Portfolio management, A systemic approach

A proposal based on the concepts of the Demand Driven Adaptive Enterprise Model

Demand Driven World
transforming push and promote into position and pull

Flowing Consultoría

Portfolio management: Why is a must

- Defining the **Strategy** of a company is the main role of upper management.
- Defining the strategy means defining:
  - **Products (portfolio)**
  - Markets
  - Business models
- Then, portfolio management should be a continuous key upper management task
- We claim that it is also the starting point of SC management

Portfolio management: the current state

- Companies have functions, budgets, plans, processes, people, etc, etc, etc, devoted to constantly launching new products.
- BUT……

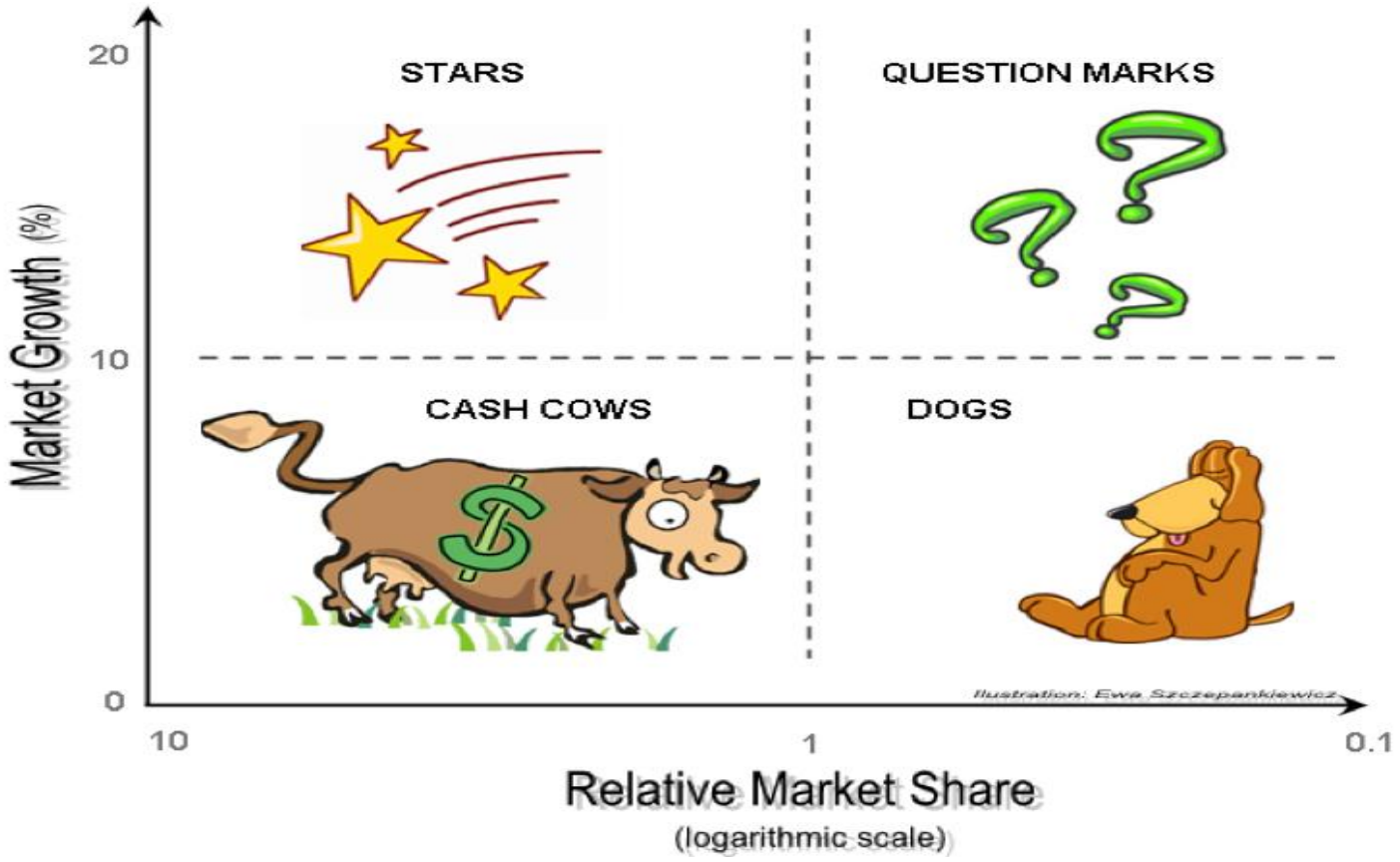
Portfolio management: the current state

They rarely have the simplest effective rule to take products out of the portfolio…

Portfolio management: the current state

The usual approach: operations people complaint and complaint and then every two years someone listens. A team meets and cuts 30% of the portfolio

