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Lean Development – Influencing the Organization

Presentation Organization

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- **Introduction**

- Leverage Points
- System View

- **Description of the different type of leverage points**

- **How to apply to your project**

- **But first – a story**

- Electronic company with good metrics
- Root cause performed but not effective
- Declining sales and quality
- Program meetings focused on delivery and shipping metrics
 - Quality and production metrics always last ...if at all
- End of one month, workers gathered the wheel stops from the parking lot!??

The Introduction – Leverage Points

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- **Leverage points are places within a complex system where a small shift can cause big changes**
 - Best describe by Donella H. Meadows - 12 leverage points
 - Key to influencing the organization
- **Leverage points are not a new idea – imbedded in history, culture, and Legend**
- **Intuitively aware – used wrong**
 - Most organizations know about their leverage points
 - A given improvement team may not
 - Levers are often counterintuitive - pushed when they should be pulled¹
 - Strongest saving often come from redirecting the organizational force on their levers

¹ J.W Forrester, *World Dynamics* Portland Oreg.: Productivity Press 1971.

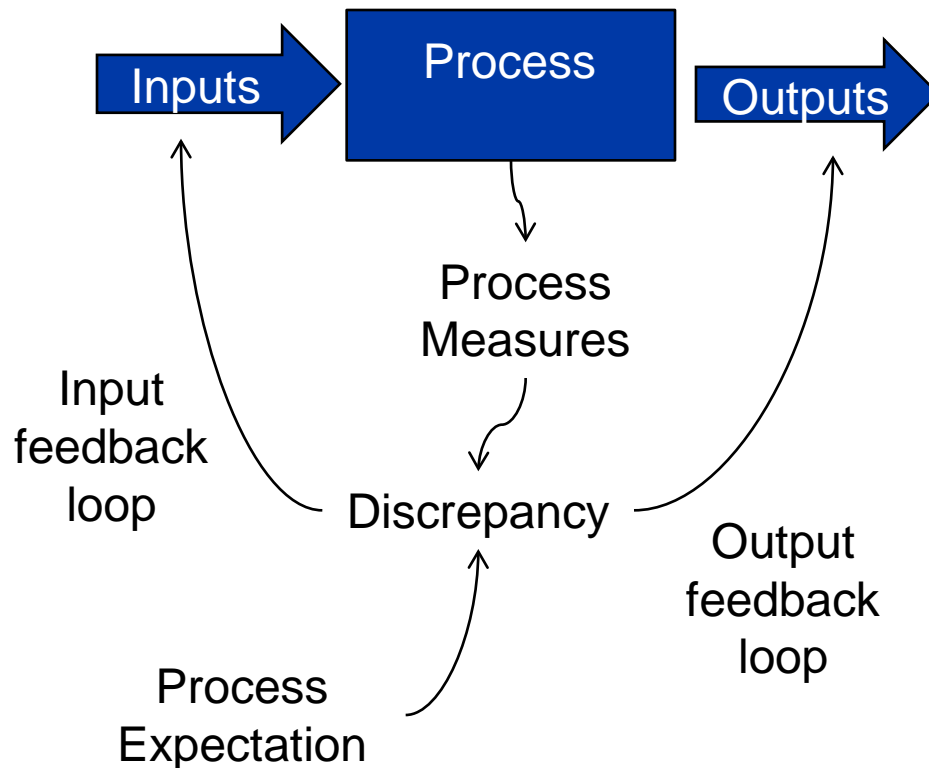
Introduction – Leverage Points

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- **Traditional view of the forces acting for and against any improvement process**
 - Budgetary
 - Organizational
 - Social
 - Strategic
- **System thinking helps to rank and categorize these forces**
 - Six Sigma “SIPOC” is a starting point

The Introduction – A System View

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- **Process**
- **Inputs increase the available stock needed for the process**
- **Outputs decrease the available stock created by the process**
- **The Process Measures VS the Process expectation(s) the discrepancy**
- **Two negative feedback loops adjusts the input/output (WIP Control)**
- **The Process expectation and the feedback loops are outside the process**

Introduction to the Levers

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- **Some levers are stronger than others**
 - The order of strength of the levers may vary
- **Resistance to change higher for stronger levers**
- **Levers take various forms (lowest to highest)**
 - Physical – The “Hows”
 - Response – The “Whats”
 - Transformational – The “Whys”

Physical – The lowest-level Levers (1 of 2)

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■ Physical - lowest-level Levers

■ 12. Numbers

- Think metrics, staffing levels, number of Cad terminal, etc

■ 11. Buffers

- Think Overtime, work constraints, WIP, material stocks, etc
- Has to be thought about in terms of the process needs

Physical – The lowest-level Levers (2 of 2)

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■ Physical - Lowest-level Levers

■ 10. Process structure or network

- Think hiring, office space, ability to add CAD terminals, machines, etc.
- Machining centers, transfer lines, computer networks

■ 9. Delays relative to the rate of changes

- Think ability to respond: audit results, metrics, reaction to standard and special causes, etc
- How fast can you gear-up? wind-down?
- How fast
- What happens if a very large order is received?
- How fast can your systems respond?

