

Costs of Quality (COQ)

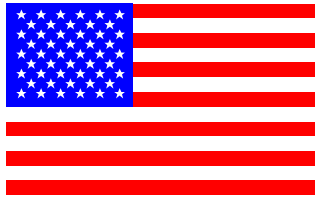
It is easier to
MEASURE the
COQ in
organizations
that use ABC
and ABM.



COQ is not
required to be
reported in the
financial
statements.

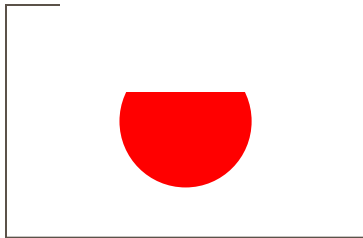
When COQ is reported,
it is usually expressed
as a % of sales.

Quality Awards and Certificates



Malcolm Baldrige National Quality Award

The Deming Prize



Japan

ISO 9000



European
Community

Managing Time in a Competitive Environment

We need to
reduce . . .

New Product Development

Customer Response Time

cycle Time

Less time means quicker response to changing customer needs and to changing conditions of the marketplace.

Measuring Results: Process Efficiency

Process efficiency

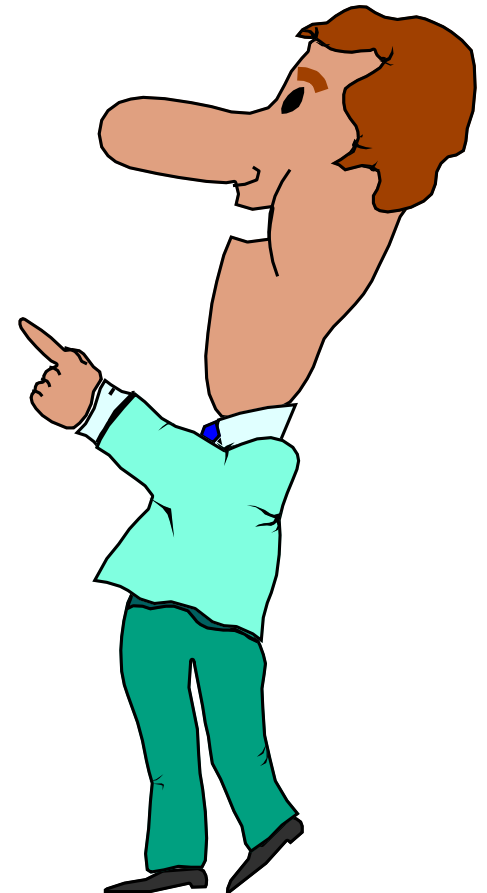
- The ability to transform inputs into outputs at lowest cost.

