

Agile network course

Module 1.3 Managing Projects (Kanban)

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We will examine how the rules applied to the Kanban board allow the project to evolve. Furthermore, we will review how these rules enable the project to be organized according to adaptation needs.

We reviewed the main metrics used in Kanban to verify that the project is progressing favorably.

You
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Inspiration

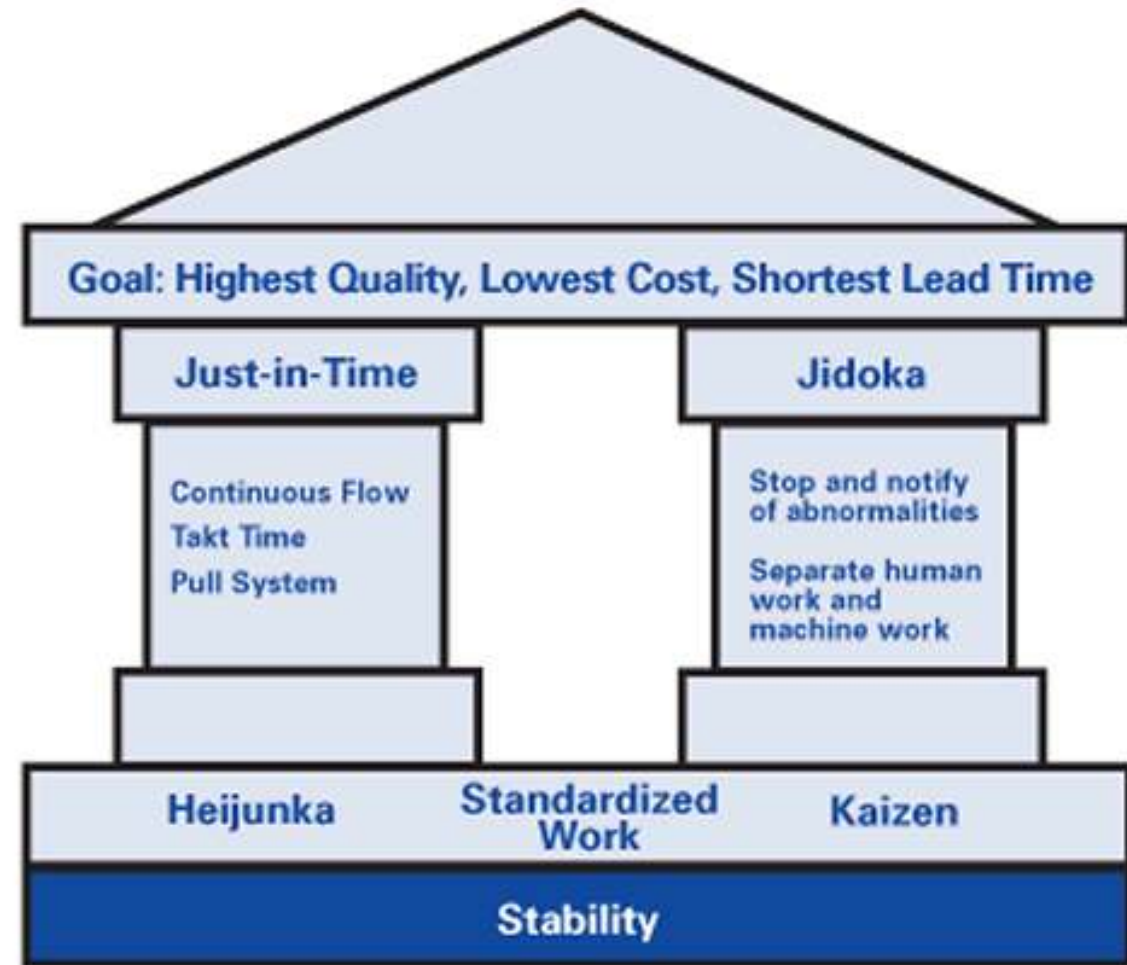
- KANBAN
 - Kan (Visual) + Ban (Card)
- It originated in the Japanese textile industry of the early 20th century.
 - Automatic loom (Sakichi Toyoda)
 - Objective: to improve the lives of workers by freeing them from repetitive tasks
- Why avoid repetitive tasks?
 - The novelty motivates
 - At the beginning of an activity, more attention is paid.
 - The variety provides an overview of the process
- How can repetitive tasks be avoided?
 - Facilitating job specification: homogeneous cards



