

Improvements in vain – The 9th waste



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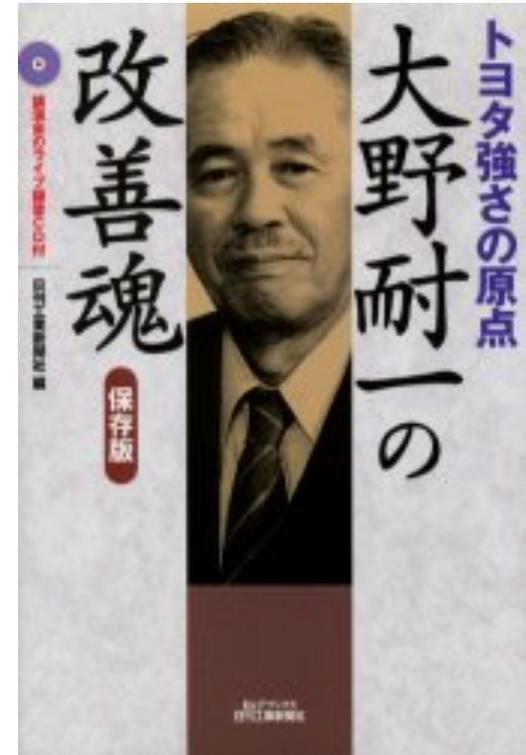
Author background

- **Marcus Bengtsson, Ph.D.**
 - Maintenance Engineer, Volvo CE Operations Eskilstuna
 - Long-term maintenance development
 - Responsible for implementation of maintenance systems within Volvo Production System
 - Chairman of Maintenance Core Competence Network within Volvo CE
 - Chairman of network on condition based maintenance within Volvo AB Sweden
 - Previously Chairman and examiner of two Polytechnic schools
 - Researcher, Mälardalen University
 - Project manager: Reducing maintenance-related waste
 - Project participant: User-supplier integration in production equipment design
 - >25 academic publications, mostly within the area of maintenance management and condition based maintenance
- **Christer Osterman, M.Sc.**
 - IBM, Computer Integrated Manufacturing, Robotics
 - JICC, Print head manufacturing
 - Astra Zeneca, Pharmaceutical
 - Scania
 - Logistics development
 - Kaizen team leader and trainer
 - Manager of Lean office at Chassi
 - Manager Global Lean office
 - Industrial PhD student, Scania and Mälardalen University
 - Participant of the Innofacture research school
 - 3 academic publications, mostly within the area of Lean implementation
 - Licentiate thesis in progress



Background and Problem

- Much of the effort and resources spent on improvements give little, if any, results
- We define this as: ‘Improvements in vain’
- Not new though, however not emphasized that much
- E.g. Bicheno *et al.* – ”Waste in not following through...”
- Ohono – ”Omoitsuki kaizen” (思いつき改善) or ”Kaizen by inspiration”
- Miller – ”Popcorn kaizen”





Background and Problem

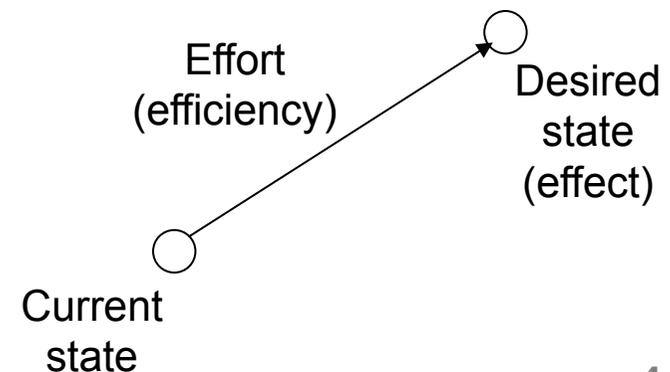
- The goals of a lean business strategy is about increasing effectiveness (effect) without sacrificing and preferably improving resource efficiency (effort)
- ‘Improvements in vain’ has two roots:
 1. Resources are spent aiming at the wrong desired state or starting from an incomplete understanding of the current state
 2. Inefficient improvement process, overspending efforts and resources to reach desired state



