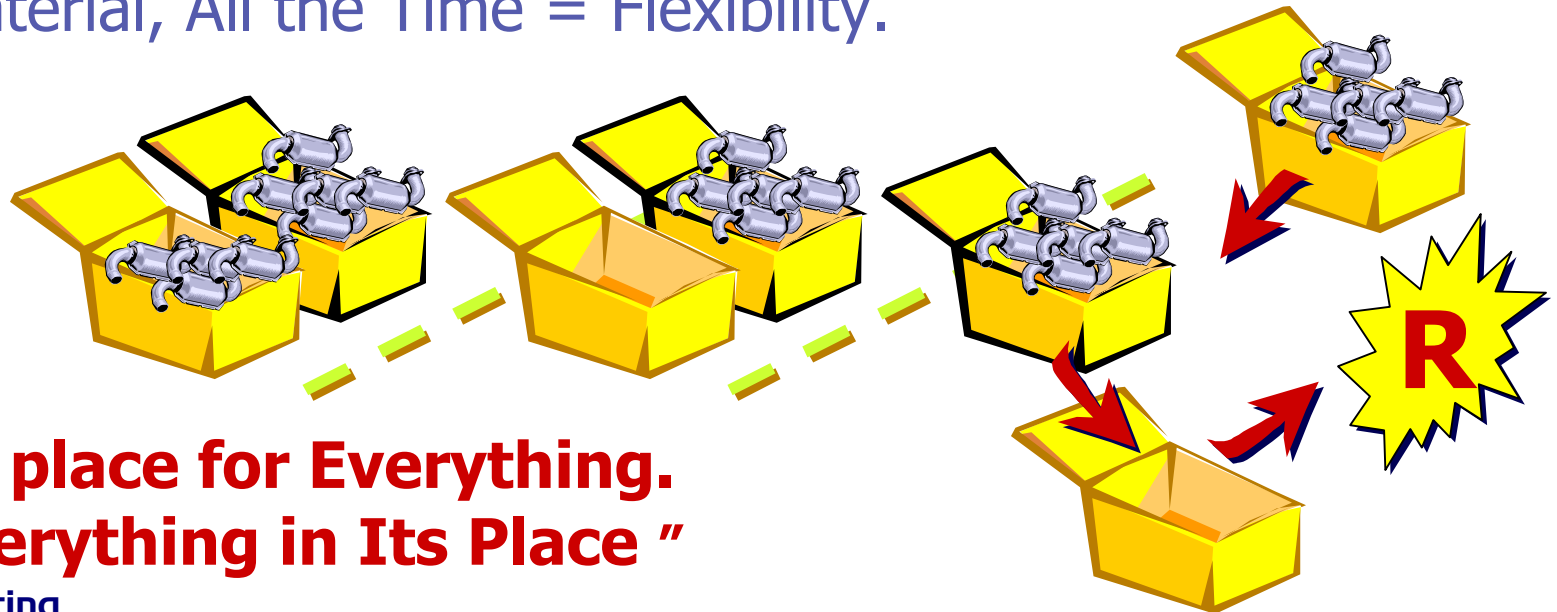


# KANBAN

## MATERIAL REPLENISHMENT

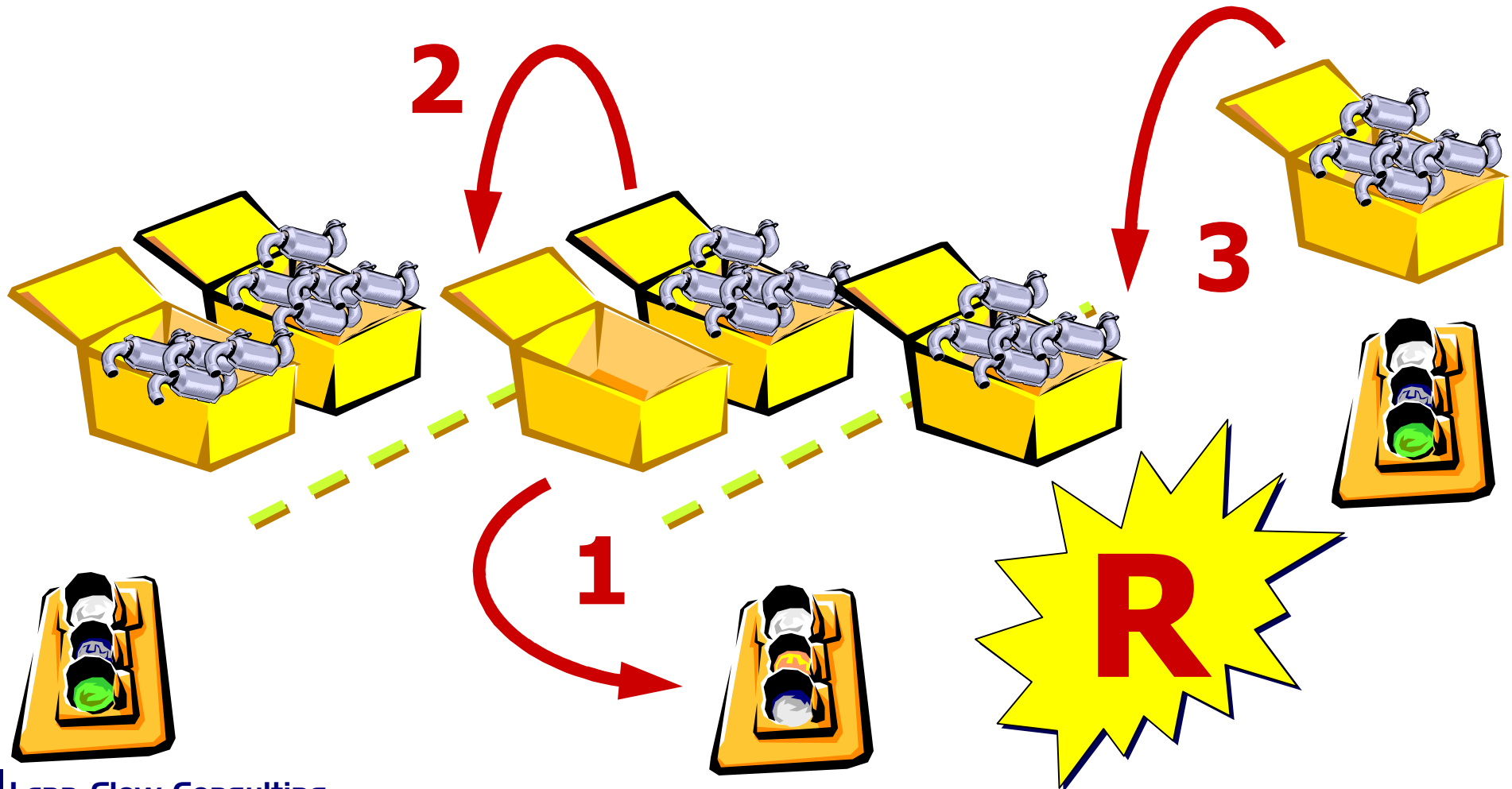
- Simple, Visual Signal.
- “Pull” versus “Push”. – Customer Demand not Schedule.
- Let's the People and Process Manage Flow.
- Easy modifications, Quickly.

All Material, All the Time = Flexibility.