Inspiration

- Popularized by
 - They integrated Kanban into their TPS (Toyota Production System) model created in 1953 by Taiichi Ohno
 - TPS is a model (philosophy) created for the benefit of
 - Customers
 - Workers
 - Product
- Values of philosophy
 - Genchi Gentbusu (go and see)... or return to the origin. In short, **to know** what you are working on so that, when you start again, you can do it better.
 - Kaizen (continuous
 - Work as a **challenge**
 - Teamwork **as** a value
 - Respect as a principle to consider in labor

- Toyota Production System (TPS)
- Core Goal: Maximise value, eliminate waste.
- The Two Pillars:
 - Just-in-Time (JIT): Produce only what is needed, exactly when needed.
 - Jidoka: Stop production immediately if a defect occurs.
- The Foundation:
 - Kaizen: Continuous improvement driven by everyone.
- The 3 Enemies (To Eradicate):
 - Muda: Waste.
 - Mura: Unevenness.
 - Muri: Overburden.



Inspiration

- Pillars (tools) on which the TPS model is based
- Just-in-Time:
 - Kanban: cards and standard task management method for the entire process
 - Takt-Time (controlled work cycle: Heijunka) to avoid setbacks
 - MUDA: Reduction of waste and overloads
- JIDOKA
 - Control: each team member has the power to stop the production process
 - The problems are visible
 - The solutions are immediate and do not transmit defects

Inspiration

- Foundations (philosophy) on which the TPS model is based
- 5's
 - Sifting: order
 - Sorting: classification
 - Sweeping: cleaning (sweeping and collecting)
 - Spic and Span: normalization (standardization)
 - Sustain: support
- KAIZEN (Continuous Improvement)
 - Everyone thinks, therefore... everyone has ideas, therefore... everyone has an opinion, and therefore... everyone contributes to improvement (success belongs to everyone)

- Equal team
 - All components have power over the project
- Visual thinking
 - Simplicity in visualizing the project status
- Continuous improvement
 - All members reflect on the project
- Global optimization
 - The aim is the well-being of the entire team and, consequently, of the project.

- Beginning
 - Start with what needs to be done
 - Incremental improvement through small changes
 - Respect for team members and the process
 - Consensus versus imposition (beware of voting, consensus is not voted on)
 - Collaboration versus competition
 - Horizontal leadership
- Tools to achieve the principles
 - Project visualization
 - Understanding the project workflow to understand how it evolves
 - Limit work in progress
 - Optimize without wasting time and without overloading
 - Use of metrics that truly represent the project and recognize the value of the product

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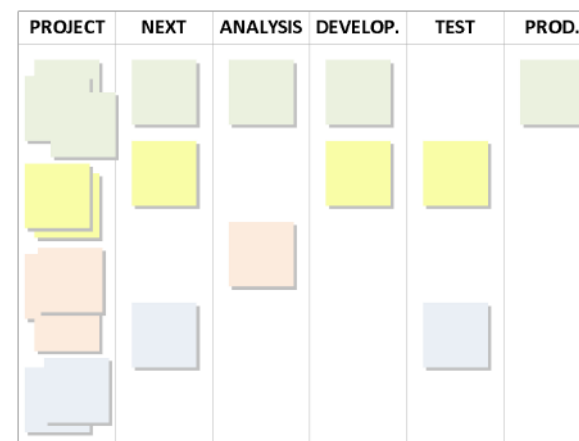
- The basis of the Kanban model is the board that represents the project (or a part of it)
 - Columns: represent phases in time
 - Rows: represent project characteristics
 - Cards: represent tasks

TO DO	DOING	DONE
Redactar informe final Comprar clips	Leer informe ventas	Buscar informe ventas

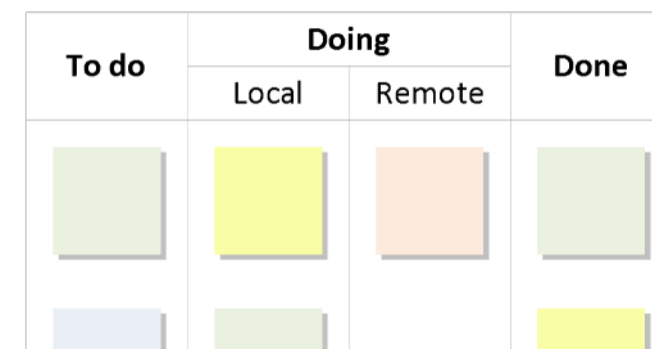
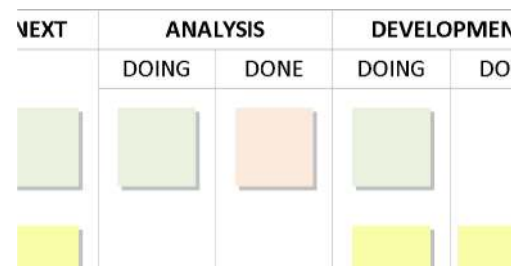
- It is completely flexible and adaptable to the needs of the project.

