 suggestions per year
    - About 85% of suggestions were accepted
- Cross-functional teams: e.g. New model introduction teams
  - Document the process, improve the process



# NUMMI

“The GM system relied on authority. People with rank — the managers — ruled regardless of their competence or the validity of what they were saying. It was basically a military hierarchy. At NUMMI, rank doesn't mean a damn thing — standardized work means that we all work out the objectively best way to do the job, and everyone does it that way. I might make some minor adjustments because of my height, for example, but I follow the procedure we've laid out because it makes sense. We're more like a special forces unit than the regular military hierarchy. Management has delegated responsibility to the people who do the work and that gives workers a sense of pride in their jobs.”

(RM, team leader)

[check out the This American Life podcast on NUMMI]

# NUMMI productivity: 1986

GM-Fremont	NUMMI	Takaoka
29.1	19.6	18.0

Note: excluding stamping, molding, and seat assembly personnel, and corrected for number of welds, welding automation, product size, relief time, and option content

[source: Krafcik , 1986]

# NUMMI quality

Problems per 100 vehicles experienced in first 90 days  
(J. D. Power surveys of passenger cars)

	Industry average	best small car	NUMMI Nova
1987	171	111	113

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Problems per 100 vehicles experienced in first 90 days  
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	Industry average	best small car	NUMMI Nova
1987	171	111	113
1995	103	56	56

# Case Example: Kaiser Permanente

- Kaiser Permanente
  - Health plan
  - Hospital system
  - Permanente Medical Groups
- 1980s: rise of HMO competition
  - Cost pressures
  - Strikes
- Union response:
  - Strikes
  - Corporate campaign?
  - Propose partnership model
- Formation of Labor-Management Partnership
  - Formalized in 1997 Collective Bargaining

# Case Example: Kaiser Permanente

- Union's role: proactive
- Joint top-level goals: quality, service, affordability, best place to work
- Partnership goes from “labor relations strategy” to “operations strategy”
- Union-management joint councils at every level
- Unit-based teams in 3,500 units across the organization
  - Labor and management co-leads
  - Whole department works together to drive CPI in their unit—managers, doctors, nurses, clerical, support, etc.
  - Daily “huddle” to review day's work and CPI status
  - Partnership fund pays for training, coaching, tracking
- *Plus* staff units devoted to Performance Improvement
  - Work in matrixed teams with line units