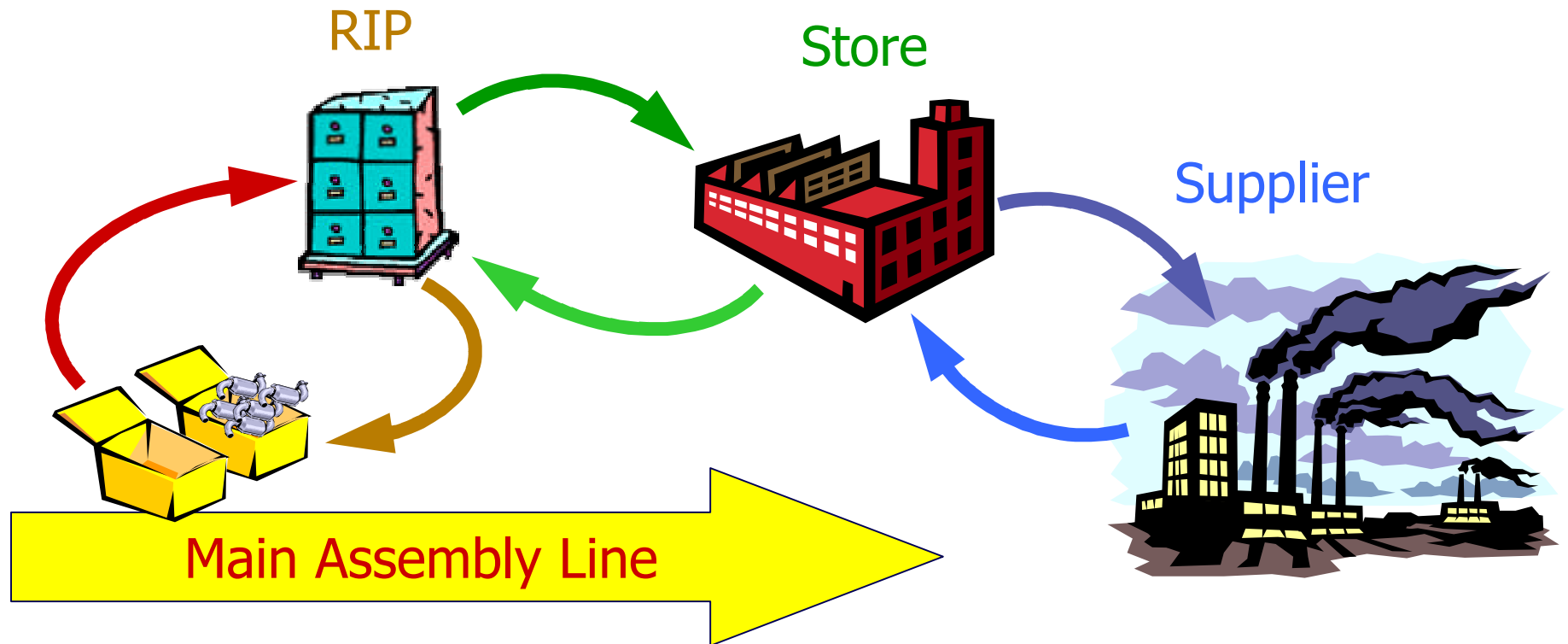


**“A place for Everything.  
Everything in Its Place ”**

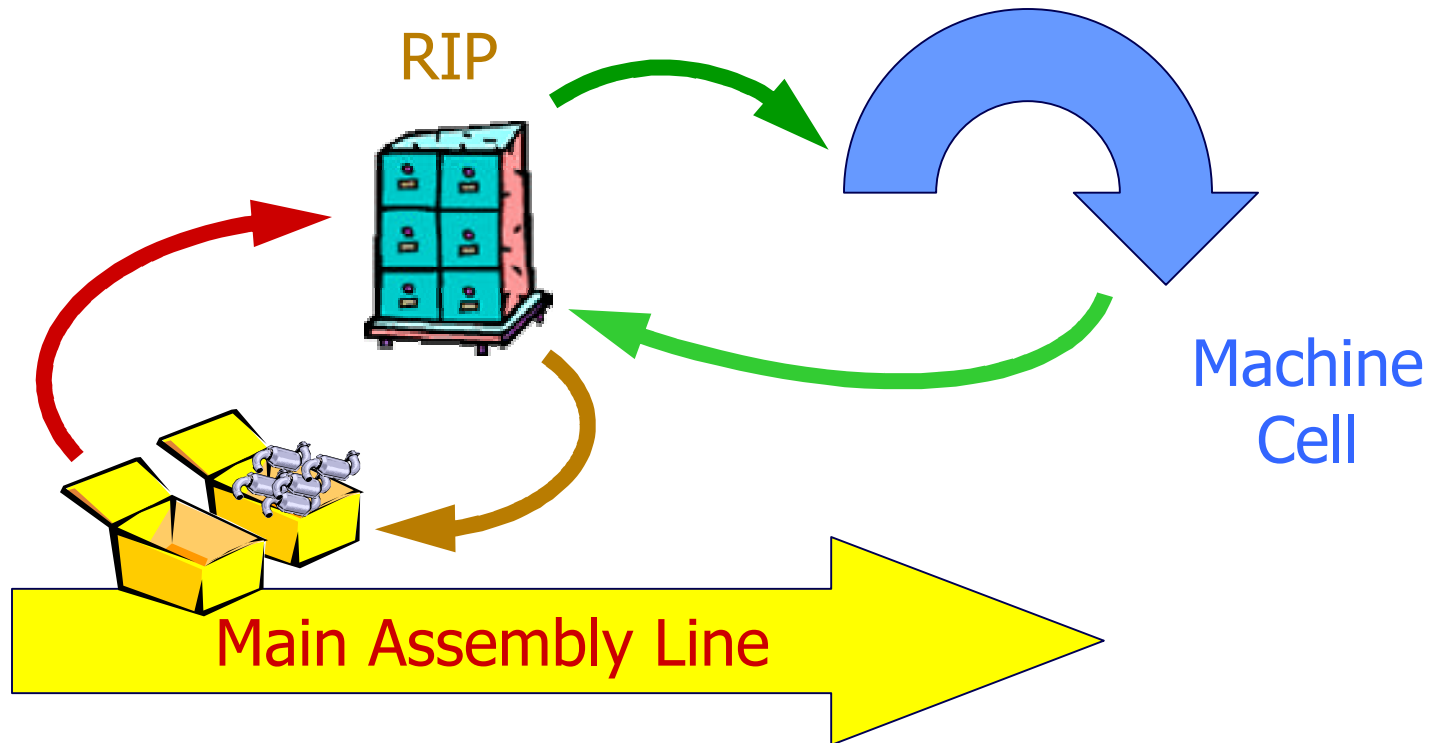
# KANBAN TWO-BIN SYSTEM



# KANBAN PULL SEQUENCES CHAIN



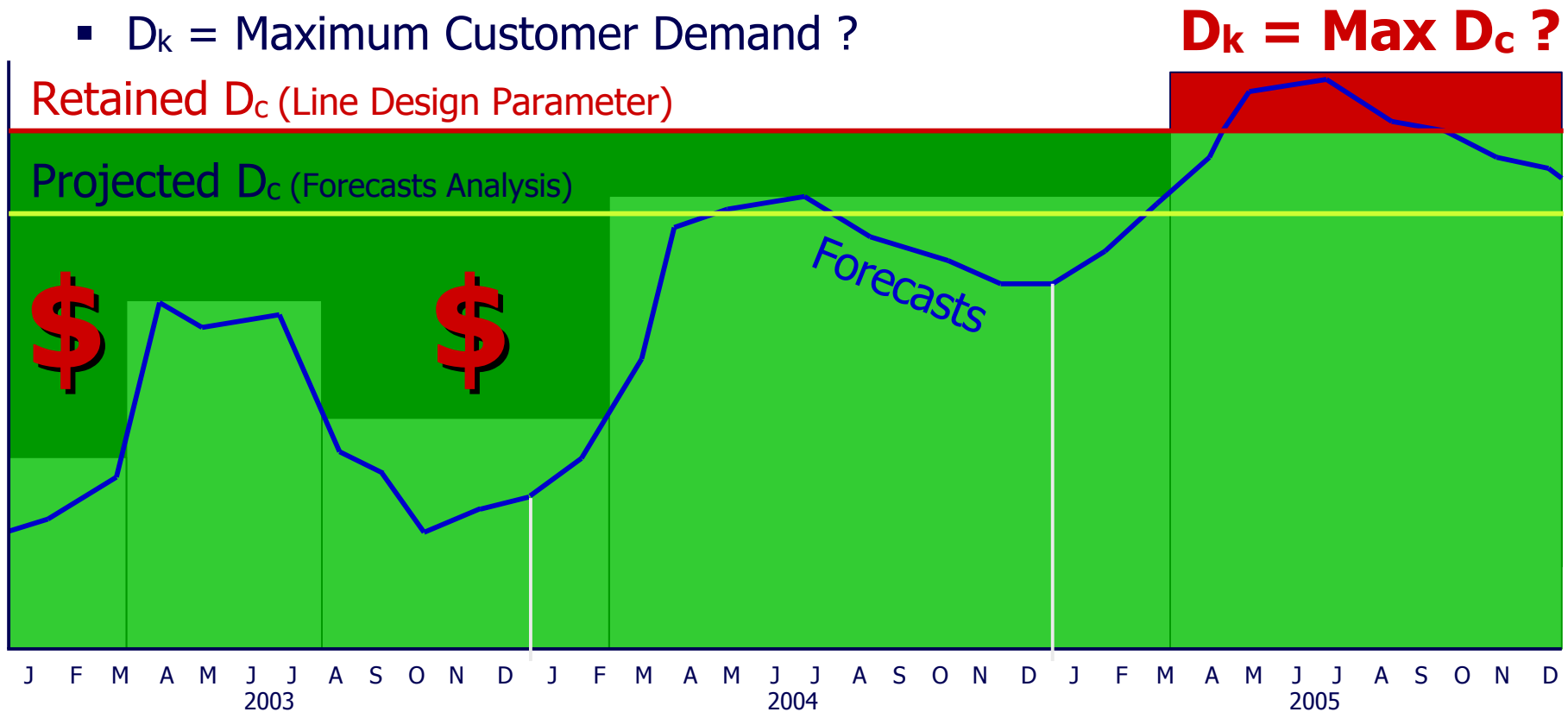