Kanban Board

- Columns: Time
 - They are organized by the phases that the tasks must go through.



- You can also put up partitions
 - “Done” in phase i
 - It is “To do” in phase i+1



- Even divisions that are not necessarily of time

Kanban Board

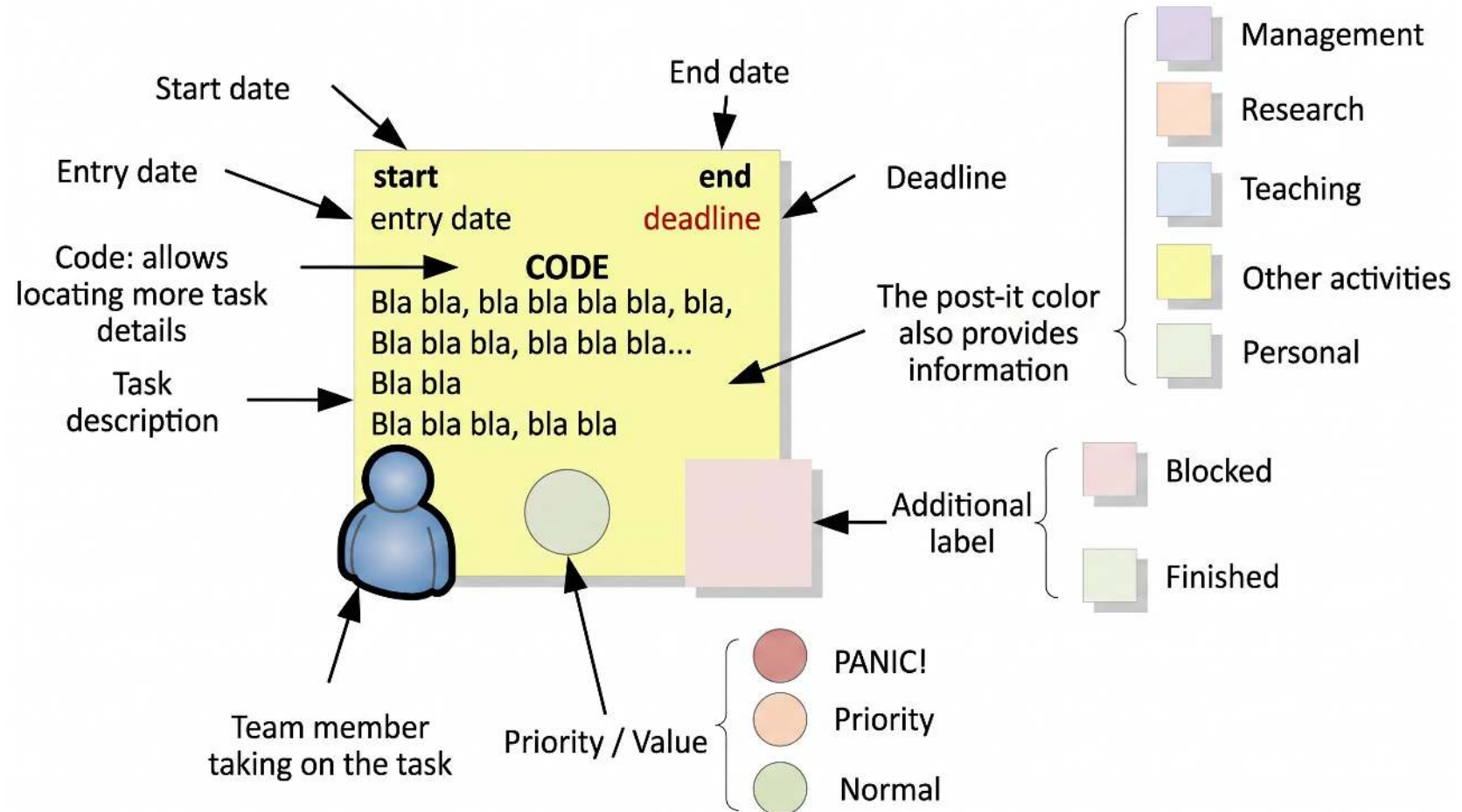
- Rows: project features
 - They add a second dimension to the project
 - project
- You can also put up partitions
 - They organize the project
 - When combined with column divisions, they add a lot of complexity.