Portfolio management: the current state - BCG

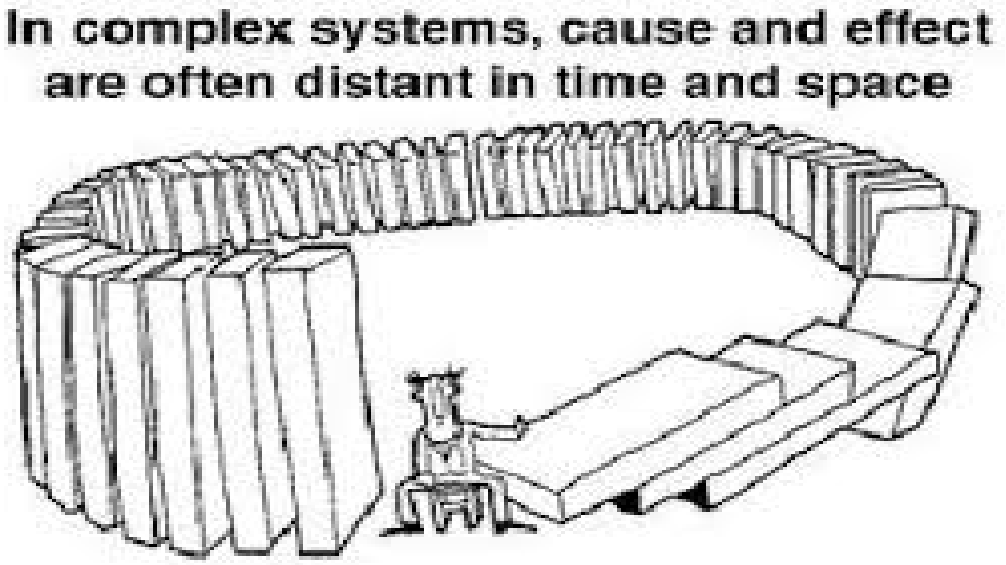


Systemic Portfolio Management
The starting point

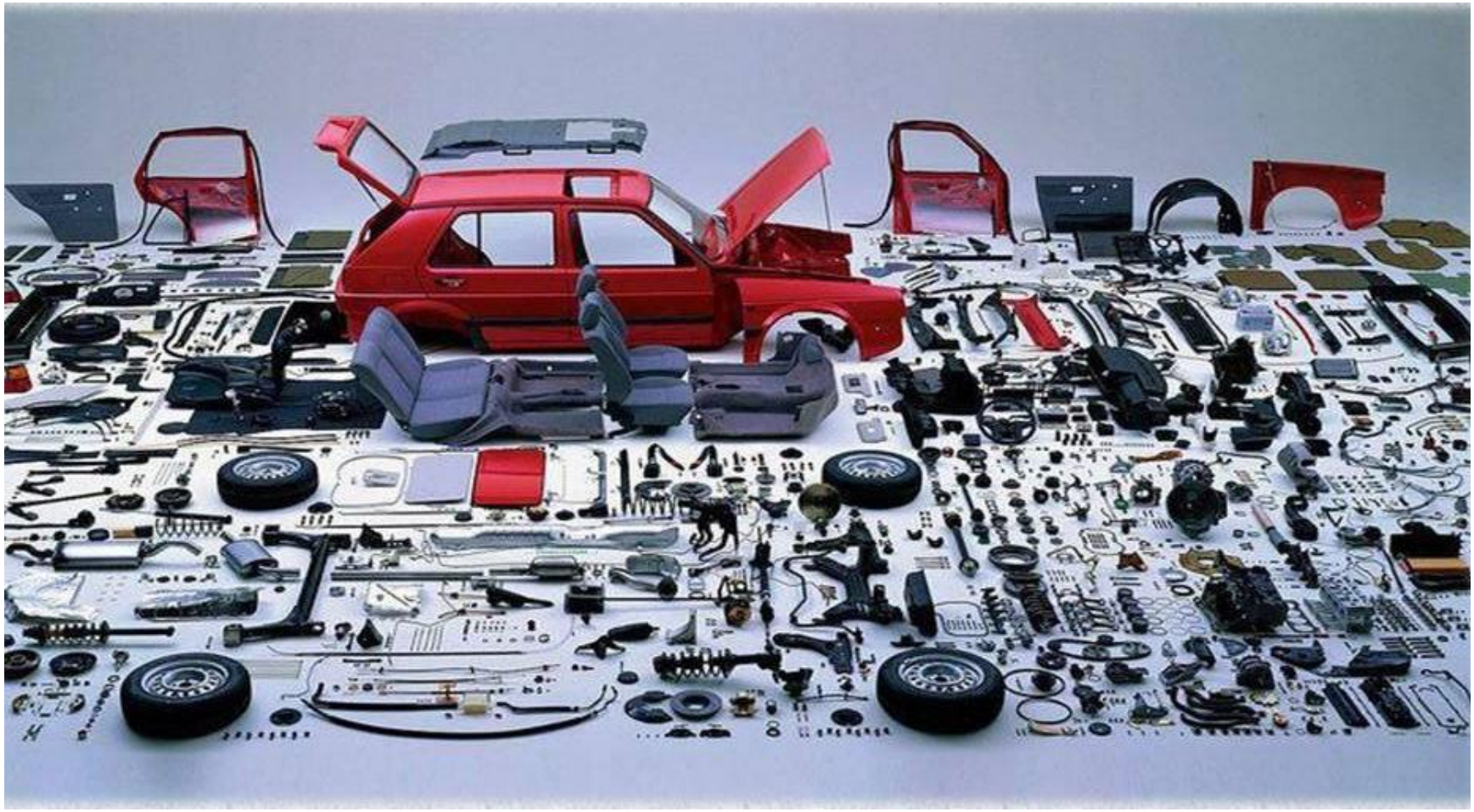
- We start all our DDMRP implementations with a deep portfolio revision
- We advice our clients in designing a simple but effective portfolio management methodology/process
- Example: Vajillas Corona.
- Portfolio must be designed following systemic considerations.

What is systemic

- DDAE is based on Complex Adaptive Systems.
- Systems thinking/Systemic management



A system



Systems think/Systemic management

- It is far more important to manage the interactions than the actions of the parts of the system
- Significantly improving a part of the system can be catastrophic: a F1 motor in a buggy
- Role of each component in the system: a plant definition
- A simple definition: SYNCHRONIZATION

Portfolio management: Where it fits

Strategy

- Products
- Markets
- Business models

Operational Excellence

- Quality
- Max opportunity (OTIF)
- Max velocity
- Min inventory
- Min expenses

Portfolio management: Where it fits

Portfolio management - DDAE model

Where?

(Position)

BEFORE

How Much?

(Quantity)

When?