Production processes

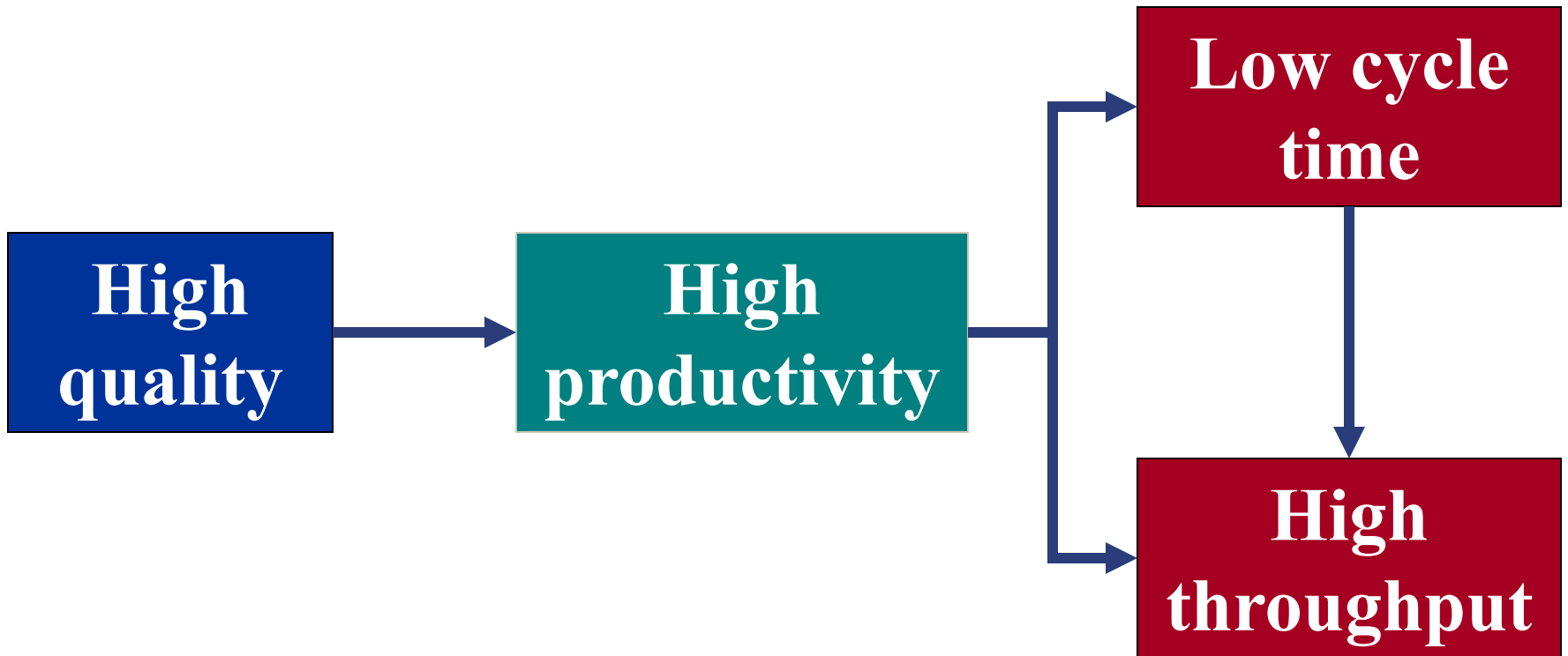
- Result directly in the production of products or services provided to external customers.

Business process

- Support or enable production processes.



Measuring Results: Process Efficiency



Measuring Productivity

$$\text{Total Factor Productivity} = \frac{\text{Value of Goods \& Services}}{\text{Total cost of Providing Goods \& Services}}$$

Specific productivity measures compare:

**Outcomes
Valued by
Customers**

**to The scarcest or most
valuable resources used to
achieve the outcomes.**

Measuring Cycle Time

The average time necessary to complete and deliver all good units and dispose of units that have to be reworked or scrapped because of defects.

$$\text{Average Cycle Time} = \frac{\text{Total Processing Time}}{\text{Good Units Produced}}$$

Measuring Throughput Efficiency

A measure of the amount of time spent adding value compared to the total cycle time.

$$\text{Throughput Ratio} = \frac{\text{Value-added Time}}{\text{Total Processing Time}}$$

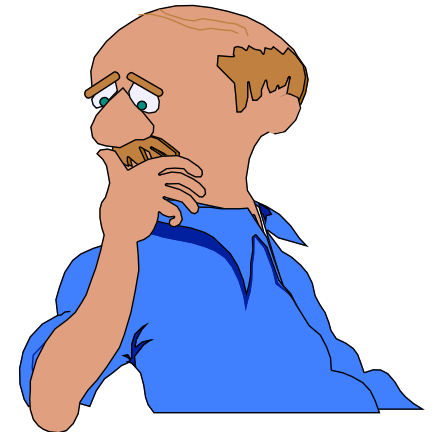
Measures of Capacity

Process Capacity

A measure of a process's ability to transform resources into valued products and services.