	TO DO	DOING	DONE
Juan			
Ana			

	TO DO	DOING	DONE
ANALYSIS	Urgent 		
	Normal 		
TEST			

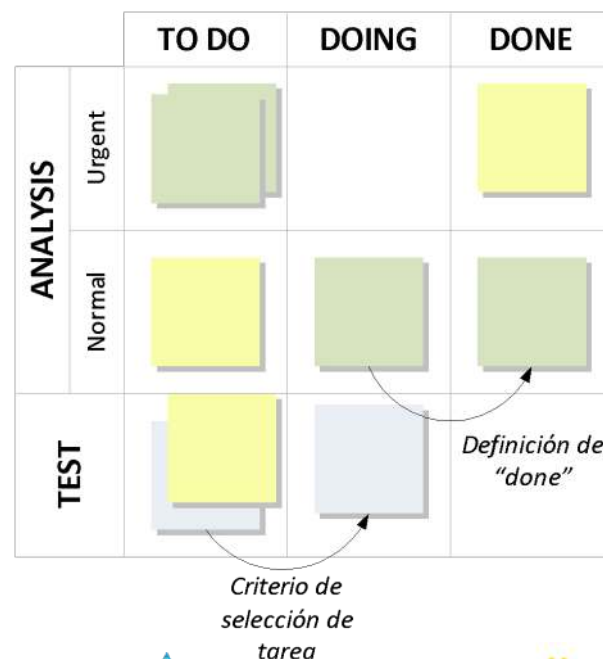
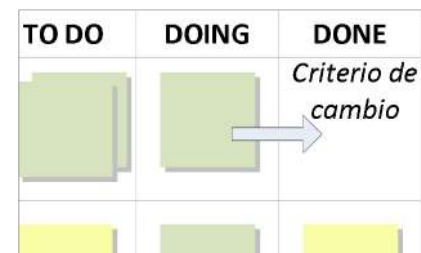
Kanban Board

- The cards
 - They must be common to all project processes.
 - They must provide the necessary information to be carried out



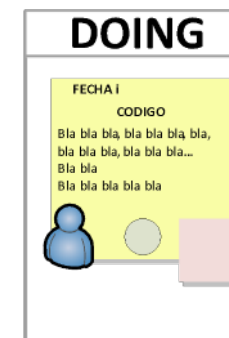
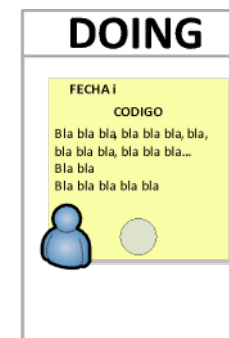
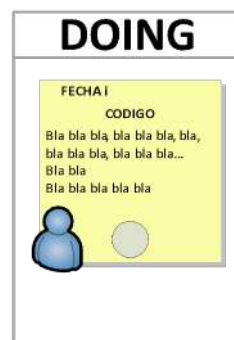
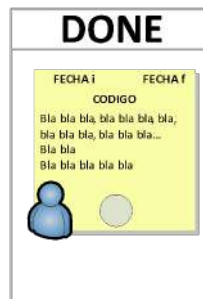
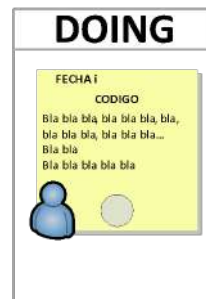
Kanban Board

- Card movement... some questions
 - When should you switch columns?
- Column change criteria
 - Always the same criteria
 - They must be homogeneous in a column
 - Who decides on change?



