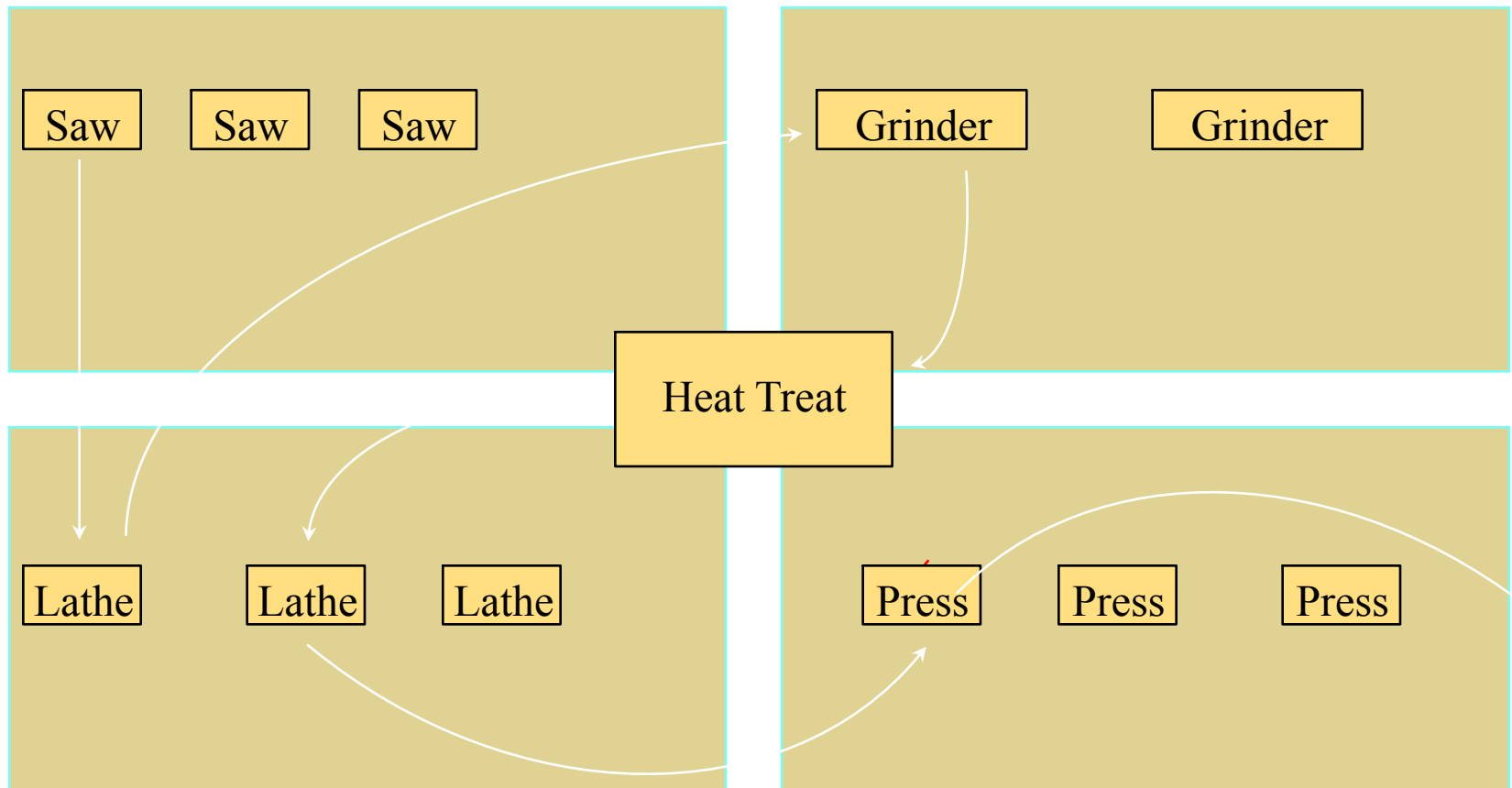


Group Technology (Part 1)