Response – The Mid-level Levers

Response (1 of 2)

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■ Response - Mid-level Levers

■ 8. Negative feedback loops

- Think about how people respond to metrics, requests, issues, risks, etc
- Does it change based on who is involved?
- Slows the process

■ 7. Positive feedback loops

- Think awards, encouragement, etc.
- Often hard to quantify – maybe intangible and invisible until the effect are felt
- Speeds the process

Response – The Mid-level Levers (2 of 2)

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■ Response - Mid-level Levers

■ 6. Information transparency

- Who controls the information and who can see the information
- Think about what change boards or other forums the data must go through
- Who are the information gatekeeper in your organization?
- This is why a given improvement team may not know the organizational leverage points

■ 5. Rules

- Think about the command media system
- Process Governance

Transformational –The High-level Levers (1 of 2)

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■ Transformational - The High-level Levers

■ 4. The power of self-organization

- Direct impact on Process Discipline
- Group theory: Tuchman’s “forming storming, norming, performing”
- Organizational Framework: Zachman – layers are self-organizing

■ 3. Process expectations

- Think about how the expectations impacts the feedback

Transformational –The High-level Levers (2 of 2)

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■ Transformational - The High-level Levers

■ 2. Process mindset or paradigm

- Think about the underlying values of the organization, management, corporate culture, etc.
- The lever is not easily move for a specific improvement process.
 - May determine what type of solutions are acceptable
- Six Sigma’s “waves” approach

■ 1. Belief

- Strongly held belief
- Personality testing and surveys hints at how this is working in the organization
- The organization promotes some while down playing others

Leverage Points – How to apply

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■ Look beyond just the facts

- When performing the analysis, understand what levers are influencing the project
 - E.g. Value stream maps often only describe the “Physical” and some “Response” levers – Add the other “Response” and “Transformational” levers
- When looking for solution(s), address multiple leverage points
 - E.g. A new metric is a “Physical” lever, changing the documented process is a “Response” lever, Shifting the goal of the process is a “transformational” lever.
 - Sometimes just adjusting the way a lever is applied is the best solution.

Leverage Points – Conclusions

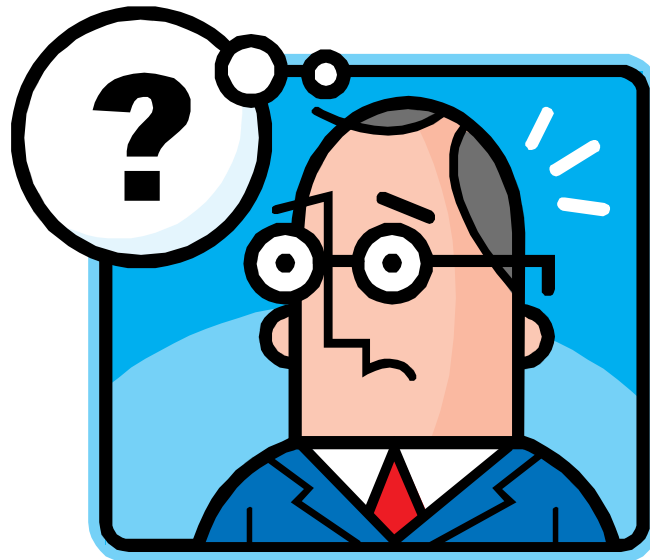
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- **The organization knows their leverage points**
 - A given improvement team may not
 - Most organizations are using them wrong – counterintuitive
- **Promote multiple leverage solutions with the same goal for maximum impact**
 - Ensure the solution is capture in the processes/systems for long term savings
 - Work towards transformational changes

The rest of the Story

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- **Shipping the wheel stops to various customer because they we short on a key metric: “Tons Shipped.”**
- **Only metric the CEO was really concerned about**
 - Prior job a CEO of a steel company
- **Solution required changing the expectation of the processes**
 - Only then does the quality and production methods show improvements



Reference

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- **Donella Meadows, *Leverage Points: Places to Intervene in a System*, 1999**
http://www.sustainabilityinstitute.org/pubs/Leverage_Points.pdf