Kanban Board

- Allowed changes
 - Completion dates
 - Additions
 - "Blocked" labels
 - Completion labels
- Team
- Unforeseen events and supervening causes



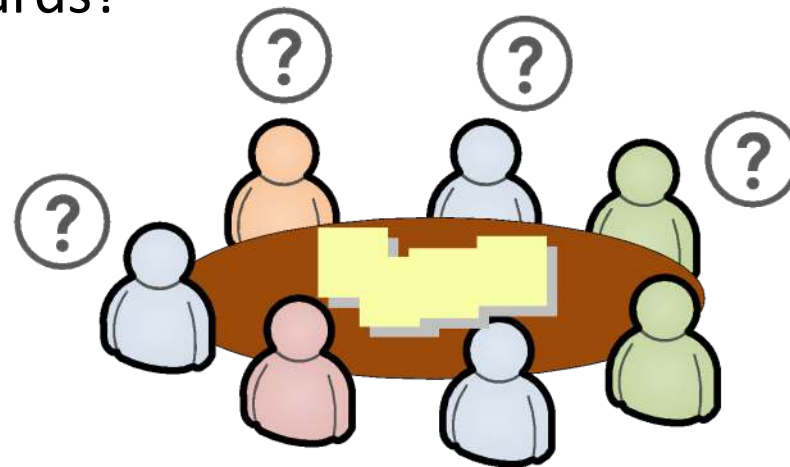
- Card movement... some questions
- Change of priority
 - bad estimate?



- Change of description
 - Bad design?



- Card movement... some questions
 - Do they have to start from the first column?
 - Do they have to reach the last column?
 - Can they change rows?
 - Can they go backwards?
- Unforeseen issues
 - The team decides.



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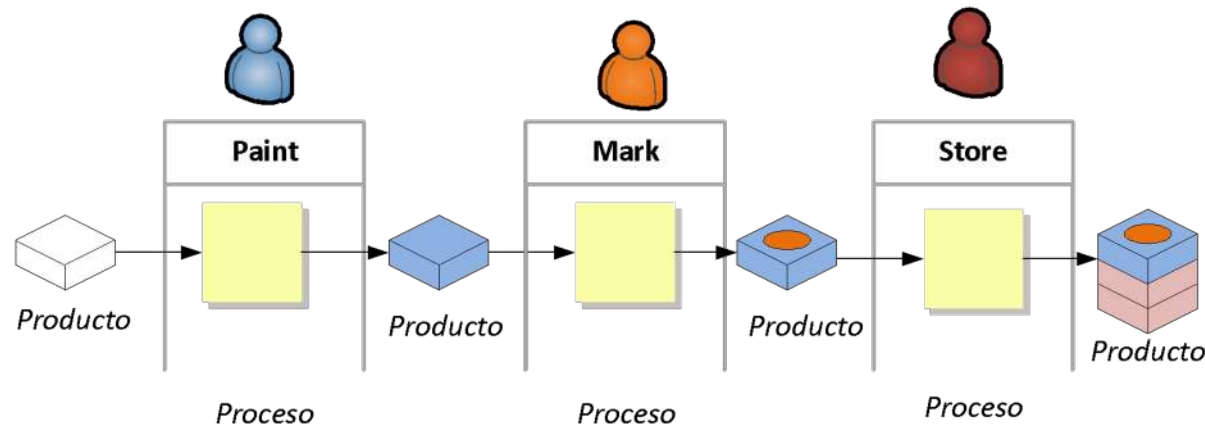
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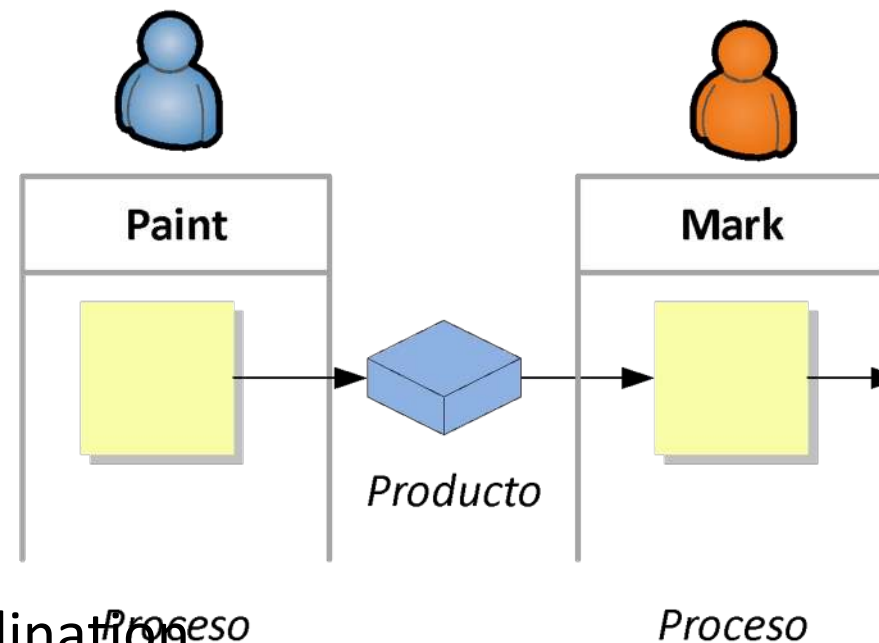
Kanban rules