Effort



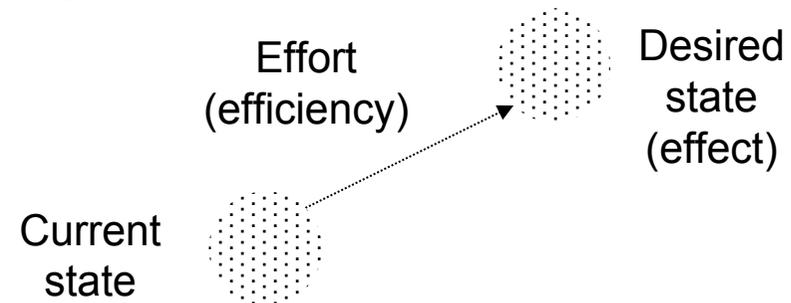
Effect





Ineffectiveness

- Undefined current state and/or desired state, efforts will not achieve effect
- Issue with the term value
- Mitigated by introducing internal term “*need*” (in Swedish “*behov*”)
- *Is there a “need” for this improvement?*





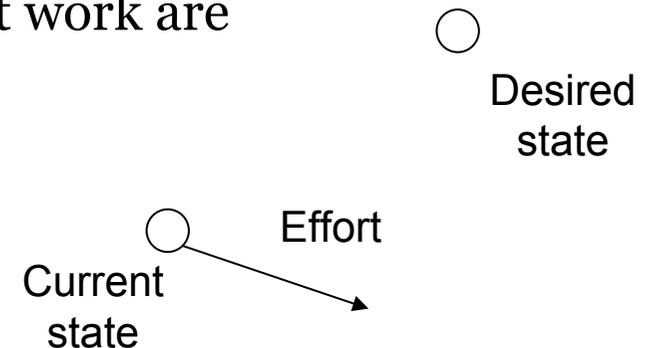
Inefficiency

- Current and desired state is defined and presumed correct, however, resources are overspent to reach desired state
- It is thus, of course, of importance that the improvement is performed and implemented in an efficient way
- Mitigated by introducing internal term “*internal value*”
- *Is there a need for this improvement? If so, what is the cost for the improvement and what is the future “internal value” of the improvement?*
- Even though either inefficiency or ineffectiveness can be the reason for ‘Improvements in vain’ we see several organizational behaviors that can trigger inefficient improvements



Triggers of inefficiency

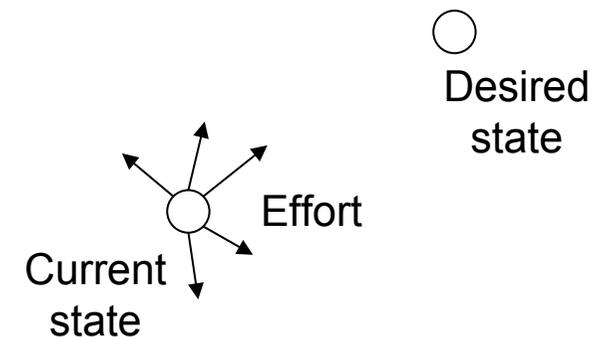
- Incomplete understanding of lean and MUDA, MURA and MURI, aiming efforts in the wrong direction
- For instance, solving problem with excessive waste (MUDA) might be misdirected if not simultaneously solving problem with (or at least acknowledge) excessive unevenness (MURA)
- Natural variation in processes might cause organizations to believe that improvement work are successful when in fact it is not





