Economic Foundation & Analysis

Trento Summer School on Advanced EU
Competition Law & Economics

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Moena, June 15, 2015

Foundation

Notions of efficiency

- Allocative efficiency: a (static) **property of a market** (the system through which the exchange of products occurs)

- Productive efficiency: a (static) **property of the production process** (i.e. the system through which goods and services are produced and distributed)

- Dynamic efficiency: a property of the system of production and exchange to be assessed **over time**

Allocative efficiency

- Allocative efficiency

  - All consumers that derive from the consumption of a product a benefit larger than the social cost of producing the same good are allowed to consume the product
  - All consumers that derive a benefit lower than the social cost of producing the same good are excluded from the consumption of the product

Productive efficiency

- Output is produced with the minimum amount of input (technical efficiency), and

- Output is produced at the minimum cost (economic efficiency)

Dynamic efficiency

- Innovation

    - New (more efficient) production processes
    - New products (better qualiy, more differentiated)
    - New distribution systems (e.g. ecommerce)

Competition (Rivalry) and the market

- Competition is a characteristic of the "market" (exchange system)
  - It determines:
    - Who (firms), on the supply side, will actually **sell** the product
    - Who (consumers), on the demand side, will actually **buy** the product
    - Which transactions will take place and which will not (how much of the product will be **exchanged**)

- Competition affects the **allocation** of scarce resources

Markets and (price) signals

- Markets send (price) signals

- Sellers and buyers make their decisions based on these signals

- (Perfect) competition = sellers and buyers **individually** do not have the **power** to alter the signal

Competition as a selection mechanism

Competitive signals perform a **selection** function:

1. Select sellers with the lowest production cost

2. Select buyers who have the highest evaluation

3. Select the transactions that are socially desirable

Market power

- Market power: the ability of one or more firms to price above the perfectly competitive level
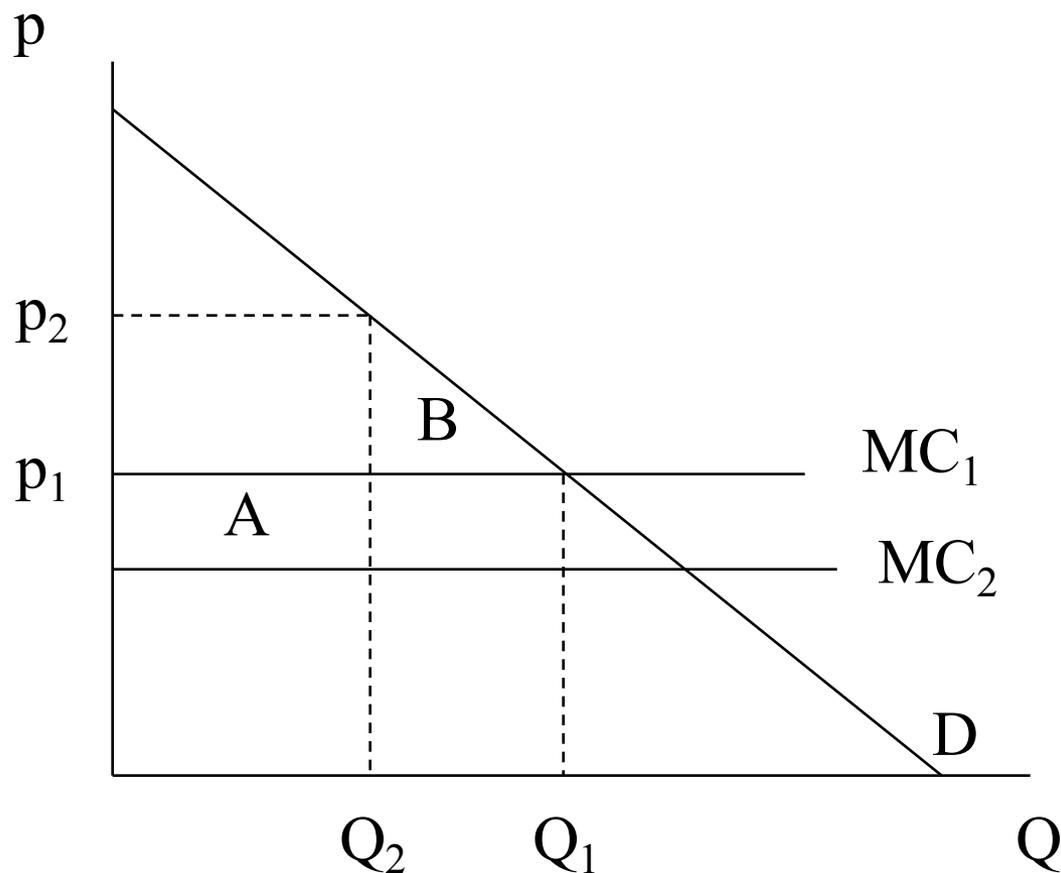
- Lerner Index

$$L = \frac{p - mc}{p}$$

- $L = 0$ (perfect competition); $L = 1$ (maximum market power)
- Market power determines an inefficient allocation of resources

