

faurecia

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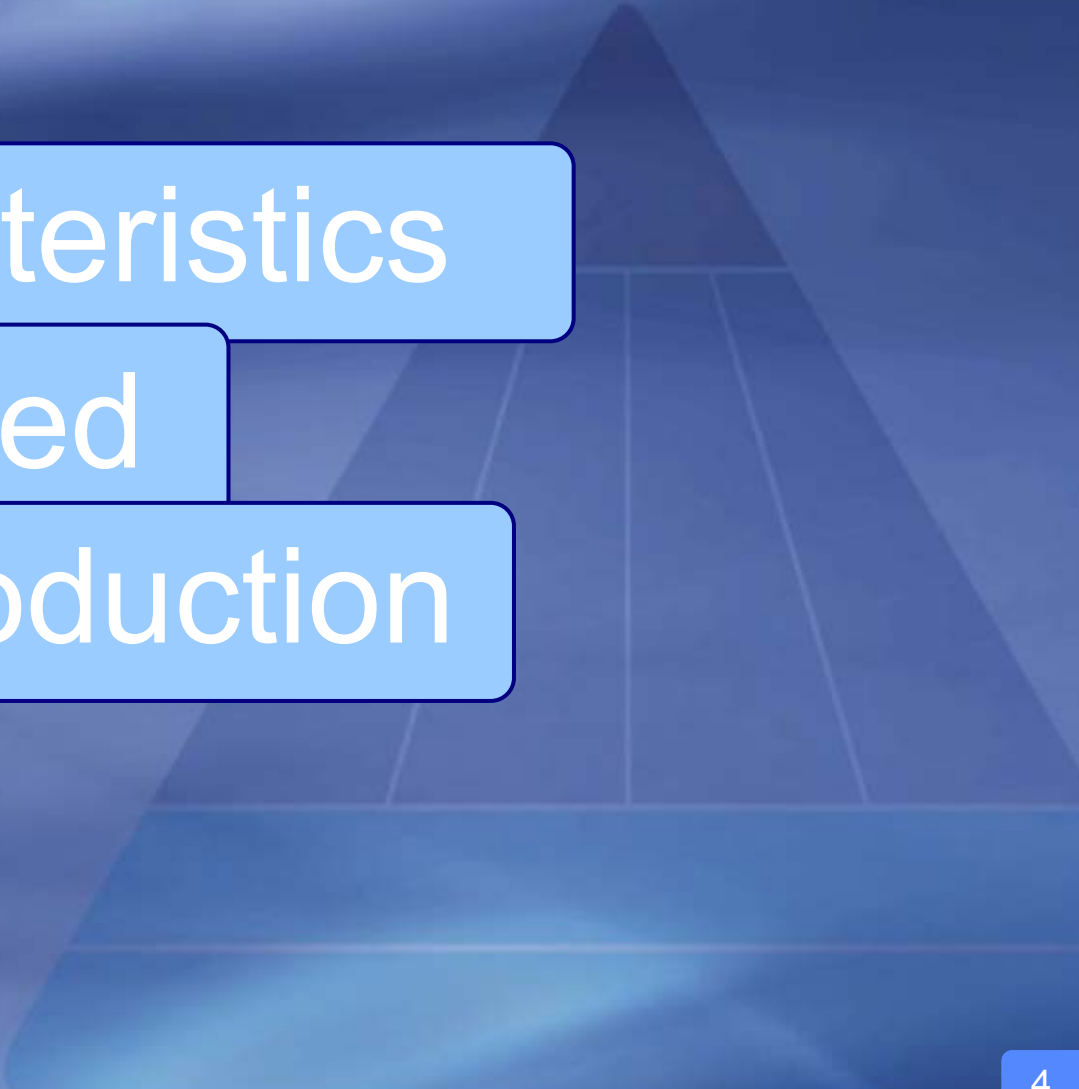
Production Leveling

What is Production Leveling?