# KANBAN PULL SEQUENCES CHAIN



# DAILY RATE

## THE RIGHT NUMBER TO CALCULATE KANBAN

- What is the Right Number ?
  - $D_k = D_c$  to Assume Flexibility ?
  - $D_k = \text{Maximum Customer Demand}$  ?



# MATERIAL REPLENISHMENT MANAGEMENT LIGHTS

## ■ RED.

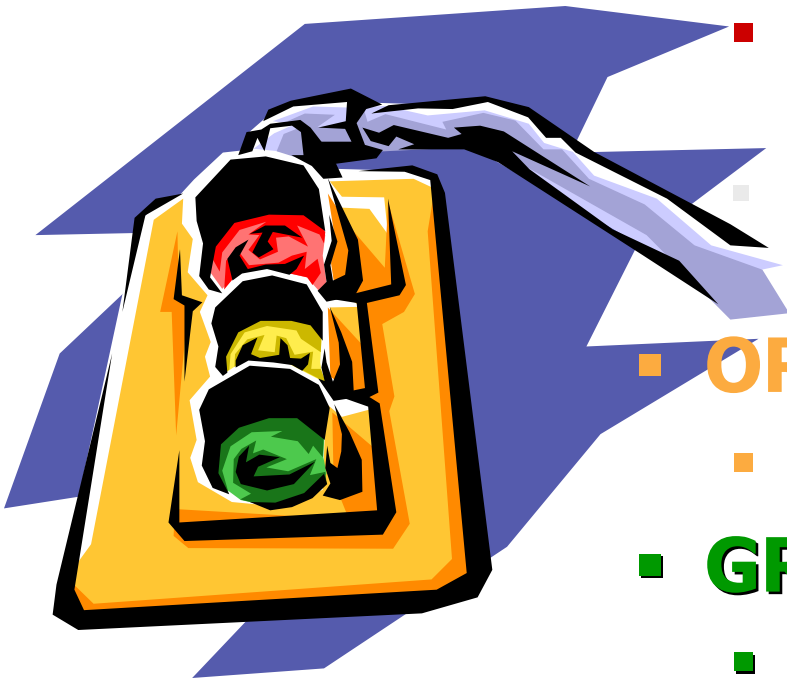
- Material Shortage, when we have problems that have stopped the Line.
- Quality Defect.
  - Production Flow is stopped.

## ■ ORANGE.

- Replenishment is required.