Productive efficiency and competition

- Competition and productive efficiency

- Economies of scale

- More efficient to concentrate production within "few" firms, possibly one (natural monopoly)

Dynamic efficiency and competition

- Competition and dynamic efficiency
- Two effects of competition
  - Escape competition effect
  - Schumpeterian effect
- Innovation depends on incentives
- Inverted-U relationship
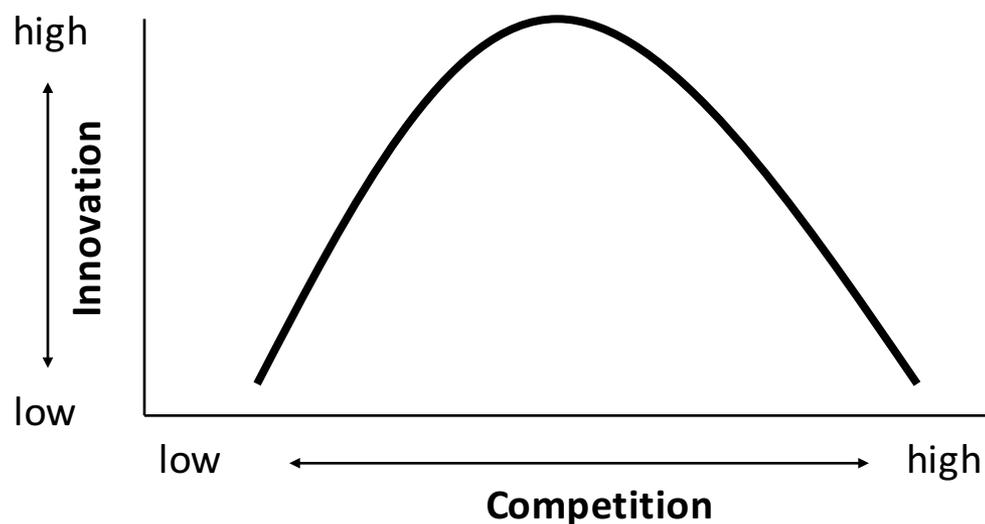
Analysis

A framework for assessing market power

- Market power can exist in a variety of contexts:
  - in some markets, a single undertaking may possess market power (unilateral effects)
  - in other markets, a number of undertakings may collectively possess market power (coordinated effectcs)

- It is necessary to have a conceptual framework to assess <u>whether</u> and to what <u>extent</u> market power exists

The "old" economic assessment framework

- The traditional approach for assessing market power relied on the causal link between **structure–conduct–performance**

- Main focus on structural factors

Structural analysis: steps

- Step 1: Define a relevant market (product and geographic)

- Step 2: Analyse the supply-side structure of the market
    - Number of competitors
    - Market shares and concentration indexes
    - Vertical integration; etc.

- Step 3: Assess barriers to entry (potential competition)

- Step 4: Assess countervailing buyer power (if any)

Modern economic approach: developing a theory of harm

- In the latest years, antitrust authorities focused on articulating a *"theory of harm"* behind a competition concern

- The theory of harm is a <u>story</u> that explains why an agreement between two or more firms or a practice engaged by a firm may harm competition and adversely affect consumers

- It does not only take into account the structural features of the market but also the incentives and the ability of the firms involved

Theory of harm: elements

A well developed theory of harm:

- should articulate how competition and, ultimately, consumers will be harmed by the practice under exam relative to an appropriately defined counterfactual

- should be consistent with the incentives and the ability of the parties involved

- should be consistent with the available economic theory

- should be consistent with the available empirical evidence

Theory of harm: statements

A theory of harm and the justifications of the various nodes of the story will make emerge two categories of statements:

1. **Factual assertions**: description – and possibly quantification – of an economic phenomenon

   - e.g. X and Y are the closest competitors; consumers face high switching costs; demand price elasticity is 1.6