(Timing)

Portfolio management - DDAE model

What?
(Portfolio MTS-MTO)

Where?
(Positioning)

BEFORE

How Much?
(Quantity)

When?
(Timing)

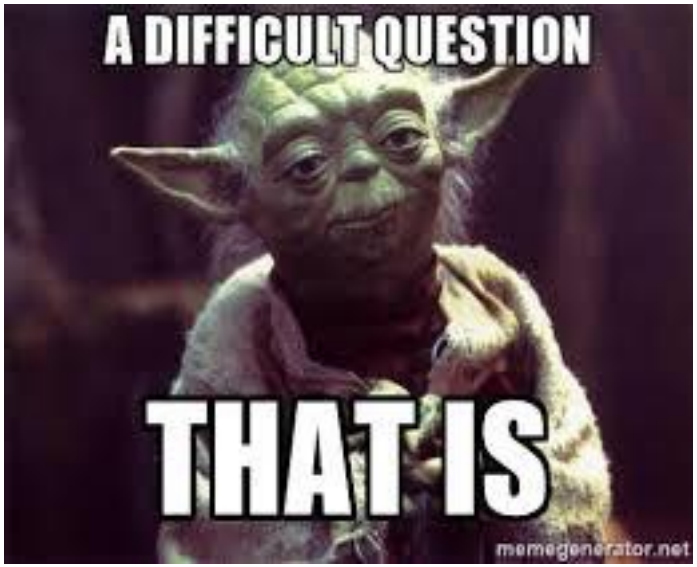
Portfolio management - Capacity

- Portfolio defines how the capacity of a company will be used
- The capacity is defined at production family level
- **Then, the PM analysis should be done at production family level**
- There should be a constant feed-back loop between PM and capacity management

Portfolio management

- Two scary questions for any plant manager:
  - *What is exactly your lead time?*
  - *What is exactly your capacity?*
- Common answer: the most used words in SCM:

  “it depends”



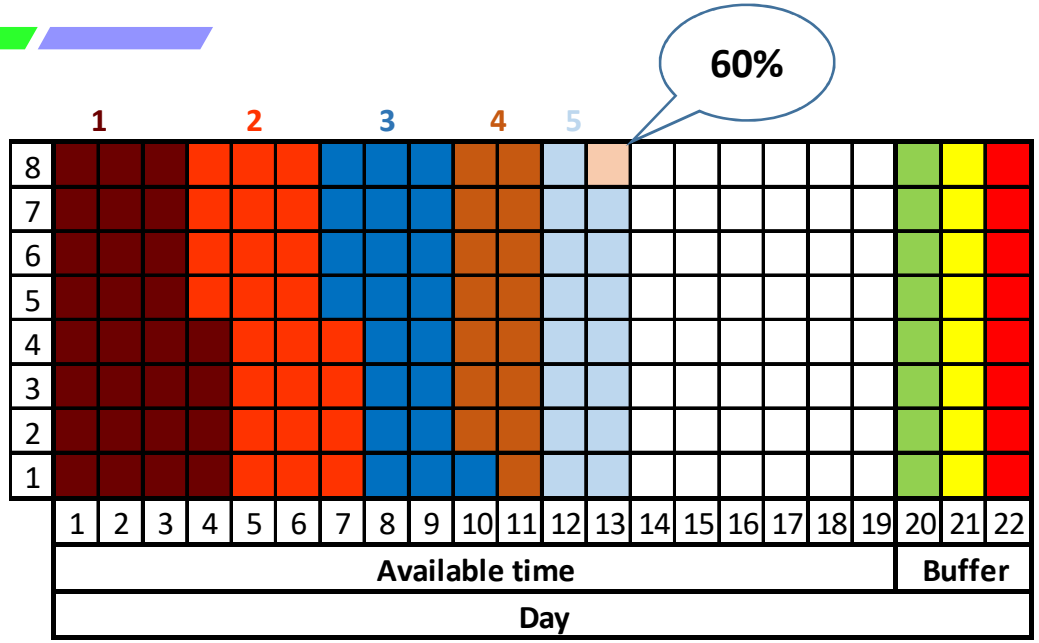
Portfolio management

But, there exists a precise way to define capacity!!

