

Managing capacity Nissan cuts production

Case duration (Min): **45-60**

Operations Management (OPs)

Managing capacity

Worldwide

Case summary:

Focus is on use of available resources for ongoing operations when demand fluctuates - short range (six to 24 month) capacity decisions

Learning objectives:

Explain the concept of capacity

Identify a variety of short, medium and long term capacity adjustment strategies

Case problem:

How to manage production and capacity issues in the context of demand uncertainty and fluctuation

Auto Manufacturers - Major

Company

Nissan

www.nissan-global.com

Nissan Motor Company, Ltd, shortened to Nissan, is a Japanese multinational automaker headquartered in Japan, founded 1932. It formerly marketed vehicles under the "Datsun" brand name and is one of the largest car manufacturers—revenue appx \$90 billion USD (2007) and Employees 190,000 (2008). Nissan continues its quest to optimize product development and deliver highly innovative technology. Today, in various countries and regions around the world, they enjoy a reputation for creating truly innovative vehicles and service programs. With facilities around the world, the Qashqai, Micra, Micra C+C and Note are produced by Nissan Motor Manufacturing (UK) Ltd in Sunderland, Tyne & Wear.

First, if you are taking a taught management course then consult with your tutor and ensure that the case has not been scheduled into a teaching class or tutorial. If it has not:

1. Play/ read the media associated with the case. You may need to access the Internet and enter a URL to locate any video clips.
2. Attempt the Case study questions.

Consider attempting the case study as a group exercise; you could form a study group with fellow students.

3. Check the suggested answers - remember these are suggestions only and there are often many possible answers.

Discuss questions and answers with other students.

4. If you feel your answer(s) were weak then consider reading the relevant suggested readings again (also see the case study suggested references).

Title/ Media type	URL/ Media description
Nissan cuts production	http://news.bbc.co.uk/1/hi/england/7681091.stm
Film	The car manufacturer Nissan has cut production at its Sunderland plant blaming market conditions for the slow down.

NOTES:

Case study questions...

Action		Pre/During/After class
1	UNDERSTANDING CAPACITY What is meant by capacity in the operations sense?	During
2	NISSAN CAPACITY NMUK is/ has been the most productive car plant in Europe, producing more 'cars per person' than any other factory. What determines the capacity for car production at Nissan? You should attempt to categorise factors according to operational, tactical and strategic capacity decisions.	During
3	DEMAND FLUCTUATION AND OTHER FACTORS IMPACTING CAPACITY MANAGEMENT What long and medium term factors might impact upon capacity decisions at Nissan?	During
4	CAPACITY PLANS (DEMAND STRATEGIES) What alternative methods might Nissan consider for responding to demand fluctuation? With reference to the case video, identify which method has been favoured by Nissan?	During
5	METHODS OF ADJUSTING CAPACITY (PLANNING OPTIONS) Identify and discuss the medium term options adopted by Nissan to modify supply. What other options could they have considered? Discuss options in relation to cost and other issues. How are excess resources utilised when production is reduced?	During

Answers...

CAPACITY

the maximum production possible - The amount of work a production unit, whether individual or group, can accomplish in a given amount of time

SAFETY CAPACITY

, defined as an amount of capacity reserved for unanticipated events such as demand surges, materials shortages, and equipment breakdowns

SAFETY STOCK

Safety Stock or Buffer Stock exists to counter uncertainties in supply or demand

AGGREGATED PLANNING AND CONTROL

a term used to indicate medium-term capacity planning that aggregates different products and services together in order to get a broad view of demand and capacity.

SCHEDULING

Refers to the assignment of start and completion times to particular jobs, people, or equipment

DEMAND MANAGEMENT

an approach to medium-term capacity management that attempts to change or influence demand to fit available capacity.

DEMAND UNCERTAINTY

The risk of significant and uncertain fluctuations in the demand for their products.

DEMAND PLANNING

A collaborative effort in which different groups within the organization share information and analysis to create an overall demand forecast for the organization.

DESIGN CAPACITY

the capacity of a process or facility as it is designed to be, often greater than effective capacity.

Question/ Answer

1 UNDERSTANDING CAPACITY

What is meant by capacity in the operations sense?

The maximum production possible - The amount of work a production unit, whether individual or group, can accomplish in a given amount of time; maximum rate of output/time or units of resource availability

2 NISSAN CAPACITY

NMUK is/ has been the most productive car plant in Europe, producing more 'cars per person' than any other factory. What determines the capacity for car production at Nissan? You should attempt to categorise factors according to operational, tactical and strategic capacity decisions.

Facilities decisions (long term/ strategic) – facilities and processes, physical capacity; NMUK relies heavily on Information Technology to function. Computer-controlled robots and other machinery, particularly in the Body Shop, are vital to production.

Aggregate planning (medium term) – work force and production levels; staff at NMUK use a number of methods to ensure productivity remains high. Three of the main ones are Kaizen, Just in Time and Job Rotation.

Scheduling – assignment of specific tasks, activities or jobs

3 DEMAND FLUCTUATION AND OTHER FACTORS IMPACTING CAPACITY MANAGEMENT

What long and medium term factors might impact upon capacity decisions at Nissan?

The proliferation of low cost countries (Eastern Europe, China and India) is fuelling a migration of manufacturing from the UK.

Medium term issues relate to the recession, inflation, disposable income fluctuations etc

4 CAPACITY PLANS (DEMAND STRATEGIES)

What alternative methods might Nissan consider for responding to demand fluctuation? With reference to the case video, identify which method has been favoured by Nissan?

Level capacity plan - an approach to medium-term capacity management that attempts to keep output from an operation or its capacity, constant, irrespective of demand

Chase demand - an approach to medium-term capacity management that attempts to adjust output and/or capacity to reflect fluctuations in demand

Demand management - an approach to medium-term capacity management that attempts to change or influence demand to fit available capacity

The case film provides examples of Chase demand methods at Nissan

5 METHODS OF ADJUSTING CAPACITY (PLANNING OPTIONS)

Identify and discuss the medium term options adopted by Nissan to modify supply. What other options could they have considered? Discuss options in relation to cost and other issues. How are excess resources utilised when production is reduced?

Varying hours worked (idle time); halting production i.e. no longer continuous and line speed reduction

They may also have considered: varying the size of the workforce (laying off/ redundancy), using part time staff, sub contracting, carrying inventory

When people are idle due to production adjustments, Nissan used the time to train employees

UTILIZATION

the ratio of the actual output from a process or facility to its design capacity.

LEVEL CAPACITY PLAN

an approach to medium-term capacity management that attempts to keep output from an operation or its capacity, constant, irrespective of demand.

CHASE DEMAND

an approach to medium-term capacity management that attempts to adjust output and/or capacity to reflect fluctuations in demand.

DEMAND MANAGEMENT

an approach to medium-term capacity management that attempts to change or influence demand to fit available capacity.

PRODUCTIVITY

an economic measure of efficiency that summarises the value of outputs relative to the value of inputs used to create them

Case study references

Cole, G A. and Kelly, P P. (2011) 'Management Theory and Practice', Ed. 7. Cengage EMEA.

Collier, D. and Evans, J. (2009) 'OM', Ed. 1. Cengage Learning.

Kelly, P P. (2009) 'International Business and Management', Cengage Learning EMEA.