# KP LMP results

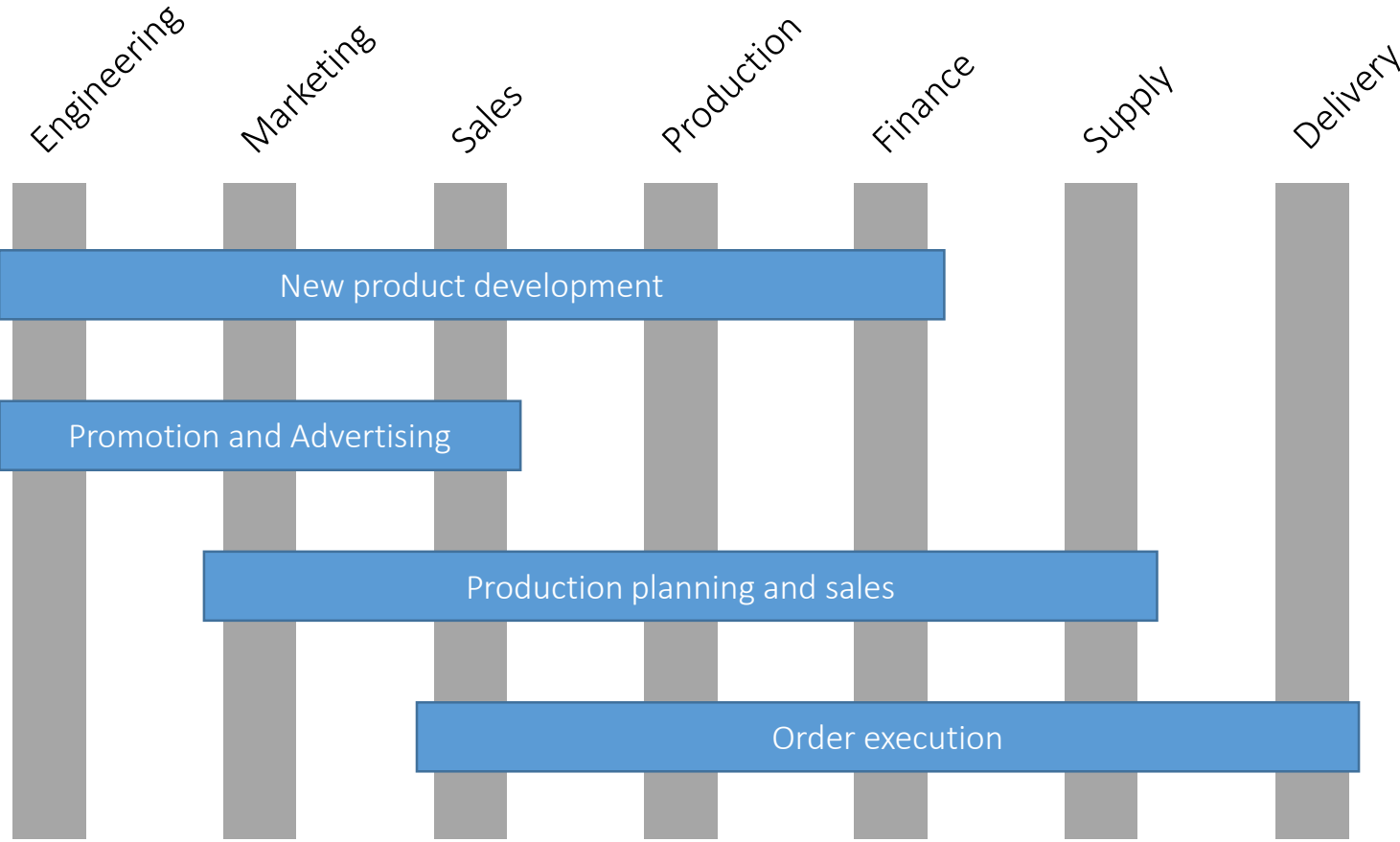
- In just the first six months of 2017, 3,500 partnership teams launched nearly 10,000 projects.
- Departments with high-functioning UBTs report:
  - 60 % fewer patient falls with injuries
  - 38 % fewer workplace injuries
  - 21 % fewer lost work days
  - 13 % improvement in patients' overall hospital satisfaction
- In 2016, the partnership and teams helped save more than \$48 million, on top of \$35 million saved in 2015.

# Organizing for CPI

- Unit-Based Teams:
  - Each unit-based team always has one or more improvement project underway
  - Pick targets that contribute to organize-wide goals
- Cross-Functional Process Teams:
  - Improving business performance requires more effective coordination across functional silos
  - So we create “process owners” and formal structures under them that link participants across functions
  - Often under matrixed management



# Process teams for cross-functional CPI



# CPI as a strategy

- A range of project types:
  - Unit-based teams do regular work *plus* CPI projects
  - Cross-functional process teams do regular coordination work *plus* CPI projects
  - (*plus* top-down strategic projects)
- Embedded in the organization's operating strategy
  - CPI strategic goals: create meaningful goals that everyone can work towards
  - CPI as a strategic commitment: resources, attention
  - Union engagement
- Supported by organizational infrastructure
  - Organizational structures for projects, sponsoring, steering
  - Funding CPI efforts
  - Training for CPI

# Some possible target benefits: “7 wastes”

- Avoidable processing time
- Overproduction
- Inventory
- Defects
- Waiting time
- Avoidable motion of people
- Avoidable transportation of goods