24 hours/day

Capacity and portfolio: Low capacity utilization

SKU	ADU Un/Day	AMU Un/Month	Run Rate Un/Hr	Total Time Hr/Month
1	2 000	60 000	2 200	28
2	1 800	54 000	2 300	24
3	1 500	45 000	2 200	21
4	1 200	36 000	2 400	15
5	900	27 000	1 900	15

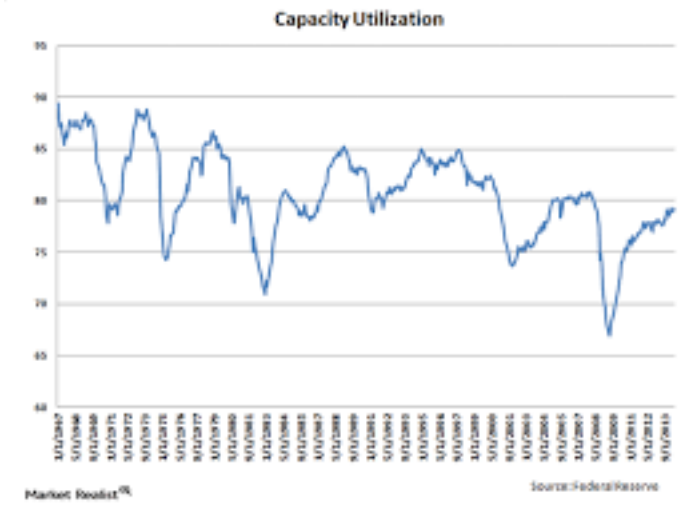


Available Time	
Hours/Day	8
Days/Month	22
Available Hours	176

Portfolio management - Capacity

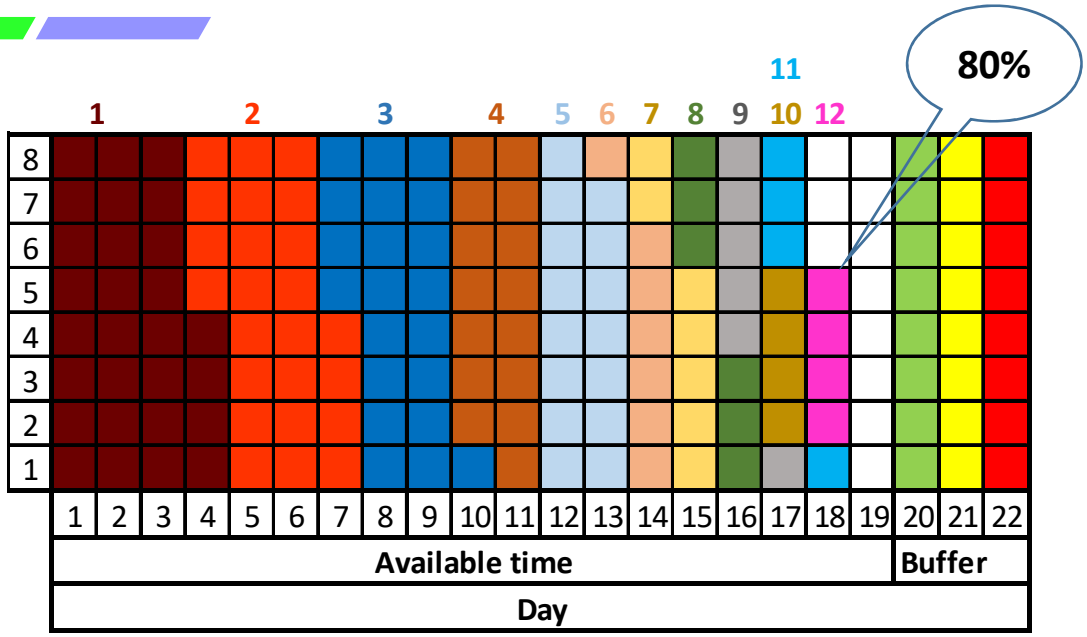
What if the capacity utilization of a production family is 60%?