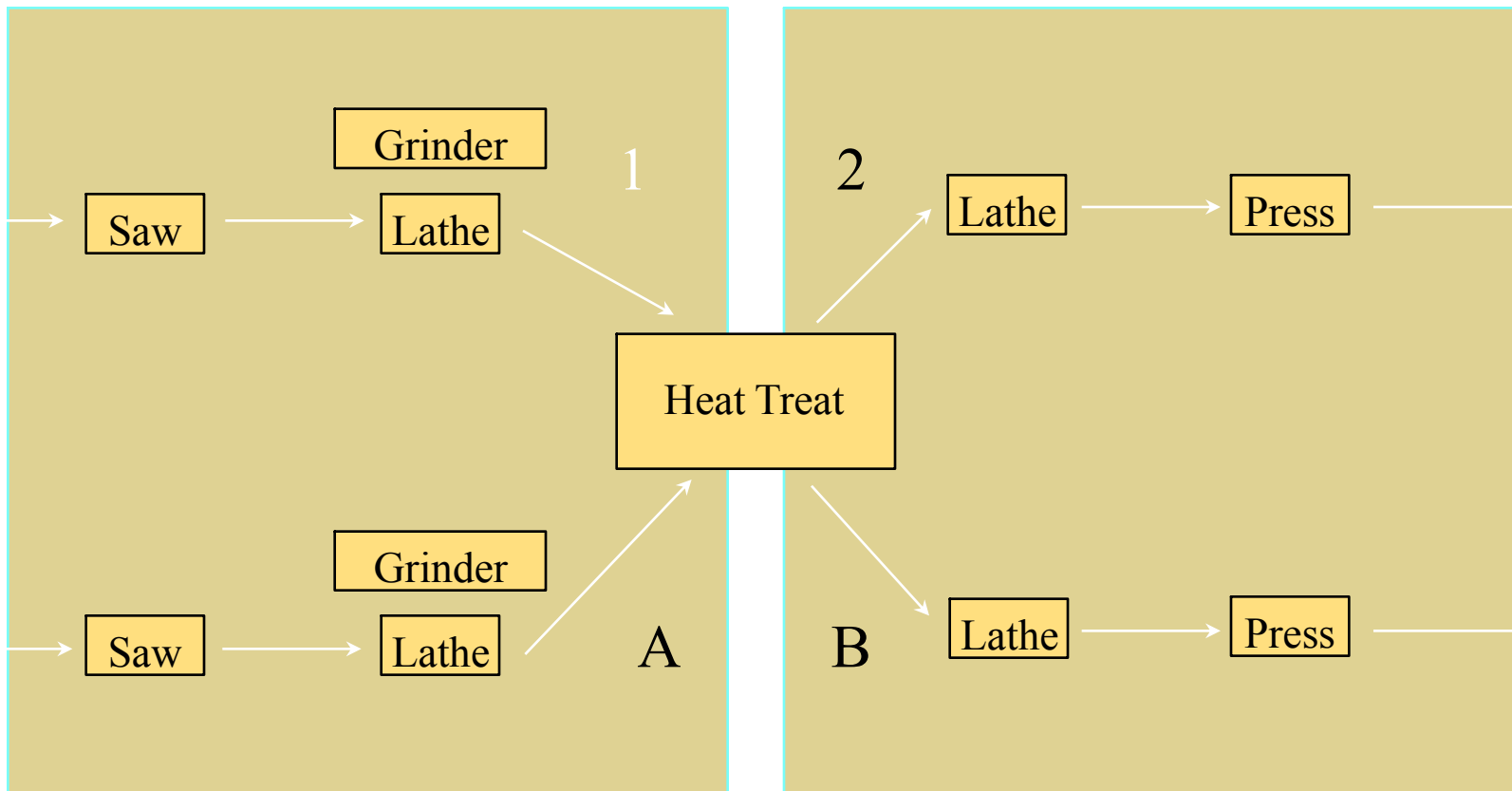
Note how the flow lines are going back and forth

- Using *Departmental Specialization* for plant layout can cause a lot of unnecessary material movement



Group Technology (Part 2)

- Revising by using *Group Technology Cells* can reduce movement and improve product flow



Workforce

■ Traditional

- competitive attitude between workers and managers
- status symbols and privileges
- much of the employees' time is nonworking time: looking for parts, moving materials, setting up machines, getting instructions, and so on. When actually working, they tend to work fast.

