







### Session 2: Competition Policy Fundamentals

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Ву

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#### **Competition Policy Fundamentals**







EU approach identifying relevant markets for ex ante regulation

- Barriers to entry 1.
  - 1. Structural
  - 2. Legal/regulatory
- 2. Dynamic effects
  - 1. Technology
- 3. Sufficiency of competition law

Ex ante regulation needed if the above do not hold – the test is <u>cumulative</u> and <u>prospective</u>, forward looking 6



#### Market Definition

# Relevant market and limits of substitution

- When defining a market identify services and/or products exposed to <u>similar competitive constraints</u>
- Market definition is about identifying the limits of substitution – on <u>demand and supply sides</u> of market
- A common test for assessing market boundaries is known as the *Hypothetical Monopolist Test* or the SSNIP test (see below)
- The application of the test results in the identification of the relevant or antitrust market
- It is sometimes said that a *relevant market* is one that is worth monopolising

### It is about substitutes

- Examines demand side substitutes how these impact on price setting
  - Functionally similar products in the eye of the end user
  - If a service price increases, are there other similar products available?
- Examines supply side substitutes
  - How other producers can switch production relatively easily and supply service

## Supply side substitutability

- Price increase results in some firms producing similar products switching production
- It is possible that supply side substitution alone could make unprofitable the price increase considered
  - If so, the market needs to be widened
- Supply side substitution is quick entry (occurs in less than a year)

# De novo entry is not supply side substitution

- In applying the SSNIP Test, entry of <u>new</u> firms into the market is not considered supply side substitution
  - New entry is assumed usually to take too long to have an effect on the hypothetical monopolist, as the price increase needs to be profitable over a one year period
- Entry is considered to be something that occurs in a market already defined, and its effects are examined at the market analysis stage

### The SSNIP Test

"A market is defined as a product or group of products and a geographic area in which it is produced or sold such that a hypothetical profitmaximizing firm, not subject to price regulation, that was the only present and future producer or seller of those products in that area likely would impose at least a 'small but significant and non-transitory' increase in price, assuming the terms of sale of all other products are held constant. A relevant market is a group of products and a geographic area that is no bigger than necessary to satisfy this test."

From the 1982 US Horizontal Merger Guidelines

### The SSNIP Test

- The SSNIP Test is a thought experiment applied iteratively
- Start with the narrowest candidate market
  - Is there a market for residential fixed access?
  - Look at functional characteristics of product
  - Are there similar products? E.g. non-residential fixed access (business lines)
  - Does the similar product constrain the hypothetical monopolist? If so, widen the market

# Operationalizing the SSNIP Test

- Could a hypothetical monopolist increase prices by up to 10% profitably?
  - No, then widen market by including near substitutes
  - If yes, stop as market boundaries have been identified
- Why widen the market if no?
  - Other products or services on either the <u>demand</u> or the <u>supply</u> side constrain the hypothetical monopolist, in which case these must lie in the same <u>economic market</u>

# Operationalizing the SSNIP Test

- It is usual to start with price equal to cost and to consider a price increase from this position
  - In regulated markets it is often presumed that prices are equal to cost
- If a higher price is considered, it could lead to what is known as the *cellophane fallacy* 
  - After a famous antitrust case in the US involving Dupont

### Beware the Cellophane Fallacy

- United States v. E.I. Du Pont De Nemours & Co (1956)
- Between 1923-47 Dupont controlled 75% of cellophane sold in U.S., which accounted for 20% of all flexible packaging products
- Government alleged Dupont had an illegal monopoly
- Court disagreed with Government on basis of market definition
- Dupont claimed cellophane was not the relevant market, since at prevailing prices there appeared to be a high cross-price elasticity of demand between cellophane and aluminium foil, wax paper and polyethylene
- A near monopoly of "the cellophane market" was a modest share of something called "the wrappings market"

### Beware the Cellophane Fallacy

- A monopolist ought to set prices such that consumers are close to switching to other products (near the consumer's reservation price)
- A price at the monopoly price will therefore give the impression of many substitutes
- But...at the monopoly price a firm has not been constrained by other products, so they cannot be close substitutes

# Self-supply

- In wholesale markets undertakings may self-supply products and services e.g. leased lines or their equivalent such as fixed links
- Incumbents and alternative operators (entrants) can self-supply
- Should self-supply be included in the market?
- Incumbent usually provides services on the merchant market therefore incumbent self-supply is to be included
- Alternative operators may be able to provide merchant service BUT usually constrained by
  - Capacity constraints
  - Lack of ubiquity
  - Delay in getting to market
- Alternative providers self-supply not usually considered part of the market

### Chain of substitution

- In some cases similar products may be considered, say different capacities of leased lines (64kbs, 128kbs, 2Mbs, etc.)
- Can the price of a high capacity leased line be constrained by the aggregation of lower capacity leased lines?
  - Is there a chain of substitution?
- The chain of substitution can also apply geographically

### Using evidence and analysis

- Company documents may reveal perceived substitutes
- National Regulatory Authority reports
- Interviews/surveys
- Switching costs are these significant?
- Price patterns (price correlations)
- Own or cross-price elasticities
- Critical loss analysis (CLA)
  - The minimum percentage loss in volume of sales required to make a 5 or 10% price increase unprofitable

### Critical loss analysis (CLA)

- Critical loss analysis (CLA) is the application of an algebraic relationship to help identify a relevant market
- Its application emerged in US anti-trust merger analysis in the early 1990s
- It has since been applied widely by anti-trust agencies around the world

#### Estimate the 'incremental margin' (i.e. the margin between price and costs assessed by using observations about price and variable costs) and calculate the 'critical loss' (CL) (i.e. the volume of sales that would make a given percentage price increase unprofitable for a hypothetical monopolist).