2. **Logical propositions**: a reasoning that, on the basis of a set of premises, (i.e. some factual assertions), derives a conclusion

   - e.g. switching costs would prevent a new entrant from reaching an efficient scale and would impede entry

Theory of harm: testing the statements

- In general a factual assertion can be either **true** or **false**

  - When a factual assertion contains estimates it is impossible to express such a clear-cut opinion and the judgement it can only concern the **reliability** or **robustness** of the estimates

- A logical proposition is **valid** or **invalid**

  - internal consistency: conclusions must logically follow from the premises

  - economic theory: conclusion are related to the premises by an established or sound economic theory

Some examples of unsatisfactory theories of harm: margin squeeze

- What is the proper counterfactual?
    - A lower wholesale input price (constructive refusal to deal)?
    - An higher retail price (predation)?

- Very different statements to be tested... If predation:
    - need to estimate avoidable downstream costs and prove "sacrifice"
    - foreclosure unlikely if not dominant in downstream market
    - some evidence of recoupment necessary
    - no need to prove the indispensability of input

- Implications
    - Remedies (totally different for domco, rivals and consumers)
    - Damages – if predation only loss of profit, passing on arguments irrelevant, etc.

Some examples of unsatisfactory theories of harm: on-line sales ban (*Pierre Fabre*)

- Pierre Fabre: 20% of the market for high-end cosmetics

- De facto ban of on-line sales

- ECJ (preliminary ruling): in the context of a <u>selective distribution system</u>, a contractual clause requiring sales of cosmetics and personal care products to be made in a physical space where a qualified pharmacist must be present, resulting in a ban on the use of the internet for those sales, amounts to a restriction by object within the meaning of that provision

Some examples of unsatisfactory theories of harm: on-line sales ban (*Pierre Fabre*)

- there are legitimate requirements, such as the maintenance of a specialist trade capable of providing specific services as regards high-quality and high-technology products, which may justify a <u>reduction of price competition</u> in favour of competition relating to <u>factors other than price</u> (par. 40)

- The aim of maintaining a prestigious image is not a legitimate aim for restricting competition (par. 46)

- What is the theory of harm?

  - Reducing intra-brand competition?

  - What is the Pierre Fabre incentive of doing so?

Some examples of unsatisfactory theories of harm: on-line sales ban (*Pierre Fabre*)

- Manufacturer's profits

$$\Pi = (w - c) * Q(p,\ s)$$

- w = wholesale price; c = manufacturer's marginal cost; $Q(p, s)$ = downstream demand, which depends on p = retail price and s = demand enhancing factors, such as ancillary services or <u>brand image</u>

- Manufacturer is better off if $Q(p, s)$ is higher; generally so are consumers

- If a selective distribution system is "efficient" this means that it implies a combination of p and s such that $Q(p, s)$ is higher, even though it entails an higher p

Some examples of unsatisfactory theories of harm: on-line sales ban (*Pierre Fabre*)

- What is the consumer welfare consequences of on-line sales if they increase price competition?

Theory of harm: broad categories

- Individual theories of harm are numerous and specific to the case at stake

- However, most draw on a limited number of common potential sources of competitive harm:

  - **Softening competition/unilateral market power**

  One or more firms have a lower incentive to compete aggressively and can unilaterally exercises market power

  - **Collusion**

  Two or more firms coordinate to jointly exercise market power

  - **Foreclosure**

  A firm reinforces or protects its market power by excluding equally efficient competitors from the market

Softening competition

- One or more firms undertake a practice such that lowers their incentives to compete aggressively

- Examples
  - Merger between to close competitors: unilateral effects

  - Best pricing policies
    - Price Matching Guarantee
    - Parity clause

  - Softening competition theory of harm is based on an alteration of a static game

Collusion

- Coordination of market strategies (prices, output etc.) such as to raise profits and harm consumers

- Coordination occurs through a dynamic interaction (repeated game)

- 3 Problems:
  - Coordination problem: finding the terms of coordination
  - Enforcement problem: curbing firms' incentive to deviate through a punishment mechanism
  - External stability: impeding disruptive actions by fringe competitors and/or buyers

Foreclosure

- Raising rivals' costs strategy - RRC

  - the dominant firm impedes the access to an essential input or to a more efficient input

- Lowering rivals' demand strategy - LRD

  - the incumbent reduces the demand that is available to new entrants till is no longer profitable entering the market

- Output strategy

  - the dominant firm does not affect neither the cost or the demand of competitors, but might choose its output level so as to bring price at a level that would make entry unprofitable

Case #1: GE/Instrumentarium

GE/Instrumentarium

- Acquisition by General Electric Company (US) of sole control of InstrumentariumOYJ (Finnish)

- Product market: Various instruments (perioperative monitors, patient monitors, critical care monitors, all of them separate)

- Geographic markets: national

- Theory of harm: Unilateral effects, elimination of a close competitor

Some questions

- What kind of evidence did the Commission examine to assess the "closeness of competition" between GE and Instrumentarium?