- Does it mean all products should be kept in the portfolio?
- Not necessarily!
- Some products may not meet the desired KPI´s.



Capacity and portfolio: The ideal state

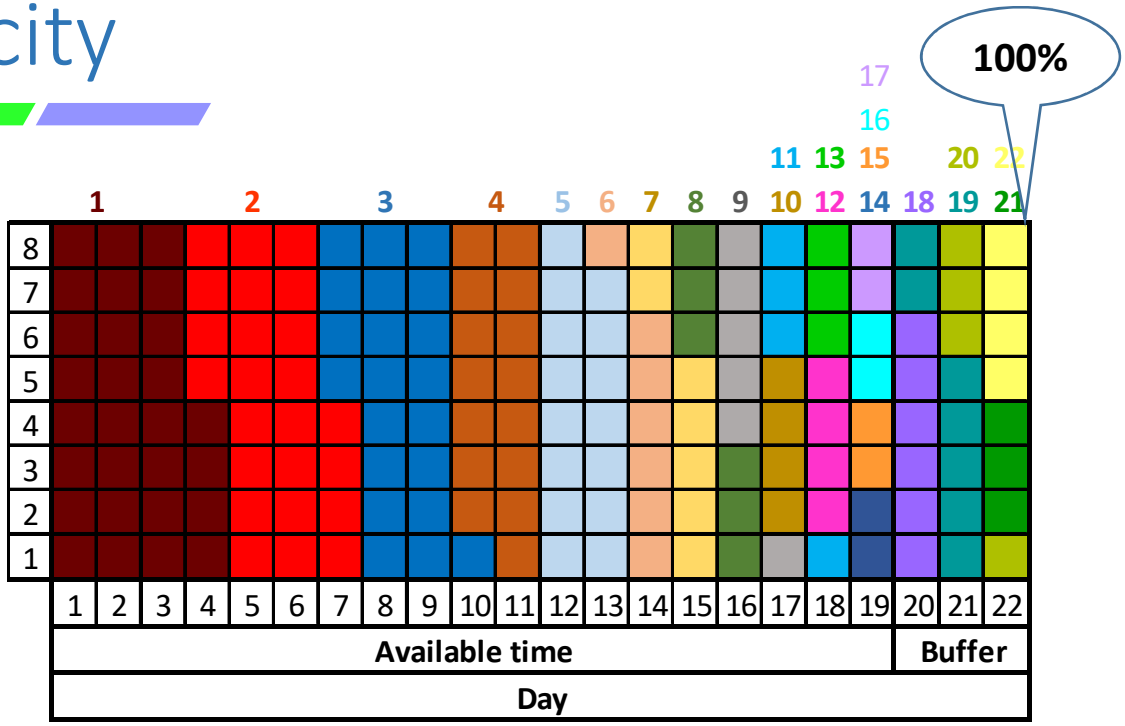
SKU	ADU Un/Day	AMU Un/Month	Run Rate Un/Hr	Total Time Hr/Month
1	2 000	60 000	2 200	28
2	1 800	54 000	2 300	24
3	1 500	45 000	2 200	21
4	1 200	36 000	2 400	15
5	900	27 000	1 900	15
6	500	15 000	2 200	7
7	450	13 500	2 200	7
8	400	12 000	2 000	6
9	350	10 500	1 900	6
10	300	9 000	2 400	4
11	250	7 500	2 300	4
12	200	6 000	1 700	4