Triggers of inefficiency

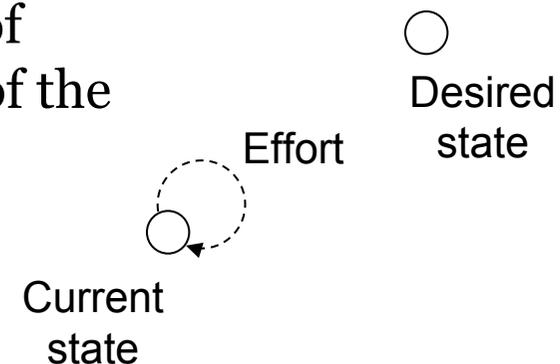
- Unfocused improvements, much efforts is spent while achieving very little totally
- Delegating the capacity to solve problems and improve to the lowest level while lacking managerial guidance
- There is a risk in that the total sum of improvement work will be less than the efforts and resources spent
- Lots of things change but few things truly improve





Triggers of inefficiency

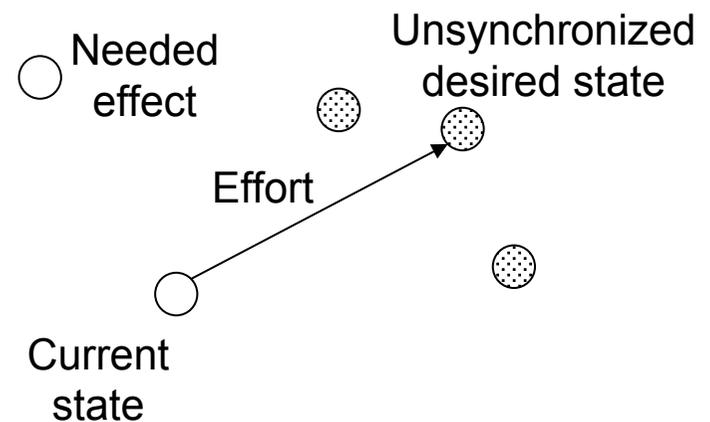
- Superficial solutions, overwhelmed organizations achieving shallow or non-existent improvements
- Management demands that, e.g., a certain problem solving tool/method should be used in every instance
- In an untrained or resource-lacking organization there is a risk in that focus is being put on the tool itself and not on what the tool is suppose to support
- The waste is triggered when the demands of management does not match the capacity of the organization





Triggers of inefficiency

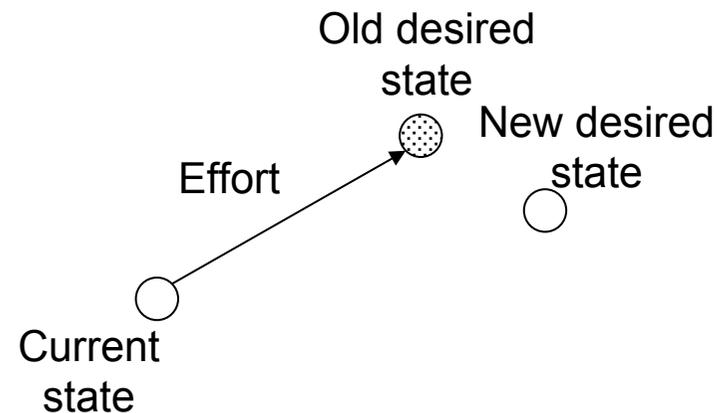
- Lack of synchronization, efforts achieve target but target is wrong, effort is thus wasted
- Departments that are indirectly connected performs improvement work in line with organizational targets but does not synchronize their efforts
- An improvement for one particular department might be successful but might at the same time increase waste in other departments