Production Leveling is the method by which we reduce as much as possible the variance in production quantity, to optimise the resources needed

Presentation content

- Characteristics of unlevelled production
- Why level production?
- How do we level production?
- Transmitting the leveled demand to production



Characteristics
of Unleveled
Production

Resource

- Equipment is specified to achieve peak demand
- Manpower retained to achieve peak demand
- Are 30% underutilized 98% of the time
- Manpower productivity is not under control

Material flow

- Is organized around large batches
- High levels of WIP on shopfloor
- Frequent stock checking occurs
- Regular shortages of raw materials

Schedule manipulation

- Schedules are regularly changed
- Management time is absorbed by changes
- Suppliers regularly fail to meet changes

Why level production?

- To minimize costs
- To maximize resource utilization
- To absorb system instability
- To reduce our stocks

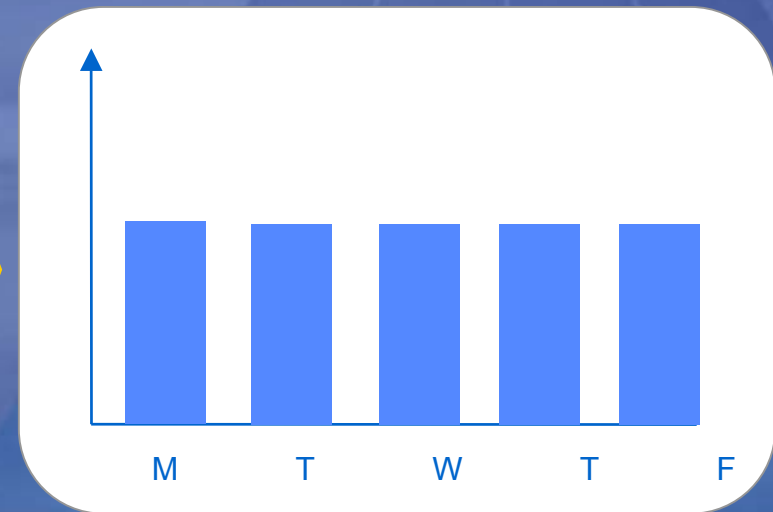
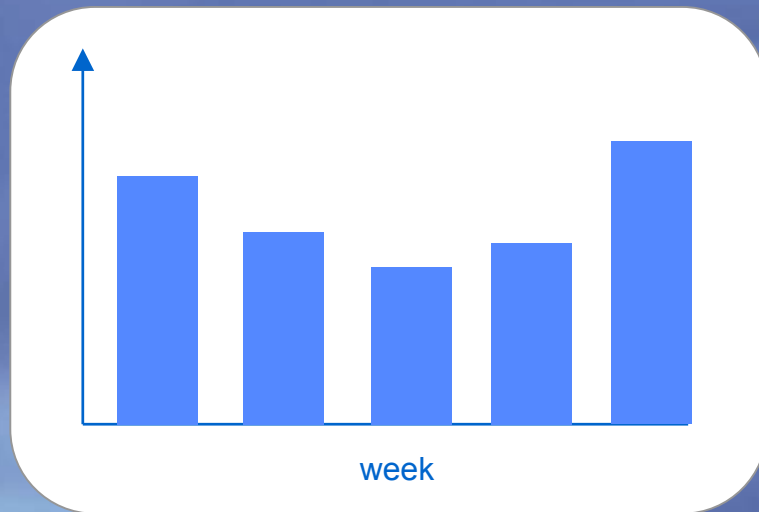
What should we consider when leveling production?