Available Time	
Hours/Day	8
Days/Month	22
Available Hours	176

Capacity and portfolio: Not enough capacity

SKU	ADU Un/Day	AMU Un/Month	Run Rate Un/Hr	Total Time Hr/Month
1	2 000	60 000	2 200	28
2	1 800	54 000	2 300	24
3	1 500	45 000	2 200	21
4	1 200	36 000	2 400	15
5	900	27 000	1 900	15
6	500	15 000	2 200	7
7	450	13 500	2 200	7
8	400	12 000	2 000	6
9	350	10 500	1 900	6
10	300	9 000	2 400	4
11	250	7 500	2 300	4
12	200	6 000	1 700	4
13	180	5 400	1 800	3
14	150	4 500	2 200	2
15	120	3 600	2 400	2
16	100	3 000	2 100	2
17	50	1 500	1 700	2
18	400	12 000	2 000	6
19	450	13 500	2 200	7
20	300	9 000	2 400	4
21	180	5 400	1 800	3
22	250	7 500	2 300	4
Total	**12 030**	**360 900**		**176**



Available Time	
Hours/Day	8
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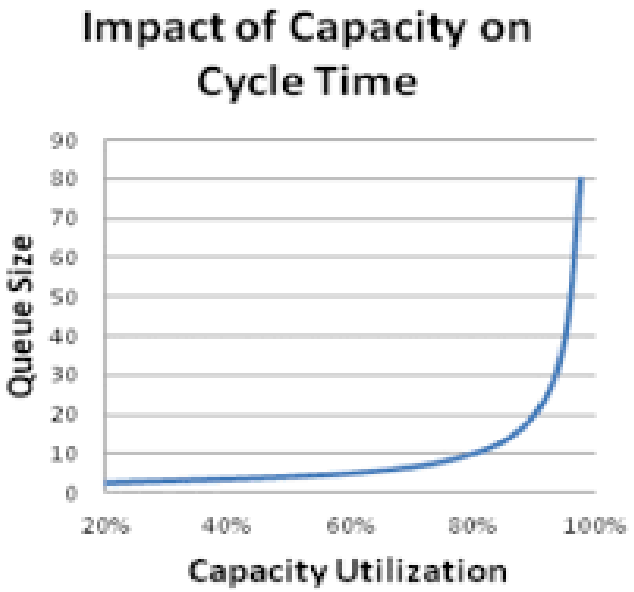
Portfolio management - Capacity

What if the capacity utilization of a production line is higher than around 80-85%?

- Active bottleneck
- Problems
- Not enough capacity buffer: VUT equation, long lead times, low OTIF
- Impossible to implement DDMRP
- Products MUST be taken out of the portfolio



Portfolio management – A systemic approach

- It is a key management task
- It is the starting point of the DDS&OP process
- It is the starting point of SC management
- It is highly related to capacity management
- It should include systemic relationships between:
  - Financial variables
  - Market variables
  - **Operational variables**
- Every company should design its own methodology/policies

Portfolio management
Financial KPI´s

1. Financial variables:

1.1 Total sales/month: absolute value

1.2 Gross margin/month: absolute value

1. 3 Product ROI:

- Gross margin/cash cycle;
- Gross margin/Total target inventory (RM+FP)

1.4 Gross margin per time unit: Gross margin/hour in the scarcest resource

Product ROI

- “I lend you money at 0.1%...”

Product ROI :
Gross margin/Cash cycle

	Supplier A	Supplier B
Selling price	100	100
Cost	50	70
Margin	50	30
Margin %	50%	30%
Cash cycle (days)	60	20
ROI (%/day)	0,83%	1,50%
ROI (%/month)	25%	45%

Increase in cost	40%
Increase in ROI	80%

Product ROI:
Gross margin/Required total investment in inventory

		Supplier A	Supplier B
Selling price	$/un	100,0	100,0
Cost	$/un	50,0	70,0
Monthly sales	un	3.000,0	3.000,0
Total sales	$/mo	300.000,0	300.000,0
Total cost	$/mo	150.000,0	210.000,0
Contribution	$/mo	150.000,0	90.000,0
ADU	Un	100	100
Lead time	days	60	20
MOQ	Un	3.000	500
LT factor	%	30%	50%
Variability factor	%	40%	30%
Average on hand	Un	4.020	1.550
Average on hand	$	201.000,0	108.500,0
ROI:			
Contrib/inventory		**75%**	**83%**

Product ROI

- Product ROI should be a fundamental KPI in portfolio design.
- It should be calculated using cash cycle and expected on hand inventory (both RM and FP).
- Long lead time products are far less profitable than widely accepted due to long cash cycles and high required inventories.
- They may also generate stock outs and surpluses.