- When tenders are involved, sometime each tender is defined as a separate relevant market. Why this is not the case here? How did the existence of tendering procedures affected the assessment of the case?

Market features

- Stable and mature market

- Tendering procedures (with detailed specifications and "most economically advantageous" procedures rather than "lowest price")
  - About 60% to 100% sales are made through a tendering procedure

- The anesthesiologist (primary user of this equipment) plays an important role in making the choice of a perioperative patient monitor

Overview

- Market shares (perioperative monitors)

  - High combined market shares

  - Stable market shares of the merging parties

  - Lower market shares of competitors

2002 %	EEA	A	BE	DK	DE	FI	FR	GR	UK	IRL	IT	NL	PT	ES	SW
GE	[0-5]*	[0-5]*	[0-5]*	[10-15]*	[5-10]*	[0-5]*	[5-10]*	[0-5]*	[5-10]*	[0-5]*	[0-5]*	[0-5]*	[0-5]*	[15-20]*	[5-10]*
Instru-mentarium	[55-60]*	[75-80]*	[55-60]*	[35-40]*	[40-45]*	[95-100]*	[45-50]*	[45-50]*	[70-75]*	[50-55]*	[50-55]*	[65-70]*	[35-40]*	[65-70]*	[70-75]*
Combined	[65-70]*	[75-80]*	[60-65]*	[50-55]*	[45-50]*	[95-100]*	[55-100]*	[45-50]*	[80-85]*	[55-60]*	[50-55]*	[65-70]*	[35-40]*	[80-85]*	[75-70]*
Philips[i]		[10-15]*	[5-10]*	[10-15]*	[30-35]*	[15-20]*	[0-5]*	[20-25]*	[35-40]*	[5-10]*	[20-25]*	[15-20]*	[15-20]*	[5-10]*	[5-10]*	[5-10]*
Siemens	[15-20]*	[10-15]*	[20-25]*	[15-20]*	[30-35]*	[0-5]*	[10-15]*	[10-15]*	[5-10]*	[20-25]*	[20-25]*	[15-20]*	[50-55]*	[5-10]*	[10-15]*
Datascope	[0-5]*	[0-5]*	[0-5]*	[0-5]*	[0-5]*	[0-5]*	[5-10]*	[0-5]*	[0-5]*	[0-5]*	[5-10]*	[0-5]*	[0-5]*	[0-5]*	[0-5]*
Others	[0-5]*	[0-5]*	[0-5]*	[0-5]*	[0-5]*	[0-5]*	[0-5]*	[0-5]*	[0-5]*	[0-5]*	[0-5]*	[0-5]*	[0-5]*	[0-5]*	[0-5]*
Market size (mEUR)	125.4	4.6	3.9	2.3	23	4.3	15.6	1.6	32.9	1.4	14	5.3	2	7.8	4.2

Actual competition

- Here, tendering procedures do not fundamentally affect the value of market shares as a strong indications of the merged entity's market power.
    - Value of each contract won is low and the number of tenders is high
    - Customization is restricted, the specification of the tender already determine whether a given supplier will submit a bid or not
    - Customers appear to be willing to switch in case of SSNIP

- Market shares reflect real purchasing decisions by customers in a given hear, hence are informative of market power

Closeness of competition

- Suppliers select auctions in which they participate and do not bid when they believe they have no chance of winning.

- The more frequently two firms face each other, the more likely it is that their prices are substitutes.
  - in 3,355 tenders, the merging parties encountered each other in [50-60]%
  - Faced no competitor in [20-30]%
  - A single competitor in [20-30]%
  - When facing other competitors, in [30-40]% of the cases, the merging parties faced neither Siemens nor Philips but only various fringe players

- The merger may result in a reduction of the number of significant players from two to one in one tender out of three.

- When both Instrumentarium & GE are present, Philips bids lower (stronger competition!)