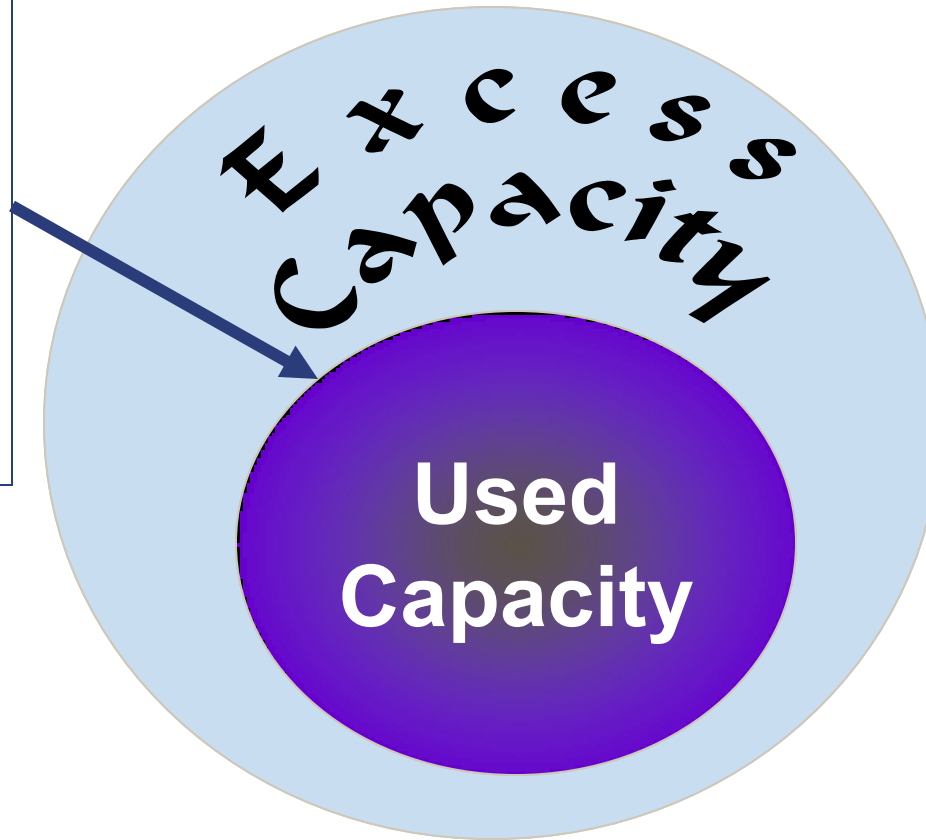
Practical
Capacity

It is possible for “capacity demand” to exceed practical capacity.

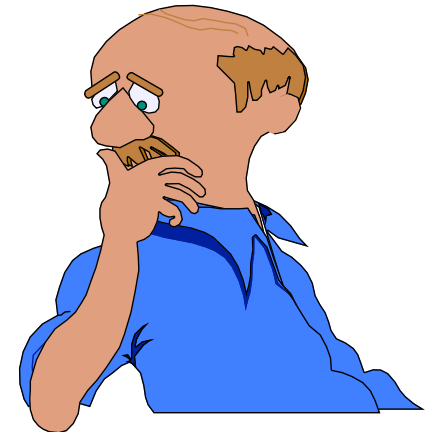


Measures of Capacity

Used Capacity
is the amount
of the
practical
capacity that
is actually
used.



In some
cases, “used
capacity” can
actually
exceed
“practical
capacity.”

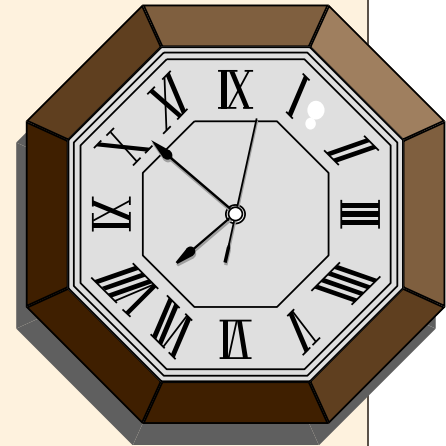


Managing Quality + Time + Productivity + Capacity = JIT

The objective of JIT is to . . .

- *purchase materials*
- *produce products*
- *and deliver products*

. . . just when they are needed.



Managing Quality + Time + Productivity + Capacity = JIT

The goal is to manage costs so that the savings associated with JIT exceed the cost of implementing JIT

Cost savings:

- Inventory warehouse rent or cost
- Inventory managers and personnel
- Less warranty cost

Implementation costs:

- Employee retraining
- Technology improvement
- Exposure to work stoppage risks.