- 2. Estimate what the 'actual loss' (AL) in sales would be (using available demand data, including elasticity estimates for the 'candidate market') for a given price increase.
- 3. If AL exceeds CL, the market needs to be widened to include nearby substitute products.

 $\begin{pmatrix} \text{Benefit of} \\ \text{price increase} \end{pmatrix} = p[q+q] \qquad CL = \frac{\Box q}{q} = \frac{-\Box p/p}{(\Box p/p) + m}$ 

 $\begin{pmatrix} \text{Cost of} \\ \text{price increase} \end{pmatrix} = -(p-c)\Box q \quad CLE = \frac{\Delta q / q}{\Delta p / p} = \frac{-1}{(\Delta p / p) + m}$ 

$$\frac{\Box p}{p} \left( 1 + \frac{\Box q}{q} \right) = \left( \frac{-(p-c)}{p} \right) \frac{\Box q}{q}$$

where m = (p - c) / p

## CLA example: mobile roaming

CLA for a mark-up <i>m</i> =9.3%		
Price increase	CL	CLE
5%	35%	7
10%	52%	5.2

# Geographic dimension

- Market definition also requires identification of geographic markets
  - Approach same as before
  - Start with the narrowest market
  - Take account of pricing is there regional or national pricing?
- Leased lines markets, are they defined from point to point or nationally?



#### Market Analysis



### Purpose of market analysis

- To investigate whether an entity (in Europe undertaking) is <u>dominant</u> i.e. has market power (equivalent to SMP)
- Need to assess factors which might enable the exercise of dominance or market power
- Forward looking analysis should be applied, emphasis on where a market is likely to be heading not where it has been

### The concept of dominance

- Enshrined in the European Treaty
- Relevant European Legislation
  - Articles 82
    - Abuse of dominant position prohibited
    - Ex post application
  - ECMR 139/2004
    - Impede effective competition by creating or strengthening a dominant position
    - Ex ante application

How has dominance been interpreted?

- Dominance:
  - Behave to an appreciable extent independently of competitors, customers, and consumers (United Brands case 1978)
- Often emphasis is placed on market shares
  - 40% or more share indicative of dominance
  - 50% or more share and <u>stable</u> over time, rebuttable presumption
    - Hoffman-La Roche vs Commission 1979 and Akzo vs Commission 1991

# Identifying dominance

- Two alternative approaches to determining dominance:
- Direct measurement of dominance based on prices in relation to cost (e.g. a Lerner index type approach)
- Indirect method of measuring dominance which considers
  - Market shares
  - Entry barriers
  - Vertical characteristics of an industry
  - The power of buyers
  - Etc
- The EC's approach is rooted in the indirect method, starting as it does with an analysis of the market shares of the undertaking in question, the market shares of competitors and then considering barriers to entry.
- Some countries, such as Mongolia, specify dominance as referring to a specific market share threshold

Direct measure of dominance: Lerner Index

$$\max_{q_i} \pi_i = q_i p(q_i, \mathbf{q}_{-\mathbf{i}}) - cq_i \quad \rightarrow \quad -\frac{\partial p}{\partial q_i} \frac{\partial Q}{\partial Q} q_i = p^* - c$$

$$-\frac{\partial p}{\partial Q}\frac{\partial Q}{\partial q_i}\frac{q_i}{p^*} = \frac{p^* - c}{p^*} \text{ note that } \frac{\partial Q}{\partial q_i} = 1$$

$$-\frac{\partial p}{\partial Q}\frac{Q}{p*}\frac{q_i}{Q} = \frac{p*-c}{p*}$$

$$\frac{m_i}{\varepsilon} = L_i$$
, where  $m_i = \frac{q_i}{Q}$ ,  $\varepsilon = -\frac{\partial Q}{Q} \frac{p^*}{\partial p}$ ,  $L_i = \frac{p^* - c}{p^*}$ .

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# Direct measures relationship to market share assessment

- L<sub>i</sub> is the Lerner Index of market power of firm /
- HHI is the Herfindahl-Hirschman Index (usually between 0 and 10,000, or [0,1])
  - HHI=0, m=0 for all firms
  - HHI=10,000, one firm with 100% share monopoly

• Aggregate index of market power:

$$L = \sum_{i} m_{i} L_{i} = \sum_{i} m_{i} \left(\frac{m_{i}}{\varepsilon}\right) = \frac{\sum_{i} m_{i}^{2}}{\varepsilon} = \frac{HHI}{\varepsilon}$$

### Indirect measures of dominance

#### Examples

- Market share
- Absolute size of undertaking(s)
- Control of infrastructure not easily replicated
- Technological advantages
- Countervailing buying power (CBP)
- Privileged access to capital markets
- Economies of scale/scope
- Vertical integration
- Barriers to expansion



#### Remedies for dealing with dominance

### Principles for choosing remedies

Remedies should be chosen so that:

- Consistent with the promotion of competition and other objectives e.g. universal service;
- Contribute to the development of other objectives (in the EU the European internal market); and
- Promote the interests of end users

### The remedies available in the EU

- Transparency (e.g. publishing RIOs)
- Non-discrimination (e.g. equivalence)
- Accounting separation
- Access to and use of specific network facilities
- Price control and cost accounting obligations



#### End Session 2