

The background of the slide is a blurred photograph of a desk. On the left, there is a dark-colored mug. In the center, an open book with many pages is visible. To the right, there are some papers and a pen. The overall lighting is soft and warm. On the right side of the slide, there are several decorative, semi-transparent shapes in shades of brown and orange, some with a dotted pattern.

Lecture 10

Design of Logistics Systems
Modern Concepts

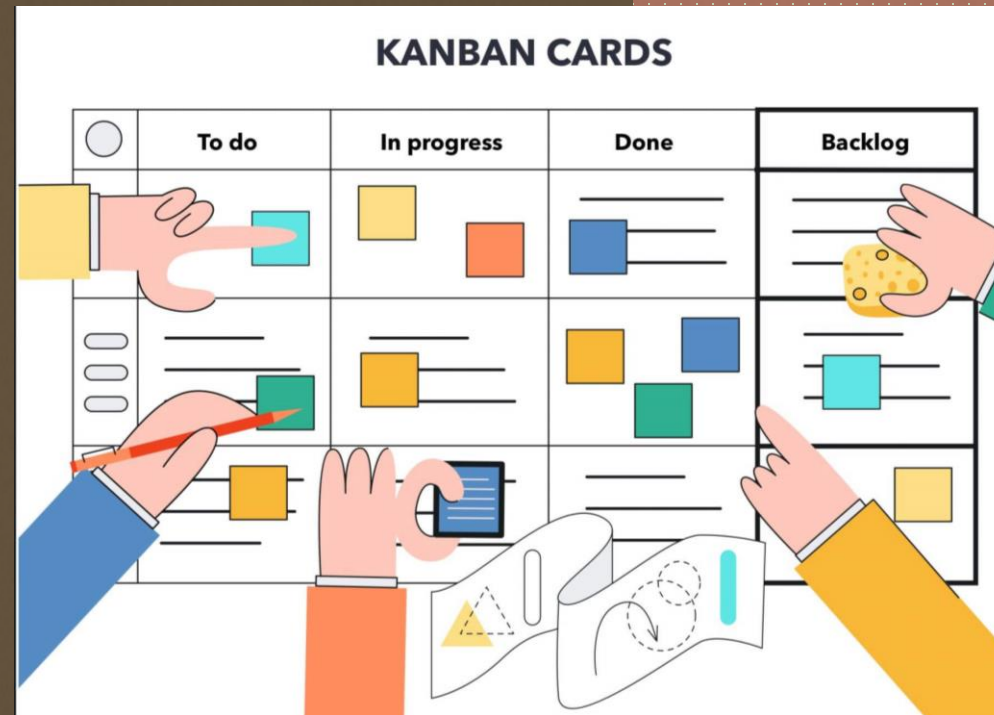
- ❖ JIT inventory systems have several advantages over traditional models. Production runs are short, which means that manufacturers can quickly move from one product to another.
- ❖ Also, this method reduces costs by minimizing warehouse needs.
- ❖ Companies also spend less money on raw materials because they buy just enough resources to make the ordered products and no more.

The disadvantages of JIT inventory systems involve potential disruptions in the supply chain. If a raw-materials supplier has a breakdown and cannot deliver the goods in a timely manner, this could conceivably stall the entire production line.



KANBAN

Kanban is a Japanese scheduling system that's often used in conjunction with JIT. Taiichi Ohno, an industrial engineer at Toyota, developed Kanban in an effort to improve manufacturing efficiency.



TO DO

DOING

DONE

USE
KANBAN

TRY
KANBAN
TOOL

EXTEND
&
PERSONALIZE
KANBAN
BOARD

LEARN
ABOUT
KANBAN

GET
SOME
STICKY
NOTES

GET A
WHITE-
BOARD!

看板 - Kanban cards limit excess work in progress

- 看板 - Kanban literally means "visual card," "signboard," or "billboard."
- Toyota originally used Kanban cards to limit the amount of inventory tied up in "work in progress" on a manufacturing floor.
- Kanban cards act as a form of "currency" representing how WIP is allowed in a system.



What is Kanban?

- A Signal
- A card, ticket, empty container, etc
- A system or a set of rules
- Moves parts to point of consumption
- Managing all the cards



Part Description				Part Number	
Smoke-shifter, left handed.				14613	
Qty	20	Lead Time	1 week	Order Date	9/3
Supplier	Acme Smoke-Shifter, LLC			Due Date	9/10
Planner	John R.		Card 1 of 2		
			Location	Rack 1B3	