There are four aspects to production leveling

- The leveling of volume
- The leveling of mix
- The leveling of manpower
- The introduction of shopstock



Leveling of volume

$$\frac{\text{Total quantity required in period}}{\text{Number of production days in period}} = \text{Quantity to be produced per day}$$



The leveling of mix – using a monthly schedule




Monthly production schedule

Product	Quantity	Weeks			
		1	2	3	4
X 	1,000	[Yellow bar]			
Y 	600			[Blue bar]	
Z 	400				[Green bar]

Balls are made in the fourth week of the schedule during the last four days

The leveling of mix – converting to a daily demand

Monthly production schedule

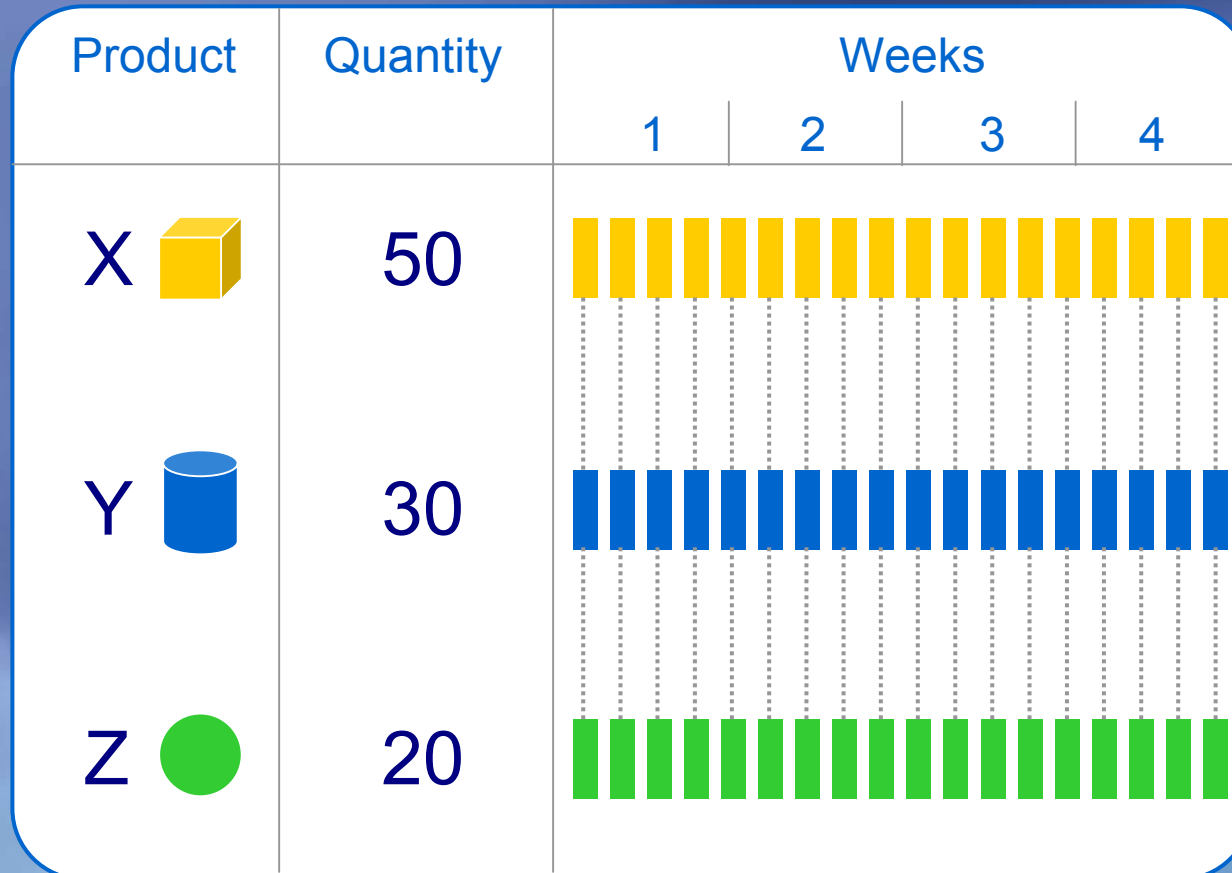
Product	Quantity	Weeks			
		1	2	3	4
X 	1,000	50 pieces / day			
Y 	600	30 pieces / day			
Z 	400	20 pieces / day			

