Managing Processes & Systems & Projects
Deliver
Lean synchronization (11)
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Lean synchronization
Slack et al chapter 11 (2009)

- Agile vs. Lean
  - Lean equals synchronized, regular flow and low inventory, agile equals responsiveness, flexibility and fast delivery
- **Works for operations and supply networks as well as for processes**
- Focussing on lean synchronization can initially reduce resource utilization
  - **There is no point in producing output just for its own sake**
- **Synchronization** = Deliver exactly what customer wants, exact quantities, exact time, exactly where required
- **Lean synchronization** = Aims to meet demand instantaneously with perfect quality and no waste
- Traditional flows
  - have **buffer** between stages to **"Insulate"** themselves --> Independent from each other
    - issue resolved by staff at stage xy
    - River & Rock analogy --> water makes the rocks "invisible" so that issue is not being noticed
- Lean synchronization
  - Items passed **"Just in time" - JIT** to next stage
    - issue resolved by all stages --> intrinsic efficiency
    - Sees accumulation of inventory as preventing problems to be seen
- Barriers of synchronization
  - waste = any activity that does not add any value
    - Waste from irregular flow
      - waiting time
      - transport
      - process inefficiencies
      - inventory
      - wasted motions
    - Waste from inexact supply
      - Overproduction or underproduction
      - Early or late delivery
      - Inventory
    - Waste from inflexible response
      - Large batches
      - Delays between activities
      - More variation in activity mix than in customer demand
    - Waste from variability
      - Poor reliability of equipment
      - Defective products or services
  - Eliminate **waste**
  - Harness **contribution** of all the people
    - Discipline
    - Felxibility
    - Equality
    - Autonomy
    - Development of personnel
    - Quality of working life QWL
      - Decisionmaking, security of employment, enjoyment
    - Creativity
    - Total people involvement
      - use their capabilities, --> Recruiting people, deal with suppliers etc.
  - Improvement as a **continuous activity**
    - to get closer to :Aims to meet demand instantaneously with perfect quality and no waste
    - Japanese word for continuous improvement = **KAIZEN**
- **Cutting out waste = just-in-time tools**
  - 1 Is flow streamlined?
    - Move towards a flow that brings systematization (e.g. function layout to cell layout etc
    - 1 Examine the shape of process flow
      - Curving line or U-shaped
    - 2 Ensure visibility
      - work with visual signals, authority to stop process
    - 3 Use small-scale simple process technology
      - use several smaller machines instead of 1 big machine
  - 2 Does supply exactly match demand?
    - Pull control
      - "Don't send nothing to nowhere make them come and get it"
    - Kanbans
      - Signal which is a tool of preceding process to send more, visual control tool, tool within KAIZEN
  - 3 Are processes flexible
    - Change in flexibility lead to reduced waste and smoothes flow
    - Reduce setup times
      - Pre-Prepare equipment
      - Make equipment capable of performing all tasks
      - Facilitate the change of equipment (conveyor belts etc.)
  - 4 Is variability minimized?
    - Variablility in product/service quality or quantity, or timing acts against smooth flow and waste elimination
    - Level **schedule** as much as possible
      - Keep mix and volume of flow even over time
      - Regularity & Rhythm brings visibility & transparence
    - Level **delivery schedules**
      - Reduces inventories
    - Adopt **mixed modelling**
      - mix the modelling structure --> don't produce A-B-C but A-A-C-C-B-B etc.
    - Adopt **Total productive maintenance** TPM
      - Involve everyone in maintenance jobs