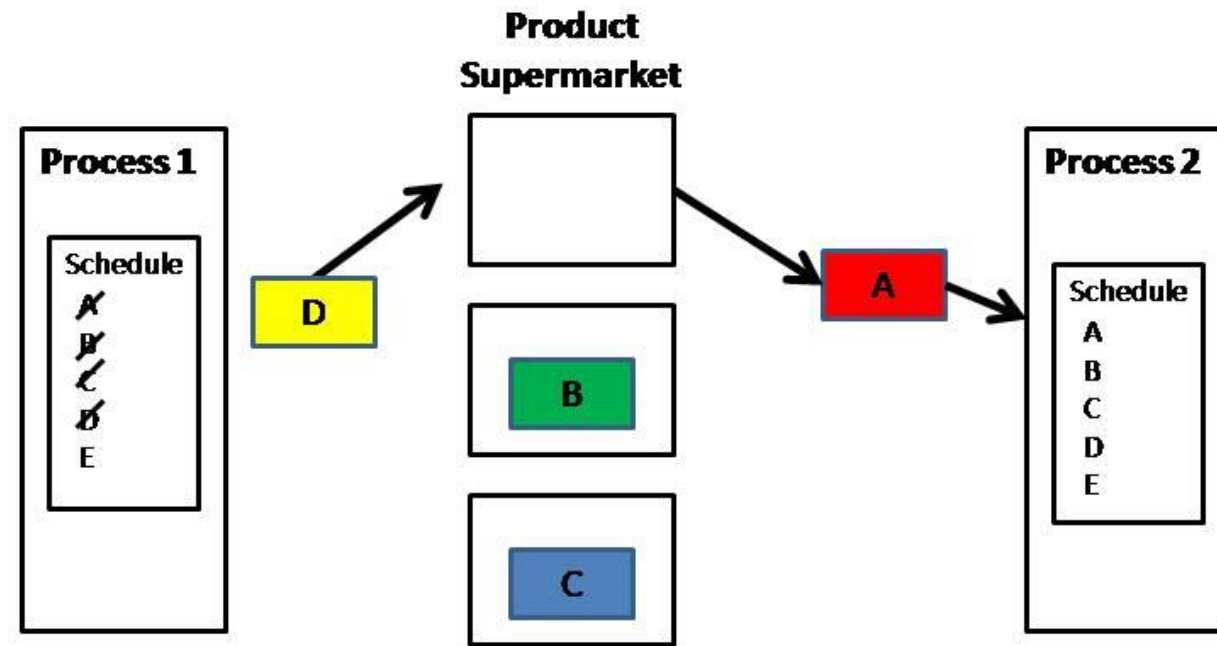
Kanban cards feature critical information about that particular work item, giving the entire team full visibility into who is responsible for that item of work, a brief description of the job being done, how long that piece of work is estimated to take, and so on.

The Kanban Rules

- Each container must have a card that indicates item number description user and producer, location and quantity.
- No parts are started without a card.
- All containers contain exactly their stated quantity.
- No defective parts may be sent to the customer.
- The number of Kanban should try to be reduced.
- A Kanban bin is filled in hours or a day not days or weeks.
- Kanban is a technique for work release. eKanBan enhances this method by tracking these movements automatically in your computer system.

CONWIP

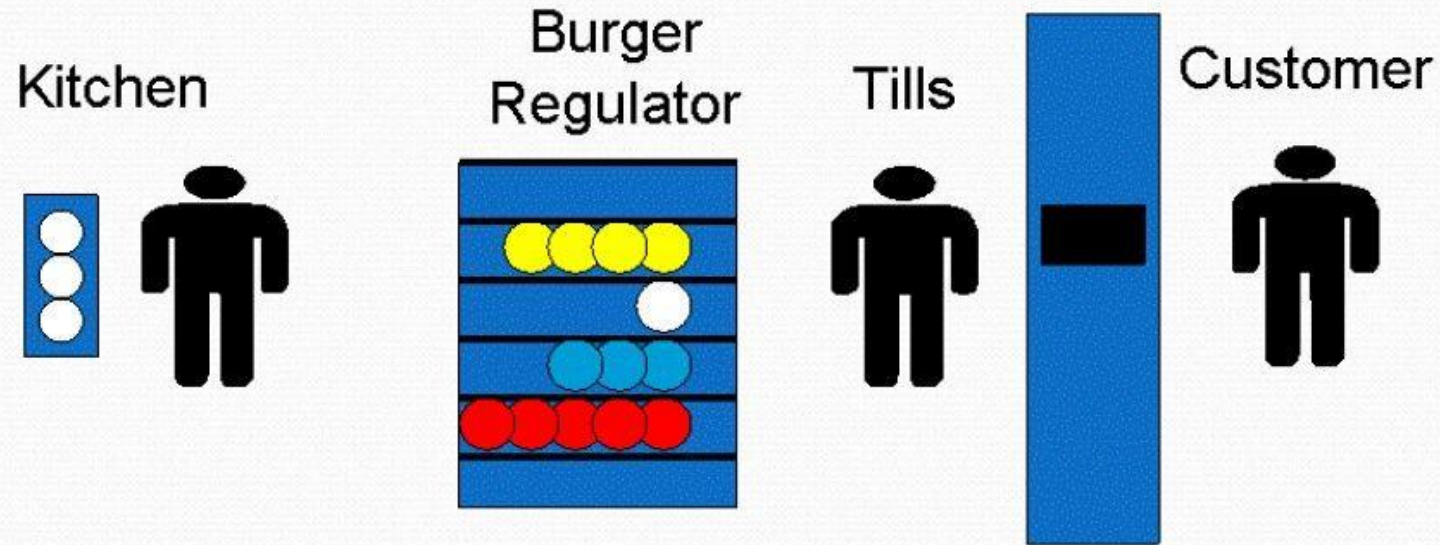
Constant Work in Progress With Scheduling



**Empty space in product
supermarket is Kanban
Authority to produce next
component on the
schedule**

**Process takes the required
components directly from
product supermarket
according to their schedule.**

Kanban: A Simple Real Example



As each burger is consumed . . .
They are removed from the regulator . . .
And then replenished by the kitchen . . .
Not made to a forecast and pushed at the customer

It is focused on getting things done, and its fundamentals can be broken down into next principles

- Start With What You Do Now;
- Focus on Customer's Needs and Expectations;
- Manage the Work;
- Regularly Review the Network of Services.

A Kanban system is more than sticky notes on the wall. The easiest way to understand Kanban is to understand its philosophy and apply it to your daily work

Prepare your