- Kanban has its rules
 - They come from their use in assembly lines
 - They are applicable to project management
 - Each team, project, etc. usually sets its own rules.
- The rules are based on managing processes and products



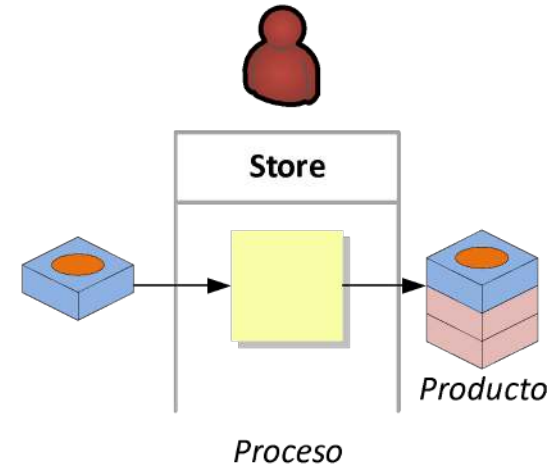
Kanban rules

- Rule 1. The process collects from the previous process only the necessary products, in the precise quantities, from the appropriate place and at the appropriate time.
 - Synchronization between products and processes (time)
 - Precise quantity: good project design
 - Suitable location: good space design
 - Appropriate timing: horizontal coordination

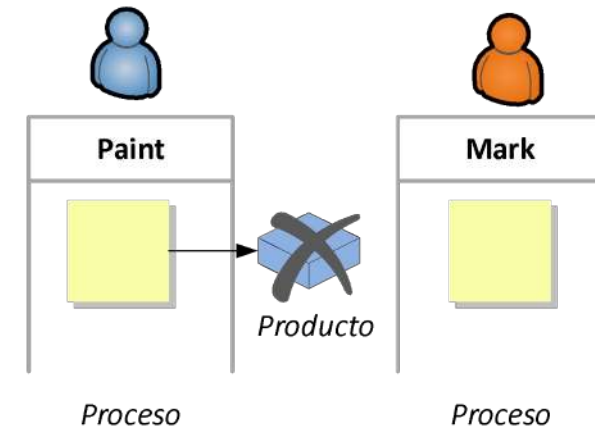


Kanban rules

- Rule 2. The process must manufacture its products in the quantities collected by the subsequent process.
 - The processes must be well understood.
 - If there is a failure, the project must be stopped.



- Rule 3. Defective products must never proceed to the next process
 - Defects spread
 - It's best to stop the project and analyze what's happening.



Kanban rules

- Rule 4. The number of Kanban (cards) should be minimized

- Many cards:
complex design
- Overwork
leads to failures, failures
lead to errors, and
errors halt the
project.

	TO DO	DOING	DONE
Juan			
Ana			

- Rule 5. Kanban should be used to adapt processes to fluctuations in product demand.
- Rule 6. Balance production



Module 1.3. Managing Projects (Kanban)

Road map



Co-funded by the
European Union

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Kanban metrics

- Kanban has its metrics
 - They come from their use in assembly lines
 - They are applicable to project management
- WIP (Work in Progress)
- Switch Time
- Lead Time
- Cycle Time
- Touch Time
- Value stream
- ...
- Additional metric. _____

Kanban metrics

- WIP (Work in Progress)
 - Key Kanban metric: the team can only work on a certain number of items at a time
- WIP limit: Maximum number of tasks to be developed in each phase.
 - It is established at the beginning of the project
 - It adjusts itself at all times depending on the circumstances (trial and error).
- WIP Intervals
 - If it is very low: there are team members who are **idle** or overly **specialized** .
 - If it is very high: there are **overloaded components** or components doing too many **different things** at the same time.