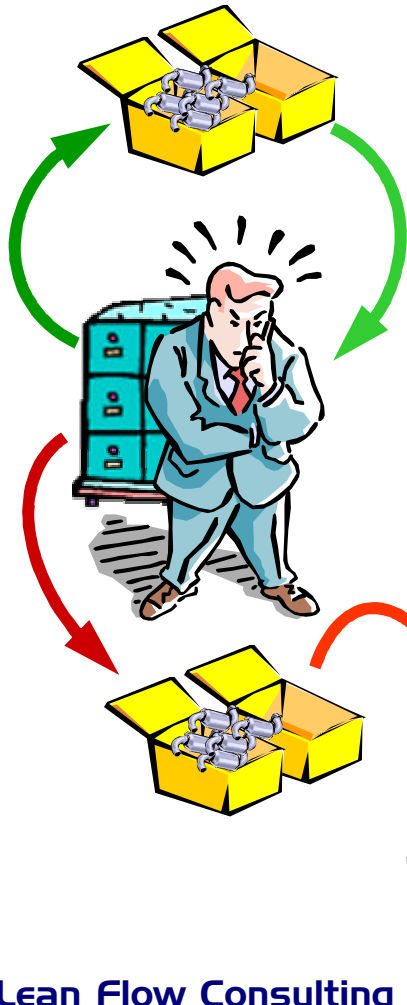
## ■ GREEN.

- Line run without any problem.