Closeness of competition

- Runner-up analysis:
  - Suppose GE & Instrumentarium are close competitors, one would expect to see GE as the second-placed bidder for a large number of those bids won by Instrumentarium and vice-versa

Other analyses

- The average discount offered when both notifying parties are present is higher (lower prices)
  - (Econometric modelling to assess the impact)

- Fringe player and potential competition
  - Repeat runner-up analysis to assess the strength of competition

Other risks

- Barriers to entry and expansion
  - Importance of innovation as a parameter of competition (merging parties were the most innovative suppliers)
  - Importance of distribution network (to offer support over the whole life cycle)

- Lack of countervailing buyer power
  - In purchasing decisions: "*Performance and Quality are the most important criteria followed by Service and Product durability. Price is obviously less important*".
  - Fragmented customer base (limited value of tenders → lower price sensitivity)

Case #2: Anglo American PLC/ Lafarge S.A

Anglo American PLC / Lafarge S.A

- Horizontal joint venture between Anglo and Lafarge in the production of cement aggregates, asphalt and ready-mix concrete (RMX)

- Theory of harm:

  Coordinated effects in the markets for the supply of bulk cement in UK

Competitive assessment

Merger with coordinated effects in the market for bulk cement

- The more an industry is already characterised by the coexistence of factors which favour a collusive outcome, the more risky to allow a merger

    which kind of evidence has been collected?

- Three conditions need to be satisfied for collusion to be possible

- Coordination has to be continuous? Price has to be monopolistic?

Competitive assessment: first condition

- Ability: (Pre – merger)
  - High concentration (4 UK producers)
  - Limited capacity expansion (only Tarmac)
  - Structural links
  - Homogeneous product
  - Similar cost structure
  - Price announcement letters

- Ability: (Post merger)
  - Four to three cement producers (five to four RMX suppliers)

Competitive assessment: first condition

- Monitoring (Pre – merger)
  - High degree of transparency on total production of cement, capacity and companies' own market shares *(how? Was it sufficient knowing its own market share?)*

- Monitoring (Post –Merger)
  - Increased market information *(vertical integration played a role, why?)*

Competitive assessment: second condition

Internal sustainability (pre-merger)

o High capital investment and risk of aggressive competition

o High cross – sales : repatriation of cement volumes as signalling or punishment mechanism

o Lafarge was limited in repatriation because it was not a large cement buyer

Internal sustainability (post merger)

o JV, large producer, stronger incentive to coordinate

o Greater flexibility and options of punishment by increasing similarities in vertical integration

o Greater use of repatriation as signal

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Competitive assessment: third condition

External sustainability
(pre-merger)

o Competitive fringe

o No threat from imports

o High barrier to entry

o No buyer power

o Firms with no incentive for
coordination: Tarmac

   BUT..

External sustainability
(post –merger)

o By removing Tarmac, that was
part of the competitive fringe
and had a strong incentive to
expand its output, the JV would
increase the external
sustainability

Conclusions

The CC concluded that the proposed JV would make coordination in the bulk cement market significantly more likely to emerge (if there were no pre-existing coordination) or if there were pre-existing coordination would increase materially its effectiveness and stability

Case #3: TomTom/Tele Atlas

TomTom/Tele Atlas

- TomTom's acquisition of sole control of Tele Atlas: vertical merger in the industry of portable navigation devices (PND).

- Upstream market (Tele Atlas and Navteq mainly)
  Product market: navigable digital map databases
  Geographic market: *worldwide*

- *Intermediate market (TomTom and Garmin)*
  Product market: navigation software
  Geographic market: *EEA, but worldwide in scope*

- Downstream market
  Product market: portable navigation devices, i.e. PNDs.
  Geographic markets: national in scope

- Key topic: foreclosure

Some questions

- What was the concern of competitors?

- Which hypotheses of input foreclosure have been explored?

- How did the Commission assess:
  - whether the merged entity would have the **ability** post-merger to foreclose access to inputs;
  - whether it would have **incentives** to do so;
  - whether a foreclosure strategy would have a significant detrimental **effect** in the downstream PND market?