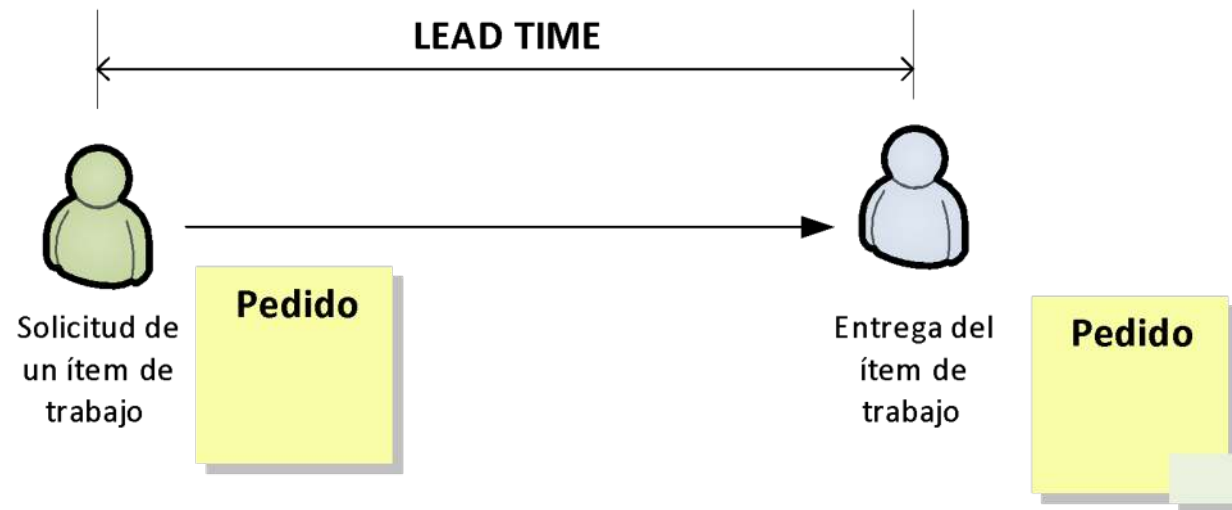
Kanban metrics

- Maximum WIP: the number of tasks in a column.
 - They include all the “sub-columns”
 - Until it is reduced, tasks from a previous column are not accepted.
- It depends on how well the tasks are defined.
 - Remember that the tasks should be as homogeneous as possible, not only in structure but also in estimation
- They allow us to interpret how the process

		WIP: 2(5)	WIP: 3(3)	WIP: 6(8)	
PROJECT	NEXT	ANALYSIS	DEVELOP.	TEST	PROD.
					
					
					
					

Kanban metrics

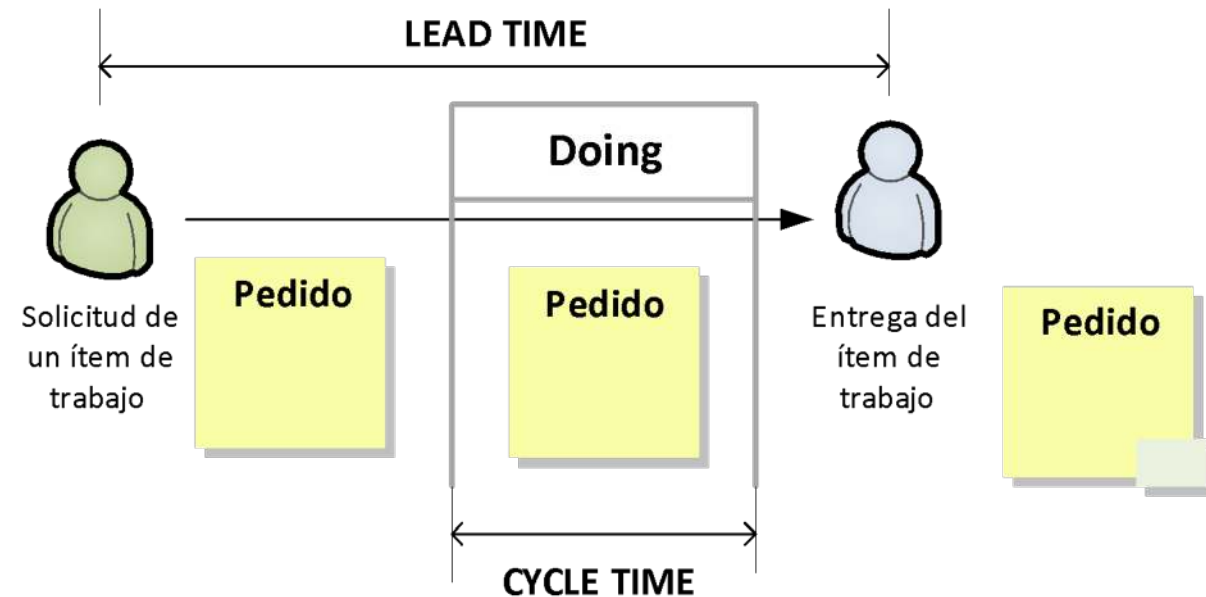
- Lead Time
 - Time that elapses from when an item is requested until it is delivered
 - It is usually measured based on the work, from hours to days.
 - It measures the quality of serving the product or completing the process.