20 working days
in the month

We achieve a daily
requirement
by dividing the
quantity by the
number of days

The leveling of mix – using a daily schedule




Daily production schedule



The frequency of making balls has increased by 20

The leveling of mix – the rate of production

Daily production schedule

Product	Quantity	Daily		
		6.00 am	noon	2.00 pm
X 	50	1 pc every 9.6 mins		
Y 	30	1 pc every 16 mins		
Z 	20	1 pc every 24 mins		
	100			

Working time
is 480 mins

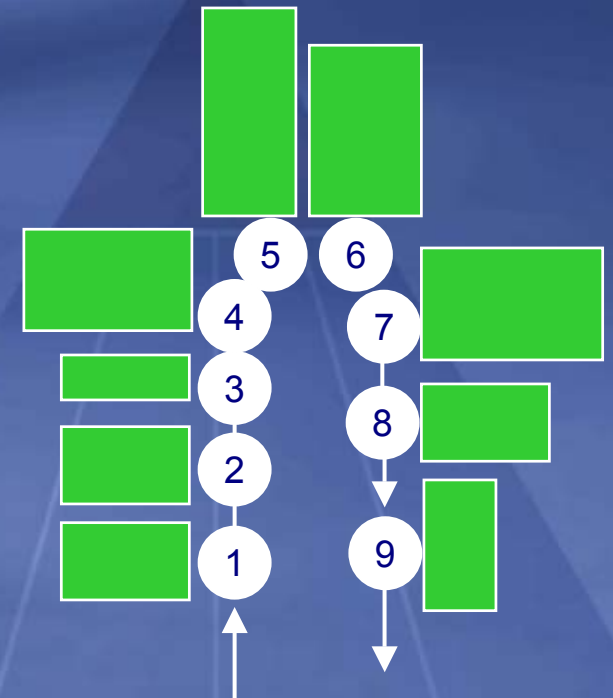
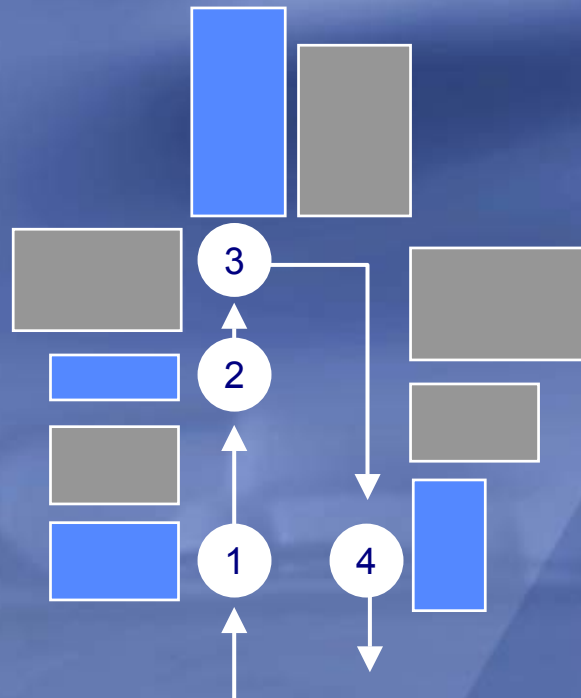
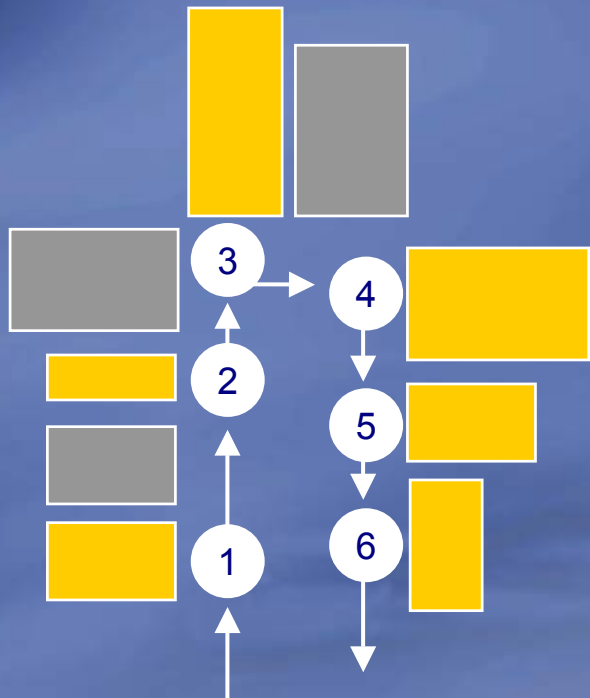
1 product every
4.8 mins from
production line