# KANBAN

## REPLENISHABLE OR NOT ?



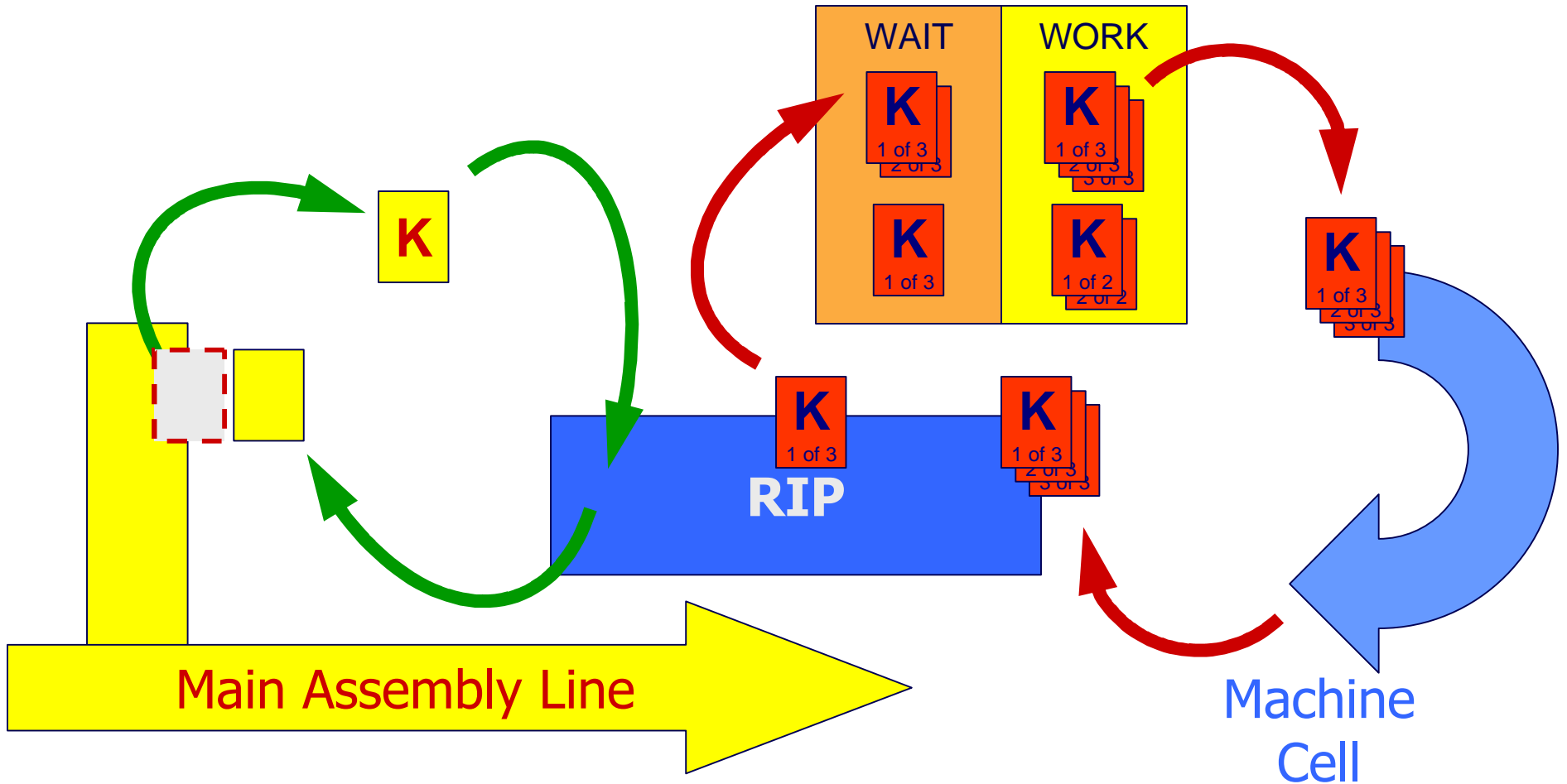
- **REPLENISHABLE.**

- Self-Managing, Simple Visual Signals.
- Frequent Demands.
- Supported with Calculations.
- Surfaces and Materials Investment.

- **NON-REPLENISHABLE.**

- Infrequent Demands. – With Spikes.
- High Value justifies Elegant Management.
- As Complement to Replenishable Kanban to Satisfy an Abnormal Demand.
  - Temporary Increase of the Daily Rate.
- Do you estimate the Impact of Daily Change ?