Kanban metrics

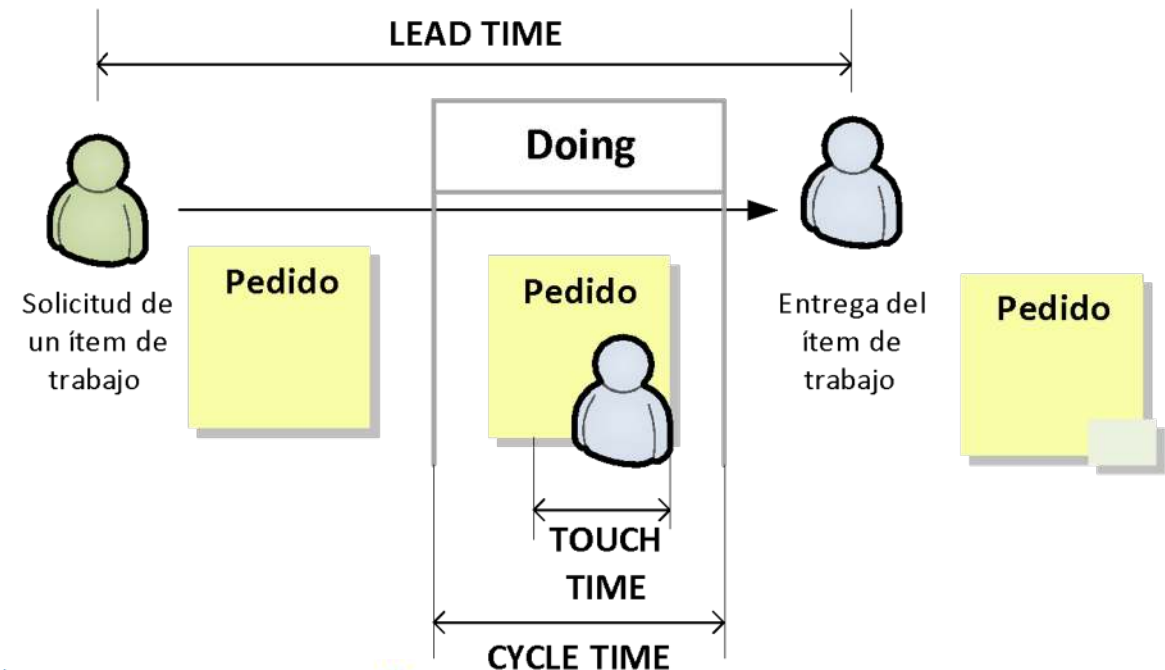
- **Cycle Time**

- It measures the time that elapses between the start of item processing and its completion.
- It is measured according to the process, from hours to days.
- It measures the real time spent working on a process.



Kanban metrics

- Touch Time
 - Time that an item is actually being worked on
 - Unlike CycleTime, TouchTime measures the actual time that has been worked
 - $\text{TouchTime} < \text{CycleTime} \ll \text{LeadTime}$



Kanban metrics

- Switch time: context switch
 - The same task by the same person should involve
 - The same time
 - The same quality
 - Not all tasks are the same
 - Not all people are the same
- Changes in tasks involve “losses”
 - Learning time (or time to take on the task)
 - Mismatches in task estimation
- It's equivalent to traffic on a highway.
 - The higher the task density, the slower the process.
 - The more changes (additions, departures) the slower it gets.
- It is usually estimated at 20% of the task time
 - Pareto Principle... and other principles
 - Switching time = number of columns * 0.2
 - Kanban switch = Switch time * WIP

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- Summary

- Kanban is a method that allows you to organize tasks with a view to optimizing
 - Eliminating idle time
 - Avoiding overloads
- It's a visual method: a board.
- It allows you to adjust production to demand.
 - Cards with the information needed for the entire process
- It has dynamic adjustment mechanisms (continuous improvement)

- To see