What should we consider when leveling production?

There are four aspects to production leveling

- The leveling of volume
- The leveling of mix
- **The leveling of manpower**
- The introduction of shopstock

The leveling of manpower – work content



Work content
= 15 mins









Work content
= 10 mins



Work content
= 20 mins

The leveling of manpower







Daily production schedule

Product	Quantity	Daily		
		6.00 am	noon	2.00 pm
X 	50			
Y 	30			
Z 	20			

Manning varies during production shift, output rate is fixed

The leveling of manpower

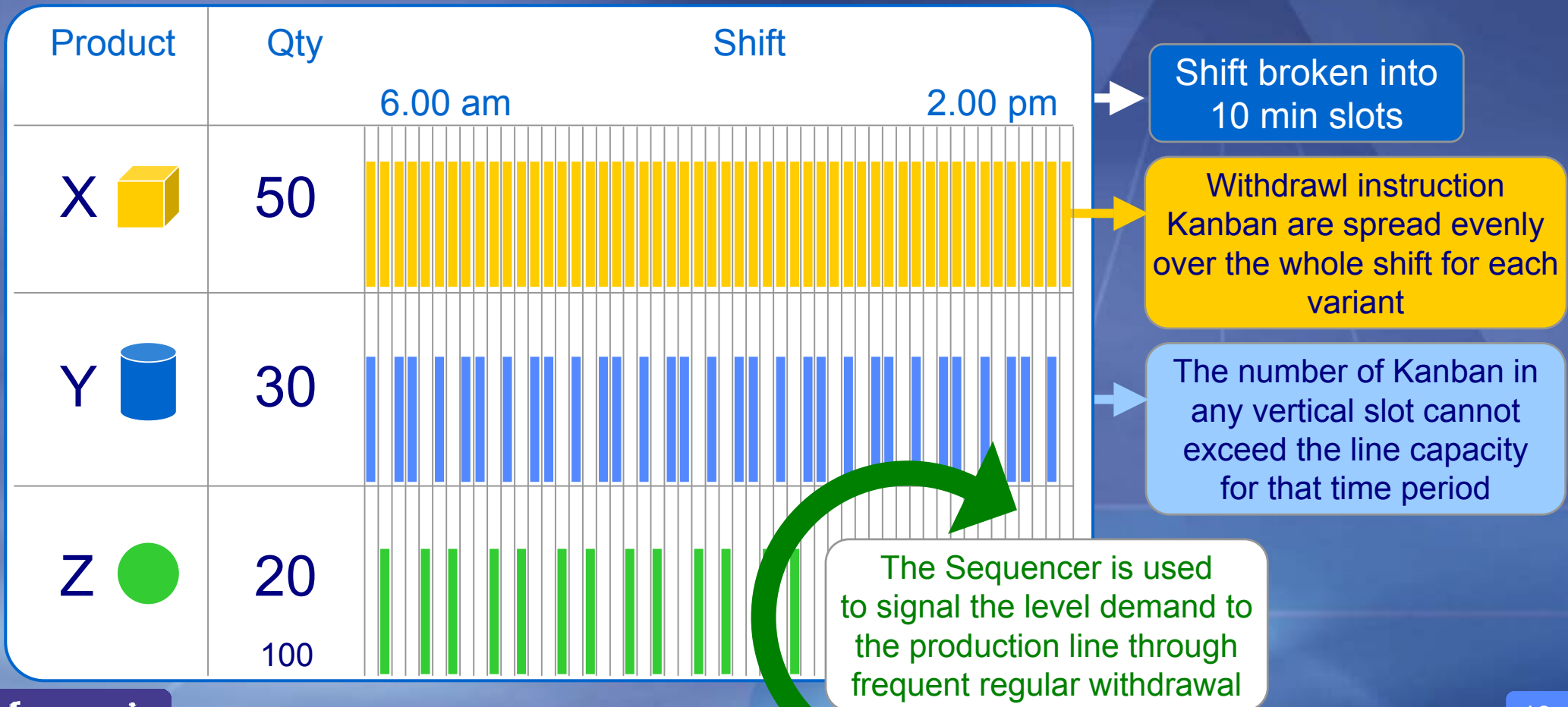
Daily production schedule

Product	Quantity	Daily		
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Manning fixed during production shift, output rate varied