Product margin

Traditional analysis:

	Product A	Product B
Selling price	$10.000	12.000
RM cost	$6.000	$5.000
Processing time	2.5 hours	2.0 hours

Product margin

But..

	Product A	Product B
Selling price	$10.000	12.000
RM cost	$6.000	$5.000
Processing time	2.5 hours	2.0 hours
Units/hour	100	50

Product margin

But…

	Product A	Product B
Selling price	$10.000	12.000
RM cost	$6.000	$5.000
Processing time	2.5 hours	2.0 hours
Units per hour	100	50
Cash cycle	120 days	10 days

Portfolio management
Market KPI´s

2. Market variables:
    - Sales frequency
        - Low frequency: Difficulty in sourcing raw materials
        - Complex buffer design
    - Market penetration:
        - Number of clients that buy the product
        - Exclusive products: complex inventory management

Portfolio management
Operations KPI´s

3. Operational variables:
   - Flow Index:
     - MOQ/ADU
     - High FI: captures capacity, captures working capital, obsoletes, expiration dates.
     - Example from food industry: a product has a shelf life of 30 days but the FI is 45 days!!
   - Companies should set a maximum allowed FI.
   - New products example: a product will not stay in the porftolio if FI is not less than 120 days after 6 months in the market.

Flow Index

Center	SKU	ADU	Green zone	Flow Index
CEDI	7702951240230	0.00003	1	29,463
CEDI	7702951656697	0.00006	1	15,425
CEDI	7702951239616	0.00016	1	6,097
CEDI	7702951239609	0.00016	1	6,094
CEDI	7702951560987	0.07246	50	690
CEDI	1111111082294	0.03595	19	529
CEDI	1111111128367	0.07801	38	487
CEDI	7702951558045	0.10544	43	408
CEDI	7702951562011	0.11497	37	322
CEDI	7702951562400	0.10803	33	305
CEDI	7702951562165	0.11038	33	299
CEDI	1111111122327	0.06667	18	270
CEDI	7702951558182	0.14275	38	266
CEDI	1111111122358	0.10000	26	260
CEDI	7702951558700	0.14555	35	240
CEDI	7702951561434	0.28949	62	214
CEDI	1111111122303	0.08444	18	213
CEDI	7702951561335	0.24598	50	203
CEDI	7702951541443	0.18503	35	189
CEDI	7702951109452	0.32336	59	182
CEDI	7702951558120	0.31718	57	180
CEDI	7702951531185	0.24739	44	178
CEDI	7702951562042	0.21992	37	168

Portfolio management
Other operational considerations

3. Operational variables:
   - Manufacturability
   - Disign for manufacturing
   - Launch new products based on operational strengths

Summary:
KPI´s for portfolio management

Portfolio analysis KPI´s				
Variables	**KPI**	**Description**	**Frequency**	**Threasdshold**
Financial	Monthly gross margin	Net sales minus total variable costs		
	Product ROI	Gross margin/cash cycle		
		Gross margin/total required inventory including raw materials		
	Product profitability	Margin/production units in the scarce resource		
Market	Sales frequency	Days with sales per year		
	Market penetration	Number of clients that buy the product		
Operations	Flow Index	MOQ/ADU		
	Manufacturability	How easy/complicated is to produce		

CONCLUSION:
Portfolio management

- Each company should install a permanent process for managing its portfolio
- It starts monitoring capacity requirements by production line/family
- A set of systemic variables/KPI´s/rules should be defined in order to define if a product stays or goes out of the portfolio when there is not enough capacity and/or defined KPI´s are not met.

Thanks.