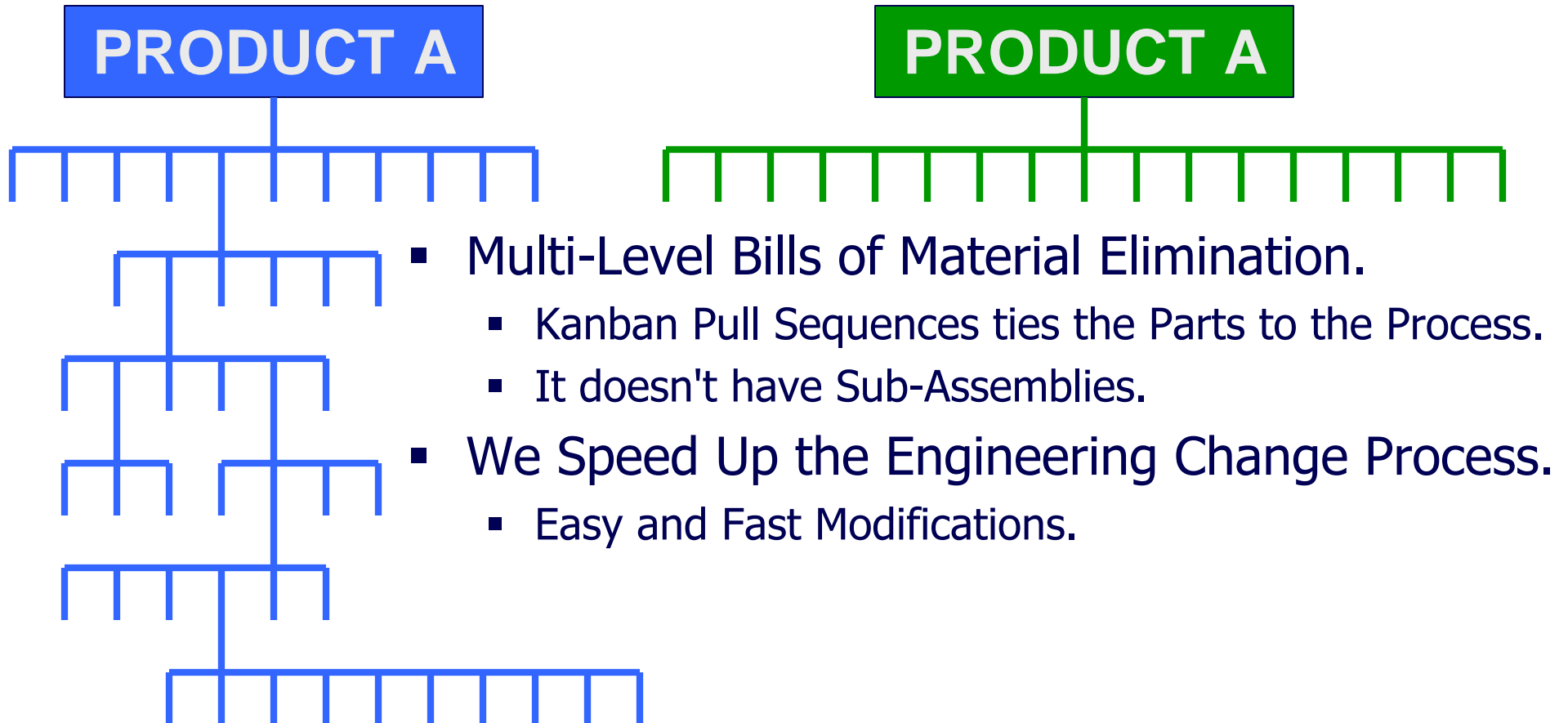
# DUAL-CARD KANBAN PULL SEQUENCES CHAIN



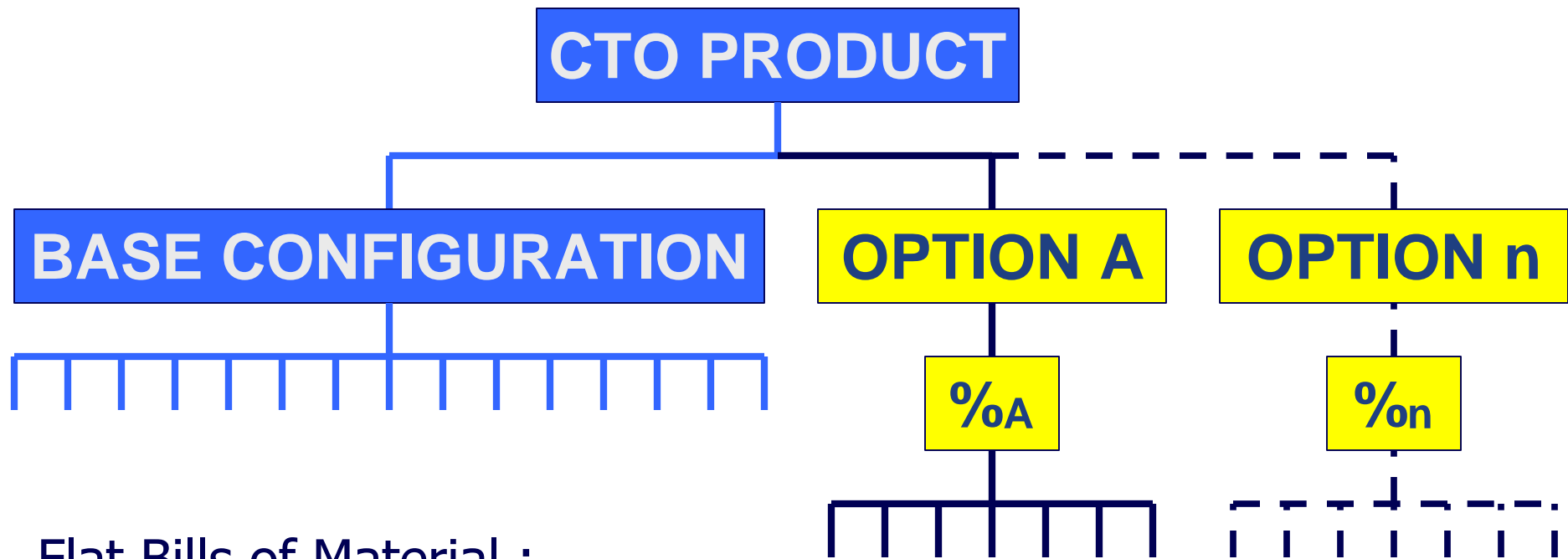


# BILLS OF MATERIAL

## ... FLAT BILLS OF MATERIAL



# BILLS OF MATERIAL CONFIGURED TO ORDER PRODUCTS



- Flat Bills of Material :
  - For Base Configuration.
    - Hard-Bill Product ?

$$\text{Sum} [ \%_{(A;...;n)} ] = 100$$

- **And EVERY Option or "Pack Options".**