Transmitting the leveled demand to production

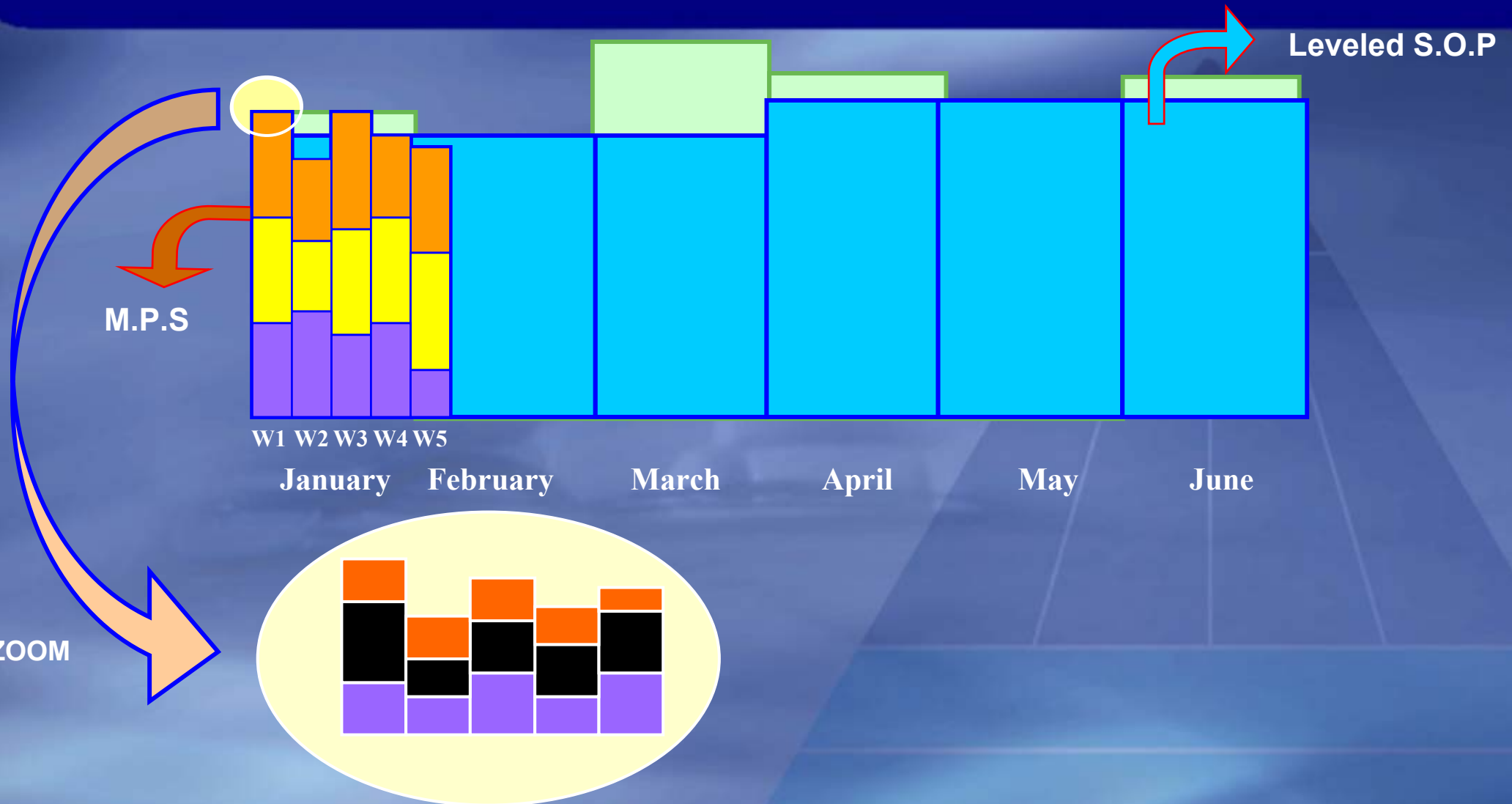
Production sequencer