■ JIT

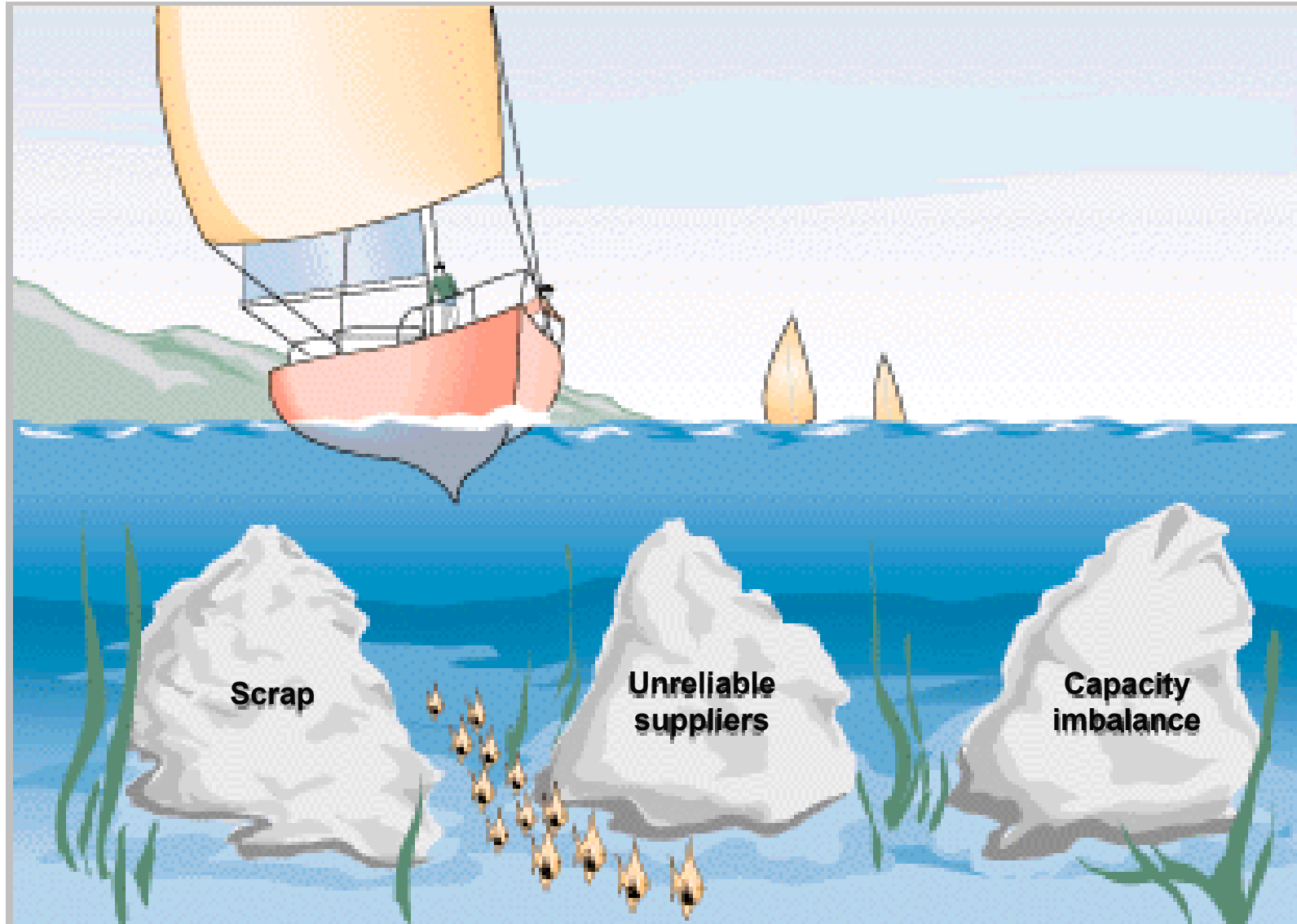
- broadly skilled flexible workers who can uncover and solve problems
- workteams
- cooperative attitudes

Inventories

- Traditional
 - used to buffer operations
 - large WIP buffers
- JIT
 - inventory is seen as an evil
 - small WIP buffers



Inventory Hides Problems



Suppliers

- Traditional
 - suppliers treated as adversaries
 - multiple sourcing
- JIT
 - supplier considered part of team
 - single-sourcing agreements
 - supplier certification programs



Planning and Control

- Traditional
 - focus is on planning
 - planning complex and computerized
- JIT
 - focus is on control
 - procedures kept simple and visual
 - rather than planning and forecasting for an uncertain future, the firm attempts to respond to what actually happens in real time with flexible, quick operations.

Quality

- Traditional
 - inspect goods at critical points
 - scrap rates tracked
- JIT
 - goal is zero defects
 - workers themselves inspect parts

Maintenance

- Traditional
 - corrective maintenance, repairing a machine when it breaks down
 - done by experts who do nothing but repair broken equipment
 - equipment run fast
- JIT
 - preventive maintenance, conducting maintenance before the machine is expected to fail, or at regular intervals.
 - done by equipment operators
 - equipment run slow (minimizes their chance of breakdown while maximizing their output)

Value Stream Mapping

- A qualitative lean tool for eliminating waste that involves a current state drawing, a future state drawing, and an implementation plan.

Typical Benefits of JIT

- Cost savings: inventory reductions, reduced scrap, fewer defects, fewer changes due to both customers and engineering, less space, decreased labor hours, less rework.
- Revenue increases: better service and quality to the customer.
- Investment savings: less space, reduced inventory, increased the volume of work produced in the same facility.
- Workforce improvements: more satisfied, better trained employees.
- Uncovering problems: greater visibility to problems that JIT allows, if management is willing to capitalize on the opportunity to fix these problems.

Potential Problems Implementing JIT

- Applicable primarily to repetitive operations
- Requires discipline
- Based on cooperation and trust
- Requires change of philosophy

Interaction of JIT Elements