Traditional “Push” Manufacturing - Example

Computer Manufacturer



Forecast Sales



Order components



Store Inventory



Prepare
Production
Schedule



Begin Production in
Anticipation of Sales



Make sales
from finished
goods inventory



JIT “Pull” Manufacturing - Example

Computer Manufacturer



Customer places an order



Create Production Order



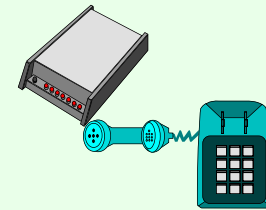
Generate component requirements



Goods delivered just in time



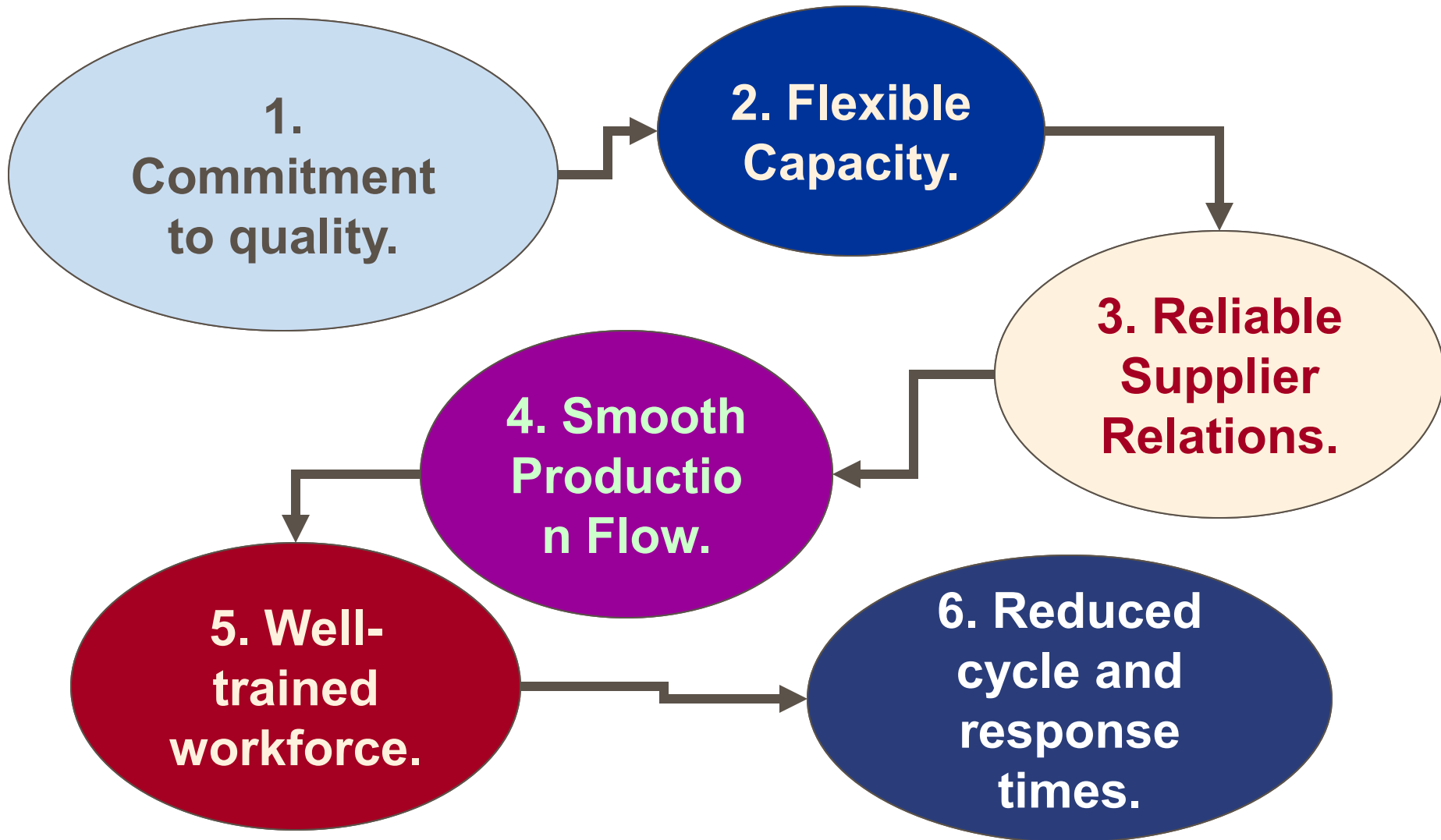
Production begins as parts arrive



Components are ordered



JIT Success Factors



End of Chapter 7

Uh, Boss?
My luggage
was Just-in-
Time, but I
wasn't!