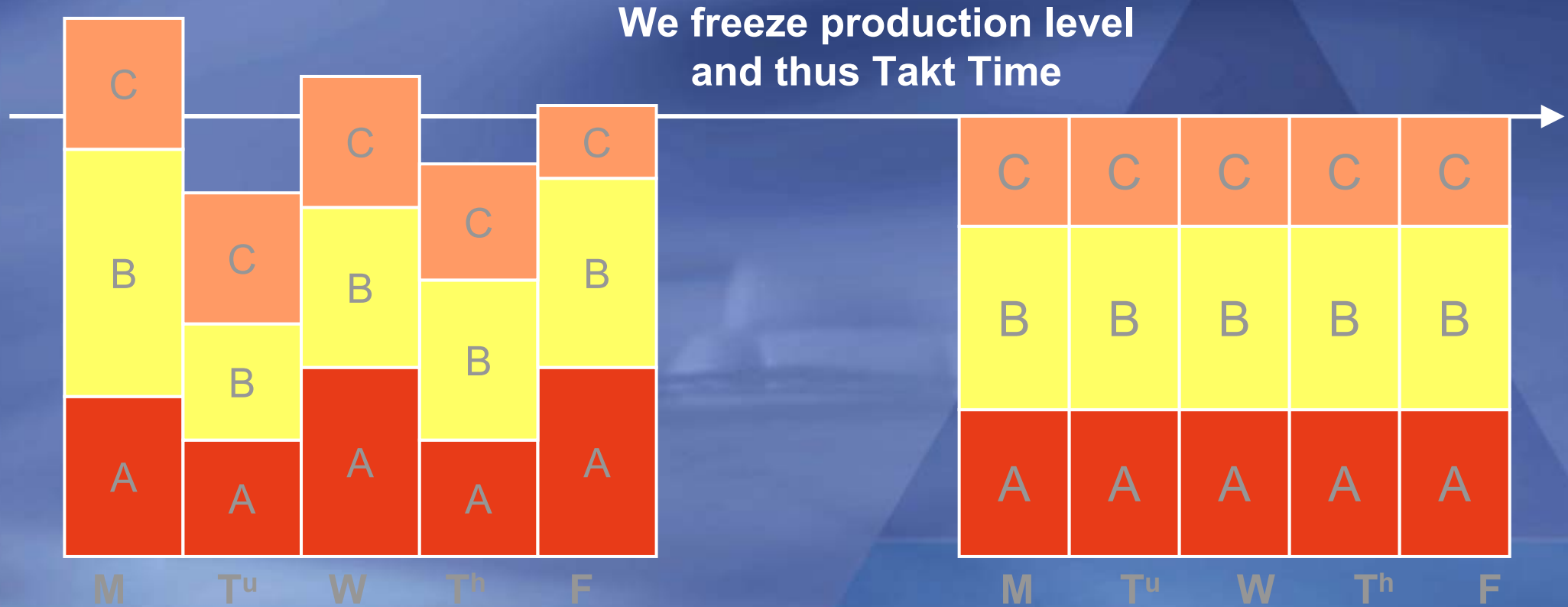


How to level

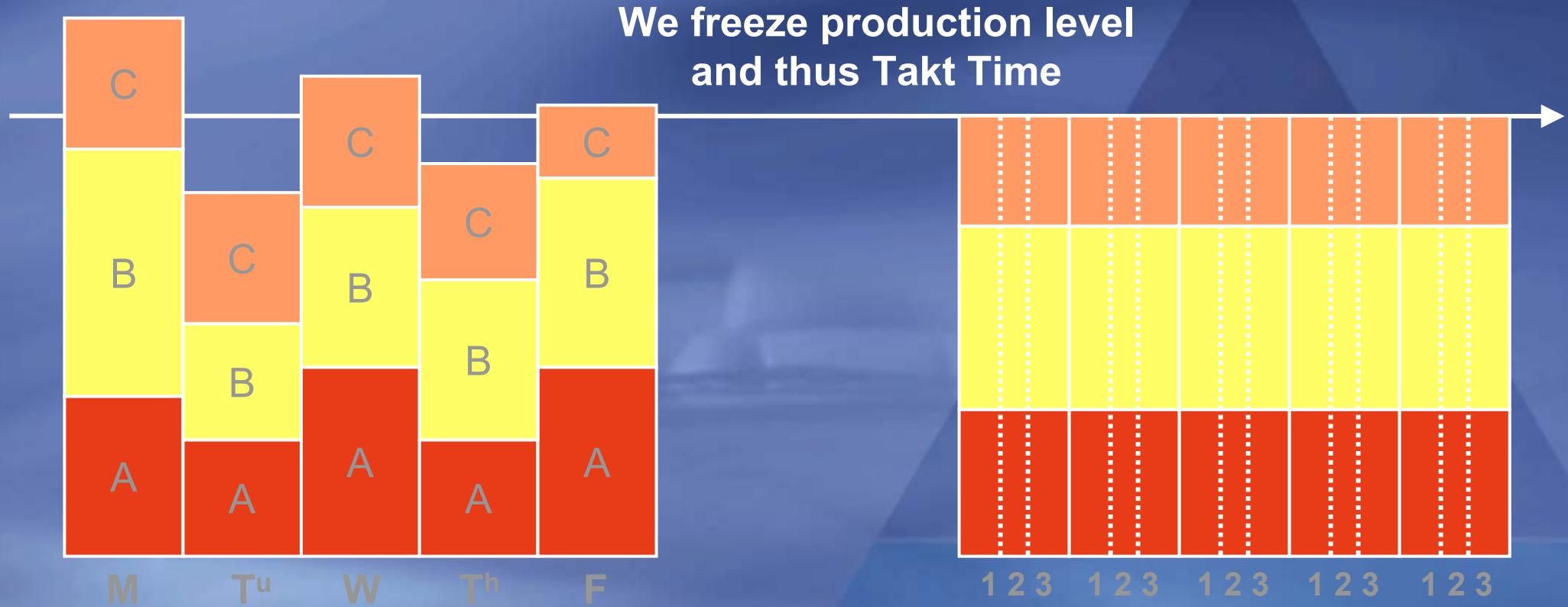
Sales & operations planning (S.O.P.)



Master Plan Scheduling (M.P.S.)



Master Plan Scheduling (M.P.S.)





The End