Assessment – ability to post-merger foreclose?
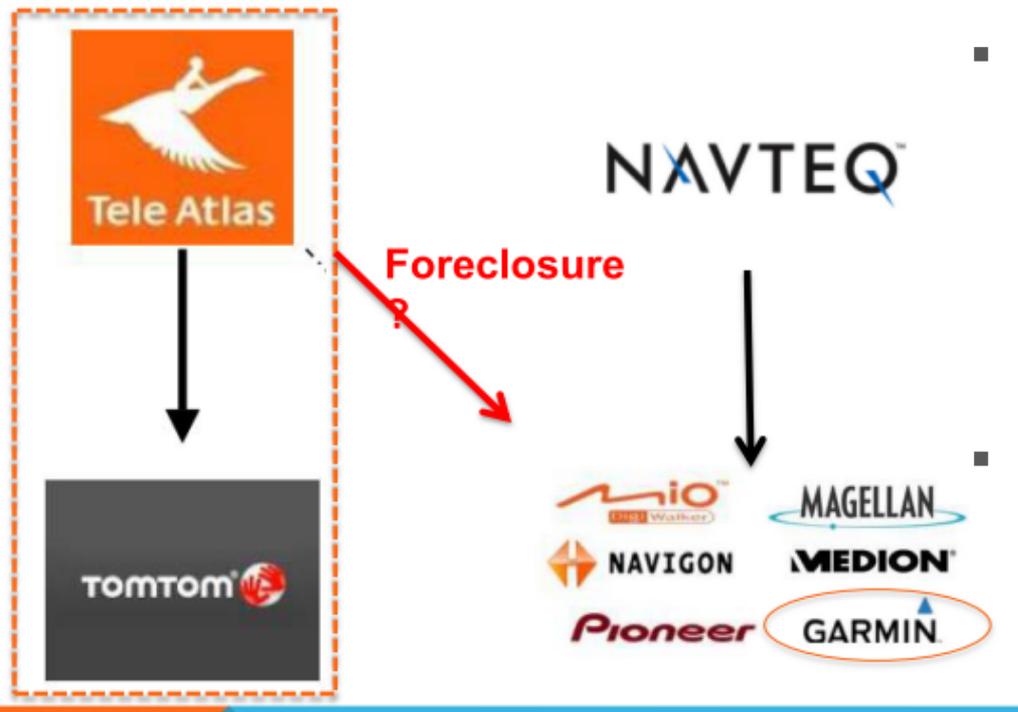
- Hypotheses to explore:
  - by increasing prices
  - by providing degraded maps or delayed updates

- Indicators to assess
  - market power
  - importance of the input (map) for the downstream product (PND)
  - possible counter-strategies

Market shares

	All portable end-users	PNDs
TomTom	[30-40]	[30-50]
Mio Tech & Navman	[10-20]	[10-20]
Garmin	[10-20]	[10-20]
MEDION	[0-10]	[0-10]
MyGuide	[0-5]	[0-5]

Assessment – ability to foreclose post-merger

- Market power: Tele Atlas sells map databases above marginal cost and has a market share of more than 50% in the upstream market, NAVTEQ being the only other provider of navigable digital map databases with a similar coverage and quality level

- Importance of input: maps are a critical component for PND

- Possible foreclosing strategy: maybe raising prices (the hypothesis of "gaming" with map formats appears unlikely)

- Lack of effective counter strategies, because:
  - Entry unlikely to be timely
  - Long term contracts between Tele Atlas and Garmin (and, to a lesser extent, others) would prevent the former from foreclosing access to input. However, Garmin represents only 20% of the market.

Assessment – incentive to foreclose post-merger

- Suppose the vertically integrated entity stops selling its map databases to downstream competitors. What is the likely effect on its profits?
    - Check profits both upstream and downstream!
        - Losses upstream
        - Profits downstream (?)

    - Net effect?
        - The extent to which downstream demand is likely to be diverted away from foreclosed rivals; and
        - The share of that diverted demand that can be captured by the downstream division of the integrated firm

Assessment – incentive to foreclose post-merger

- The cost of the input (map) has a very low weight on the cost of PND. Even in pass on to customers is high, the change in cost would determine only a small increase in sales for the merged entity.
- Evidence that some PND suppliers would be reluctant to pass on cost increases
- Garmin is protected from price increases and this would further reduce the diversion from competitors to merged entity

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Assessment – effects on the downstream market

- No detrimental effects

- Likely efficiencies (merger specific)
  - Internalization of double markup
  - Volume discounts are common in the industry, but are too limited to substantially eliminate double mark-up → hence efficiencies are merger specific
  - Other efficiencies: aligned incentives to develop better maps, faster

Conclusion

- *"The merged entity **lacks the incentive to stop supplying** map databases to its downstream competitors. In addition, **any foreclosure strategy** to increase prices or degrade quality for TomTom's competitors **would not have a significant anticompetitive effect** in the downstream PND and navigation software markets. This conclusion does not rely on likely efficiencies resulting from the proposed operation. However, **the conclusion is strengthened further once efficiencies are taken into account**"*