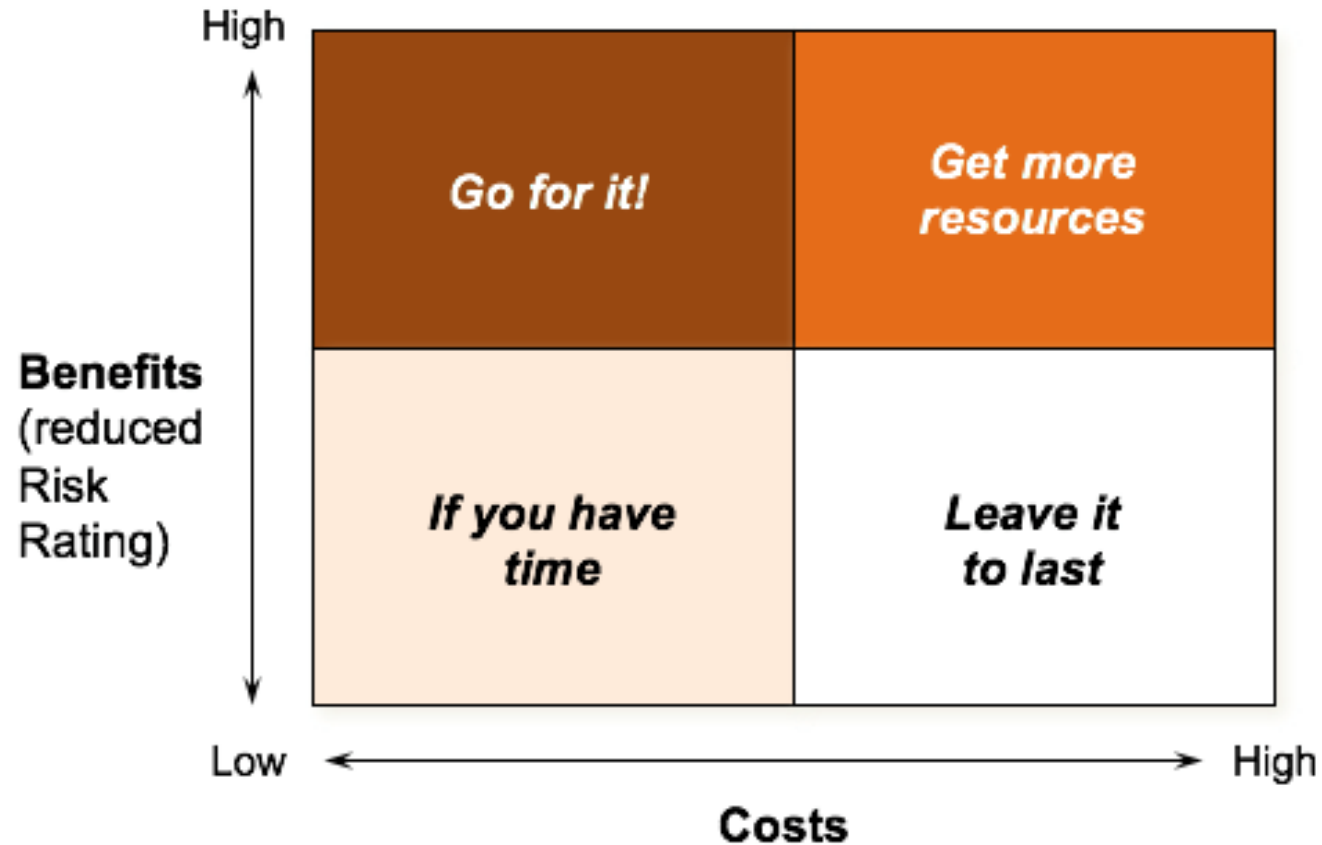
# Solutions: some common types

- Eliminate an unnecessary process step
- Simplify a work procedure
- Standardize parts
- Standardize layout of tools and parts
- Improve communication flow
- Train on best practices
- Error-proof a process
- Build in a safety check

# Consider the costs and risks

- CPI projects are relatively more attractive when...
  - Minimal or no capital expenditure
  - Low risk
    - Narrow scope of change
    - Buy-in to solutions by all stakeholders
    - Confidence the change will generate a positive impact
  - Improvements can be implemented quickly (within 1-2 weeks)
  - The project team has the authority to implement the desired changes

# Prioritize among targets



# Challenges of partnership

- For management
- For workers
- For unions

# Challenges of partnership

- For managers
  - I'm still responsible for the unit's financial success, but now I have to share authority with a union partner who is not
  - It's not easy to shift to a participative style of leadership
  - We get mixed messages from (and have weak trust in) higher-level managers
  - This takes more time in meetings
  - How to deal with the short-term trade-off between current performance and improvement efforts
  - Won't we run out of low-hanging fruit pretty quickly? Then what?
- For workers
- For unions



# Challenges of partnership

- For managers
- For workers
  - This is extra work – where is the extra pay?
  - This is hard – I'm not sure I know how to do it
  - How do I deal with my co-workers who don't want us changing our methods?
  - Hey – I've learned so much doing this – is there some promotion path for me to continue developing?
- For unions

# Challenges of partnership

- For managers
- For workers
- For unions
  - Does this mean getting into bed with management?
  - Do we have the knowhow for improvement activity and dealing with the business aspects?
  - My members feel that improvement work is extra work that they are not being paid for
  - I'm getting pressure from recalcitrant members: will I get reelected?
  - Do we have employment guarantees?
  - How do we maintain member support for improvement work that happens "behind the scenes"? This requires stronger union democracy