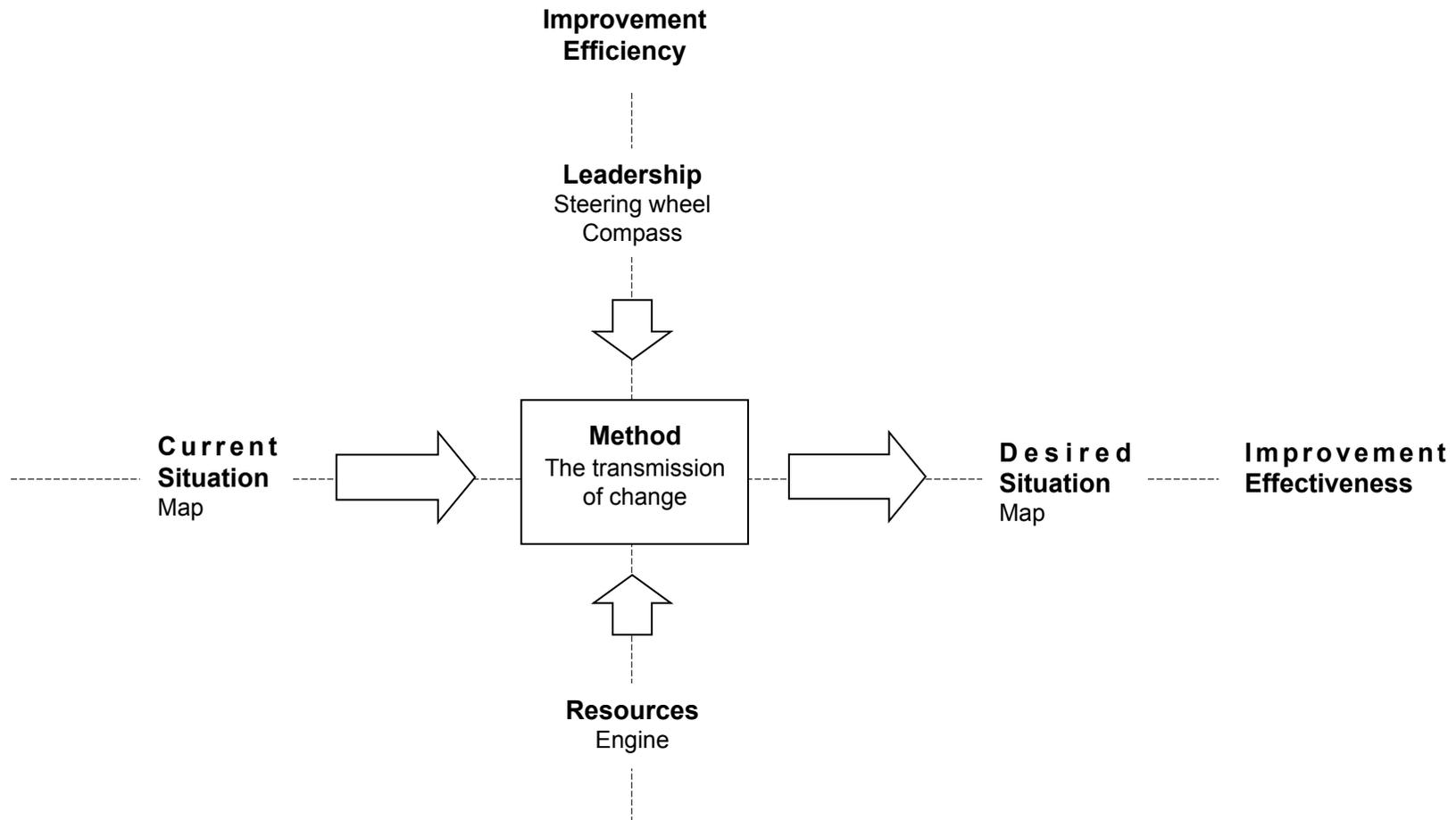
Triggers of inefficiency

- Blind improvement course, not reevaluated
improvement idea lists after improvement work has commenced might make target wrong
- Even though a list was correctly prioritized when it was created, things change and new knowledge is attained





Improvement process model





Conclusions

- First gain change momentum but do not forget to direct change
- Lean is generally about sustainably getting more output with less input – therefore attention (measures) of both effectiveness and efficiency is required
- The number of possible improvements in a process is basically infinite – resources are not
- When the current state meets the needed state at an economical cost the change becomes an improvement, in all other cases it remains just a change (and in some cases a very expensive change)

